(69)

RESEARCH REPORT SERIES

Research Report Number 64: Part I

Family Planning in Pakistan: A Review of Selected Service Statistics, 1966-67

by

Lee L. Bean
Daniel M. Farooq and Qamar Fatima

January, 1968

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS
OLD SIND ASSEMBLY BUILDING
BUNDER ROAD, KARACHI
PAKISTAN

Research Report Number 64: Part I

Family Planning in Pakistan: A Review of Selected Service Statistics, 1966-67

by

Lee L. Bean
Daniel M. Farooq and Qamar Fatima

January, 1968

The Research Reports of the Pakistan Institute of Development Economics are circulated to inform interested persons with regard to research progress at the Institute. These reports may be freely circulated but they are not to be quoted without the permission of the author. Work on this manuscript is still in progress; comments are invited to improve the final version.

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS
Old Sind Assembly Building
Bunder Road
Karachi-1
Pakistan

ERRATA - Research Report No:64 - Part I.

Page	Line	Table	Incorrect	Correct
1.	23	-	: personnel - supply	Personnel:Supply
4.	9	-	: appendixes	appendices
6.	23	-	: ordinale	ordinal
7.	18	-	: 4 million	one million
7.	19	-	: 4 million	one million
8.	2	-	: show	shown
12.	-	11	: Source	Census Bulletin No:1, Age, Sex and Marital Status.
12.	-	-do-	: - do -	Census Bulletin No:4, Literacy and Education.
12.	-	-do-	: -do-	Census Bulletin No;5, Economic Characteristics.
18.	19	-	: 967	957
34.	18	-	: inbalance	imbalance
36.	-	8 caption	: missing sub-headings	Doctors Urban Fulltime Clinics Doctors, Part Time, Rural Clnics Doctors, cut-peice.
40.	9	-	: 100.2	100.4
44.	33	-	: optomistic	optimistic
53.	23	-	: 35 million	25 million
53.	29	-	: 2.7 million	1.7 million
53.	30	-	: West Pakistan	East Pakistan
54.	-	16	: after caption-missing on right hand top	Rs (00's)
56.	20	-	: one	Three
56.	21	-	: 1.23	1.34
57.	11		: 17.74	17.75
60.	31	-	: indrect	indirect
65.	10	18	: 31.7	.317
65.	13	18	: .793	793
65.	14	18	: 188	.188
68.	30	-	: yv.n and yv	Tyv.n, Tyv
68.	31	-	: yw.n and yw	Tyw.n, Tyw
68.	32	-	: yx.n and yx	Tyx.n, Tyx
68.	33	-	: using —	using tau
75.	2	-	: along	alone
75.	7	-	: prevent	prevented

TABLE OF CONTENTS

PREFACE

This report is being circulated in its present preliminary form in order to elicit comments and suggestions for further analysis.

The initial analysis of the published family planning reports which appears as section VII here was started in the Demographic Section of the Pakistan Institute of Development Economics with the preliminary work being carried out by Miss Qumar Fatimah, a research assistant in the Institute.

With the cooperation and encouragement of Dr. (Mrs.) Nafis Sadik, Dr. Samual Wishik and Dr.(then Miss) Batul Turabi, the original records were made available and the original study expanded. Coding and checking of the documents involved the collective labour of all of the members of the Demographic Section of the Pakistan Institute of Development Economics and the Statistical Section of the Family Planning Council in Karachi.

Analysis of the data, including the punching of the data processing cards was carried out in three places, at the Population Council in New York, at Computor Associates, Inc., in Salt Lake City, Utah, and Karachi, Pakistan. The clerical work has been completed largely by Mr. Daniel Farooq and Miss Fatimah. Financial support was received from The Population Council and The Ford Foundation. We have been fortunate to have comments on parts of the report by Dr. P. Satterthwaite, Dr. J. G. Hardee, Mr. William Seltzer, Dr. G. W. Jones, Mr. T. Johnson, Mr. Khalil Saddiqui and Dr. (Mrs.) Nafis Sadiq.

Appreciation is due to Mrs. Patricia Lobo who was largely responsible for typing and retyping the report. To complete the report, however, Mrs. M. L. Bean assumed the responsibility of typing a major part of the text in Part I.

What significance this report may have is, therefore, due to the work of a large number of people. The errors, evaluation and hopefully infrequent value judgements, however, are the responsibility of the senior author of this report.

that it is one of the poorest countries with one of the lowest per capita income levels in the world.[2] Administrative control, particularly in view of the degree of decentralization in the programme [18, pp. 4-16], is essential. While the available statistics provide a description of performance, financial control and a means to assess the personnel strengths, the question remains as to whether the reports are and can be used to revise and adjust programme operations to exploit strengths and eliminate soft spots in the programme.

Additional questions which must be raised, however, are whether there are too many reports and are they too complex. Is too much time being spent on completing administrative reports or are the reports too detailed and complex for the information provided or for the use to which the reports are put. A related question is whether the reports are accurate: is the information upon which critical administrative decisions are based correct? The questions are important, yet difficult to answer.

Family planning is one of the more important development issues in Pakistan. The current rate of population growth in Pakistan is one of the highest in the world [4]. How high, however, is continually debated. Good vital statistics are not attainable in Pakistan [8], and even the 1961 census probably under-enumerated the population [13]. Yet data from the Population Growth Estimation Project [10] indicate an all Pakistan

---

[2] A recent estimate of per capita income is based upon the Central Statistical Office, Quarterly Survey of Current Economic conditions, 1963-64. Assuming family size to be 5.5 persons in rural East Pakistan, 5.7 in urban East Pakistan, and 5.9 in both urban and rural West Pakistan, per capita income was estimated as follows (in Rupees per year):

	East Pakistan	West Pakistan	All Pakistan
Rural	305	373	333
Urban	509	515	513
Both	316	406	357

See [6].

I. INTRODUCTION

The purpose of this research report is to review and analyze selected service statistics collected in the normal administrative operation of the Pakistan Family Planning Programme during the 1966-67 fiscal year. In the report three issues will be discussed; (1) The utility of the selected service statistics for administrative control of the programme. (2) The validity of the service statistics under review. (3) The use of the statistics for basic demographic and family planning research.

Service statistics may be broadly defined as those data collected in the normal operation of the family planning programme [32]; these include; reports of IUD's inserted, conventional contraceptives distributed (or sold), vasectomies and tubeligations, clinic record cards covering the socio-demographic and medical characteristics of clients, coupons (as used in the Korean and Taiwan programmes [32]), personnel, financial, supply and equipment reports. With the adoption of the clinic record card in Pakistan for IUD cases, an interesting body of data will soon be available [27]. However for the period under review in this paper, only four broad classes of service statistics were available for all programme districts for all or most of the year.[1] (1) Reports of IUD's inserted, conventional contraceptives sold, vasectomies or tubeligations performed. These will be referred to as performance data. (2) Financial reports, (3) Personnel reports and (4) Supply and equipment reports. The latter class of data is not analyzed here.

The utility of the service statistics in a national family planning programme of the size and magnitude of Pakistan's is questionable. Pakistan is investing more money per capita in family planning than any other major country [26] despite the fact

---

[1] As will be noted, not all of the data are available for all months of the year, particularly where the data are not included in the monthly report by The Family Planning Council or where alternate control systems - internal audit - are of more importance.

crude birth rate in excess of 50 per thousand and a crude death rate of less than 20 per thousand and thus a growth rate in excess of 3 per cent per annum [4]. Under these conditions, the adjusted 1960 Pakistan population of 97.7 million would grow to 247.2 million in 1985 with no decline in fertility and even with a successful programme as outlined in the family planning scheme the population would grow to 193.8 million [4].

The relationship between population growth and economic development is clearly recognized in Pakistan [29]. Family planning was one of President Mohammad Ayub Khan's original goals for Pakistan when he assumed power in the 1958 revolution [12], and it has become one of the five major national development goals as outlined in the Perspective Plan [26]. The importance of this program therefore requires constant review and evaluation of all aspects of the program.

Determining the relevance of the service statistics reported is critical but requires more information than can be made available in this report. It would be necessary to follow in detail both the information flow up through the various reporting and decision making levels of the bureaucracy as well as the flow of decisions down through the various operational levels.

The aims of this report are more modest: what does the service statistics reporting procedure tell us about the operation of the programme during a given year?

In addition to the essentially administrative issues, we will also examine the usefulness of the statistics for basic social and demographic analysis. What districts are most successful in their programmes? Are there particular types of districts which are more successful? Finally, what types of family planning financial and personnel inputs are related to performance?

In summary, the report is limited to a summary of official family planning reports of performance, personnel and expenditures

for the fiscal year 1966-67. The report is presented in two parts. Part I consists of the following sections in addition to the introduction: Section II describes briefly the analysis procedures, and Section III the programme districts. Sections IV (Performance), V (Personnel) and VI (Finance) summarize the three types of reports analyzed in this study. In Section VII an analysis of certain correlates of family planning performance is presented and Section VIII is devoted to a summary and discussion of the study.

Part II of the research report contains four appendices. Appendix A presents the reporting forms used by the district for the submission of monthly statistics. Appendix B describes briefly some of the problems involved in the analysis of population statistics at the district level. Appendix C contains a brief description of each district, the reported performance and two graphs for each district on performance and personnel levels. Appendix D contains the detailed financial summaries by district for each item of expenditure during the year.

SECTION II. METHODOLOGY

To date some of the service statistics with which this report deals have been tabulated, by hand, by three different organizations and published in relatively simple form as monthly district totals, percent of programme target achieved, and in chart form indicating changes over the year.[3] (Financial, supply and equipment summaries are not similarly published.) These summary reports are based upon individual district monthly reports (see Part II, Appendix A) which theoretically are to be forwarded for compilation by the 14th of the following month. These reports are detailed summaries of

(a) Programme performance

(b) Expenditures

(c) Personnel employed, in training and turnover and clinics in operation

(d) Supplies on hand, distributed and received

(e) Vehicular reports

In this study only performance, personnel and expenditure reports are analyzed, for each of the twelve months July 1966 to June 1967. The information on the report forms was transferred to coding sheets for punching on data processing cards. All code sheets were 100 percent checked, all punch cards verified and usual deck cleaning procedures employed. Nevertheless certain errors have been found in the data. All such errors have been corrected manually where possible. Two types of "errors" were most common: missing reports and erroneous totals, particularly in the case of financial data. There was nothing which could be done to correct for missing data, but new cost totals were determined by ignoring the reported totals from the districts and by calculating a new sum of the individual items.

[3] The Family Planning Council, the East Pakistan Family Planning Board, and the West Pakistan Family Planning Board each publish similar reports. See /15,16,25/.

For summary statements, quarterly, semi-annual and the year's total and monthly averages have been computed, adjusting where necessary for missing data.

In addition to the programme service statistics, district socio-demographic characteristics have been introduced into the analysis. The selection of the variables was premised on two assumptions: performance in particular and personnel and finance in part may simply be a function of total population size or the number of target persons (fertile couples) in the district. Secondly, performance may also be related to variables traditionally associated with fertility differentials in countries of declining fertility: literacy, urbanization, and non-agricultural employment for example. The precise measures used are listed in the following section.

It should be pointed out that the socio-demographic data are subject to a number of limitations. No such data by districts has been made available since the 1961 census. While population size itself would be impractical to project on a district basis (see Part II, Appendix B) it would be impossible to estimate the mid-year (January 1, 1967) level of the other variables. A less rigid assumption than what would be necessary in projecting absolute levels is that district rank order differences have remained relatively constant. The variables are thus treated as simple ordinal data [77. The use of ordinal measures of association (Section VII) has one further advantage. Because of the small number of programme districts and the absence of evidence that the variables are normally distributed or relationships linear, the weaker set of assumptions involved in ordinal measures of association appear more reasonable.

Finally, in the analysis which follows (Section VII), all relationships examined are based on ecological correlations and measures of association and must be so interpreted [31].

SECTION II. METHODOLOGY

To date some of the service statistics with which this report deals have been tabulated, by hand, by three different organizations and published in relatively simple form as monthly district totals, percent of programme target achieved, and in chart form indicating changes over the year.[3] (Financial, supply and equipment summaries are not similarly published.) These summary reports are based upon individual district monthly reports (see Part II, Appendix A) which theoretically are to be forwarded for compilation by the 14th of the following month. These reports are detailed summaries of

(a) Programme performance

(b) Expenditures

(c) Personnel employed, in training and turnover and clinics in operation

(d) Supplies on hand, distributed and received

(e) Vehicular reports

In this study only performance, personnel and expenditure reports are analyzed, for each of the twelve months July 1966 to June 1967. The information on the report forms was transferred to coding sheets for punching on data processing cards. All code sheets were 100 percent checked, all punch cards verified and usual deck cleaning procedures employed. Nevertheless certain errors have been found in the data. All such errors have been corrected manually where possible. Two types of "errors" were most common: missing reports and erroneous totals, particularly in the case of financial data. There was nothing which could be done to correct for missing data, but new cost totals were determined by ignoring the reported totals from the districts and by calculating a new sum of the individual items.

[3] The Family Planning Council, the East Pakistan Family Planning Board, and the West Pakistan Family Planning Board each publish similar reports. See /15,16,25/.

In analyzing the program statistics a question arises with respect to goals or targets and their achievement. The overriding goal of the Pakistan family planning programme for the Third Five Year Plan is to reduce the birth rate by 20 percent. To achieve this goal a number of assumptions must be met:

1. The birth rate is 50 per thousand, but recent PGE estimates suggest this figure to be too low.

2. It is estimated that there are 20 million fertile couples in Pakistan, although no discussion of how this figure was derived has been made available.

3. It is assumed that all fertile couples, excluding certain populations in tribal and frontier areas, will be reached by the programme and that the programme will be 25 percent effective.

4. Programme effectiveness is assumed to be measurable in terms of couple years protection. Therefore assuming 1, 2 and 3 to be true, it would be necessary for the programme to be successful in 1970 to have the following conditions obtain: no more than 20 million fertile couples in the country, 1 million couple years protection achieved, and 1 million births prevented.

On the surface the programme seems relatively straight forward, simple and easily evaluated. Certainly the programme has operated on such an assumption. Performance on a yearly basis has been translated into measures of couple years protection. For IUD insertions, it is assumed that over a period of a year three-fourths couple years protection is given under certain assumptions of IUD retention during the year. The amount of protection for the second year is reduced to take into account expected explusions, removals, and accidental pregnancies during that year. Thus the IUD couple years protection rate is based upon an assumed rate of retention over the course of a year, but to date there is no valid IUD retention studies available to test these assumptions in Pakistan. Useful retention may thus be over or under-estimated. Yet useful retention must be determined in order to translate into

a meaningful measure of couple years protection, and the translation of couples years protection to births averted as shown by Potter in a recent paper is a rather complex process when a high degree of accuracy is required [27].

The transformation of conventional contraceptives distributed into couple years protection presents other problems in the Pakistan family planning programme. The reported figures for condoms, foaming tablets, foaming liquids, and "other" in part represent the number of these items which are distributed to agents who sell and retain fifty percent of the proceeds from the subsidized price of the conventionals. The figures refer to stocks on the shelf and not to stocks transferred to the ultimate consumers. Yet taking the distribution figures and dividing by 100, another set of couple years protection is derived despite the lack of information on the number actually used, frequency of sexual intercourse, regularity of use, and efficiency of the device. Further it is assumed that foam tablets remain viable in the field after once distributed and that a certain number of applications of foaming liquid are in each container sold in order to estimate the number of "treatments." These assumptions need to be tested.

Vasectomies and tubeligations, during the first year following the operation are assumed to provide a full year of protection, although there is no information on the following: age of the patient and his wife, condition of the wife -- pregnant or ammenoric -- or whether instructions are given to the patient to avoid intercourse without some alternate means of protection during the first 30 to 60 days following the operation in the case of vasectomy.

All of these assumed couple years of protection are summed to determine total couple years protection. The technique is simple, but undoubtedly largely inaccurate. Too many important variables are ignored, and too many assumptions made which have not been checked or based on data about sexual behaviour and family planning practice in Pakistan. This does not, of course, necessarily negate the administrative value of the technique.

Goals have been established for each programme district based upon assumed couple years protection the districts must collectively achieve in order to reach the overall goal of the programme by 1970. These performance goals are of particular importance since strong pressures are brought to bear on programme personnel to achieve the goals. It is therefore useful to examine the goals as set down in the programme before examining the actual performance during the year.

The method of establishing family planning goals for the year 1966-67 is unclear, although it appears in a general way that goals were set upon the basis of district population size. This was, apparantly the specific criterion in 1965-66 although it has been suggested but not confirmed that adjustments in the targets for 1966-67 were made on the basis of the previous year's performance.

While goals or targets bear some relationship to population size, the relationship is obviously not one to one. Consider the following cases:

1. Jhelum has the same target of couple years protection as Jhang and Sheikhupura yet it is three quarters the size of these two districts(1961), had a child woman ratio much less than in the other two districts, had a much lower masculinity ratio and had a higher proportion of the population female between the ages of 15-49. Jhelum is widely known as a district which provides men to the military; men who are away from home much of the year or for longer periods of time. This may account for the low child woman ratio.

2. Karachi, Multan, Lyallpur and Lahore have the same targets but vary in population size between 2 million and 2.7 million.

3. Mymensingh and Dacca have the same targets, but Mymensingh had a population of 7 million and Dacca had a population of 5.1 million in 1961.

4. Noakhali has the same target as Kushtia but is twice as large.

There is a rough correspondence between goals and population size and the correlation is significant (see Section VII). Still

there remains a number of other factors related to goal setting which to this writer are unclear.

Targets and goals are important administrative devices. Yet with the meaning of each relatively unclear, in large part this report will deal with only numerical performance during the year: IUD's reported as inserted, conventional contraceptives distributed, and vasectomies or tubeligations reported to have been done. Since official goals, however, provide the key to the operation of official sanctions -- positive or negative -- in the operation of the programme, we shall return to this issue in a subsequent section of the paper. Evaluation of the concept of couple years protection or births prevented is, however, beyond the scope of this paper.

SECTION III. THE FAMILY PLANNING PROGRAMME DISTRICTS

During the second year of the Third Five Year Plan's family planning scheme, the number of programe districts was expanded from 23 to 25 in West Pakistan and from 10 to 11 districts in East Pakistan. Political and demographic factors make expansion easier in West Pakistan than in East Pakistan, although the consideration of certain geographical factors may suggest the reverse. In the future cultural factors may make expansion more difficult in West Pakistan.

Districts in West Pakistan are smaller in population size and have many fewer villages and local governing bodies and therefore the staffing problems are less severe. However, the population of the West Pakistan districts is more widely dispersed making travel more difficult at times although this is, of course, off-set by the problems of travel during the yearly floods in East Pakistan. Given the relative differences in population size, the addition of one East Pakistan district against two West Pakistan districts is, on a population basis, consistent with the parity principle.

In West Pakistan the two districts added during the year were Gujrat and Montgomery, the latter apparantly added in place of Jacobabad which had originally been scheduled in the Family Planning Scheme for the year. In East Pakistan Barisal was added as a programme district.

Programme districts originally included and those newly added are those in which it is assumed that it would be easier to introduce the family planning scheme. Ease of introduction of the programe is based upon a series of assumptions: facilities, available personnel, and the likelihood of acceptance by the population. Thus the districts in the program should be viewed as those, if all assumptions are correct, where the family planning program should be most successful.

Detailed descriptions of these districts appear in Table 1 and Part II, Appendix C.

Table 1

Sociodemographic Characteristics of Pakistan Family Planning Programme Districts

Districts	1961 Population (000's)	Child woman ratio	Femininity ratio[a]	Females 15-49[b] (percent)	Urban Population[c] (percent)	Literate Population (percent)	Males in non-agriculture[d] (percent)
East Pakistan							
Mymensingh	7,018	863	926	21.2	3.4	14.1	9.1
Dacca	5,095	888	902	20.3	14.8	18.9	30.7
Comilla	4,388	862	954	21.3	3.2	20.3	9.0
Barisal	4,263	876	948	21.0	2.8	17.8	10.0
Chittagong	2,983	816	887	20.4	12.5	23.0	31.3
Rajshahi	2,811	873	953	21.7	4.3	16.2	9.8
Khulna	2,449	852	907	20.7	7.0	22.4	16.9
Noakhali	2,383	863	973	21.4	1.4	20.2	9.8
Dinajpur	1,710	803	895	21.9	4.2	21.3	7.9
Bogra	1,574	854	953	21.9	3.0	18.7	8.3
Kushtia	1,166	964	921	19.9	5.4	12.5	18.5
West Pakistan							
Multan	2,702	804	861	20.4	21.4	9.4	38.0
Lyallpur	2,683	751	869	21.2	21.4	15.2	37.6
Lahore	2,479	771	829	20.7	59.1	21.0	48.0
Karachi	2,044	771	759	19.9	93.6	32.2	56.9
Sialkot	1,596	659	898	22.1	15.9	14.6	30.9
Sargodha	1,467	777	892	20.9	19.4	13.4	33.4
Gujranwala	1,291	736	865	21.6	26.7	14.5	40.1
Gujrat	1,326	686	899	22.5	12.7	15.3	28.9
Hyderabad	1,286	718	809	20.9	40.0	13.8	36.6
Rawalpindi	1,137	681	925	22.2	35.7	27.5	39.6
Peshawar	1,710	837	862	19.8	31.5	13.1	38.7
Sheikhupura	1,081	730	874	21.4	12.6	11.0	28.9
Jhang	1,079	760	868	20.6	16.0	11.9	34.8
Hazara	1,050	837	976	20.8	5.3	9.6	18.6
Muzaffargarh	989	874	866	20.5	7.4	8.1	24.5
Sukkur	837	774	834	20.9	25.6	14.3	27.5
Rahimyar Khan	1,016	932	841	19.8	11.2	8.5	19.3
Mardan	814	849	928	19.8	12.9	8.1	23.3
Jhelum	749	689	972	21.9	14.1	21.0	29.7
Nawabshah	692	917	832	20.2	12.9	11.7	21.4
Bahawalpur	736	851	843	20.8	17.8	9.5	24.1
Larkana	604	752	832	22.1	12.9	11.8	19.5
Montgomery	2,134	778	876	20.9	11.2	9.3	30.9
Khairpur	472	903	824	20.2	9.8	9.7	20.2
D.I. Khan	352	931	865	19.7	17.9	8.7	27.4

Sources: Pakistan, Ministry of Home and Kashmir Affairs, Census of Pakistan, 1961: Census Bulletin No. 3, Age, Sex and Marital Status. Census Bulletin No:4, Literacy and Education. Census Bulletin No:5, Economic Characteristics.
Vol. 1, Pakistan, Population
Vol. 2, East Pakistan, Population
Vol. 3, West Pakistan, Population
Karachi, Government of Pakistan Press, no dates.

a. The femininity ratio is calculated in the Pakistan census in place of the usual masculinity ratio
b. Sepcifically, the percent of the population which is female, aged 15-49 is reported here.
c. The urban population was defined as those living in cities or towns with a population of 5,000 or more. Areas with a smaller population could be defined as urban by the Census Commissioner if the town or village was judged to have urban characteristics.
d. Specifically, the percent of the males in the labour force classified as non-agricultural workers is reported here.

The West Pakistan districts differ from East Pakistan districts with respect to most socio-demographic characteristics. The East Pakistan districts are roughly 175 percent larger in terms of total population size than the West Pakistan districts. Fertility seems to be lower in West than in East Pakistan as indicated by the 1963 PGE fertility data [107] and the child woman ratios from the 1961 census. The average feminity ratio (females per 1000 males) is much lower in West than East Pakistan, although this may be due to greater under enumeration of females in West Pakistan. The proportion of the population which is female and aged 15-49 is approximately equal in the two Provinces on the average however.

West Pakistan is more urbanized and industrialized although the proportion of the population literate is, on the average, lower than in East Pakistan. In part, however, the lower literacy level is off-set by the fact that the proportion of the population with higher levels of education is much greater in West than in East Pakistan. This is a function of several factors: school retention rates are much lower in East Pakistan [117]. With the capital of the country in West Pakistan some movement of high level manpower has taken place from East to West Pakistan and the provincial disparity in investments during the First and Second Five Year Plans more rapidly expanded educational and particularly higher educational facilities in West Pakistan.

Urbanization and industrialization which is disproportionately a phenomena of West Pakistan may also in part be traced to the disparity of investments for both social infrastructure and industrialisation. This disparity is now being eliminated in the Third Five Year Plan. The differences may be expected to remain with the country, however, for some time.

Because of the major differences between East and West Pakistan, it is therefore necessary to analyze performance of the family planning programme in Pakistan separately for the two wings of the country.

In spite of the differences, both provinces have certain features in common. The child-woman ratio is typical of many developing countries but is as much as twice as high as most European countries, the United States or Japan. The child woman ratio in Japan (1960) for example was only 310 /337 while the average for West Pakistan programme districts was 793 and the average in East Pakistan was 865.

For both provinces the femininity ratio was unusually low. As pointed out in a recent study, this is the result of two factors: underenumeration of females and higher mortality rates for females. (The latter is an especially important factor in Pakistan. As the mortality rate continues to decline one may expect to find the sex difference in mortality reduced and reversed thereby increasing the proportion of females who will live through the child bearing years. The result would not only be to increase the femininity ratio but also to increase the fertility potential of the population in the absence of family planning.)

As for the percent urban, percent literate and the percent males in the non agricultural labour force, the levels are consistent with those found in other developing countries. Industrialization and the associated phenomenon, urbanization, has not been significant in the country as a whole. The literacy level of the population is not only low but one of the lowest in the world. And because of the lack of educational facilities rapid increases should not be expected. Moreover without some control over the rate of population growth the problems of educating the population will become increasingly difficult.

SECTION IV. FAMILY PLANNING PERFORMANCE

A. IUD: Achievement and Progress

West Pakistan: During the year a total of 335,729 IUD insertions were reported in the West Pakistan program districts. The numbers reported by district -- quarterly, semi-annually, and for the year -- are presented in Table 2. The number reported inserted was significantly higher in the second half of the year for the province. Six districts, however, indicated a lower second half than first half year total: Gujranwala, Peshawar, Hazara, Mardan, Bahawalpur and Montgomery. Three of these districts are in the former frontier areas (Hazara, Mardan, and Peshawar.)

The quarterly averages are more variable. During the second quarter of the year the provincial totals declined from 79,764 to 75,405 and the decline occurred widely throughout West Pakistan. A total of 17 of the 25 districts reported fewer insertions during the second quarter. It is unlikely that this general decline was in total the result of Ramazan since the fasting period was split between the last month of the second quarter and the first month of the third quarter. In the third quarter the number of insertions reported increased by nearly 15 thousand in West Pakistan, and only six districts reported fewer insertions in the third quarter than in the second quarter. Moreover only two of these districts -- Peshawar and Mardan -- had also reported a second quarter decline.

During the last quarter of the fiscal year, the number reported for the province declined from the third quarter total by only 65. However, a total of 11 districts reported fewer insertions in the fourth quarter relative to the previous one.

The trends reflected in quarterly and semi-annual totals for the individual districts are relatively irregular. Only one program district, Sialkot, reported quarterly increases throughout the year over the previous quarter's performance. No program district consistently reported decreases by quarter, and only six districts reported fewer insertions in the second half of the year relative to the first half.

Table 2

I. U. D. Insertions by District, Quarterly, Semi-Annual and Total
July 1966 to June 1967

District	Quarterly Totals				Semi-Annual Total		Total
	July Sept	Oct Dec	Jan Mar	April June	July Dec	Jan June	1966-67
Multan	5814	5710	7651	7362	11,524	14,923	26,447
Lyallpur	5350	4199	5431	6206	9,549	11,637	21,186
Lahore	6852	6015	6916	6766	12,867	13,682	25,549
Karachi	6021	5845	6168	7081	11,866	13,249	25,115
Sialkot	3573	3713	3543	4856	7,286	9,399	16,685
Sargodha	3379	4123	6833	5603	7,502	11,826	19,328
Gujranwala	4660	5150	4332	4194	9,810	8,526	18,336
Gujrat	3310	3296	4286	4318	6,606	8,604	15,210
Hyderabad	4116	4105	4577	4557	8,221	9,134	17,355
Rawalpindi	4115	3268	4159	4229	7,383	8,388	15,771
Peshawar	4054	3750	3485	4041	7,804	7,526	15,330
Sheikhupura	2179	1994	2403	2340	4,173	4,743	8,916
Jhang	2216	2269	3534	3621	4,485	7,155	11,640
Hazara	2504	2765	2256	1640	5,269	3,896	9,165
Muzaffargarh	1372	1480	1384	1472	3,852	2,856	5,708
Sukkur	1638	1631	1787	2244	3,269	4,031	7,300
Rahimyar Khan	1061	939	1807	1781	2,000	3,588	5,588
Mardan	1546	1106	991	1433	2,652	2,424	5,076
Jhelum	2330	1821	3544	3170	4,151	6,714	10,865
Nawabshah	1834	2375	3108	2473	4,209	5,581	9,790
Bahawalpur	2027	1866	2110	1540	3,893	3,650	7,543
Larkana	1098	701	918	1813	1,799	2,731	4,530
Montgomery	7587	5810	6939	5258	13,397	12,197	25,594
Khairpur	265	771	961	1354	1,036	3,315	3,351
D. I. Khan	863	703	891	894	1,566	1,785	3,351
West Pakistan	79,764	75,405	90,314	90,246	155,169	180,560	335,729
Mymensingh	7159	8410	7361	16,314	15,569	23,675	39,244
Dacca	22484	23599	16728	21,136	46,083	37,864	83,947
Comilla	2768	4310	4829	8,797	7,078	13,626	20,704
Barisal	384	3225	4422	7,261	3,609	11,683	15,292
Chittagong	3759	3436	3760	4,325	7,195	8,085	15,280
Rajshahi	3016	5494	4484	4,557	8,510	9,041	17,551
Khulna	2931	5322	3972	4,934	8,253	8,906	17,159
Noakhali	1991	2389	2582	3,929	4,380	6,511	10,891
Dinajpur	1441	1707	1520	3,355	3,148	4,875	8,023
Bogra	3354	3408	2869	4,915	6,762	7,784	14,546
Kushtia	1260	1646	1901	2,829	2,906	4,730	7,636
East Pakistan	50,547	62,946	54,428	82,352	113,493	136,780	250,273

Few districts were able to consistently achieve their targets throughout the year. On a quarterly basis five districts reported insertions in excess of target through the year: Hyderabad, Muzaffargarh, Sukkar, Nawabshah, and Bahawalpur. If one considers that there are 100 possible target quarters (four quarters multiplied by the 25 districts), the reports indicate that in 37 of the 100 target quarters, the number reported surpassed target. In the first quarter nine districts were above target, in the second - seven, in the third - eleven, and in the fourth - nine. There is no evidence that there was a last quarter push to surpass targets or a falsification of records to meet the program goal.

Achievement was relatively high in all program districts with respect to the set targets. The monthly average insertions reported ranged from 62 percent of target (Sheikhupura) to 203 percent of target (Sukkur), but total provincial performance for the year was below target.

East Pakistan: The year's performance in terms of IUD's reported is lower in East than in West Pakistan, but East Pakistan has a more consistent picture of improvement over the year. Of the year's total of 250,273 reported insertions, 136,780 were reported in the second half of the year - a 20.4 percent improvement over the first half. For West Pakistan it was 16.1 percent.

The variations by quarter in East Pakistan are quite different in comparison to West Pakistan. The total reported increased in the second quarter, dropped in the third quarter, and then significantly increased in the fourth quarter. During periods of provincial increase, few districts in East Pakistan reported decreases. During the 2nd quarter only one district reported a decline over the first quarter total, seven reported decreases during the third period decline, and all districts reported increases during the last quarter. Only Dacca reported fewer insertions during the second half of the year. Three districts reported successively higher totals in each subsequent quarter to the first.

East Pakistan districts were considerably below target in the reported number of insertions. On the average, the monthly number of insertions was only 37.2 percent of target in Dinajpur, but 155.5 percent of target in Dacca. In only six of the 44 possible target quarters did any district surpass target for Dacca in each of the four quarters. Only Mymensingh and Bogra in the last quarter of the year reported enough IUD insertions to surpass, on a monthly average, the monthly target.

B. Vasectomies and Tubeligations

West Pakistan. There is little that can or need be said concerning the vasectomy and tubeligation record in West Pakistan for 1966-67. Very few surgeries were reported in most West Pakistan districts. For the entire year only the largely urban areas reported a significant number of vasectomies or tubeligations: Karachi, Hyderabad, Lahore, Multan and Rawalpindi each reported 100 or more during the year. Moreover there is no evidence of any significant increase during the year. Fifteen of the 25 program districts reported fewer operations in the second half of the year than in the first half; the first half provincial total was 957 while the second half total was 813. Quarterly totals present a similar picture. In the second quarter, 11 of the 23 districts reporting changes indicated a decrease: 12 of 24 in the third quarter, and 15 of 24 in the fourth quarter. Most changes, whether increases or decreases, were insignificant.

East Pakistan. The East Pakistan tubeligation/vasectomy program is particularly interesting. From a first quarter total of 8233 the total reported for the program districts increased to 14,726 in the second quarter. Nine of the 11 program districts reported increases during this period. However the increase took place only in the first months of the period and the provincial totals began decreasing in November and the decrease continued through January. The third quarter total is approximately one-third of the second quarter total, but since February the total reported has increased consistently so that 19,001 was reported in the last

Table 3

Vasectomies and Tubeligations by District, Quarterly, Six Month and Total Twelve Month Totals for July 1966 to June 1967

District	Quarterly Totals				Six Month Total		Total
	July Sept	Oct Dec	Jan Mar	April June	Jul Dec	Jan June	1966-67
Multan	33	29	39	14	62	53	115
Lyallpur	22	24	38	26	46	64	110
Lahore	162	46	64	45	208	109	317
Karachi	119	96	106	127	215	233	448
Sialkot	9	10	14	8	19	22	41
Sargodha	15	30	12	23	45	35	80
Gujranwala	15	12	7	5	27	12	39
Gujrat	1	3	5	-	4	5	9
Hyderabad	26	16	5	-	42	5	47
Rawalpindi	70	57	79	34	127	113	240
Peshawar	1	16	3	3	17	6	23
Sheikhupura	7	3	3	0	10	3	13
Jhang	2	13	2	4		6	21
Hazara	9	2	9	3	11	12	23
Muzaffargarh	2	1	0	7	3	7	10
Sukkur	5	17	7	11	22	18	40
Rahimyar Khan	3	6	7	0	9	7	16
Mardan	0	1	41	10	1	51	52
Jhelum	5	5	4	8	10	12	22
Nawabshah	2	1	4	2	3	6	9
Bahawalpur	3	4	3	10	7	13	20
Larkana	16	7	3	6	23	9	32
Montgomery	11	12	8	0	23	8	31
Khairpur	2	6	1	2	8	3	11
D. I. Khan	0	0	1	0	0	1	1
West Pakistan	540	417	465	348	957	813	1,770
Mymensingh	963	2301	59	390	3264	449	3,713
Dacca	369	3358	2015	6590	3727	8605	12,332
Comilla	16	26	65	1045	42	1110	1,152
Barisal	8	770	781	1509	778	2290	3,068
Chittagong	1	19	106	2289	20	2395	2,415
Rajshahi	487	461	231	288	948	519	1,467
Khulna	474	1523	333	1019	1997	1352	3,349
Noakhali	20	45	7	2262	65	2269	2,334
Dinajpur	4486	4928	530	1106	9414	1636	11,050
Bogra	1380	1160	495	1352	2540	1847	4,387
Kushtia	29	135	321	1151	164	1472	1,636
East Pakistan	8233	14,726	4943	19,001	22,959	23,944	46,903

quarter of the year. All program districts reported increases in the fourth quarter of the year, but only six reported more in the second half of the year.

During the month of January, 1967 the fee paid for vasectomy was reduced and yet it is unlikely that this accounted for the total decrease in the number of vasectomies performed in the second quarter. Before the cut in fee was introduced the number of cases was declining. Moreover the variations by quarter in East Pakistan correspond to the variations by quarter for IUD's inserted in terms of direction of change although the magnitude of the change is much greater in the case of vasectomies and tubeligations. It should be noted also that the low number of cases reported for December and January may be influenced by the fact that Ramazan began in the middle of December and then continued through nearly the first two weeks in January.

While the large number of vasectomies performed in East Pakistan is interesting the phenomenon is not understood. Three factors may be suggested to explain this: personnel, financial incentives, and unexplained East-West Pakistan cultural differences. While the availability of personnel in East Pakistan to perform the vasectomy may be a necessary condition to explain the provincial differences, it is not a sufficient condition. A large number of physicians were registered for vasectomy in West Pakistan in the last quarter of the year but without an increase in the number of operations performed. The financial incentives have been reduced in the country, yet the number of vasectomies performed in East Pakistan increased dramatically in the last half of the year after the reduction. Incentives may be a factor but certainly not the critical one. This leaves us with "unexplained cultural differences." What these may be would be impossible to guess or identify without a detailed study, yet the fact that incentives and personnel alone do not explain the differences suggest that any anticipation of a comparable program in West Pakistan may be without hope of fulfillment.

C. CONVENTIONAL CONTRACEPTIVES

An important part of the family planning programe in Pakistan is the distribution and sale of conventional contraceptives. A variety are available, although to date the major types have been condoms and foam tablets. Foam liquids also became widely available, at least in West Pakistan, after the first quarter of the year. A variety of other types, predominately jellies, have been used in the program but neither widely or in significant numbers. Conventional contraceptives are distributed in two general ways: (1) through sales agents -- shopkeepers, drug houses, tea and hotel operaters, etc. -- and (2) through midwives, dais and other program personnel or clinics. In the first case the figures indicate the number of conventionals distributed to agents, and therefore may not reflect distribution to clients. Little information is available on the actual distribution to users. Conventionals distributed by dais and other family planning personnel may more closely reflect usage patterns, but the data available do not allow us to distinguish channels of distribution. Thus the most adequate description of the following figures is that the data refer to stock transfers; transfers from family planning stock to agents or organizers. There is no data, however, to indicate when the conventionals are transfered to the user.

Summary data for conventional contraceptive distribution are presented in Tables 4, 5, 6, and 7 for East and West Pakistan separately.

West Pakistan. Conventional contraceptives distributed in West Pakistan totaled 60.9 million for the year or 73 percent more than the 35.1 million distributed in East Pakistan. In eight of the 25 West Pakistan districts, condoms constituted 50 percent or more of all conventionals distributed. The percent of conventionals distributed which were condoms ranged from 37.0 percent in Hazara to 70.2 percent in Karachi.

Condom distribution in West Pakistan has shown a consistent increase over the year, for the province as a whole and for most

Table 4

Condom Sales by District, Quarterly, Semi-Annual and Total
July 1966 to June 1967

District	Quarterly Totals				Semi-Annual Totals		Total
	July Sept	Oct Dec	Jan Mar	April June	July Dec	Jan June	July 1966-1967
Multan	822,846	1,023,373	932,840	178,280	1,846,219	1,111,120	2,957,339
Lyallpur	490,873	686,196	661,322	723,120	1,177,069	1,384,442	2,561,511
Lahore	261,353	813,583	1,331,703	1,764,186	1,074,936	3,095,889	4,170,825
Karachi	559,320	701,399	1,006,564	2,282,780	1,260,719	3,289,344	4,550,063
Sialkot	127,280	209,192	320,736	405,504	336,472	726,240	1,062,712
Sargodha	113,969	265,460	215,928	431,184	379,429	647,112	1,026,541
Gujranwala	178,352	369,252	422,241	281,233	547,604	703,474	1,251,078
Gujrat	246,204	362,172	338,124	389,808	608,376	727,932	1,336,308
Hyderabad	223,393	412,342	432,714	453,500	635,735	886,214	1,521,949
Rawalpindi	236,838	277,902	347,523	305,496	514,740	653,019	1,167,759
Peshawar	92,868	83,938	128,469	250,754	176,806	379,223	556,029
Sheikhupura	147,023	228,468	307,716	210,502	375,491	518,218	893,709
Jhang	81,276	96,756	132,109	159,339	178,032	291,448	469,480
Hazara	120,136	105,664	77,966	107,906	255,800	185,872	441,672
Muzaffargarh	191,648	269,616	342,000	275,772	461,264	617,772	1,079,036
Sukkur	103,872	151,993	220,215	198,702	225,865	418,917	644,782
Rahimyar Khan	133,056	203,152	195,790	192,026	336,208	387,816	724,024
Mardan	78,384	107,919	106,399	109,864	186,303	216,263	402,566
Jhelum	44,556	49,148	74,285	115,221	93,704	189,506	283,210
Nawabshah	182,433	242,250	245,659	289,149	424,683	543,808	968,491
Bahawalpur	99,189	171,265	140,873	159,349	270,454	300,222	570,676
Larkana	91,596	175,020	157,956	149,610	266,616	307,566	574,182
Montgomery	208,987	518,711	290,833	241,976	727,698	532,809	1,260,507
Khairpur	70,800	94,717	113,781	116,180	165,517	229,961	395,478
D. I. Khan	66,690	70,832	71,820	97,858	137,522	169,678	307,200
West Pakistan	4,972,942	7,690,320	8,615,566	9,898,299	12,663,262	18,513,865	31,177,127
East Pakistan							
Mymensingh	644,298	950,796	1,058,856	2,192,706	1,595,094	3,251,562	4,846,656
Dacca	247,488	436,186	643,449	926,364	683,674	1,569,813	2,253,487
Comilla	46,412	57,512	631,224	672,930	103,924	1,304,514	1,408,073
Barisal	37,932	309,237	1,141,536	347,688	347,169	1,489,224	1,836,393
Chittagong	313,818	448,716	470,292	453,936	762,534	762,534	1,686,762
Rajshahi	441,876	824,016	707,484	604,248	1,265,892	1,311,732	2,577,624
Khulna	217,508	224,664	245,200	345,752	442,172	590,952	1,033,124
Noakhali	129,744	225,588	153,164	1,038,636	355,332	1,191,800	1,547,132
Dinajpur	104,952	117,576	195,164	241,236	222,528	436,400	658,928
Bogra	314,742	61,500	88,140	128,790	376,242	216,930	593,172
Kushtia	90,412	185,172	257,165	228,530	275,584	485,695	761,279
East Pakistan	2,589,182	3,840,963	5,591,674	7,180,816	6,430,145	12,772,490	19,202,635

Table 5

Foam Tablets - Sold - Distributed by District, Quarterly, Semi-Annual and Total
July 1966 to June 1967

District	Quarterly Totals				Semi-Annual Totals		Totals
	July Sept	Oct Dec	Jan Mar	April June	July Dec	Jan June	1966-1967
Multan	234,816	1,496,428	79,626	686,560	1,731,244	765,186	2,496,430
Lyallpur	274,392	453,996	456,586	435,237	728,388	892,823	1,621,211
Lahore	349,283	460,157	530,830	634,763	809,440	1,165,593	1,975,033
Karachi	533,821	519,083	418,737	284,994	1,052,904	703,731	1,756,635
Sialkot	95,124	141,000	255,288	203,064	236,124	458,352	694,476
Sargodha	170,230	229,090	198,287	354,825	399,320	553,112	952,432
Gujranwala	82,038	223,772	218,421	170,909	305,810	389,330	694,140
Gujrat	339,600	353,976	156,660	448,524	693,576	605,184	1,298,760
Hyderabad	181,910	294,825	309,252	452,486	476,735	761,738	1,238,473
Rawalpindi	293,677	292,525	344,097	227,452	586,202	571,549	1,157,751
Peshawar	135,888	110,352	98,561	141,011	246,240	239,572	485,812
Sheikhupura	151,642	215,064	285,408	162,012	366,706	447,420	814,126
Jhang	45,816	250,792	80,762	90,210	296,608	170,972	467,580
Hazara	109,998	229,151	135,238	146,568	339,149	281,806	620,955
Muzaffargarh	260,296	130,848	75,524	316,884	391,144	392,408	783,552
Sukkur	113,880	135,550	114,198	160,224	249,430	274,422	523,852
Rahimyar Khan	178,155	234,378	224,899	249,209	412,533	474,108	886,641
Mardan	97,832	134,040	99,942	64,496	231,872	164,438	396,310
Jhelum	123,956	65,488	104,626	131,483	189,444	236,109	425,553
Nawabshah	185,678	287,737	278,379	328,998	473,415	607,377	1,080,792
Bahawalpur	126,610	82,551	141,509	180,016	209,161	321,525	530,686
Larkana	178,790	188,232	165,612	188,072	367,022	353,684	720,706
Montgomery	249,258	209,076	169,686	134,197	458,334	303,883	762,217
Khairpur	70,192	119,718	97,304	90,974	189,910	188,278	378,188
D.I. Khan	89,736	97,440	89,276	79,292	187,176	168,568	355,744
West Pakistan	4,672,618	6,954,269	5,129,708	6,361,460	11,626,087	11,491,168	23,118,055
East Pakistan							
Mymensingh	1,113,600	939,003	921,486	1,380,750	2,052,603	2,302,230	4,354,841
Dacca	185,004	376,188	443,798	477,060	561,192	920,858	1,482,050
Comilla	719,880	672,474	1,173,272	553,428	1,392,354	1,736,700	3,119,054
Barisal	44,604	312,348	253,824	275,124	356,952	528,948	885,900
Chittagong	242,334	225,168	154,824	146,184	467,502	301,008	768,510
Rajshahi	441,060	493,512	340,152	321,090	934,572	661,242	1,595,814
Khulna	186,156	134,040	121,104	145,112	320,196	266,216	586,412
Noakhali	183,228	228,178	235,132	737,604	411,406	972,736	1,384,142
Dinajpur	131,724	165,926	146,916	286,848	237,650	433,764	671,416
Bogra	73,260	82,604	69,966	68,406	135,864	138,372	274,236
Kushtia	149,220	174,408	189,684	103,472	323,628	293,156	616,784
East Pakistan	3,470,076	3,723,849	4,050,158	4,495,078	7,193,919	8,545,236	15,739,159

Table 6

Foam Liquid Sales by District, Quarterly, Semi-Annual and Total
July 1966 to June 1967

District	Quarterly Totals				Semi-Annaul Totals		Total
	July Sept	Oct Dec	Jan Mar	April June	July Dec	Jan June	1966-1967
Multan	-	334, 620	342, 780	211, 560	334, 620	554, 340	888, 960
Lyallpur	-	197, 040	338, 220	241, 680	197, 040	579, 900	776, 940
Lahore	1, 012	57, 420	111, 600	153, 120	58, 432	264, 720	323, 152
Karachi	-	40, 440	9, 300	7, 860	40, 440	17, 160	57, 600
Sialkot	4, 320	62, 520	102, 360	105, 900	66, 840	208, 260	275, 100
Sargodha	2, 820	52, 620	57, 480	58, 500	55, 440	115, 980	171, 420
Gujranwala	13, 140	90, 060	10, 620	75, 060	22, 200	85, 680	107, 880
Gujrat	-	87, 540	127, 320	73, 740	87, 540	201, 060	288, 600
Hyderabad	1, 380	38, 760	75, 240	139, 086	40, 140	139, 086	179, 226
Rawalpindi	7, 320	7, 380	42, 180	31, 560	14, 700	73, 740	88, 440
Peshawar	8, 100	16, 200	5, 178	121, 320	24, 300	126, 498	150, 798
Sheikhupura	3, 120	12, 360	37, 620	15, 840	15, 480	53, 460	68, 940
Jhang	-	2, 940	22, 980	39, 300	2, 940	62, 280	65, 220
Hazara	-	24, 000	47, 640	60, 180	24, 000	107, 820	131, 820
Muzaffargarh	-	41, 400	82, 800	27, 760	41, 400	110, 560	151, 960
Sukkur	780	42, 240	61, 620	40, 740	43, 020	102, 360	145, 380
Rahimyar Khan	-	35, 520	62, 880	10, 680	35, 520	73, 560	109, 080
Mardan	-	13, 020	44, 940	32, 460	13, 020	77, 400	90, 420
Jhelum	1, 440	3, 480	7, 680	11, 940	4, 920	11, 940	16, 860
Nawabshah	3, 060	31, 620	37, 980	45, 060	34, 680	83, 040	117, 720
Bahawalpur	360	60, 660	70, 920	48, 240	61, 020	119, 160	180, 180
Larkana	16, 140	48, 720	48, 240	51, 420	64, 860	99, 660	164, 520
Montgomery	-	72, 120	67, 800	37, 200	72, 120	105, 000	177, 120
Khairpur	-	22, 620	30, 780	5, 580	22, 620	36, 360	58, 980
D. I. Khan	-	4, 620	12, 900	9, 960	4, 620	22, 860	27, 480
West Pakistan	62, 992	1, 399, 920	1, 859, 058	1, 655, 746	1, 462, 912	3, 514, 804	4, 977, 716
Mymensingh	-	-	15, 102	15, 600	-	30, 702	30, 702
Dacca	-	-	8, 100	3, 660	-	11, 760	11, 760
Comilla	-	-	3, 720	8, 460	-	12, 180	12, 180
Barisal	-	-	1, 020	3, 966	-	4, 986	4, 986
Chittagong	7, 020	720	4, 620	960	7, 740	5, 580	13, 320
Rajshahi	-	-	4, 380	7, 080	-	11, 460	11, 460
Khulna	-	-	3, 480	6, 420	-	9, 900	9, 900
Noakhali	-	-	-	1, 860	-	1, 860	1, 860
Dinajpur	-	-	1, 680	2, 820	-	4, 500	4, 500
Bogra	-	-	-	-	-	-	-
Kushtia	-	-	7, 200	1, 800	-	9, 000	9, 000
East Pakistan	7, 020	720	49, 302	52, 626	7, 740	101, 928	109, 668

Table 7

Other Contraceptives Sales by District, Quarterly, Semi-Annual and Total
July 1966 to June 1967

District	Quarterly Totals				Semi-Annual Totals		Total
	July Sept	Oct Dec	Jan Mar	April June	July Dec	Jan June	1966-1967
Multan	31,340	134,160	322,620	171,480	165,500	494,100	659,600
Lyallpur	-	-	-	2,460	-	2,460	2,460
Lahore	29,800	8,920	5,840	3,550	38,720	9,390	48,110
Karachi	4,800	3,200	7,700	2,900	8,000	10,600	18,600
Sialkot	-	480	300	-	480	300	780
Sargodha	6,600	6,300	4,660	5,520	12,900	10,180	23,080
Gujranwala	39,120	19,900	10,140	15,040	59,020	25,180	84,200
Gujrat	1,300	1,320	1,780	2,825	2,620	4,605	7,225
Hyderabad	5,800	2,700	4,520	1,740	8,500	6,260	14,760
Rawalpindi	19,240	3,300	2,900	100	22,540	3,000	25,540
Peshawar	-	-	-	-	-	-	-
Sheikhupura	200	3,940	920	720	4,140	1,640	5,780
Jhang	- 80	300	2,640	5,680	380	8,320	8,700
Hazara	-	-	20	-	-	20	20
Muzaffargarh	172,560	136,340	100,460	1,900	308,900	102,360	411,260
Sukkur	82,000	111,840	107,320	99,500	193,840	206,820	400,660
Rahimyar Khan	49,140	18,200	10,600	7,400	67,340	18,000	85,340
Mardan	-	400	-	-	400	-	400
Jhelum	180	-	640	516	180	1,156	1,336
Nawabshah	2,340	9,280	4,520	6,440	11,620	10,960	22,580
Bahawalpur	-	-	-	-	-	-	-
Larkana	1,500	-	-	-	1,500	-	1,500
Montgomery	-	-	-	-	-	-	-
Khairpur	-	100	3,400	660	100	4,060	4,160
D. I. Khan	2,980	2,620	4,200	6,200	5,600	10,400	16,000
West Pakistan	448,980	463,300	595,180	334,631	912,280	929,811	1,842,091
Mymensingh	2,080	440	480	-	2,520	480	300
Dacca	14,240	17,900	2,120	1,500	32,140	3,620	35,760
Comilla	60	100	40	-	160	40	200
Barisal	-	-	-	-	-	-	-
Chittagong	10,300	22,300	-	1,500	32,600	1,500	34,100
Rajshahi	-	-	-	-	-	-	-
Khulna	-	-	-	-	-	-	-
Noakhali	-	-	-	-	-	-	-
Dinajpur	220	100	60	180	320	240	560
Bogra	-	-	-	-	-	-	-
Kushtia	-	-	-	-	-	-	-
East Pakistan	26,900	40,840	2,700	3,180	67,740	5,880	73,620

districts. On a quarterly basis no district has reported successively fewer sales in each of the last three quarters and eight districts reported successively greater sales in each of the last three quarters. Only three of the 25 program districts report fewer distributed in the last half year. For the province as a whole, distribution figures increased consistently from nearly five million in the first quarter to 9.9 million in the last quarter.

Foam liquid sales made up a relatively small albeit significant proportion of conventionals distributed in West Pakistan. The number distributed was somewhat higher in the second half of the year, but the last quarter total was slightly lower than that of the previous quarter. There were only thirteen districts during the first quarter in West Pakistan where foam liquids were sold, but they were available in all program districts subsequently. All districts increased the number of applications distributed in the second quarter but the totals dropped off in five districts in the third quarter and in 14 of 25 districts in the last quarter of the year.

A total of 1.8 million "other" applications of conventionals was sold or distributed during the year in West Pakistan. These were not available in all districts and the sales correspond closely to that of foam liquids.

The second most frequently sold conventional contraceptive in West Pakistan was the foam tablet. In contrast to conventionals distributed, foam tablet sales dropped off slightly in the second half of the year. The number distributed in the program districts dropped from a second quarter high of nearly 7 million to 5.1 million in the third quarter but the number subsequently increased to 6.3 million in the last quarter. Nonetheless 10 of the 25 districts reported fewer foam tablets distributed in the fourth quarter than in the third quarter.

In general the conventional distribution was below target in West Pakistan. Only three districts reported enough conventionals distributed during the year for their monthly average to exceed the monthly target: Muzaffargarh, Sukkur and Khaipur.

East Pakistan. Conventionals distributed in the East Pakistan districts totaled 35.1 million. Condoms constituted a much greater proportion of the total in East Pakistan districts than in West Pakistan. This may be in part due to the relatively small number of foam liquids and "other" conventionals sold or available in East Pakistan during the year.

Only one district, Comilla reported less than 50 percent of the conventionals distributed as condoms: 34.0 percent. However condom distribution in Comilla has been increasing rapidly, from 46 thousand in the first quarter to 673 thousand in the last quarter of the year.

Condom sales in East Pakistan follow a trend similar to that observed in West Pakistan but the relative increases for each subsequent period are much greater than observed in West Pakistan. The second half year distribution was more than 100 percent greater than the first half year's total. Decreases by quarter were infrequent: one of eleven districts (first to second quarter), one in eleven districts in the third quarter and four of eleven districts in the fourth quarter, but the total for the eleven districts did increase significantly in the fourth quarter.

Slightly more than 100,000 foam liquid applications were sold in East Pakistan during the year and almost all in the last half. Only in Chittagong were foam liquids distributed in the first half year. Fourth quarter totals were only slightly higher than third quarter totals.

Less than 100,000 "other" conventionals were distributed during the year in East Pakistan, and most of these in the first six months. None were distributed in six of the eleven program districts.

Foam tablet sales increased over the year for the province as a whole, but there was much variation during the year among the various districts. The number distributed increased slowly by roughly 300,000 per quarter and 1.4 million in the second half of the year. District variations are much greater. In the second quarter, 6 of 11 districts reported a smaller number sold than for the previous period, 5 of eleven districts in the third quarter and 5 of eleven

districts in the fourth quarter. Over the year 4 districts reported lower second half year sales.

D. SUMMARY AND CONCLUSIONS

In this section we have reviewed the family planning programme performance with respect to IUD's reported as inserted during the year, vasectomies/tubeligations performed, and conventionals distributed.

Over the course of 1966-67 the number of IUD's reported increased consistently. The number reported was significantly higher in West than East Pakistan, but the relative increase has been much higher in East Pakistan during the year. On the basis of the data available in this study, it is impossible to judge precisely the validity of the statistics or translate the number of IUD's inserted into couple years protection. The number of IUD's reported is large but certainly consistent with the emphasis placed on this aspect ofthe program. The variations are reasonable and the fact that so many districts failed to achieve their targets during the year suggests no general effort to pad reports in order to avoid administrative sanctions. Further there was no unusual increase in the number of IUD's inserted during the last part of the year to meet targets; the increase at the end of the year was consistent with the past trend and has continued into the first quarter of 1967-68 the 25 program districts in West Pakistan from the previous year reported a 12 percent increase in the number of IUD's inserted and the 11 program districts (1966-67) of East Pakistan reported a three percent increase in the first quarter of the current fiscal year. Hopefully these figures also suggest that the older program districts have not reached a saturation point.

Regardless of the success of the program as reflected in these statistics, it is difficult to translate the figures into couple year's protection. No data were available on whether the number reported included initial insertions and reinsertions and if so, in what proportions.

The number of conventional contraceptives distributed has consistently increased in both East and West Pakistan. Again there

is no overt evidence of falsification of the reports although there is reason to question the impact of the conventional contraceptive program. It is unreasonable to assume that adoption of conventionals will occur in spurts on the basis of existing theoretical discussions of the spread of innovations. Yet distribution of conventionals has taken place in a highly irregular pattern. The data available indicate an unprecidented distribution of conventional contraceptives during the second quarter of the year, particularly in West Pakistan. This does not necessarily mean distribution to users but distribution to agents where the conventionals may remain in stock, undistributed and aging for some time. The problem of aging is less critical in the case of condoms and certain "other" conventionals or foam liquids stored under pressure. In the case of foam tablets, given the climatic conditions of the country, deterioration is an important problem. Overstocking of agents in any period is likely to result in the distribution of tablets which have lost their effectiveness. To a lesser degree the same problem is involved in the distribution of the other types of conventional contraceptives.

Since the second quarter of 1966-67 the distribution of conventionals has been more regular at the provincial and national level although radical variations are still found among various program districts. For the programme as a whole the most important conventionals in the program have been,first, condoms, second, foam tablets and third, foam liquids. Moreover the first two types have been increasingly displacing foam liquids and other types of conventionals in the program.

Vasectomies and tubaligations remain an essentially East Pakistan programme. The number reported in West Pakistan is small and has decreased over the year. In East Pakistan, following a second quarter decline, the number of operations performed has consistently and dramatically increased. This remains an enigma in the total program of Pakistan and one which requires detailed study.

SECTION V. FAMILY PLANNING PERSONNEL

Within each of the family planning program districts a variety of types of workers are involved in the program and the types vary slightly between East and West Pakistan. Some classification system is essential but it is difficult to conceive of the family planning personnel in traditional "labour" terms, such as direct and indirect labour inputs. District performance cannot be viewed in traditional business or industrial terms. The "charter"[1] of the family planning scheme emphasizes administrative activity rather than performance criterion *per se*. We have therefore classified the family personnel according to functional responsibility and qualifications.

The various personnel in the district program have been grouped into three relatively homogeneous classes and one residual category: I-Medical Personnel, II-Paramedical Personnel, III-Administrative Personnel, and IV-Others.[2]

A. Description of Family Planning Personnel

Medical Personnel. This category corresponds to the classification of medical personnel listed in the monthly summary of the family planning program except we have excluded from the detailed analysis the doctors registered for vasectomy. Registration was recorded only late in the year and creats a class of medical workers quite distinct from those previously involved in the formal operation

---

[1]The term charter is used here in the sense that Malinowski used the term to distinguish social institutions [14]. It is a useful concept in this context since it stresses the necessity of evaluating the program within the context of the official administrative goals which are often lost in the overwhelming stress placed upon performance goals: IUD's inserted, conventionals sold or distributed and so on. If the concept of charter has any meaning for the family planning program, then the program should be evaluated as an administrative rather than an action program. The administrative goals of the program are diversified, however, making evaluation difficult.

[2]These classes do not cover the total personnel involved in the program since clerks, statistical assistants, storekeepers, typists drivers and peons are excluded. No direct information is available for these essentially service personnel and the costs for them are included under operational costs of headquarters or other units.

of the program. Indeed the inclusion of these individuals in the program distorts the entire picture of the medical personnel. (See Part II, Appendix C.) The category of medical personnel involves three types of workers whose function is largely to perform the insertions of the IUD. These are as follows:

a. Doctors, urban, full time clinics. These are full time lady doctors assigned one per urban clinic. Approximately one-third of their time is spent in the urban clinic itself and two-thirds in rural IUD camps. Their qualifications are M.B., B.S., and they have the rank of Class I officers. Their prime responsibility is fitting the IUD but in addition they are responsible for the sale of conventionals within the clinic and the documentation of the clinic operation.

b. Doctors, rural, part time clinics. Their responsibilities parallel those of the doctors in the urban clinics. They are not full time employees of the family planning program, but are paid a fixed rate per month in addition to fees.

c. Doctors-cut piece. These are registered doctors who insert the IUD. They are paid a fee for service from the family planning program and perform their function in any agency, clinic or IUD camp.

Paramedical. This category includes three classes of Lady Health Visitors (LHV's) who after training are registered for the insertion of the IUD and operate in a manner analagous to that of the medical personnel. The three sub-classes are thus: LHV, urban, full time clinic; LHV, rural, part time clinic; and LHV, cut piece. In addition trained midwives may also be included in the program and registered for the insertion of the IUD. Within the next program year a fourth category, Lady Family Planning Visitors (LFPV's) will be entering the program following a special training course for IUD insertion.

Administrative Personnel.

a. District Executive cum Publicity Officer. This person

is the principal officer for the implementation of the family planning programme in the district. His responsibilities include maintenance of stores and supplies for the program, achievement of family planning targets as set down in the program, supply of clinic equipment, registration of doctors, agents and dais, maintenance of accounts and records, liason with the District Health Officers, publicity, and submission of district reports. As originally set down in the scheme the qualifications for the post were a Masters Degree in Sociology or an allied subject and some experience in mass communication.

b. District Technical Officer. This post is to be filled by a female M.B.,B.S., usually with no medical specialization. At present the pay scale is that of a Class II officer although duties include supervision of Class I medical officers. The Technical Officer is responsible for the recruitment and registration of medical and paramedical personnel, training of medical and paramedical personnel, procurement of equipment and supplies for family planning clinics, registration and supply of part time clinics, supervision of family planning doctors, testing contraceptives and working in mobile clinics and IUD camps.

c. Family Planning Supervisors in West Pakistan and Thana Family Planning Officers in East Pakistan. Family Planning Supervisors are normally required to have a bachelors degree. Within the district their functions include: motivation and education for family planning, organization of field work in the program, registration and supervision of agents and dais, supply of conventional contraceptives, organization of family planning service in clinics and camps, follow-up of IUD cases, and supervision of records.

d. Union Council Secretaries in West Pakistan and Additional Staff for Thana Development Officers in East Pakistan. Their functions include assisting the Family Planning Supervisors in West Pakistan and the Thana Family Planning Officers in East Pakistan in carrying out their program responsibilities, arranging meetings,

and helping to eliminate resistance to the program, and providing assistance in the usual operation of the program. As outlined in one circular, the functions of these individuals are essentially the same as those of the Family Planning Supervisors-Officers, except on a reduced scale [17].

Others

a. Village-Mohalla Family Planning Organizers or Dais. Responsibilities include motivation through individual contacts, sale of conventional contraceptives, referral of IUD cases, and assistance in the follow up of IUD cases. Male organizers are also included in this group although the number is small.

b. Agents. These are shopkeepers, hotel proprietors, chemists, factories or any other institution or person who serves as a sales agent of conventional contraceptives.

B. Manpower Supply and Demand

In an underdeveloped country such as Pakistan with its current population problem, the demand for raw manpower is much less than the supply generated by a rapidly growing population. Estimates of unemployment are not available, however, and those which have been made report rates only slightly higher than the levels of frictional unemployment in developed countries [21]. This is largely the result of the fact that the usual concept of unemployment is inapplicable to the labour market in Pakistan. More frequently underemployment in its various forms is the major problem and it is easily observable although difficult to measure or clearly conceptualize [9]. Still the Planning Commission in the Third Five Year Plan estimated that the unemployment rate which combined both unemployment and underemployment was roughly 20 percent of the labour force [25].

The family planning program at the district level, however, cannot draw on the vast body of available raw manpower only. Specific skills and educational qualifications are required for certain categories of personnel, particularly classes I, II and III as

outlined above

According to the Third Five Year Plan the following medical and paramedical personnel were available in Pakistan in 1965: one doctor for every 7,400 population, one nurse for 32,000 people, and one lady health visitor for each 115,000 persons. These figures were based on an estimated 15,600 doctors, 3,600 nurses, and 1047 lady health visitors. The Plan calls for an expansion of doctors to 19,800, nurses to 5400, and lady health visitors to 2750 by 1970. Against this projected supply, the projected medical and paramedical requirements for the 1960-70 family planning scheme total 2219 exclusive of district technical officers and other medical personnel in the program above the district level /257. The expanded vasectomy program will also increase the demand on the supply of medical and paramedical personnel, both in numbers of individuals in the program and in man hours of medical care since the IUD and vasectomy programs require females for the IUD insertions and males for the vasectomy program.

It is largely because of the imbalance between the supply and the demand of qualified medical personnel that the program has undertaken the training of Lady Family Planning Visitors who will be able, to some degree, to off-set the medical needs of the family planning program. Nevertheless, the program has and will probably continue to face personnel problems in the area of medical and paramedical personnel under the existing technology of the program. This is, of course, compounded in Pakistan since the demand is largely for female workers and the number of female doctors is limited and will continue to be for a long period of time.[3]

Within the administrative group the more difficult position to staff and maintain is that of the technical officer since the requirements for this post are M.B., B.S.. Therefore the same constraints apply to this position as apply to the medical personnel.

---

[3]The 1961 census for example reported the following numbers of physicians, surgions, and dentists: 13,065 males and only 1,013 females/217.

Other positions, such as the Executive cum Publicity Officer and the Family Planning Supervisors or Thana Family Planning Officers should be less difficult to maintain. The educational requirements are not excessive and are such that the program may draw upon a relatively large class of underemployed and unemployed college graduates[30].

Given the labour situation in Pakistan, with the appropriate financial emoluments it should not be difficult to fill posts other than the most technical. It remains a question, however, as to whether the personnel filling these posts are adequately trained or motivated for the positions and whether they are functioning effectively within their positions. This question will require further direct studies of personnel in the field but eventually must be answered.

C. Personnel Levels and Turnover, 1966-67

Medical Personnel. Data on employment levels and trends for medical personnel in the district family planning programs are presented in Tables 8 and 9. In Table 8 the quarterly, semi-annual and annual totals of man-months of medical labour (personnel) are presented by district and province. Table 9 presents rates of turn-over during the year, ratios of accession to separation and the proportion of man-months of labour required by the scheme achieved during the year.

In the first section of Table 8 are presented the figures for doctors in full time urban clinics. Under the scheme allocation for the year 1966-67, twenty full time urban clinics were authorized in West Pakistan and 12 in East Pakistan. Most districts in which urban clinics were authorized were limited to one, but Karachi was allocated four, Lahore-three, Mymensingh-two, Dacca-three, and Comilla-two. Under the scheme proposal this means that 32 full time urban clinic doctors should have been in place during the year.

Examination of the data in Table 8 indicates that during the first part of the year, almost all districts were understaffed. This is probably not a true reflection of the personnel situation.

Table 8

Quarterly, Semi-Annual, and Annual Total of Medical Personnel in Positi

West Pakistan	Doctors, Urban Full Time Clinics							Doctors, Part			
	Quarters				Semi Annual		Year	Quarters			
	I	II	III	IV	A	B	Y	I	II	III	IV
Multan	2	3	3	-	5	3	8	16	24	8	-
Lyallpur	2	3	3	3	4	6	11	30	35	38	36
Lahore	6	9	9	9	15	18	33	40	60	60	60
Karachi	8	12	12	12	20	24	44	4	6	6	6
Sialkot	2	3	3	3	5	6	11	10	17	21	18
Sargodha	2	3	3	3	5	6	11	17	27	23	18
Gujranwala	2	3	3	3	5	6	11	30	45	45	36
Gujrat	4	6	6	6	10	12	22	2	3	3	3
Hyderabad	2	3	3	3	5	6	11	24	35	35	33
Rawalpindi	2	3	3	3	5	6	11	22	33	33	34
Peshawar	2	3	3	3	5	6	11	15	21	21	21
Sheikhupura	-	-	-	-	-	-	-	12	9	12	13
Jhang	2	1	-	3	3	3	6	14	21	21	21
Hazara	-	-	-	-	-	-	-	16	22	20	22
Muzaffargarh	-	-	-	3	-	3	3	5	16	12	12
Sukkur	2	3	3	2	5	5	10	20	29	27	27
Rahimyar Khan	-	-	-	-	-	-	-	10	12	12	12
Mardan	2	3	3	3	5	6	11	10	14	8	4
Jhelum	-	-	-	-	-	-	-	17	29	27	25
Nawabshah	2	3	1	-	5	1	6	4	4	6	6
Bahawalpur	-	-	-	-	-	-	-	12	13	12	10
Larkana	-	-	-	-	-	-	-	-	18	17	10
Montgomery	-	1	3	3	1	6	7	15	22	23	21
Khairpur	-	-	-	-	-	-	-	16	11	16	16
D.I Khan	2	3	3	6	5	9	14	-	-	-	-
Total	44	65	64	68	109	132	241	361	526	506	464
Adjusted Total	57	65	64	48	122	132	254	(52[illegible]			

n at the End of the Month, by Province, and District, 1960-61

Semi Annual		Year	Quarters				Semi Annual		Year
A	B	Y	I	II	III	IV	A	B	Y
40	8	48	43	61	96	87	104	183	276
65	74	139	15	23	24	24	38	48	86
100	120	220	92	144	157	174	236	331	567
10	12	22	198	297	212	245	495	457	952
27	39	66	4	21	21	28	25	49	74
44	41	85	36	63	40	27	99	67	166
75	81	156	2	3	3	3	5	6	11
5	6	11	11	17	15	15	28	30	58
59	68	127	30	43	37	34	73	71	144
55	67	122	40	60	60	60	100	120	220
36	42	78	16	33	37	42	49	79	128
21	25	46	22	33	35	28	55	58	113
35	42	77	-	3	5	2	3	7	10
38	42	80	12	16	15	11	28	26	54
21	24	45	-	-	-	-	-	-	-
49	54	103	-	-	-	-	-	-	-
22	24	46	-	-	-	-	-	-	-
24	12	36	-	-	-	-	-	-	-
46	52	98	7	12	12	8	19	20	39
8	12	20	-	1	3	1	1	4	5
25	22	47	10	26	30	18	36	48	84
18	27	45	-	-	-	-	-	-	-
37	44	81	16	21	20	21	37	41	73
27	32	59	-	-	-	-	-	-	-
-	-	-	-	2	3	3	3	6	8
887	970	1857	554	879	825	831	1483	1553	3036

East Pakistan — Table 3 (continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Mymensingh	2	3	5	6	5	11	16	12	17	15	13	29	28	57	2	3	1	-	5	1	6
Dacca	-	12	12	12	12	24	36	-	174	180	180	174	360	534	-	-	-	-	-	-	-
Comilla	2	3	1	-	5	1	6	2	3	5	6	5	11	16	-	-	-	-	-	-	-
Barisal	-	-	-	-	-	-	-	-	16	12	15	16	27	43	-	-	-	-	-	-	-
Chittagong	2	6	4	6	8	10	18	10	34	34	30	44	64	108	-	-	-	-	-	-	-
Rajshahi	-	3	3	3	3	6	9	12	22	19	18	34	37	71	68	34	6	6	102	12	114
Khulna	2	3	3	3	5	6	11	3	9	3	3	12	-	18	8	12	12	6	20	18	-
Noakhali	-	-	-	-	-	-	-	4	4	3	-	8	3	11	-	-	-	-	-	-	-
Dinajpur	-	-	-	-	-	-	-	3	6	6	6	9	12	21	1	-	-	-	1	-	1
Bogra	2	3	3	3	5	6	11	4	6	6	6	10	12	22	2	3	3	3	5	6	11
Kushtia	-	-	-	-	-	-	-	6	9	9	9	15	18	33	-	-	-	-	-	-	-
Total	10	33	31	33	43	64	107	164	296	292	286	356	578	934	81	52	22	15	133	37	170
Adjusted Total	17	33	31	33	50	64	114	(241)	-	-	-	-	-	-	81	52	22	15	133	37	170

Few districts provided personnel reports during the first month of the fiscal year. Assuming that employment levels in the second month of the year were the same as those in the first month of the year, an adjusted total figure for East and West Pakistan and for the country as a whole has been computed.

West Pakistan appears to be under personnel strength requirements only in the first quarter and in excess during the subsequent three quarters. The excess in West Pakistan can largely be attributed to the fact that three districts -- Gujrat, Muzaffargarh and Nawabshah -- reported full time urban clinic doctors on staff at some time during the year while no full time urban clinics were in operation for these three districts. Excluding these three districts, quarterly personnel strength would be only slightly below requirements. In general it appears that the West Pakistan districts have continually increased staff to the point where almost all districts with full time urban clinics were staffed by the required number of full time medical personnel.

In East Pakistan the same lack of information for the first month of the year presents an even more bleak picture. Making the same adjustment we did for West Pakistan, it appears that in most East Pakistan districts the required total number of personnel was available. However Bogra's reports of urban clinic full time medical personnel are probably incorrect. No full time urban clinics are authorized for the district and the numbers are exactly the same as for cut piece doctors, suggesting double reporting. Substracting these figures from the totals and making the usual first period adjustment the quarterly totals for East Pakistan would be 24, 30, 28 and 30 against quarterly targets of 36.

The specific personnel requirements for doctors in part time clinics and doctors cut piece are undefined. Within the part time clinics the functions may be performed by either a part time doctor or a lady health visitor, and the requirements for part time clinics are thus set down in terms of total staff (doctors, lady health visitors or trained midwives) rather than for specific specialties.

Data for doctors employed in part time clinics are usually unavailable for the first month of the year, therefore the first quarter and first half year totals are somewhat low. Making a similar estimate of the type made in the case of urban full time doctors, our revised estimate for West Pakistan suggests that the number of part time doctors has declined through each quarter. After adjusting the data for East Pakistan, the figures suggest an increase in the number of personnel in the program in the second quarter and then a slight drop-off in subsequent quarters.

With few exceptions, most districts averaged two or more part time doctors in the program during the year. The only exception in West Pakistan is Gujrat and this may not be an exception since the district reported two full time urban clinic physicians available while none was authorized. In East Pakistan Comilla had one part time doctor only available during the first six months and Khulna and Noakhali similarly lacked a representative number of part time clinic doctors in the program for a major part of the year.

While a large number of doctors are registered for cut piece work in West Pakistan, they are concentrated in specific districts. Three districts--Multan, Lahore and Karachi--account for more than 50 percent of the total available man months of personnel available in this category. Four districts reported no physicians registered for cut piece work. In East Pakistan only five districts reported any doctors registered in this category and the number has decreased consistently from the first to fourth quarter of the year.

Comparing East and West Pakistan, it is clear that the availability of doctors in the family planning program is significantly greater in West Pakistan. On the basis of the person months totals, there were 123 percent more full time urban clinic doctors available but only 66 percent more authorized clinics. There were twice as many part time doctors in the family planning program in

West Pakistan and eighteen times as many cut piece doctors registered for the program.

Data presented in Table 9 indicate the turnover rate of medical personnel. Section one presents an alternate measure of the difference between East and West Pakistan with respect to urban clinic doctors. During the year, given the target levels and using uncorrected totals, only 80.6 percent of the employment target was met in East Pakistan but the target was slightly over-achieved in West Pakistan, 100.4 percent.

Section II of Table 9 indicates the turnover rates of medical personnel in the program[4], and section III the ratio of accessions to separations. The turnover rate of full time clinic doctors in East Pakistan was nearly 10 times higher than the rate in West Pakistan although the ratio of accessions to separations is slightly higher in East Pakistan indicating some overall improvement during the year.

The separation rate of doctors in rural part time clinics is slightly lower in East Pakistan than West Pakistan. The low accession ratio for West Pakistan is another reflection of the dropping out of rural part time clinic medical personnel.

For both East and West Pakistan, the number of cut piece doctors has been decreasing with the number of separations exceeding the number of accessions. Moreover the turnover rate is significantly higher in East Pakistan and the accession ratio significantly lower.

There seems to be three points of interest in the data presented above: (1) the inability of the East Pakistan districts to secure the required number of full time medical personnel in the clinics, (2) the loss of doctors registered for cut piece work in both wings and (3) the high turnover rate of medical personnel in East Pakistan.

---

[4]The net turnover rate is computed as the sum of all accessions and separations of the program personnel during the year divided by the total personnel strength at the end of each months summed over the year multiplied by 100. Thus the rate is the net turnover per 100 workers over the entire year.

Paramedical Personnel: Summary data on paramedical personnel are presented in Tables 10 and 11. No detailed breakdown by district is provided here or in subsequent personnel summaries, although these tables may be obtained on request from the Demographic Section, Pakistan Institute of Development Economics. Four categories of paramedical personnel were employed in the program during the year 1966-67: LHV's, full time urban clinics; LHV's, part time rural clinics; LHV's cut piece; and trained midwives. All have the function of inserting IUD's in the absence of medical personnel.

In Table 10 the quarterly, semi-annual and year's total of person months is summarized for each province. The pattern is somewhat similar to that for medical personnel. For all categories insufficient information is available for the first quarter of the year, thus quarterly differences and semi-annual differences largely reflect the absence of this data. More reasonable estimates of trends must be based on the personnel employed during the last three quarters of the year.

For the last three quarters of the year there is no clear cut pattern for all categories of paramedical personnel. The only apparant linear trend is observed in the case of LHV's cut piece in West Pakistan where there has been a regular increase in the number registered.

East - West Pakistan differences are in the usual direction. Significantly more paramedical personnel are in the program in West than in East Pakistan. However the difference in full time urban clinic LHV's is less than what would be expected on the basis of the number of authorized urban clinics. The number of full time LHV's in West Pakistan is only 45 percent higher than in East Pakistan while the number of authorized clinics is 66 percent higher. However the number of LHV's in part time clinics is 4.7 times higher in West Pakistan, LHV's cut-piece are more than 20 times greater, and trained midwives nearly 20 times greater.

As shown in Table 11 the number of full time LHV workers in East Pakistan appears to exceed the requirements, 105.6 percent

Table 9

Medical Personnel in the Family Planning Programme, by Province, 1966-1967

Classification	East Pakistan	West Pakistan
I. Percent of Actual to Required Employment of Medical Personnel		
Doctors, urban full time clinics	80.6	100.4
Doctors, part time rural clinics	undefined	undefined
Doctors, cut-piece	undefined	undefined
II. Net Turnover Rate of Family Planning Personnel	(per 100)	(per 100)
Doctors, urban full time clinics	31.5	3.7
Doctors, rural part time clinics	4.5)	6.2
Doctors, cut piece	26.4	8.9
III. Ratio of Accessions to Separations		
Doctors, urban full time clinics	2.29	2.00
Doctors, rural part time clinics	1.10	..45
Doctors, cut piece	.10	.80

Table 10

Quarterly, Semi-Annual and Annual Total of Paramedical Personnel by Province, 1966-1967 (in person months)

	Quarters				First Six Mos.	Second Six Mos.	Year
	I	II	III	IV			
LHV, urban, full time clinic							
East Pakistan	16*	46	47	43	62*	90	152*
West Pakistan	39*	61	59	62	100*	121	221*
All Pakistan	55*	107	106	105	162*	211	373*
LHV, rural part time clinics							
East Pakistan	70*	129	118	105	199*	223	422*
West Pakistan	305*	556	568	548	861*	1116	1977*
All Pakistan	376*	685	686	653	1060*	1339	2399*
LHV, cut piece							
East Pakistan	23*	12	12	14	35*	26	61*
West Pakistan	234*	359	379	405	593*	784	1377*
All Pakistan	257*	371	391	419	628*	810	1438*
Trained midwives							
East Pakistan	4*	15	16	20	19*	36	35*
West Pakistan	120*	177	166	165	297*	331	628*
All Pakistan	124*	192	182	185	316*	367	663*

*Partial Quarterly reports; data for one to three months may be missing.

while the number in the West Pakistan clinics is somewhat below the required number, 73.6 percent. This is in direct contrast to the differences observed for medical personnel.

Turnover rates are greatly lower in East Pakistan for paramedical personnel in comparison to medical personnel. The turnover rate for LHV's, full time urban clinics, is much less than for West Pakistan as is the turnover rate for trained midwives. The turnover rate for LHV's in part time clinics is greater than in West Pakistan as is the rate for LHV's cut piece although the rate here probably reflects the small base number.

In East Pakistan progress appears to have been made during the year in building up the number of LHV's in urban clinics, LHV's cut-piece and trained midwives since the accession to separation ratio is in excess of one, but the part time clinic staff has dropped off since the ratio is only .42 (see Table 11.) In West Pakistan the accession to separation ratio falls below one for LHV's in full time urban clinics and for trained midwives but exceeds one for the other two categories of paramedical personnel. However the degree of improvement as measured by the ratio is less than in East Pakistan, but this may also be a statistical artifact.

In summary, the large number of urban full time LHV's in East Pakistan relative to West Pakistan suggests that paramedical personnel in part off set the West Pakistan advantage in medical personnel. No such advantage is observed in rural part time clinics where turnover rates are high and accessions to separations low. As a consequence accession to separation ratios for cut piece LHV's and trained midwives are high in East Pakistan but probably as the result of insufficient numbers of medical or paramedical personnel. No similar strong pressures are found in West Pakistan and this may explain the lower ratios for LHV's cut piece and trained midwives.

In the entire review of medical and paramedical personnel the most optimistic aspect for East Pakistan is the LHV staff in full time clinics. Generally the total medical and paramedical

staff situation in West Pakistan is reasonable: positions are usually filled and the turnover rate relatively low. The differences largely reflect availability of medical staff in the two wings.

Administrative Personnel. We have included four types of workers under the category of administrative personnel: the Executive cum Publicity Officers, Technical Officers, Family Planning Supervisors or Officers, Union Council Secretaries or Additional Staff for Thana Development Officers. Data on employment for these categories are presented in Tables 12 and 13, and the same limitations of reporting apply here also although the number of districts failing to report employment data for these categories is much smaller.

Over the year there were no great variations in the number of individuals in these categories employed in the program; first and second half year differences largely reflect the absence of some data for the first quarter of the year.

Consistent East-West differences in employment are observed again. The number of individuals employed appears to be more stable in West than in East Pakistan, and in West Pakistan the required number of Executive cum Publicity Officers has been constantly at the required level according to the available data for the last three quarters of the year. East Pakistan districts have never been fully staffed at this level for any quarter although the situation in the second half of the year was somewhat improved.

Technical officers have not been at strength in either West or East Pakistan although the problem is again more acute in East Pakistan. As indicated in Table 13 the percent of actual to required employment was 30.3 percent in East Pakistan and 66.7 percent in West Pakistan. Moreover the turnover rate was twice as high in East Pakistan but the ratio of accessions to separations was 3 to 1 while the ratio in West Pakistan fell below 1.

With the exception of the technical officers, the balance of the administrative categories have been usually filled during the year. Indeed the data indicates employment in access of requirements .

Table 11

Paramedical Personnel in the Family Planning Programme, by Province, 1966-1967

Classification	East Pakistan	West Pakistan
I. LHV urban, full time clinics	105.6	73.6
II. Net Turnover Rate	(per 100)	(per 100)
LHV, urban full time clinics	2.64	5.9
LHV, rural part time clinics	8.24	5.7
LHV, cut piece	16.7	8.1
Trained midwives	7.3	16.2
III. Ratio of Accessions to Separations		
LHV, urban full time clinics	.3	.63
LHV, rural part time clinics	.42	1.17
LHV, cut piece	2	1.8
Trained midwives	3	.67

Table 12

Quarterly, Semi-Annual and Year's Total of Administrative Personnel, by Province, 1966-1967 (in person months)

	Quarters I	II	III	IV	First Six Months	Second Six Months	Year
Executive cum Publicity Officer							
East Pakistan	24	27	33	32	51	65	116
West Pakistan	73	75	75	75	148	150	298
All Pakistan	97	102	108	107	199	215	414
Technical Officer							
East Pakistan	8	6	10	16	14	26	40
West Pakistan	48	52	52	48	100	100	201
All Pakistan	56	58	62	64	114	126	241
Family Planning Officers Supervisors							
East Pakistan	654	802	810	791	1456	1601	3057
West Pakistan	2010	2185	2197	2223	4195	4420	8615
All Pakistan	2664	2987	3007	3805	5651	6021	11672
U. C. Secretaries or Additional Staff for Thana Development Officers							
East Pakistan	2150	2434	2440	2381	4584	4821	9405
West Pakistan	7212	7538	7541	7569	14750	15110	29860
All Pakistan	9362	9972	9981	9950	19334	19331	39265

for Union Council Secretaries in West Pakistan. This is likely the result of including Town and Municipal Committee chairman in the program.

There is, in general, nothing particularly striking or unusual about the administrative picture at the district levels with two exceptions: the inability to maintain the top level district administrator in certain districts of East Pakistan and the inability to staff and maintain the technical officer post in both provinces.

Agents and Organizers(Dais.) The lady organizers (dais) and the agents constitute the largest block of personnel in the family planning program. On a monthly average there were more than 50,000 agents in the program in Pakistan and roughly 24,000 village organizers. With the exception of the first quarter of the year when some reports were not received, the total number has remained relatively constant.

In East Pakistan (see Table 14) the number of dais has decreased slightly in the last two quarters and the number reported in the program during the second half of the year was lower than in the first half of the year. In contrast in West Pakistan the number of dais as reported increased slightly during the year and the second half year's total exceeds the total for the first half year. The reported number of agents has been more variable, quarter by quarter, and the total for the second half year is substantially higher, i.e., approximately five thousand more agents in the program in the second half year in contrast to the first half of the year. This difference, however, is most likely the result of the lack of reports for certain districts in the first quarter of the year.

For all categories of personnel examined above it has been found that there are more program personnel in West than in East Pakistan. This is also true in the case of contraceptive agents, but not in the case of organizers. Over the year there was a significantly greater number of dais in the East Pakistan program.

Table 13

Administrative Personnel in the Family Planning Programme, by Province
1966-1967

Classification	East Pakistan	West Pakistan
I. Percent of Actual to Required Employment		
Executive cum Publicity Officer	87.9	99.3
Technical Officer	30.3	66.7
Family Planning Officer-Supervisors	92.3	95.6
U. C. Secretaries or Additional Staff for Thana Development Officers	94.7	114.4
II. Net Turnover Rate	(per 100)	(per 100)
Executive cum Publicity Officer	1.7	.7
Technical Officer	10.0	5.0
Family Planning Officer-Supervisors	2.2	2.2.
U. C. Secretaries or Additional Staff for Thana Development Officers	.33	.63
III. Ratio of Accessions to Separations		
Executive cum Publicity Officer	(2:0)	1
Technical Officer	3	.67
Family Planning Officer-Supervisors	2.09	1.17
U. C. Secretaries or Additional Staff for Thana Development Officers	.28	1.18

Table 14

Quarterly, Semi-Annual and Year's Total of Family Planning Organizers (Dais) and Agents in the Family Planning Programme, 1966-67 (in person months)

	Quarters I	II	III	IV	First Six Months	Second Six Months	Year
Lady Organizers Dais.							
East Pakistan	52,546	57,008	55,994	52,848	109,554	108,842	218,396
West Pakistan	40,357	41,675	42,214	42,683	82,032	84,897	166,929
All Pakistan	92,903	98,683	98,208	95,531	191,586	193,739	385,325
Agents							
East Pakistan	34,640	69,193	68,676	68,629	103,836	137,305	241,144
West Pakistan	55,366	84,025	86,010	85,077	139,391	171,087	310,478
All Pakistan	90,012	153,218	154,686	153,706	243,227	308,392	551,622

Table 15

Family Planning Organizers (Dais) and Agents in the Family Planning Programme, by Province, 1966-1967

Classification	East Pakistan	West Pakistan
I. Percent of Actual to Required Employment		
Family Planning Organizers (Dais)	86.7	94.4
Agents	55.8	82.6
II. Net Turnover Rate	(per 100)	(per 100)
Family Planning Organizers (Dais)	1.80	2.71
Agents	1.72	1.09
III. Ratio of Accessions to Separations		
Family Planning Organizers (Dais)	1.62	1.21
Agents	1.60	1.49

In East Pakistan a total of 218,396 woman months of labour was reported and only 166,929 in West Pakistan. The difference mirrors the vastly greater number of villages within the eleven East Pakistan districts in contrast to the 25 West Pakistan districts since the number of dais is a function of the number of villages.

In spite of the differences between East and West Pakistan, East Pakistan is understrength to a greater degree than West Pakistan for both agents and dais (see Table 15.) For the year the East Pakistan districts were at 86.7 percent of required strength for dais and 55.8 percent for agents while the comparable figures are 94.4 and 82.6 percent in West Pakistan.

With such a large number of personnel in the program the net turnover rates are surprisingly low, ranging from 1.09 per hundred for agents in West Pakistan to 2.71 for dais in West Pakistan. The ratio of accessions to separations is in excess of one for both categories in both provinces despite the slight decline in the number of dais over the year. This is due to the large number of accessions in the first part of the year in new program districts. Eliminating initial "hires" the ratio falls below one.

D. Summary and Conclusions

If the family planning program is evaluated as an administrative activity, then the personnel data indicate that the program has been partially successful although critical problems remain. In particular the position of Technical Officer has been a difficult one to fill. This, however, is not unexpected in view of the requirements of the post.

The scarcity of medical personnel in the country and especially in East Pakistan is reflected not only in the absence of the required number of Technical Officers but also, in East Pakistan, in the lack of the required number of full time urban clinic doctors and the high turnover rates. The accession to separation ratio indicates some improvements over the year, but much more must take place is the medical staff requirements are to be met.

The problem can be expected to be even more critical in the fiscal year 1967-68 when additional program districts are added. Hopefully the new cadre of Lady Family Planning Visitors will reduce the problem somewhat.

Regardless of the employment category the data reflect consistently greater staffing problems in East than in West Pakistan. In part the discrepancies reflect less complete reporting on the part of East Pakistan districts. Most districts in both provinces did not provide personnel reports for the first month of the year, but a number of personnel reports from East Pakistan districts were not only submitted late but also misclassified or failed to report certain categories of personnel.

Data on medical personnel, paramedical personnel, and administrative personnel appear to be correct in general. The figures reported are consistent and reasonable in most cases. A few reports suggest misclassification of personnel, particularly in the case of doctors in part time clinics who were reported as urban full time clinic doctors. The amount of error, however, is not great.

In the case of agents and dais, however, the data are probably greatly in error. The figures are too consistent and the turnover rates too low. As shown in Part II, Appendix C a number of districts report exactly the same number of dais in the program each month and the same number of agents. For example, four districts in East Pakistan and seven districts in West Pakistan report no change in the number of agents during the year; three districts in West Pakistan and one district in East Pakistan report no change in the number of dais in the program. It is likely that the districts simply do not know exactly how many dais or agents are in the program from month to month; the number is too large for adequate control given the small number of direct administrative officers to supervise the program. The span of control is too great. On the average one Family Planning Officer or Supervisor is responsible for approximately 50 agents and 24 dais scattered

throughout their area. If they had no other functions they might be able to supervise these people, but unfortunately they have many other responsibilities.

Without more adequate supervision it is unlikely that the agents or the dais are particularly effective or that conventional contraceptives are effectively distributed on a regular basis among agents or dais.

SECTION VI. FINANCIAL REPORTS

A summary of the family planning expenditures at the district level is presented in Tables 16 and 17. Detailed reports by district and province are presented in Appendix D, Part II of this study. All figures reported have been rounded to the nearest 100 rupees. The totals reported should be viewed as conservative estimates of total expenditures. In our coding and analysis of the data, it was found that the financial data were the least reliable, most inconsistent and least frequently reported set of any data examined in this study. Despite continued rechecks of the files maintained by the Central Family Planning Council statistical section in Karachi, no records were found for specific months for a number of districts. This need not mean that they were neither completed nor forwarded since reports could have been lost in the mails and the original of the form may still have reached the provincial Family Planning Board. In addition to missing reports, reported totals did not check when the separate items were added. In this case the sum of the individual items was accepted as the correct figure in this study. Because of the missing and questionable data, this section will be limited to a brief description of expenditures.

The magnitude of the program in Pakistan is clearly reflected in the total expenditures reported: over Rs 25 million in the country at the district level alone, split almost equally between the two provinces. In West Pakistan the total expenditures have been relatively constant during the past three quarters of the fiscal year while the expenditures in East Pakistan have been constantly increasing. In the first six months of the year, the expenditures reported for West Pakistan were Rs 1.7 million higher than in East Pakistan but Rs 1.1 million less in the second half of the year.

The pattern of expenditures was quite different in the two provinces. Administrative costs -- headquarters, allowances to district medical officers, Union Council Secretaries or Additional Staff for Thana Development Officers in East Pakistan, and Family

Table 16

All Financial Expenditures for Family Planning Programme 1966-67

Quarterly, Semi-Annual and Annual Totals for Districts, and Provinces.

Rs (00's)

	Quarterly Totals I	II	III	IV	Semi-Annual Totals A	B	Annual Total
Multan	2669	3145	2615	2930	5814	5545	11359
Lyallpur	1731	2052	2481	2273	3783	4754	8537
Lahore	2023	2788	2489	2469	4811	4958	9769
Karachi	1199	1927	1587	1114	3126	2701	5827
Sialkot	760	1698	1954	2138	2458	4092	6550
Sargodha	1563	1607	1769	810	3170	2579	5749
Gujranwala	1393	1967	1699	2020	3360	3719	7079
Gujrat	755	1159	1090	1010	1914	2100	4014
Hyderabad	837	1372	1689	2428	2209	4117	6326
Rawalpindi	1085	1547	1773	1727	2632	3500	6132
Peshawar	988	1701	1183	1419	2689	2602	5291
Sheikhupura	789	1190	1281	1288	1979	2569	4548
Jhang	739	1063	1424	1541	1802	2965	4767
Hazara	1666	1655	986	1236	3321	2222	5543
Muzaffargarh	778	1068	596	1212	1846	1808	3654
Sukkur	626	948	1151	1120	1574	2271	3845
Rahimyar Khan	772	827	864	1020	1599	1884	3483
Mardan	783	689	774	621	1472	1395	2867
Jhelum	705	880	939	363	1585	1302	2887
Nawabshah	710	737	711	911	1447	1622	3069
Bahawalpur	543	754	715	787	1297	1502	2799
Larkana	642	626	551	670	1268	1221	2489
Montgomery	1845	1763	2101	2295	3608	4396	8004
Khairpur	379	503	806	734	882	1540	2422
D. I. Khan	450	429	543	573	879	1116	1995
West Pakistan	26430	34095	33771	34709	60525	68480	129005
Mymensingh	3861	4619	5211	3902	8480	9113	17593
Dacca	-	5284	8739	10193	5284	18932	24216
Comilla	330	2053	2720	5578	2383	8298	10681
Barisal	978	2453	2959	6522	3431	9481	12912
Chittagong	1689	1862	1799	3564	3551	5363	8914
Rajshahi	1508	2094	2996	1894	3602	4890	8492
Khulna	1311	2410	2455	2140	3721	4595	8316
Noakhali	965	1134	1541	2142	2099	3683	5782
Dinajpur	2264	2487	3038	5098	4751	8136	12887
Bogra	2152	2457	2033	1764	4609	3797	8406
Kushtia	500	912	1087	2432	1412	3519	4931
East Pakistan	15558	27765	34578	45229	43323	79807	123130

Table 17

Percent Distribution: Single Financial Item in Total Annual Expenditure by District for Family Planning Programme July 1966-June 1967

	All Fin. Expnd. Rs(00's)	Total	Percent Distribution															
			Distt. H. Q.	Allw. Med. Suptds.	U. C. Sec.& Thana Dev. Off.	FPSup. & Thana FPO's.	Publicity	Mobile Units	Transport	Urban Clinics	IUD Fees	Vasectomy Fees	Salary to Dais	Contgs.	Part-time FPPrs.	LHV's	Training.	Equip.
			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
Multan	11359	100.0	2.80	0.33	4.37	34.89	9.35	-	2.10	2.24	16.29	0.44	20.13	3.19	0.63	2.18	0.44	0.32
Lyallpur	8537	100.0	3.67	0.30	4.58	39.55	4.58	-	2.35	2.87	15.46	1.87	18.14	2.62	2.01	1.92	-	-
Lahore	9769	100.0	6.85	0.19	1.85	26.81	9.11	0.60	1.16	11.66	17.14	1.23	18.92	-	1.87	2.11	-	0.50
Karachi	5827	100.0	6.62	0.31	2.63	20.56	1.30	0.76	1.15	14.91	21.21	4.38	18.31	3.31	0.86	2.95	0.31	0.45
Sialkot	6550	100.0	3.57	0.31	4.18	31.30	3.42	1.63	2.29	3.51	15.13	0.50	28.27	3.70	1.95	2.87	1.08	1.27
Sargodha	5749	100.0	4.97	0.31	6.16	33.64	2.56	-	3.24	4.49	17.17	1.64	15.97	3.71	2.50	2.97	0.16	0.52
Gujranwala	7079	100.0	3.77	0.37	5.21	25.50	5.09	0.27	2.73	5.38	19.97	0.14	19.13	4.73	4.52	2.83	-	0.57
Gujrat	4014	100.0	10.54	0.80	-	29.87	6.13	-	4.61	-	17.49	0.07	21.28	1.77	0.95	4.46	0.12	1.82
Hyderabad	6326	100.0	9.60	0.28	3.54	18.31	6.69	0.13	7.35	2.82	22.57	1.71	14.89	1.80	2.81	2.94	2.65	1.90
Rawalpindi	6132	100.0	6.54	0.39	5.15	21.89	5.37	0.46	3.05	5.64	20.45	0.73	21.18	3.33	2.04	3.26	0.08	0.42
Peshawar	5291	100.0	5.95	0.49	2.61	21.05	7.50	-	4.31	5.61	19.62	0.21	12.64	8.28	1.97	3.70	0.06	5.99
Sheikhupura	4548	100.0	5.50	0.48	4.20	39.07	6.46	0.11	3.52	-	0.52	0.18	19.99	4.13	1.93	3.80	0.02	1.08
Jhang	4767	100.0	6.08	1.34	5.06	29.58	3.31	-	4.20	4.95	13.51	0.08	22.91	3.42	1.89	2.16	1.33	0.13
Hazara	5543	100.0	4.35	0.74	6.19	28.52	5.94	0.32	2.27	1.17	12.65	1.66	15.24	14.20	2.42	2.90	0.01	1.30
Muzaffargarh	3654	100.0	9.50	0.44	9.36	32.02	4.54	-	5.04	0.05	11.60	0.14	16.56	3.28	2.38	4.68	-	0.22
Sukkur	3845	100.0	6.79	0.47	4.60	26.61	4.86	-	6.24	6.89	12.09	0.36	13.92	5.77	2.37	4.01	-	5.02
Rahimyar Khan	3483	100.0	9.82	0.34	9.24	28.94	3.24	-	4.54	-	14.58	0.20	16.36	2.30	2.47	3.70	-	4.28
Mardan	2867	100.0	14.79	0.87	2.41	25.50	7.74	-	1.81	8.02	12.94	0.03	7.71	12.49	1.33	4.39	-	-
Jhelum	2887	100.0	10.88	0.69	3.08	25.95	16.63	3.05	4.43	-	13.09	0.07	13.72	-	3.15	4.43	-	0.83
Nawabshah	3069	100.0	7.88	0.39	3.97	22.51	4.01	3.13	5.44	7.23	19.81	0.16	11.66	4.85	2.44	4.76	-	1.73
Bahawalpur	2799	100.0	14.43	0.86	5.68	29.47	4.36	-	3.89	2.36	9.82	1.96	17.22	1.39	4.00	3.97	0.18	0.04
Larkana	2489	100.0	13.46	1.17	7.47	27.68	4.32	0.04	3.86	-	15.11	0.80	13.82	3.50	2.89	4.82	0.40	-
Montgomery	8004	100.0	11.06	0.29	5.02	27.67	4.07	-	2.37	1.99	19.31	0.30	18.45	0.01	2.09	1.69	5.02	0.66
Khairpur	2422	100.0	13.75	-	3.01	17.75	4.29	2.85	7.64	-	9.95	-	8.34	6.61	-	25.47	0.17	0.17
D. I. Khan	1995	100.0	14.54	1.15	3.81	22.26	1.75	-	6.67	-	10.98	-	16.79	5.36	4.31	10.93	-	1.45
West Pakistan (Total)	129005		207.71	13.31	113.38	686.90	137.12	13.35	96.26	91.80	387.96	18.86	416.55	103.75	55.78	113.90	12.11	30.84
(Average)	5160		8.31	0.53	4.53	27.48	5.48	0.53	3.85	5.10	15.50	0.75	16.66	4.15	2.23	4.56	0.48	1.23

Table 17 (continued)

			Percent Distribution														
			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
Mymensingh	17593	100.0	2.07	0.69	12.63	23.00	4.04	0.08	-	0.77	13.69	6.78	28.23	7.60	0.36	0.02	0.03	0.06
Dacca	24216	100.0	3.01	0.23	6.69	8.70	3.50	0.14	0.23	1.35	21.41	22.21	20.19	8.00	0.43	0.25	-	2.96
Comilla	10681	100.0	3.33	0.08	7.91	17.29	11.70	-	0.09	0.83	14.21	4.73	33.41	5.78	0.26	0.38	-	-
Barisal	12912	100.0	2.70	0.16	7.25	9.99	29.64	0.61	0.34	1.19	9.22	11.44	12.89	8.14	0.25	-	3.19	1.45
Chittagong	8914	100.0	3.59	0.24	10.19	20.51	14.82	0.27	2.49	1.97	14.10	7.36	13.81	4.35	0.31	0.62	1.74	3.63
Rajshahi	8492	100.0	3.03	0.08	10.47	12.20	0.75	0.32	2.00	2.20	13.04	7.07	36.98	9.40	0.69	0.79	0.78	0.21
Khulna	8320	100.0	3.03	0.28	10.46	14.46	3.26	0.02	2.54	1.19	18.44	17.10	20.16	6.92	0.20	1.87	-	-
Noakhali	5782	100.0	4.17	0.50	10.41	10.86	7.75	1.80	1.31	0.55	16.12	2.63	32.77	9.93	0.40	0.78	-	0.03
Dinajpur	12887	100.0	6.96	0.16	8.82	8.86	12.60	-	-	-	5.73	36.75	14.86	0.12	0.27	0.64	0.11	4.13
Bogra	8406	100.0	2.01	0.15	6.42	9.14	5.90	-	1.24	1.63	12.99	22.95	26.68	9.01	0.49	1.00	0.39	-
Kushtia	4931	100.0	20.60	0.45	-	4.12	11.54	1.58	1.22	1.14	15.39	11.17	23.32	5.84	0.65	1.34	1.20	0.45
East Pakistan (Total)	123130		54.50	3.02	91.25	139.13	105.50	4.77	12.16	12.82	154.34	150.19	263.30	75.07	4.31	7.69	7.44	12.92
(Average)	11194		4.95	0.27	8.30	12.65	9.59	0.43	1.11	1.28	14.03	13.65	23.94	6.82	0.39	0.70	0.68	1.17

Planning Supervisors or Officers -- amounted to over 40 percent of all costs in West Pakistan but only 16 percent in East Pakistan.

A. Summary of Expenditures

District Headquarters. The proportion of the year's expenditures on district headquarters is highly variable ranging from 2 percent in Begra to 20.6 percent in Kushtia for East Pakistan and from 2.8 percent in Multan to 14.79 percent in Mardan for West Pakistan. Districts in West Pakistan spent proportionately nearly twice as much on Headquarters costs, 8.31 percent, in comparison to 4.95 percent in East Pakistan.

The Headquarters costs for the provinces is not due to the introduction of new districts and the setting up of new headquarters. Most of the high expenditure districts were in the programme in the previous fiscal year. Moreover most districts exceeded the original scheme allocation. Each district was originally allocated Rs 29,300 for the year and 24 of the 36 program districts spent in excess of the allocated amount.

Allowances to Medical Superintendents, Civil Surgeons, and District Health Officers. This is a minor part of the total district costs. In only three district does it amount to more than one percent of the total expenditures: Jhang- 1.34 percent. In one district (Khaipur) no allowances were reported.

Allowances to Union Council Secretaries in West Pakistan and Additional Staff for Thana Development Officers in East Pakistan. On the average the districts in West Pakistan spent 4.53 percent of their budget on this item and districts in East Pakistan 8.30 reflecting the differences in the nature of these positions. One district in West Pakistan--Gujrat--reported no expenditures and Kushtia reported no expenditures. This is inconsistent with the personnel data.

In general, funds allocated for these persons have not been used. In West Pakistan 19 districts reported less spent than allocated while the number of persons reported in the program is in excess of the target. In East Pakistan the amount spent for additional

staff for Thana Development Officers was under allocation in each district reflecting the failure of the province to fill all assigned post positions. Kushtia reported no payments for the year, yet personnel reports showed persons in position.

The pattern of expenditures during the year is so irregular that one would expect much more variation in the personnel data than reported.

Family Planning Supervisors in West Pakistan and Thana Family Planning Officers in East Pakistan. The proportion of the year's total expenditures spent on these officers was surprisingly variable ranging from 17.75 percent (Khaipur) to 39.55 percent (Lyallpur) in West Pakistan and 4.12 percent (Kushtia) to 23.00 percent (Mymensingh) in East Pakistan. In spite of the high proportion spent in some districts, the total exceeded the scheme allocation only in Mymensingh. Costs have been increasing over the year as the staff positions have been filled and as more expenditures are made on travel by the district officers.

Publicity. During the year the amount spent in the various districts was highly concentrated in specific time segments. Consider the following simple index of concentration. We will note any district as one in which expenditures for publicity are concentrated if the expenditures in one quarter are in excess of 200 percent of the expenditures in any other period. On this basis 14 of the West Pakistan districts and nine of the East Pakistan districts concentrated their publicity expenditures and in the case of the nine East Pakistan districts this was all in the last quarter. Thus any impact the publicity program may have had would not show up in 1966-67.

The amount spent on publicity was variable ranging from Rs 3,500 in D. I. Khan to Rs 106,200 for Multan in West Pakistan and from Rs 6,400 in Rajshahi to Rs 382,700 in Barisal. Nearly half of all districts, 16 exceeded the scheme allocation and the expenditures in Barisal were more than five times the scheme allocation.

Mobile AV Units. These units were apparantly not available in all areas. Only 12 districts in West Pakistan and eight in East Pakistan reported expenditures for such units. The cost were relatively low, never exceeding 4 percent of the budget in any district.

Transport. Transport costs are low in both provinces but costs are proportionately four times as high in West Pakistan. As in the case of publicity expenditures the costs were largely concentrated in the last part of the year.

Urban Clinics. As a proportion of total expenditures in the province, urban clinic costs were roughly four times greater in West than East Pakistan. The data, however, again reflect errors in classification. Districts without an urban clinic report expenditures and districts without urban clinics reporting full time urban clinic doctors in the program do not report expenditures for this item.

IUD fees. This items is the second largest item of expenditure in East Pakistan and the third largest in West Pakistan. Payment of the fee is often delayed. For example no payments were made in Muzaffargarh in the 3rd quarter, in Jehlum in the 3rd and 4th quarters and in Dacca and Barisal in the last quarter of the year. IUD fees paid do not reflect variations in the number reported inserted, again suggesting a delay. If the incentive aspect of the fee is to be meaningful, the advantage may be lost or reduced through this delay in payment.

Vasectomy Fees. This is an important expenditure item only for East Pakistan. As in the case of the IUD fees, payments are unrelated to reported performance in East Pakistan because of delayed payments and changes in the fee scale. Because of the apparant delay in payments the East Pakistan districts were under the budgeted amount for the item.

A number of districts report vasectomy fees which are in total above what would be required to pay for the number of operations reported.

Salary of Dais. In most districts the reported expenditures are below scheme allocations. Payments made were highly variable during the year and did not necessarily correspond to the reported variations (or lack of variations) in the number of dais reported in the program. Over the year, however, this item was the second most costly item in West Pakistan and the most costly item in East Pakistan.

Contingencies. The item does not appear in the scheme under the original allocation but all districts report some contingency costs with the exception of two districts in West Pakistan. The costs reported under this category are often extremely high: Rs 193,700 in Dacca and 14 percent of the year's expenditures in Hazara.

Part Time Personnel. This is usually a minor item and the expenditures are fairly regular throughout the year.

Lady Health Visitors. Expenditures are relatively low in all program districts. One, however, reported that 25.47 percent of all expenditures went to Lady Health Visitors despite the small number of such persons reported in the Khaipur program. This again seems to be a case of miss reporting funds on the reporting forms.

The two remaining items, training and equipment, are again relatively minor items in the total costs of the program districts.

B. Summary

In this section we have simply summarized the financial data available to us. This information is of such questionable validity,given missing data and incorrect totals, that a more detailed analysis will require audit reports.

SECTION VII. CORRELATES OF FAMILY PLANNING PERFORMANCE

A. Introduction.

In this section of the research report, we shall examine a number of factors which are assumed to be related to family planning performance in Pakistan. The focus is on the problem of explaning provincial and district differences in family planning. The explanatory variables examined here largely deal with socio-demographic characteristics of the districts rather than with personnel or financial expenditures.

A variety of reasons, some based on personal bias, produced the decision to eliminate the personnel and financial variables from this stage of the analysis although it is expected that as a longer series of statistics become available such an analysis will be made. Among the reasons for the decision are the following: In the case of personnel data and financial data the degree to which statistics were reported was less complete than in the case of performance data. Frequently personnel and financial inputs to the program do not produce any immediate change in performance and if such relationships exist, they do not show up within the period of a single year. Moreover any observed relationship based on the experience of a single year would be of questionable validity.

Analysis of personnel data in relationship to performance presents three unique problems. First, there is no single homogeneous measure of medical personnel. IUD's may be inserted, for example, by medical or paramedical personnel working in full time urban clinics, part time rural clinics, private facilities, or IUD camps. Conventional contraceptives may be sold by agents or distributed by dais or in family planning clinics. Secondly, many of the personnel are constant in number from district to district; for example, the Executive cum Publicity Officer. Third, the number of personnel is often an indirect measure of the estimated population size or number of villages in the district: dais, Family Planning Officers or Supervisors and Union Council Secretaries for example. Therefore certain personnel variations simply reflect differences in the size of the district population.

Expenditure data often may not be used to explain performance data, but they can be used to evaluate performance data. Certain classes of expenditures are the result of specific performance: IUD fees are a function of IUD's reported inserted and vasectomy fees are the function of the vasectomies performed. If fees were constant during the year, which they have not been, then there should be an almost perfect association between performance and fees, provided that there is no significant lag between performance and payment of the fees.

Other types of expenditures may be viewed as direct inputs to the program, but again the pay-off in performance may not appear in the same year in which the investment is made. Often, for example, publicity costs were incurred only in the last quarter of the year in many districts and if there is a direct performance result, it would probably not appear until the following fiscal year. Still other types of expenditures are again the reflection of population size in the district: payments to dais, payments to family planning officers and supervisors, for example.

It would be useful to attempt to determine in some detail, what types of personnel inputs and financial outputs are related to family planning performance. This task, however, will require more data than is available in this report: data on IUD's inserted by type of personnel and conventionals distributed by type of personnel for example. In addition, any analysis which involves a time lag between input and output will require data which extends beyond one single year of the program.

For these reasons, we have restricted this analysis to a select series of variables. The selection of the variables for analysis was based upon two explanatory models.

In the first model which shall be called the population model, it is assumed that organizational structure and operational procedures are relatively constant throughout the country and that the productivity or performance success is simply a function of the size of the population. Assume that the population can be

divided into three groups: (a) the ready acceptors, (b) those who can be motivated, and (c) the resistors. Only if significant fertility differentials exist in the country should one assume that the distribution of these three types is different from district to district. Therefore, given equal organizational and operational procedures, the programme will reach a proportionately constant number of acceptors in each district. A test of this model would be to examine the hypothesis that the performance of the family planning programme is directly related to the total population of the programme districts.

The second model is essentially an organizational model. It assumes that in a relatively new and somewhat experimental programme such as family planning, productivity standards are difficult to establish and assess. This type of programme lacks structurally sequential operations and the rigidity of straight-line or job-lot manufacturing methods where now well-developed time-study methods or systems-analysis procedures may be utilized to set goals and payment rates. Under conditions extant in the country, family planning workers may not know how to work most efficiently, and may even find that hard work and long hours are no more productive than a more relaxed approach to the problem. If no organizational sanctions exist, we may assume that some workers (or districts) simply lack the skills to achieve the organizational targets while others through skill or simple luck consistently reach and surpass their arbitrary performance goals. On the other hand, if organizational sanctions for poor performance are strigent, then one may assume that performance is a function of the organizational performance goals. The test of the latter model would be to test the hypothesis that performance is directly related to performance goals.

There are now two alternative models to explain official performance, but the two models are not independent. Family planning official performance goals are designed to reflect the population size of the various districts and therefore the predictors in each model are strongly and positively associated ($r_s = .91$). Therefore,

while it is possible to test each model, it will be impossible to determine which of the two on the basis of direct separate tests is the correct model.

B. The Data and Methods

In this section two hypotheses will be examined:

(1) Family planning performance is directly related to the total population size of the family planning programme districts.

(2) Family planning performance is directly related to the officially set family planning targets.

By family planning performance we mean only the officially reported numer of (a) IUD's inserted, (b) conventional contraceptives of all types sold and (c) vasectomies and tubeligations performed. For analysis purposes we have used the monthly average for the fiscal year 1966-67.

Total district population is a difficult current figure to determine. For reasons which have been explained in detail in Appendix B, the 1961 census enumerated population totals have been used. It is assumed, of course, that relative rank size differences for all districts have remained relatively constant between 1961 and January 1, 1967, the mid-year point of the fiscal year.

Total population size in the family planning programme, however, is used as an indirect measure of the target population. It is implicitly assumed in the population model for example, that when dividing the population into three types - ready acceptors, those who can be motivated, and resistors - the family planning programme population consists of only those at risk, i.e., married couples in the child bearing years of life. If districts vary widely in population structure, then use of the total population may introduce certain bias in the test. It will therefore be necessary to examine certain structurally related variables to determine the validity of the test we shall make in this paper. These variables are (1) the 1961 district sex ratio, (2) the proportion of the population age 15-49 and female, and (3) the proportion of the population married and age 15-49.

In addition to these demographic variables, performance may be influenced by a number of other factors. These may again be divided into four classes: (1) socio-demographic, (2)personnel and,(3) financial inputs, (4) district family planning organization and operational variations. No information was available in codifiable form to deal with item 4 - organizational and operational variations. Data are available on financial and personnel inputs and are in the process of being analysed.

We have examined, however, in this paper the following additional socio-demographic variables: (1) the woman child ratio - again as reported in the 1961 census; operationally, the ratio between the reported number of children under 5 years of age to the number of women age 15-49; (2) Percentage of the population in urban areas in the district, (3) Percentage of the population literate, and (4) Percentage of the male age 10+ population in non-agricultural positions. These variables were selected since they are traditionally found to be related to fertility.

Data were analyzed for the 25 programme districts in West Pakistan and the 11 programme districts in East Pakistan.

C. Presentation of the Data

In this section data are presented for East and West Pakistan separately since the two provinces differ in their level and pattern of family planning achievement and socio-demographic characteristics. On the whole, West Pakistan has a higher level of achievement for IUD's and conventional contraceptives and a lower level for vasectomies and tubeligations. West Pakistan districts are smaller in terms of total population, more urbanized and industrialized.

Listed in Table 18 are the district averages ($\bar{x}$), standard deviations (s) and coefficients of variation (v) for the fourteen variables examined in this study. For the performance variables - IUD's inserted, conventional contraceptives and vasectomies plus tubeligations - the data represent the average of the 1966-67 monthly district average performance. The listed lower levels of performance in West Pakistan are simply a function of smaller districts. As noted below, the rate per 1000 population is consis-

Table 18

Summary Measures of Family Planning Performances, 1966-67, and selected Programme District Socio-Demographic Characteristics

Variable Identification	East Pakistan			West Pakistan		
	Average	Standard Deviation	Coefficient of Variation	Average	Standard Deviation	Coefficient of Variation
	x	s	v	x	s	v
1. I. U. D's inserted	1896	1740	.918	1119	622	.555
2. Conventional contraceptives (00's)	2661	1863	.714	2022	1481	.732
3. Vasectomies and Tubeligations	265	228	.783	6	9	.000
4. Monthly target - couple years protection - I. U. D.	2045	722	.353	957	612	.639
5. Monthly target - couple years protection-conventionals	11891	4190	.352.	5232	3458	.657
6. Monthly target - couple years protection-vasectomies	64	65	1.018	28	18.5	.661
7. Population size, 1961 (000's)	3258	1682	.516	1271	650	.511
8. Sex Ratio (1961 Census)	929	27	.030	867	43	.050
9. Proportion of the population female age 15-49	.211	.008	.036	209	.007	.034
10. " " " "married and age 15-49	.338	.014	.427	.317	.017	.055
11. " " " "urban	.056	.040	.716	.226	.186	.821
12. " " " "male age 10+ in non-agricultural occupations	.147	.084	.570	.312	.097	.313
13. " women-child ratio	865	37	.043	793	65	.083
14. " of the population literate	.188	.033	.716	.137	.059	.429

tently higher in West Pakistan for IUDs and conventional contraceptives.

	East Pakistan	West Pakistan
IUDs	.58	.88
Conventionals	81.68	159.08
Vasectomies and Tubeligations	.08	.005

Table 19 presents the results of the initial tests of the two hypotheses. The first hypothesis that population rank size is related to family planning performance holds for two measures of performance: IUDs and conventional contraceptives. In both East and West Pakistan correlations are amazingly high: for IUDs the rank order correlation coefficients are .98 and .91 and for conventionals .84 and .76 respectively. Total population is unrelated to the monthly average number of vasectomies or tubeligations; and indeed no variables examined here were found to be related to relative levels of performance for vasectomies or tubeligations. To summarize and to put the matter more precisely in a fashion which mirrors the type of statistic used, the higher the population rank of the district, the higher the IUD and conventional contraceptive performance rank.

The same result is found with slightly lower levels of association for targets. Specifically, the higher the target rank the higher the performance rank for IUDs and conventional contraceptives sold. For IUDs the correlations are .88 and .90 and for conventionals .76 and .66 in East and West Pakistan respectively.

For East Pakistan, no other variables were found to be significantly related to family planning performance. In contrast, it was found in West Pakistan that the proportion of the labour force in non-agricultural occupations, the proportion literate and the proportion urban are each significantly associated with IUD performance and the proportion of the labour force in non-agricultural occupations is significantly associated with conventional contraceptive performance.

Table 19

Correlates[(rs)(a)] of Family Planning Performance in Pakistan, by Province, 1966-1967

	East Pakistan						West Pakistan					
	I. U. D.		Conventional		Vas. & Tube		I. U. D.		Conventional		Vas. & Tube	
	r_s	z	r_s	z	r_s	z	r_s	z	r_s	z	r_s	z
1961 Total Population	.98	3.10	.84	2,67	...	...	.91	4.59	.76	3.72	...	...
1966-67 Target[b]	.88	2.78	.76	2.40	...	...	.90	4.38	.66	3.25	...	...
Prop. males age 10+ in non-agri.	...	...	...	...	...	...	.83	4.04	.54	2.66	...	...
Prop. literate	...	...	...	...	...	...	.57	2.78	...	...	...	...
Prop. urban	...	...	...	...	...	...	.56	2.75	...	...	...	...

[a]The measure of association employed is Spearmans r or rho (r_s)

[b]Corrected for ties

One should be cautioned that the relationship observed between official targets and performance does not mean that all districts equally meet their targets. As noted in Table 20, the degree to which targets are achieved is highly variable. For example, in West Pakistan the monthly average for IUDs exceeds the monthly target while in East Pakistan performance is below target and the relative variation is 37 percent higher (.531 vs .389) in East Pakistan. Districts in both East and West Pakistan are greatly under the target levels for conventionals, but there is little difference in the relative variation: 12 percent (.426 vs..485). This suggests that the average over or under performance may also be a function of target level, but the idea is unsupported by the data. Two factors mitigate the validity of the argument. Table 20 reflects the average district monthly achievement and therefore districts with small targets are disproportionately weighted for each increment above or below target. Secondly, there is no empirical relationship between target rank and level of over or under achievement.

While the relationships between labour force, urban, and literacy and family planning performance are interesting, it is possible that these are spurious, reflecting differences related to district population size. To test this assumption, Kendall's partial Tau measure of association was made. In this test the following notations were used:

n = Population rank size

v = Percent non agricultural labour

w = Percent urban

x = Percent literate

y = IUD performance

The results were as follows:

$T_{yv.n}$	=	.52	T_{yv}	=	.65 (2=4.54)
$T_{yw.n}$	=	.24	T_{yw}	=	.34 (2=2.38)
$T_{yx.n}$	=	.27	T_{yx}	=	.43 (2=3.01)

The zero order correlations using tau as the measure rather than rho remain significant. Partialing out the effect of population rank

size reduces the correlations somewhat although some measure of association remains. Unfortunately the sampling distribution of Kendall's partial is not known so that it is impossible to determine if the statistics are statistically significant.

Table 20
Average Percent of Official District Targets Achieved, by Province, 1966-67[a]

	East Pakistan			West Pakistan		
	$\bar{x}$	s	v	$\bar{x}$	s	V
IUD	.821	.421	.531	1.372	.535	.389
Conventionals	.211	.090	.426	.493	.239	.485
Vasectomies & Tubeligations	4.810	1.459	.303	.180	.182	1.011

[a]Computed by dividing the monthly target by the average monthly achievement during 1966-67. The average does not reflect total provincial achievement.

E. Discussion:

In this section it has been suggested that two models may be used to explain the relative performance of various programme districts with respect to reported IUD's inserted, conventional contraceptives sold and vasectomies or tubeligations performed. One model is essentially a population model while the other is a model of organization operations. In theory and fact the models are not independent; and there is no way, nor need there be cause to reject one model in favour of the other.

The simplest of the two is the population model. Here we assume that no significant fertility or family planning differences exist among districts in Pakistan and there are therefore relatively constant proportions of (1) couples ready to accept family planning, (2) couples who can be motivated to accept family planning and (3) hard core resistors to family planning in all programme districts. In this case, programme performance should be a function only of population size. Population size has been shown to be strongly related to the average number of IUD's inserted and conventional contraceptives sold during 1966-67. Other evidence

indicates that while the operational hypothesis holds in these two cases, the model does not explain all of the district by district performance differences.

First, population rank is unrelated to vasectomy or tubeligation performance. In East Pakistan the average performance level is much higher than can be explained by district size differences relative to West Pakistan. East Pakistan's performance in this area is unique and in terms of numbers astounding. Even within East Pakistan population size is not related to vasectomy and tubeligation performance. Family planning workers explain this performance by personnel, training and organizational differences. As we have suggested above, cultural differences should be examined.

Second, the higher performance levels for IUD's in West Pakistan may be a function of population differences other than size along. It has been found that three population characteristics other than size are related to the average number of IUDs inserted. These are: proportion of the labour force in non-agricultural occupations, proportion living in urban areas and proportion literate. These are precisely the variables one would expect to find related if family planning differences exist. The strength of association is low but statistically significant. This observation should be carefully re-examined and tested, but if the finding holds up it is the most important element of this study. This type of relationship suggests the beginning of a pattern of acceptance which is usually found as countries go through the usual period of fertility decline. This relationship would also suggest that special motivational efforts in these areas might yield proportionately greater results in acceptance of family planning than in other areas.

The second model, the organizational model, simply assumes that reported performance will be keyed to official targets to avoid sanctions for failure to meet organizational imperatives. This does not mean that the performance reports will be adjusted to meet exactly the target set. What may happen is that if operational targets are unrealistically high in terms of available

equipment, skills, or manpower and yet sanctions still exist for radically poor performance, then reports are adjusted to what is felt to be an acceptable level, i.e., a level at which sanctions can be postponed or avoided.

Patently other factors influence performance. Many more doctors are trained and licensed to perform vasectomies in East Pakistan than West Pakistan.

Determining whether performance is adjusted to target is a difficult task. In this research project we have been able to make one test. Demographers are well aware of the fact that people "adjust" their ages in census reports so that a pattern of age heaping or digital preference is found in census reports of population classified by single years of age. Specifically, for example, too many people are found in age groups ending in zero and five and too few in age groups ending in nine and four.

If IUD insertion rates are adjusted, one might assume that the number would be rounded up to a figure ending in zero and five or that some other digital preference is used. Using traditional demographic techniques the district IUD reports were examined, and while some digital preference was observed, it was not a statistically significant variant. This, however, may mean two things: no digital preference exists or the possible adjustment occurs at lower than district recording levels and as these are summed at the district level, digital preferences disappear.

The simple organizational model may be questioned on the basis of one other fact. Percent of target achieved, on the average, is highly variable by district, province and type of performance. Such differences may reflect organizational variants such as personnel, equipment and expenditures. Nevertheless a strong degree of association between target and performance remains and should be explained.

The logical explanation is that target is a function of population size and that the population model is an appropriate, although incomplete, explanation of family planning performance in Pakistan. Apparently the "ready to adopt population" is being

reached by the sale of conventionals and the IUD programme. The same may be true of vasectomies, and the absence of a significant correlation may simply mean that performance has not reached a sufficiently high enough level to reflect district differences in the number of ready acceptors. On the other hand, personnel and financial differences suggest that in East Pakistan this part of the program may have moved into the group of persons who must be motivated. How clients have been motivated is the interesting question, however?

Section VIII. Recommendations and Conclusions

In this paper two types of data have been presented: first a description of the family planning programme performance, personnel, and expenditures at the district level during the fiscal year, 1966-67. Second, certain correlates of family planning performance have been examined.

The number of statistics which have been collected in the normal operation of the family planning program at the district level is large and offers a good basis for administrative control and basic research.

The administrative advantages of the various reports are not maximized, however, if each of the various reports is viewed independently. The reports should be intagrated in the final analysis. Errors in reporting procedures may be immediately identified by comparing two or more types of reports; there should be, for example, some agreement between reported expenditures and personnel reported or performance. Internal comparisons of the data, analysis over time, are also useful. For example, the fact that most districts spend most of the funds allocated for publicity during the year means very little. The fact that most of the expenditures were lumped into specific periods and often the last period of the year suggest that publicity funds are probably not used in a way that the impact of publicity is maximized. The delaying of fee payments to personnel and clients may reduce the impact of the monetary incentives in the program, and the delay of payments clearly shows up in the data presented in this report. Unusually heavy distribution of contraceptives in particular periods may produce a stock of contraceptives which when ultimately sold to the user will be ineffective.

The reports are relatively complete but there are some items of information which would be particularly useful in the operation of the program. It would be useful to determine to what extent conventional contraceptives are distributed through agents and to what extent they are distributed through family planning clinics or dais. In the first case the distribution more accurately refers

only to stock transfers while in the latter case the distribution may more closely reflect distribution to users. A better indication still would be reporting of actual stock replacement to the agent, but this may not be feasible given the large number of agents for which the family planning officer or supervisor is responsible.

A better measure of the effectiveness of various types of personnel would require a combining of personnel and performance data. For the IUD, who does the insertions and where? Registers contain most of this information, but summary reports would have to be made. This type of analysis would be useful and could be done on a sample basis rather than increasing the paper work of the district personnel.

Given information on the types of personnel actually performing the insertions, additional analysis of fees paid and clinic direct costs would provide the basis for a more precise estimate of operational costs. What is the cost per IUD inserted in Pakistan?

In addition to the administrative benefits of the available date, there is some research potential of a basic nature. It is possible to relate performance, for example to the socio-demographic characteristics of the districts to determine where success is taking place. On the basis of the analysis presented here, it seems that districts vary only slightly in terms of their impact once population size is taken into account. Both the number of IUD's inserted and the number of conventionals distributed are related strongly to total population size while the number of vasectomies performed is not related. In West Pakistan the data further suggest that the more successful areas are not only the larger districts, but also those in which the level of urbanization, literacy and percent males in the non agricultural labour force is also nigh. Thus a more immediate and significant impact may be generated by a concentration of efforts in areas of high potential acceptance. This would be a logical extension of the policy of extending new program districts into areas of potential high acceptance. If districts differ with respect to acceptance levels why should we not expect intra-district differences and exploit them?

There are a number of questions of interest which cannot be answered on the basis of the administrative reports alone or in their present form. The relationship between personnel inputs and financial inputs and performance would require a reorganization of the reporting of personnel and financial data and reporting in more detail. Additional information collected through other sources needs to be made available to test, for example, the couple years protection and births prevented concepts of the family planning program.

Some of the information which would be required for further analysis of the performance data is available at the district level in registers and specific reports which are summarized for the reports analyzed in this study. Because of the amount of reporting and analysis required at the district level now, it would be too much of a burden to assume that district Executive cum Publicity officers or their assistants would be able to regularly organize this data. This is the type of operation which could be handled effectively by the Provincial units which might better devote their time to more refined analysis rather than duplicating the monthly report (in extended form to be sure) prepared by the Family Planning Council.

To this writer, the existing administrative data presents a unique opportunity for control and basic research. It can be used and should be used. It is not a perfect system but improvements could be made with little effort.

REFERENCES

1. Ahmed, Nazir and Karol J. Krotki, "Simultaneous Estimations of Population Growth: The Pakistan Experiment," The Pakistan Development Review. III, Spring, 1963, 37-65.

2. Aslam, Muhammad, Sultan S. Hashmi, and William Seltzer, "Abridged Life Tables of Pakistan and Provinces by Sex, 1962," The Pakistan Development Review. VII, Spring, 1967, 66-106.

3. Bean, Lee L. and Masihur Rahman Khan, "Mortality Patterns in Pakistan," paper presented at the 7th All Pakistan Statistical Conference, Dacca, 1967.

4. Bean, Lee L., Masihur Rahman Khan and A. Razzaque Rakanuddin, Population Projections for Pakistan: 1960-2000. The Pakistan Institute of Development Economics, Karachi, 1968.

5. Bean, Lee L., "Demographic Aspects of Potential Labour Force Growth in Pakistan," Participants Papers, The International Union for the Scientific Study of Population, Sydney, 1967.

6. Bergen, Asbjorn, "Personal Income Distribution and Personal Savings in Pakistan, 1963/64," The Pakistan Development Review. VII, Summer, 1967.

7. Blalock, Hubert M., Social Statistics, McGraw-Hill Book Company, Inc., New York, 1960.

8. Gustafson, Elisabeth, Existing Birth and Death Registration Systems in East and West Pakistan: 1964, Population Growth Estimation, Central Statistical Office, no date.

9. Islam, Nurul, "Concepts and Measurements of Unemployment and Underemployment in Developing Economies," International Labour Review, 89, March, 1964.

10. Khan, Masihur Rahman, Lee L. Bean and A. Razzaque Rakanuddin, "A New Look at Fertility in Pakistan and Its Implications for Family Planning," The Pakistan Family Planning Journal, I, July, 1967.

11. Khan, Masihur Rahman, "A Demographic Approach to Educational Planning in Pakistan," Participants Papers, The International Union for the Scientific Study of Population, Sydney, 1967.

12. Khan, President Mohammad Ayub, Friends, Not Masters, Oxford University Press, 1967.

13. Krotki, Karol J., "Population Size, Growth and Age Distribution: Fourth Release from the 1961 Census of Pakistan," Pakistan Development Review, III, Summar, 1963.

14. Malinowski, Branislaw, The Scientific Theory of Culture, Yale University Press, New Haven, 1940.

15. Pakistan, East Pakistan Family Planning Board, Dacca, "Progress Report on Family Planning," published monthly.

16. Pakistan, Family Planning Council, "Report on the Working of Pakistan's family Planning Programme," published monthly.

17. Pakistan, Ministry of Health, Labour and Social Welfare(Health Division), D. O. No: D-220/65-FPC, Rawalpindi, 20 May, 1965. (Directive on implementation of the family planning scheme issued in two forms, one for West Pakistan and one for East Pakistan.)

18. Pakistan, Ministry of Health, Labour and Social Welfare, Family Planning Scheme for Pakistan, Sweden Pakistan Family Welfare Project, Lahore, no date.

19. Pakistan, Ministry of Home and Kashmir Affairs, Office of the Census Commissioner, Population Census of Pakistan, 1961, Age, Sex and Marital Status, Bulletin No. 3, Government of Pakistan Press, Karachi, no date.

20. _____, Population Census of Pakistan, 1961, Literacy and Education, Bulletin No. 4, Government of Pakistan Press, Karachi,

21. _____, Population Census of Pakistan, 1961, Economic Characteristics, Bulletin No. 5, Government of Pakistan Press, Karachi, no date.

22. _____, Population Census of Pakistan, 1961, Pakistan, Vol. 1, Government of Pakistan Press, Karachi, no date.

23. _____, Population Census of Pakistan, 1961, East Pakistan, Vol. 2, Government of Pakistan Press, Karachi, no date.

24. _____, Population Census of Pakistan, 1961, West Pakistan, Vol. 3, Government of Pakistan Press, Karachi, no date.

25. Pakistan, West Pakistan Family Planning Board, "Progress Report," published monthly.

26. Pakistan, Planning Commission, The Third Five Year Plan (1965-70), Government of Pakistan Press, Karachi, 1965.

27. Peterson, H. A., "Clinical Record Card: Design and Progress," Pakistan Journal of Family Planning, I, July, 1967.

28. Potter, Robert G., "Estimating Births Averted in a Family Planning Program," unpublished paper.

29. Qureshi, M. L. (ed.), Population Growth and Economic Development with Special Reference to Pakistan. The Institute of Development Economics, Karachi, 1960.

30. Rao, V. K. R. V., University Education and Employment, Asia Publishing House, Bombay, 1961.

31. Robinson, W. C., "Ecological Correlations and the Behavior of Individuals," American Sociological Review, 15, 1950.

32. Ross, John, "A Handbook for Service Statistics in Family Planning Programs," preliminary copy of a volume to be published by The Population Council, New York.

33. United Nations, Demographic Yearbook, 1965, United Nations, New York, 1966.

34. Yusuf, Farhat, "Some Recent Estimates of Fertility of Pakistani Women Based on PGE Data," paper presented at the Seminar on Population Problems in the Economic Development of Pakistan, 2-3 June, 1967, The Pakistan Institute of Development Economics, Karachi.

18. Pakistan, Ministry of Health, Labour and Social Welfare, Family Planning Scheme for Pakistan, Sweden Pakistan Family Welfare Project, Lahore, no date.

19. Pakistan, Ministry of Home and Kashmir Affairs, Office of the Census Commissioner, Population Census of Pakistan, 1961, Age, Sex and Marital Status, Bulletin No. 3, Government of Pakistan Press, Karachi, no date.

20. _____, Population Census of Pakistan, 1961, Literacy and Education, Bulletin No. 4, Government of Pakistan Press, Karachi,

21. _____, Population Census of Pakistan, 1961, Economic Characteristics, Bulletin No. 5, Government of Pakistan Press, Karachi, no date.

22. _____, Population Census of Pakistan, 1961, Pakistan, Vol. 1, Government of Pakistan Press, Karachi, no date.

23. _____, Population Census of Pakistan, 1961, East Pakistan, Vol. 2, Government of Pakistan Press, Karachi, no date.

24. _____, Population Census of Pakistan, 1961, West Pakistan, Vol. 3, Government of Pakistan Press, Karachi, no date.

25. Pakistan, West Pakistan Family Planning Board, "Progress Report," published monthly.

26. Pakistan, Planning Commission, The Third Five Year Plan (1965-70), Government of Pakistan Press, Karachi, 1965.

27. Peterson, H. A., "Clinical Record Card: Design and Progress," Pakistan Journal of Family Planning, I, July, 1967.

28. Potter, Robert G., "Estimating Births Averted in a Family Planning Program," unpublished paper.

29. Qureshi, M. L. (ed.), Population Growth and Economic Development with Special Reference to Pakistan. The Institute of Development Economics, Karachi, 1960.

30. Rao, V. K. R. V., University Education and Employment, Asia Publishing House, Bombay, 1961.

31. Robinson, W. C., "Ecological Correlations and the Behavior of Individuals," American Sociological Review, 15, 1950.

32. Ross, John, "A Handbook for Service Statistics in Family Planning Programs," preliminary copy of a volume to be published by The Population Council, New York.

33. United Nations, Demographic Yearbook, 1965, United Nations, New York, 1966.

34. Yusuf, Farhat, "Some Recent Estimates of Fertility of Pakistani Women Based on PGE Data," paper presented at the Seminar on Population Problems in the Economic Development of Pakistan, 2-3 June, 1967, The Pakistan Institute of Development Economics, Karachi.