

COMMUNITY AND FAMILY PLANNING
A Statistical Analysis of Egyptian Data*

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1. Introduction

In the late seventies, Egyptian population and family planning policy aimed at transferring the responsibility of implementing the activities carried out in this area to local units at various levels, i.e. governorates and village councils. From the administrative point of view, this action was designed to define responsibilities and upgrade the monitoring of the national program. From the theoretical point of view, however, this action raises a series of questions, as: a) to what extent fertility, as an individual behavioral process (at the micro level), is affected by the community as an institutional identity (at the macro level) and what is the outcome of their interrelationships? b) what is the suitable community level that should be taken into consideration in this study? (i.e. village councils or village or even hamlets...), and finally, c) what is the appropriate framework for integrating individual and community variables in order to affect the decision making process and to guide it in the required directions. The time reference for these different types of variables is also critical and needs to be clarified to determine when it is expected to have a certain impact, i.e. in the short run, medium or long run.

Accordingly, the realization of the complete overlap between both individual and community variables within the context of a total development package, led the Population and Family Planning Board (PFPB) in 1977 to initiate the Population and Development Project (PDP). Both

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the Village Council* and the village represented the basic community level area taken into consideration within the overall model developed to examine and evaluate the impact of the project. This policy was also supported by the "National Strategy Framework for Population, Human Resource Development and the Family Planning Program" issued in December 1980. This strategy encompasses three interrelated programmatic areas directed towards the reduction of fertility (and subsequently population growth). One of these areas is the "institution of community-based socio-economic programs of development conducive to family planning practice" which aim at mobilizing community participation, improve community characteristics and upgrade the managerial capabilities of local officials.

The objective of this paper is to present the PDP program, the overall model to examine the interrelationships between individual, community and program variables and finally to discuss the impact of the project.

2. The Population and Development Project

The project objectives can be classified under three major components:

- (1) Promotion of greater contraceptive usage through the intensification of face to face and group communication (Raiida or outreach worker), improving clinical family planning services and mobilizing village institutions in IEC activities.
- (2) Mobilization and capitalization of local resources in terms of existing infrastructure and human participation to implement socio-economic projects in order to increase the pace of socio-economic deve-

* A Village Council consists of a mother village and a number of satellite villages that differ from one to another.

lopment, improve population characteristics, reduce infant mortality and reduce outmigration.

- (3) Upgrading management capabilities to administer different projects at village level.

It started on an experimental basis covering only 20 village councils (including 107 villages), then in September 1978 was extended to cover 171 village councils (809 villages) in 11 rural governorates. A year later, the project coverage was extended to 287 village councils (1491 villages) with a population of about 7.5 million (37% of all rural Egypt). In 1980 the project was extended twice in April and October. At the last extension the total number of village councils covered by the project reached 525 (2915 villages), thus representing about 70% of all village councils and about 73% of the total number of villages. The total number of covered rural population reached about 14 million, i.e. about 70% of the total rural population.

For the 12 governorates covered by the project, about 92% of all the village councils are covered. As can be seen from Table (1), the ratio of covered village councils differed between Upper and Lower Egypt, between 95% and 90%, respectively, (i.e. about 94% and 88% of all villages). A total of seven governorates are fully covered, while for the rest the coverage fluctuated between 91% in Kafr El-Sheikh to about 79.6% in Minia.

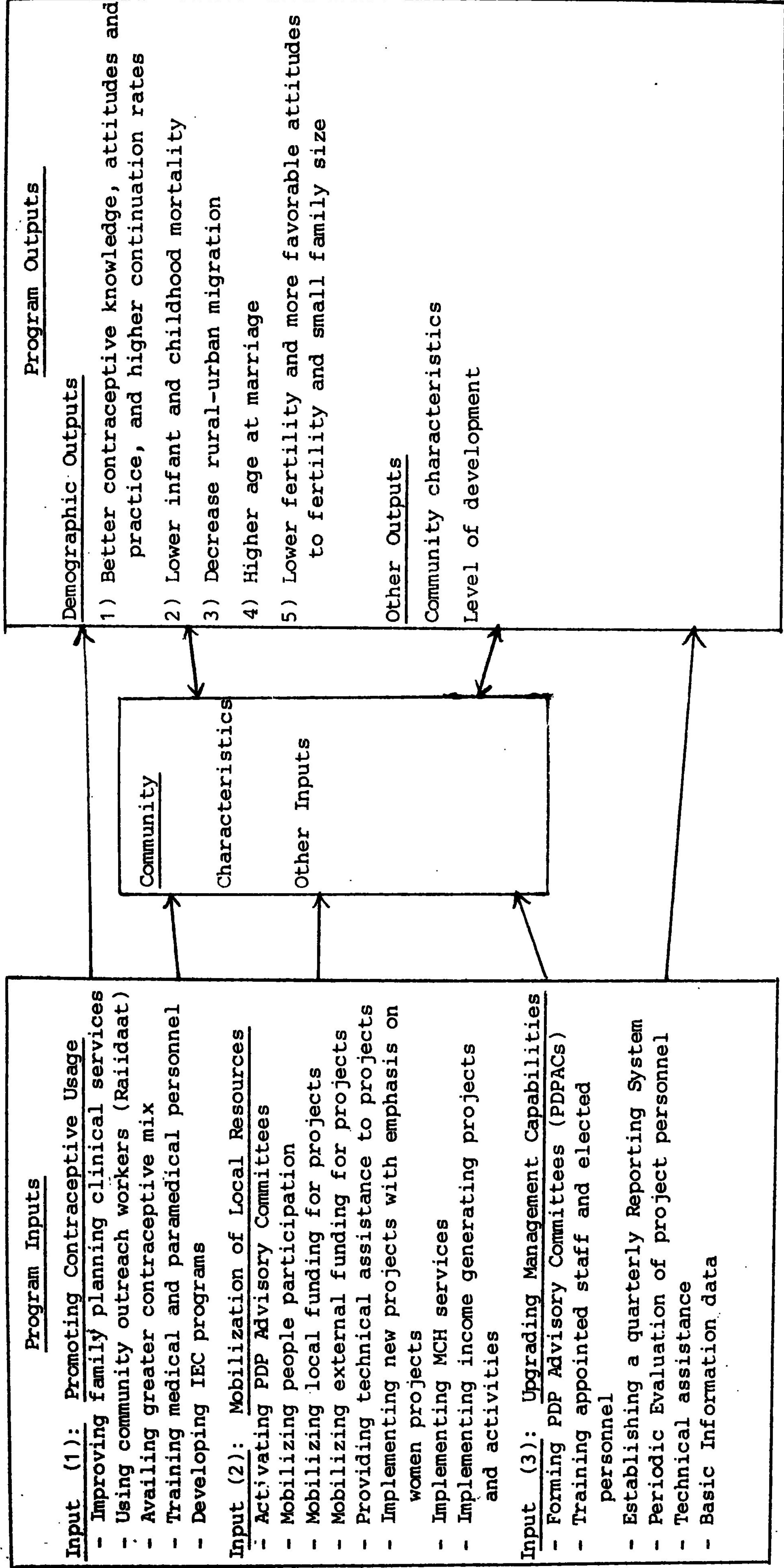
The main objectives of the project were translated into a set of inputs that are planned to interact with the community characteristics and capitalize on other inputs available to produce some specific demographic changes at the micro level. In turn, these outputs will have impact on the community by upgrading its characteristics and improving the ability to create and efficiently use various inputs. These interactions are presented in Figure (1).

Table (1)

The Distribution of Village Councils & Satellite Villages
& PDP Coverage in the Twelve Governorates

Governorate	Total Govern.		PDP Coverage		% Coverage	
	VCs	Satellite Villages	VCs	Satellite Villages	VCs	Villages
<u>Lower Egypt</u>	354	2107	318	1860	90	88
Damietta	24	56	24	56	100	100
Dakahlia	65	409	55	337	85	83
Sharkia	65	469	55	412	85	88
Kalioubia	37	188	37	186	100	100
Gharbia	53	308	53	308	100	100
Kafr El-Cheikh	43	189	39	172	91	91
Behera	67	490	55	389	82	79
<u>Upper Egypt</u>	219	1111	207	1046	95	94
Giza	39	150	39	150	100	100
Fayoum	37	155	37	155	100	100
Beni-Suef	38	221	38	221	100	100
Minia	57	342	45	277	79	81
Assiut	48	243	48	243	100	100
Total	573	3218	525	2906	92	91

Figure (1): Basic Program Inputs, Outputs and Community Interaction



Although these inputs are primarily directed toward local communities, they are structured, from the organizational point of view, into three levels: village councils (local), governorate (regional) and national (central) with varying degrees of responsibility at each level. At the core of the project, the local level, in each village council, a PDP Advisory Committee (PDPAC) is established including both executives, elected leaders and some selected influential community leaders. According to the project record a total of 9854* served as members in these committees, of which about 53.8% were executives, 45.5% elected, and only about 0.6% selected on personal basis.

Regional differences are also noticeable between Lower and Upper Egypt. About 61% of the total number of PDPAC members are from Lower Egypt which is almost the same percentage of VCs in the area. In both regions, however, the distribution of members between executives, elected and selected leaders is in the same order with different internal weights as can be seen from Table (2). It can also be seen that the average number of members of PDPAC slightly differ between Lower and Upper Egypt, i.e. from between 19 to 21 respectively. The average fluctuates between governorates from 24 members in Assiut to only 19 in Kafr - el Sheikh and Giza.

Another important input of the project is the female extension worker recruited from the village to promote, among other things, contraceptive usage and participate in IEC activities at the local level. By December 1982, a total of 3059 Raiida were recruited in all villages covered by the PDP project. Out of these about 65% of the total number of Raiida were working in Lower Egypt,

* PDP Progress Report for 1982.

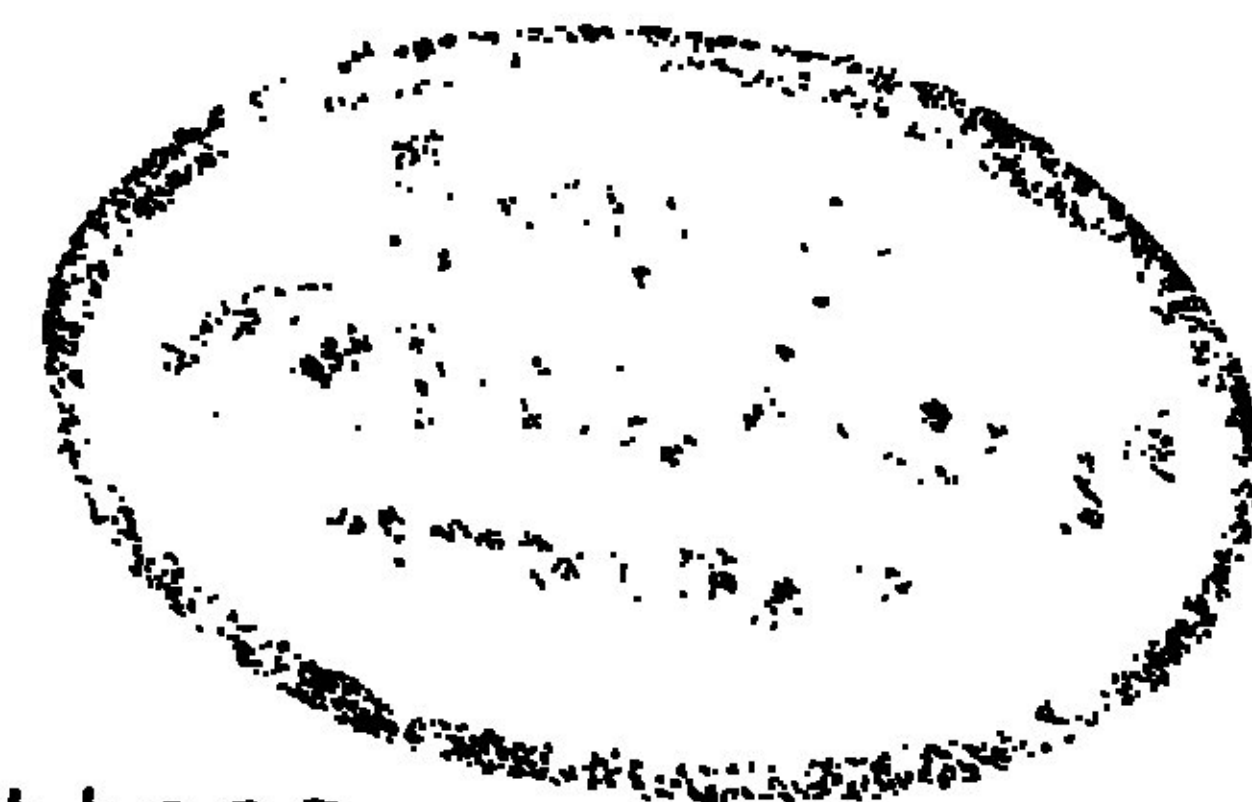


Table (2)

The Distribution of the PDP Advisory Committees
Members and the Number of Raiidat Between
Governorates in December 1982

Governorates	No.of PDPAC Members	Percent of			No.of Members Per VC	No.of Raiidat Riffiat	No.of Raiidat Per village
		Executives	Elected	Selected			
<u>Lower Egypt</u>	6004	52.6	47.1	0.3	18.9	1992	1.1
Damietta	415	50.1	47.7	2.2	17.3	98	1.8
Dakahlia	1120	53.1	46.3	0.0	20.4	349	1.0
Sharkia	1097	59.5	40.5	0.0	20.0	375	0.9
Kalioubia	720	48.2	51.5	0.3	19.5	235	1.3
Sharbia	913	57.1	42.4	0.5	17.2	358	1.2
Kafr-El-Sheikh	580	46.9	53.1	0.0	14.9	231	1.3
Behera	1159	48.0	51.9	0.0	21.1	346	0.9
<u>Upper Egypt</u>	3850	55.7	43.1	1.2	17.3	1067	1.0
Giza	573	50.1	47.9	1.2	14.7	198	1.3
Fayoum	602	52.9	45.3	1.7	16.3	195	1.3
Beni-Suef	729	50.8	49.1	0.0	19.2	216	0.9
Minia	790	53.9	46.1	0.0	17.6	315	1.1
Assiut	1156	63.7	33.7	2.6	24.1	143	0.6
Total	9854	53.8	45.5	0.6	18.8	3059	1.1

i.e. an average of a little over one Raiida per village compared with almost one Raiida in Upper Egypt. Differences between governorates were also noticeable. The average number of Raiidat fluctuated between 1.8 Raiida per village in Damietta to only about 0.6 Raiida in Assiut.

The PDPAC supervise and monitor the activities of the Raiida as part of the mandate to review the promotion and monitoring^{of} all population and family planning activities at the local level. They also coordinate with the PDP central office to ensure the availability of sufficient quantities of all required family planning methods on a continuous basis.

Beside IEC activities of the project which are carried out at various levels, another aspect of the PDP is to promote small scale projects appropriate to the needs of each village to offer its population a new way of life, thus ensuring community participation, commitment and improving managerial capabilities at the local level. By the end of 1982 the PDP project used the UNFPA and USAID funds to support a total of 513 projects by about L.E.894 thousand (almost one project per village council). The majority of these projects were services, i.e., about 64% compared to only about 36% in the productive area.

Table (3) represents the distribution of these small projects by type of project (productive/service), type of financial arrangement (loans/grants) by governorates. It shows significant regional differences. About 59% of all projects were carried out in Lower Egypt using about 69% of the funds allocated to this area up till the end of 1982. It can also be noticed that Lower Egypt had a larger share of the productive projects (68%) compared with Upper Egypt while for service projects the difference is small. For governorates, it fluctuated with

Table (3)

The Distribution of Socio-Economic Projects,
By Type, Amount of Financial Support and Co-
vernorate Till 31 December 1982

Governorates	No. of Projects			PFPB Contribution in L.E.		
	Productive	Service	Total	Loans	Grants	Total
<u>Lower Egypt</u>	126	176	302	516,278	102,648	618,926
Damietta	14	24	38	60,775	12,150	116,125
Dakahlia	15	30	45	69,708	7,998	77,706
Sharkia	35	31	66	94,938	64,500	159,438
Kalioubia	15	20	35	89,198	4,000	93,198
Gharbia	11	20	31	45,480	4,000	49,480
Kafr-El-Sheikh	18	25	43	52,134	5,000	57,134
Behera	18	26	44	104,045	5,000	109,045
<u>Upper Egypt</u>	60	151	211	244,669	30,200	274,869
Giza	15	39	54	72,508	7,800	80,308
Fayoum	13	27	40	53,035	5,400	58,435
Beni-Suef	12	25	37	69,978	5,000	65,978
Minia	7	30	37	22,355	6,000	28,355
Assiut	13	30	43	35,793	6,000	41,793
Total	186	327	513	760,947	132,848	893,795

regard to the number of projects and the amount of financial support which is also related to the size of these projects.

These projects may be proposed by regional or central coordinators but they should be formulated and initially requested by either the PDPAC or the local coordinator (headman of the village council) according to the defined priorities of the community. These projects should also be distinguished from general development activities in several ways: a) they are population oriented, i.e., they are selective in promoting a number of factors identified as being strong influencers of population trends (curb migration / women employment / ...); b) the social and economic activities they promote are ultimately measured in terms of population objectives; c) they are based on population participation with regard to target setting, activity design and management and d) their revenues might be used to support other population and family planning activities.

3. The Overall Model

The manipulation of various program inputs and their interactions with different community characteristics are expected to produce a series of demographic and socio-economic outputs (goals) in different time span. Accordingly, the community-based program is expected to produce these goals, in the short run (1-5 years), the medium run (5-10 years) or in the long run. In the short run, it is expected that the program inputs and their community interactions may lead to changes in the so-called KAP variables and subsequently a reduction in fertility towards the end of this period. Around the end of the five-year period, as the health related program gathers momentum, a fall in infant mortality might be anticipated and even later, as the effects of employment generation build up, a change in age at marriage and migration might be anticipated.

The mechanism by which these interactions and outputs are operating is outlined in Figure (2). It shows that the process will also produce a set of intermediate variables (outputs) that can be used as a catalyst to speed the anticipated demographic and socio-economic outputs. These variables include people's participation (especially women) in community development, employment levels, female employment levels, community morale and confidence, leader morale, income level and project generation, which can be measured by suitable indices extracted from data on household and community surveys.

The overall model is tested by multilevel statistical analysis to show the significant differences between two major groups of communities, namely, PDP and non-PDP villages. At the same time, various outputs will be linked with different types and degrees of inputs and intermediate outputs among communities. An example of such model testing is presented in Table (4) for studying the impact of PDP program on fertility (a medium to long-range variable). Three types of independent variables are included in the analysis. They are related to individual variables (contraceptive knowledge, attitudes towards contraceptives & family size and practice of family planning), community characteristics, whether directly collected for various villages or constructed as aggregate measures from household surveys, and thirdly, program inputs and their interactions.

In general, for model testing, the analysis will be carried out by regressing the dependent variable on the individual, community-level variables, after controlling for various factors, and then examine the commonly known hypothesis about their interactions.

Figure (2) : Conceptual Over-all Model

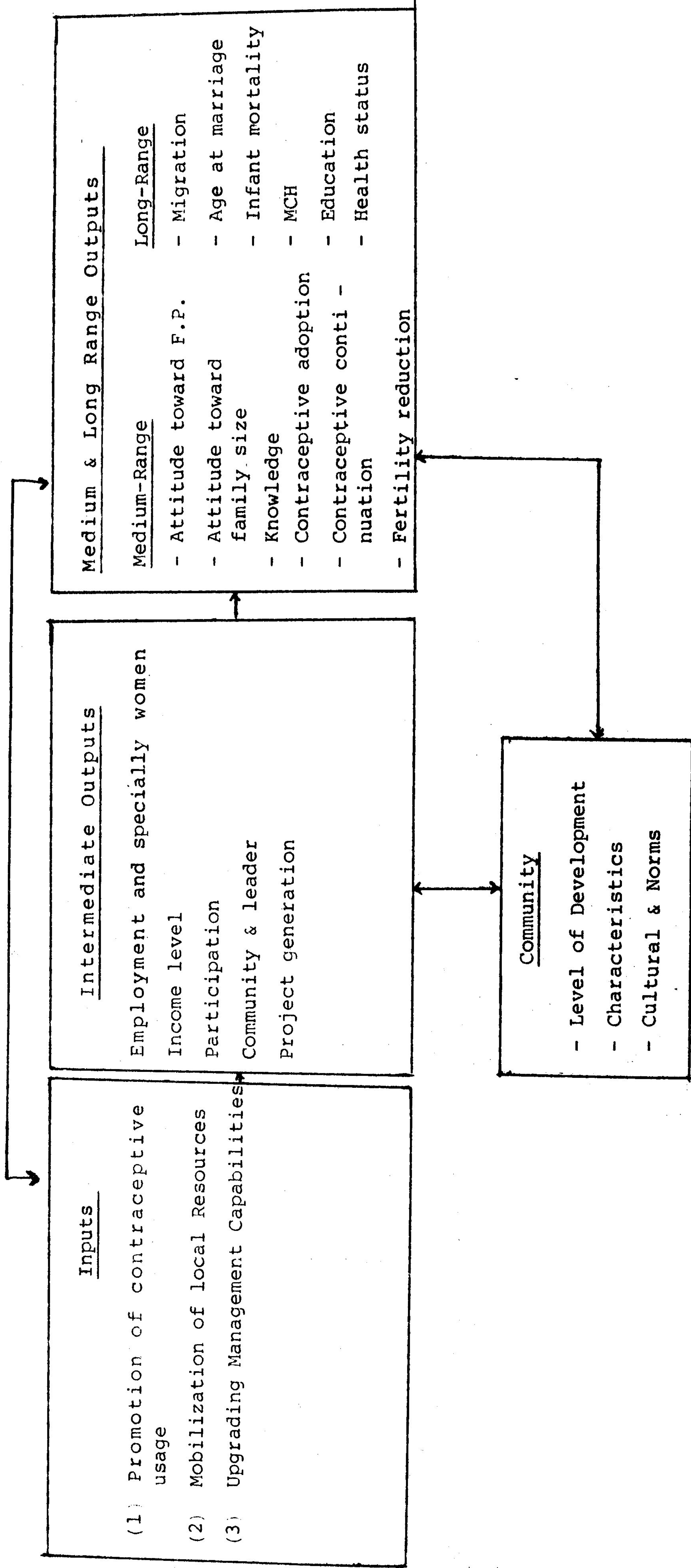


Table (4)

Outline of Multilevel Model for Studying
the Impact of PDP Program on Fertility

<u>Dependent Variable</u> (Individual level)	Fertility (CEB)
<u>Independent Variables</u> (Individual level)	<ul style="list-style-type: none">- Behaviour (Ever and Current Use)- Contraceptive Knowledge- Attitudes towards family size- Attitudes towards F.P.
<u>Independent Variables</u> (Constructed Community-level)	<ul style="list-style-type: none">- Education level- Socio-economic level
<u>Independent Variables</u> (Community-level)	<ul style="list-style-type: none">- Education facilities level- Health facilities level- Communication facilities level- General Development level- Budget level
<u>Independent Variables</u> (Program-Inputs)	<ul style="list-style-type: none">- Extension Worker (Raiida) Per Population- IEC activities- No. of socio-economic projects generated

4. Evaluation of Program Impact

The assessment of such a multi-faceted project according to the above mentioned framework is a complex and continuous process that requires massive quantities of data. Table (5) presents various research instruments that were carried out during the period 1980-1983^{*} to provide the required data for studying the impact of the PDP program. It included a series of surveys (both individual and community), in-depth case study, the usage of program records and the results of the program information systems. The analysis of such massive data is a long process that is currently carried out in collaboration between the PFPB and Cornell University's IPP. Several reports have been prepared and published^{**}. These studies, however, concentrated on the analysis of individual data because of the absence of other sources.

As shown in Table (6), in the second half of 1983, an integrated set of individual and community level data, which were built around the second Rural Fertility Survey, were available to examine the impact of the PDP program. In comparison with other sets of data (ECPs), the RFS II was an unweighted sample which needs to be adjusted before drawing any general conclusions. In addition, it was shown that variations in the measurement of key variable and analytic techniques produced more accurate and efficient results^{***} which are demonstrated in Table (6).

* In addition, the RFS I Survey (1979) findings were also used to evaluate the impact of the PDP. For details see: Khalifa, A. et al. (1981), Kelly, A et al. (1982).

** For details see: Khalifa, A. et al. (1982), Stycos J.M. et al. (1982), and Sayed, H. et al. (1983)

*** Sayed, H.A., Stycos, J.M., and Every, R. (1984)

Table (5): Research Instruments Used During the Period 1980-1983

Instruments	Date	Coverage	Size	Characteristics	Contents
(1) Egypt Contraceptive prevalence Survey (ECPS)	December 1980	17 Governorates (124 villages)	5313	Ever-Married Women 15-49	Individual: a) Nuptiality b) Fertility c) Family Desire d) Contraceptive indices (Knowledge, availability, adoption, continuation ...)
(2) Rural Fertility Survey (RES II)	April-June 1982	17 Governorates (122 Villages)	6436 5559	Households Currently-Married women	Community: Constructed Measures a. Household characteristics b. Dwelling Information c. Migration
(3) Community Surveys	Apr. - June 82 Apr. 83	17 Governorates 238 villages & VCs 122 villages	4475 564	Husbands Widow/Divorced	Individual d. Background e. Nuptiality f. Maternity History g. Contraceptive (KAP) h. Modernity i. Exposure to program
(4) Follow-up Survey	April-May 1983	17 Governorates 122 Villages	238 122 2273	Villages & village-Conucils Villages & VCs Currently-Married women	Community All Community Characteristics Individual a. Consistency with RFS II b. Follow-up of Contraceptive usage c. KAP d. Program contact

Table 15 Continued

Instruments	Date	Coverage	Size	Characteristics	Contents
(5) In-Depth Case Studies	1983	2 Governorates 2 Villages		- one successful Village with regard to fertility & contraception - on village that did not meet the successful measures	<u>Community</u> a) Cultural & Community norms b) Background Information c) Institutional framework & its impact <u>Individual</u> d) Contraceptive adoption decision process
(6) Program Records & Information System	Continuous	12 Governorates		Areas covered by the PDP Project	<u>Community</u> a) Data sheet including community characteristics b) Target setting by villages c) Program inputs d) Implementation indicators

Table (6)
Regression Coefficients for PDP Effect¹ With²
and Without Weights and Controls, by Region.

	Controls				Mean Value	S.D.
	None	Demographic ³	Individual ⁴	Community ⁵		
Behavior						
Ever use						
Lower Egypt						
Unweighted	.06	.04	.11	.16***	1.90	.97
Weighted	.14	.14***	.19***	0.23***		
Upper Egypt						
Unweighted	.05	.04	.09**	.13***	1.35	.73
Weighted	.11***	.09**	.11***	.13***		
Current use						
Lower Egypt						
Unweighted	.04	.02	.10	.18***	.97	1.23
Weighted	.17**	.17**	.23***	.32***		
Upper Egypt						
Unweighted	.10**	.09**	.15***	.19***	.33	.78
Weighted	.15***	.13***	.16***	.19***		
RAT (Living children excluded from all controls)						
Lower Egypt						
Unweighted	-.04	-.05	-.05*	-.06*	.71	.67
Weighted	-.03	-.04	-.04	-.05		
Upper Egypt						
Unweighted	-.02	-.01	-.02	-.03	.64	.48
Weighted	-.04	-.03	-.04	-.04		

Controls						Mean Value	S.
None Demographic ³ Individual ⁴ Community ⁵							
Knowledge							
Weighted methods							
Lower Egypt							
Unweighted	.47***	.47***	.62***	.70***	4.25	1.	
Weighted	.56***	.55***	.71***	.79***			
Upper Egypt							
Unweighted	.65***	.64***	.83***	1.02***	2.85	1.	
Weighted	.86***	.84***	.94***	1.05***			
Depth of knowledge							
Lower Egypt							
Unweighted	.06	.05	.16***	.22***	4.15	1.	
Weighted	.19***	.20***	.31***	.42***			
Upper Egypt							
Unweighted	.10*	.09	.23***	.35***	3.20	1.	
Weighted	.26***	.23***	.30***	.37***			
Attitudes toward family size							
Coombs							
Lower Egypt							
Unweighted	.12	.14*	.21**	.27***	5.18	1.	
Weighted	.14	.13	.20**	.33***			
Upper Egypt							
Unweighted	.03	.06	.14*	.20**	6.44	1.	
Weighted	.17*	.22**	.25***	.23***			

Controls

	None	Demographic ³	Individual ⁴	Community ⁵	Mean Value	S.D.
Want more children						
Lower Egypt						
Unweighted	.05	.02	.02	.05	2.48	.94
Weighted	.03	.05	.05	.07		
Upper Egypt						
Unweighted	.13 [*]	.15 ^{***}	.18 ^{***}	.20 ^{***}	1.82	1.29
Weighted	.23 ^{***}	.23 ^{***}	.24 ^{***}	.24 ^{***}		
People want more						
Lower Egypt						
Unweighted	.10 ^{**}	.07 ^{**}	.07 ^{**}	.08 ^{**}	2.45	.71
Weighted	.09 ^{**}	.09 ^{**}	.09 ^{**}	.10 ^{**}		
Upper Egypt						
Unweighted	.02	.02	.04	.07 [*]	1.89	.80
Weighted	.06	.06	.07 [*]	.07 [*]		
Work/think size						
Lower Egypt						
Unweighted	.06	.08 [*]	.13 ^{***}	.13 ^{***}	1.49	.78
Weighted	.16 ^{***}	.16 ^{***}	.21 ^{***}	.24 ^{***}		
Upper Egypt						
Unweighted	- .13 ^{***}	- .14 ^{***}	- .10 ^{***}	- .06 [*]	1.33	.66
Weighted	- .11 ^{***}	- .12 ^{***}	- .10 ^{***}	- .09 ^{**}		

Controls					Mean Value	S.
None	Demographic ³	Individual ⁴	Community ⁵			
Size attitudes						
Lower Egypt						
Unweighted	.03	.03	.07	.08*	3.39	
Weighted	.04	.03	.07	.12*		
Upper Egypt						
Unweighted	.06	.08	.14*	.24***	2.64	1.
Weighted	.15*	.18**	.20***	.22***		
Expected child help						
Lower Egypt						
Unweighted	- .04	- .04	- .01	.01	1.31	
Weighted	- .01	- .02	.00	.01		
Upper Egypt						
Unweighted	- .05*	- .04*	- .03	- .03	1.24	
Weighted	- .03	- .03	- .02	- .02		
Attitudes toward family planning						
Birth control attitude						
Lower Egypt						
Unweighted	.10***	.10***	.13***	.14***	1.04	
Weighted	.18***	.17***	.19***	.24***		
Upper Egypt						
Unweighted	.00	.00	.04	.09**	.59	
Weighted	.06*	.05	.07*	.09***		

Controls					Mean Value	S.D.
	None	Demographic ³	Individual ⁴	Community ⁵		
ouple attitude						
Lower Egypt						
Unweighted	.21***	.21***	.26***	.28***	2.54	1.12
Weighted	.39***	.39***	.44***	.54***		
Upper Egypt						
Unweighted	.08	.07	.14**	.24***	1.49	1.32
Weighted	.20***	.17**	.20***	.25***		
erceived attitudes						
Lower Egypt						
Unweighted	.14***	.15***	.18***	.20***	2.36	.73
Weighted	.28***	.28***	.30***	.35***		
Upper Egypt						
Unweighted	.04	.02	.06	.08**	1.88	.69
Weighted	.06*	.04	.05	.06		
Potential use -- All Cases ⁶						
Lower Egypt						
Unweighted	.22***	.22***	.31***	.40**	4.11	1.61
Weighted	.46***	.46***	.53***	.67***		
Upper Egypt						
Unweighted	.18*	.13	.22**	.33***	2.90	1.68
Weighted	.31***	.24***	.28***	.34***		
Potential use -- Non contraceptors only (only for those not using contraceptive at present)						
Lower Egypt						
Unweighted	.32***	.32***	.36***	.38***	3.45	1.34
Weighted	.46***	.46***	.51***	.60***		
Upper Egypt						
Unweighted	.04	.00	.06	.14**	2.63	1.4
Weighted	.14*	.09	.12	.15*		

FOOTNOTES

¹PDP is dummy variable: 1 = Present, 0 = Absent.

²*'s indicate significance levels : * = .05, ** = .01, *** = .001.

³Age and number of living children.

⁴Education scale of women and consumer durable, SES, scale of household plus demographic controls.

⁵Education scale for community (strata) formed by averaging the education scale of all wives in study; plus SES scale for community formed by averaging the SES, scale for all households of wives in the strata. Also includes four previous demographic and individual controls.

⁶Same scale as potential use except an additional value (6) is added for current users.

⁷Approximate number of cases used in comparison are as follows:

Lower Egypt: PDP 2408, Non-PDP 732

Upper Egypt: PDP 1490, Non-PDP 809.

The conventional KAP measures were replaced by a new set of constructed scale indices for both individual and community-level variables.* Besides, its differences between PDP and non-PDP villages with regard to size (sampling variations) and socio-economic characteristics should also be controlled. This was carried out through the analytic process in a gradual fashion as follows:

- (1) Demographic variables: Age and number of living children. Since both are important determinants of other KAP variables they were included as a control when assessing PDP impact. The results show that fertility has not been responsive to PDP efforts, which is expected, because of the nature of fertility as a medium to long-range output. Accordingly, because there was little correlation between the PDP and the demographic variables, little effect was noticed from holding this set of variables constant.
- (2) Individual variables: including both education scale of women and the economic scale (SES) beside the previous demographic variables controls.
- (3) Community variables: including education scale for the six strata included in the sample.**

* A brief description of these constructed scale indices is shown in Appendix (1).

** The sample was divided into six strata according to three variables namely, the type of village (mother vs. satellite), the presence of PDP (PDP villages vs. non-PDP villages) and the duration of PDP (villages with less than three years vs. villages of three years or more).

For the last two sets of controls, the correlation coefficient between the PDP and the criterion variables increased markedly as can be seen from Table (6). It was also observed that these correlations were even further compounded when weighting procedure was taken into consideration, especially for Lower Egypt. In all cases it can be observed that the presented coefficients first increased with the introduction of the individual level socio-economic controls, and then rose again when the community measures were added, thus showing significant program impact in all areas (Lower/Upper Egypt) for all variables included in the analysis short of fertility itself.

In sum, the summary of these findings is presented in Table (7) showing the effect of the program on the KAP variables in Upper Egypt, Lower Egypt, both or neither.

Beside the community measures based on individual data presented in the previous analysis, the same measures, i.e. education and SES Scales were constructed as averages of survey respondents and were calculated for those individual measures which were used to indicate the level of development for the individual women.* In addition, community data for all villages included in the RFS II (122 villages) were also used to construct four community measures which were added to the individual files for analysis. The measures were community education facilities scale, health facilities scale, communication facilities scale and a general development scale. (Their definitions are also included in Appendix (1)).

* Following the methods suggested by: Blalock (1983), Casterline (1983), Hermalin (1983).

Table (7)^{*}

Has the Program affected KAP variables in Upper Egypt,
Lower Egypt, both, or neither?

	Knowledge		Attitude Toward	Attitude Toward Use of		
	<u>Extensive</u>	<u>Intensive</u>	<u>Contraception</u>	<u>Family Size</u>	<u>Contrac.</u>	<u>Fertility</u>
Conventional questions & measures	Both	x	x	(Both)	Upper	Neither
Refined measures	Both	(Upper)	Lower	Neither	Upper	Neither
Weighted sample	Both	Both	Both	(Both)	Both	Neither
Statistical controls	<u>Both</u>	<u>Both</u>	<u>Lower</u> <u>Upper</u>	(Both)	Both	Neither

x = not tested
() = weak relation
____ = strong relation

* Sayed, H.A., Stycos, J.M., and Avery, R, (1984).
Op.cit , P.25.

These six community development measures were examined and they clearly indicate greater development in Lower than in Upper Egypt. The relationship between these development measures with the proposed set of KAP scales is examined. At the same time, another two measures of the PDP program (inputs) were also included. The first one is "PDP" presence as a dummy variable (0 = no-PDP , 1 = PDP present) and the other is the "Raaida" index which is measured by the number of Raaidas employed per 10,000 inhabitants according to the 1976 Census.

The examination of these relationships and the importance of these development measures in multiple regression models is being completed at the moment. However, preliminary results indicate that:

- (1) Greater development is associated with lower fertility values and behavior.
- (2) Community development, especially if measured by the average of the personal characteristics of the village has a substantial and statistical significant impact on almost all the measures of interest even when the individual level measures are also included in the model.
- (3) The impact of the PDP program is clearly obvious on contraceptive knowledge, use and practice. It is clear that whatever measure of the PDP is used, the PDP is as good a predictor of the favorable family planning status as any development measure included in the analysis.

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Appendix (1)

Definitions of Indices Used in the Analysis

(1) **Ever Use Scale**

Three point scale in which never use of any method = 1, ever use of a traditional method = 2, and ever use of a modern method = 3.

(2) **Current Use Scale**

Four point scale from never use of any method (0) to current use of modern methods (3), with past use scored as 1 and current use of a traditional method as 2.

(3) **DRAT**

This measure has been adapted from B. Boulier and M. Rosenzweig "Age, Biological Factors, and Socio-economic Determinants of Fertility: A New Measure of Cumulative Fertility for Use in the Socio-economic Analysis of Family Size," Demography, 15 (4), Nov. 1978, pp. 487-98. DRAT as used here is the ratio of actual to expected fertility between marriage and time of interview, in the absence of family planning ($m = 0$), as determined from the Coale and Trussell model of fertility. The measure differs from that employed by Boulier and Rosenzweig, since we were unable to include date of initiation of contraception in the model.

(4) **Weighted Number Known**

Ten point scale summing knowledge of five contraceptive methods: pill, IUD, Condom, Sterilization, and Breastfeeding. Each method was scored as 0 for no knowledge, 1 for recognition after probe, and 2 for spontaneous mention.

(5) **Depth of Knowledge Index**

Sum of correct responses to several questions about the pill and IUD; e.g., how often pill should be taken and how to check if an IUD is in place.
Range = 1-3.

(6) Coombs Scale

Scale devised by Coombs and Coombs to measure family size preferences by means of forced choices between pairs.

(7) Wants More Index

A four point scale ranging from wants no more (3) to wants 3 or more additional children (0).

(8) Couple Wants More Index

A three point scale ranging from 3 = neither husband nor wife wants more children (according to wife's report) to 1 = both want more.

(9) Talk/Think Size

A three point scale ranging from (1) have never thought about the number of children wanted to (3) have both thought about and discussed it with husband.

(10) Size Attitudes

The sum of four questions requiring a positive or negative response: "Who is more fortunate, a child raised in a small or a large family? Some say the woman with a small number of children is not happy at all, others say she is fortunate -- what do you think? Of two men whose living conditions are the same, one has eight and the other three children. Who will be respected more by the people? Do you think that many children means more security to the parents at old age, or that 2 or 3 could provide the same security?" Range = 0-4 with the higher value favoring the small family.

(11) Expected Child Help

Combination of responses to two items on whether children should help parents in their old age and whether actually will help. 1 = yes to both; 2 = no to either.

(12) Birth Control Attitude

Three point scale from disapproves of both sterilization and family planning (1) to approves of both (3).

(13) **Couple Attitude**

Scale of wife's attitude toward sterilization and birth control plus her report of husband's attitude toward contraception. Scored as both disapproves of both (1) to approves of both (4). Intermediate values were wife approves of either sterilization or family planning and husband disapproves of family planning, or wife disapproves of both and husband approves (2); wife approves of both and husband disapproves, or husband approves and wife approves of either sterilization or family planning (3).

(14) **Perceived Attitudes of Significant Others**

Respondents were asked whether a list of six persons (mother, mother-in-law, sister, neighbor, midwife and mosque Imam) "would approve your use of family planning methods or not." Each response was scored as approved (6); does not know (4); does not reply or N.A. (2); or disapproves (0). The scores were then summed and divided by 10.

(15) **Potential Use of Birth Control**

Five point scale for non-users (current) ranging from disapproves of family planning (1) to will use before next birth or within six months (5).

Intermediate values were: does not oppose birth control, but will not use in future (2); does not know if will use in future (3); will use after next birth, or does not know if before or after next birth, but will use after six plus months (4).

(16) **Education Scale**

A six point index ranging from illiterate and unschooled (1) to seven or more years of schooling (6).

(17) **Economic Scale**

The sum of 26 items recorded as 0 or 1 (possession or non-possession) of furniture (such as tables and beds), equipment, (such as sewing machines and clocks) and services (such as water and electricity).

(18) Education Facilities Scale

Number of types of education facilities available in the village which ranges between 0 to 4, i.e. with 0 as no school, 1= one primary school, 2= two or more primary school, 3= at least one preparatory school and 4= at least one secondary school.

(19) Health Facilities Scale

An additive scale equal to sum of scores of the following factors; i.e. it ranges between 0 to 5

- a. Health clinics, Rural health clinics, child care center
0= none, 1= one, 2= two or more
- b. Hospitals, 0= none, 3= one or more
- c. Private pharmacies, clinic, counseling rooms
0= none, 1= one, 2= two or more

(20) Communication Facilities Scale

An additive score equal to the sum of the following factors, i.e. it ranges between 0 to 8

- a. Paved roads: 0= none, 1= exist
- b. Desert roads: 0= none, 1= exist
- c. Telephone service: 0= No, 1= Yes
- d. Post Office (Public or private): 0= No, 1= Yes
- e. Newspaper: 0= No, 1= Yes
- f. Cinema: 0= No, 1= Yes
- g. Coffee shops: 0= No, 1= Yes
- h. Clubs: 0= No, 1= Yes.

(21) General Development Scale

The sum of the three previous scales.