



# **FAMILY PLANNING PROGRAM EFFORT IN EGYPT'S GOVERNORATES**

**By**

**Mona Khalifa  
El Daw Suliman  
John Ross**

**May 1999**

The Futures Group International  
*in collaboration with:*  
Research Triangle Institute (RTI)  
The Centre for Development and Population  
Activities (CEDPA)

*POLICY is a five-year project funded by the U.S. Agency for International Development under Contract No. CCP-C-00-95-00023-04, beginning September 1, 1995. The project is implemented by The Futures Group International in collaboration with Research Triangle Institute (RTI) and The Centre for Development and Population Activities (CEDPA).*

FAMILY PLANNING PROGRAM EFFORT  
IN EGYPT'S GOVERNORATES

Mona Khalifa  
El Daw Suliman  
John Ross

THE POLICY PROJECT  
Cairo Office

May 1999

## *CONTENTS*

<b>INTRODUCTION</b>	<b>1</b>
<b>METHODOLOGY</b>	<b>2</b>
<b>RESULTS</b>	<b>3</b>
1. The National Picture: Overall Program Effort Scores	3
2. Governorate Differentials in Program Effort	5
3. Component Differentials in Program Effort	6
4. Regional Differentials in Effort Levels	7
5. Program Effort, Socioeconomic Setting, and Contraceptive Prevalence	8
<b>CONCLUSION</b>	<b>9</b>
<b>REFERENCES</b>	<b>11</b>
<b>APPENDIX A</b>	<b>12</b>
<b>APPENDIX B</b>	<b>14</b>

# **FAMILY PLANNING PROGRAM EFFORT IN EGYPT'S GOVERNORATES**

**Mona Khalifa, El Daw Suliman, John Ross**

## ***INTRODUCTION***

The series of Demographic and Health Surveys (DHS) implemented in Egypt over the last decade have revealed that very large differences in contraceptive use exist among governorates. To what extent are these due to differences in social and economic development, and to what extent are they due to variations in the various family planning programs? The current study explores the later question using an adaptation of the Family Planning Program Effort (FPE) scores established in international investigations and also incorporates measures of the socioeconomic setting in governorates into the analysis.

The FPE has been applied internationally in four rounds (1972, 1982, 1989, and 1994). It yields scores for 30 program elements organized under four program components, namely: policy and stage-setting activities, service and service-related activities, record keeping and evaluation, and availability of contraceptive methods. The investigations have been quite useful in identifying areas of weakness in family planning programs, in tracking progress over time, and in a variety of other ways, such as the following.

- To help assess country prospects for reaching replacement fertility. The 1989 scores were used as one of several predictors to examine the likelihood that each of 37 countries would reach replacement fertility (Mauldin and Ross, 1994).
- To estimate access to family planning and reproductive health for most countries, based in part on certain of the scores (Population Action International, 1995).
- To determine the extent of reduction in population growth rates due to family planning programs. Bongaarts et al. (1990) used program effort scores and socioeconomic variables to estimate the extent to which world population growth has been lessened as a result of family planning programs. (See also Bongaarts, 1994.) Pritchett (1994) and Schultz (1994) employed the scores in questioning whether family planning programs significantly affect fertility.

The Egyptian National Family Planning Program in collaboration with the USAID mission carries out strategic planning exercises at the governorate level, but both groups are hindered by the lack of governorate-specific data on program effort. This constrains the planning processes meant to support decision makers, and it hinders governorates from learning from each other's approaches. Obtaining data at the governorate level can permit analyses to examine whether regional discrepancies in contraceptive prevalence reflect similar discrepancies in program effort, and how the social settings figure in the relationship.

FPE studies have only recently been applied at the subnational level. Its use in Vietnam (Pham et al., 1999) showed the feasibility and value of diagnosing strengths and weaknesses in the local programs, to permit administrative adjustments.

Egypt had in fact conducted a limited methodological trial of governorate effort measures a few years ago. A pilot application of the FPE Study was carried out with only one or two respondents from 17 governorates. The findings from this pilot suggested that a more thorough application of the FPE Study at the governorate level would be well worth carrying out. Therefore, the POLICY Project proposed collecting the current FPE data in all 26 governorates of Egypt with multiple respondents from each governorate.

The principal objective of the 1998 FPE study is to provide useful information for decision makers. Also, the study may serve to establish baseline information for future governorate-level FPE studies so as to monitor the progress of the different components of the family planning programs.

## ***METHODOLOGY***

Based on the international methodology, the Egypt 1998 FPE Study identified respondents close to the programs who could render valid judgments concerning numerous program features on which objective data were unavailable. Eight respondents were interviewed in each of the 26 governorates. Three interviewers with fieldwork experience were recruited to carry out the interviews, whereas the international studies used mailed questionnaires. It was felt that the response rate for provincial staff would be substantially improved by personal contact. The interviewers were trained in the details of the questionnaire and in how to clarify any ambiguity or misunderstanding of the questions by the respondents. The field work started in early May 1998 and continued through early July 1998.

The international questionnaire is designed to gather information from informants who are quite familiar with their country's family planning program. In this study, the respondents chosen had participated in family planning strategic planning exercises and were well positioned to provide information about the programs in their own governorates. The respondents are directors of the following eight institutions at the local governorate level in the 26 governorates:

- National Population Council
- Ministry of Planning
- Family Planning Officer at The Ministry of Health Directorate
- Clinical Services Improvement (CSI)
- Family Planning Association
- Information, Education, and Communication (IEC) Program
- Cabinet of Ministers Information Center
- Directorate of Adult Education

The study included 199 respondents ( $8 \times 26 = 208 - 9 = 199$ ) since nine of these institutions were nonexistent in certain governorates. The respondents were quite co-operative and appeared to appreciate the value of this study.

This study used the standard questionnaire developed for the international investigations, with a few modifications. The interviewer gave it to the respondent and explained it in detail.

The respondent then took time to fill out the questionnaire, and another meeting was held later to receive the written responses and to clarify any confusion.

To help avoid biased responses in the international questionnaire, certain protections have been built in. Some questionnaire items are entirely factual rather than judgmental in nature. Also, the respondents are unaware of which questions produce which scores, and they do not know the conversion rules, which involve combinations and weighting factors. Each score is finally calculated to fall between zero and four (Mauldin and Ross, 1996). As in the international study, respondents were told that they should ignore a question if they truly had no information on it. Except for the budget item, all respondents answered all the questions (100% response rate); certain other items were entirely omitted from the questionnaire as described below.

For each score in a governorate, the replies from the various respondents had to be combined into a single value. As in the international study this was generally the mean of the replies, although a few highly improbable responses were dropped.

The English version of the questionnaire as used in the international study was almost identically translated to Arabic; however, a few changes were made. Out of the 30 standard indices Egypt used only 23, but elaborated three of these to add three additional items, for a total of 26 (see Appendix A).

Four indices were omitted because they applied only to the national level. They are (1) the Budget, as mentioned above, (2) the National Population Policy, (3) Import Laws and Legal Regulations for Contraceptives, and (4) Policy on Minimum Legal Age at Marriage. All are common to the country as a whole and are not governorate-specific measures. Besides these, three of the availability indices were omitted: Abortion, which is considered illegal except for strictly life-saving reasons, and Male and Female Sterilization, which are not widely used in Egypt. While these three scores are absent from the availability data, they may be assumed to be very near zero for the country as a whole, although perhaps not for a few of the governorates. In any case, their inclusion would have substantially reduced the overall availability scores presented below.

This study added refinements to the three availability scores that were retained, for the IUD, pill, and condom. All were calculated as provided by the program alone, and again as provided by all sources. This is important in Egypt, where the private sector is an important supplier of contraception. The theoretical distinction between private and public, however, is ambiguous since a good public sector program will consciously stimulate the private sector as one of its primary objectives.

To test for agreement among respondents, and to look for possible outliers or dubious responses, standard deviations were calculated for the eight replies on each score in each governorate. All instances with large standard deviations were checked through examination of the questionnaires, and obvious outliers were excluded and the index re-calculated. This screening process detected 75 unlikely entries among the 5174 data points (26 indices x 199 respondents), or 1.4 percent.

## ***RESULTS***

### **1. The National Picture: Overall Program Effort Scores**

The national picture can be portrayed by weighting the governorate scores by their population sizes. Table 1 in Appendix B<sup>1</sup> presents the program effort score for each governorate and for each program item, along with all means and standard deviations. It shows the average score for Egypt in the next to last column, for each of the 26 indices. The overall mean, at the bottom, is 3.3, which translates to 82 percent of the maximum of 4.0. This is far above the Egyptian national score in the 1994 international study (as shown in the table below), due most probably to (a) the omission of three methods in the availability component that would have been near zero, as they were in the 17 governorate study mentioned above; (b) the doubling up of three that were included (IUD, pill, condom), with high scores; (c) the entirely different methodology of obtaining scores from the 26 governorates and weighting them to obtain a national score; and (d) any historical improvement in the national program itself from 1994 to 1998.

<b>Egypt National Scores from the International Studies (percent of maximum)</b>				
Component	Year			
	1972	1982	1989	1994
Total Score	27	40	66	59
Policy	n.a.	50	71	67
Services	n.a.	38	65	64
Evaluation	n.a.	25	67	70
Availability	n.a.	36	(60)	33

Each of the four components, of the overall score is now discussed briefly.

1. The first component, Policy and Stage-Setting Activities, with four items, has a mean of 3.4 and a range from 3.1 to 3.9, with a standard deviation of 0.5. Three items have high scores, but one is of only moderate strength, i.e., multi-ministry involvement. (Note that the international study had eight policy items, but four were omitted as explained above. Any comparison must therefore be restricted to those four items.)

2. The second component, Service and Service-Related Activities, with the full group of 13 items, has a mean of 3.1 and a standard deviation of 0.6. Five items are relatively weak: two, for community-based distribution (CBD) and incentives/disincentives, have mean scores of 3.1 and 2.9, respectively. The other three are lower and are weak: home-visiting workers, postpartum program, and private sector involvement, at scores of 1.8, 1.7, and 1.8, respectively.

3. The third component, Record Keeping and Evaluation, with the full group of three items, has the lowest mean, at 2.8, a wide range of 1.6 to 3.8, and the highest standard deviation at 0.7. Although the score for the record keeping item was high (3.5), the other two items, for evaluation and for management use of evaluation findings, scored lows of 2.5 each.

4. Finally, the Availability of Methods component pertains to three of the six methods in the international study: IUDs, pills, and condoms. However, these were assessed both for availability through the program and through all sources, including the private sector, yielding six items. Their mean (3.9) is the highest among the four components and is high for each of the

<sup>1</sup> All detailed tables and their corresponding figures appear in Appendix B.

items (3.7–3.9). The results for Egypt in the latest international study, four years before the current study, gave 2.25 for the IUD, 4.0 for the pill, and 1.13 for the condom (average 2.46). These figures are of course subject to error also, but they cast some doubt on the governorate estimates.

Because the availability scores in this study were exceptionally high, and higher than seemed plausible, some respondents were re-contacted; however this yielded little. The high availability scores affect the calculation of the overall FPE score; it falls to 3.1 when the six availability items are excluded.

For the national picture, the chief shortcomings are the weaknesses in outreach approaches, for postpartum programs, home visiting, community-based programs, the private sector, and multi-ministry involvement. Also weak are management's use of evaluation, and evaluation itself (Figure 1). Further, the availability of male and female sterilization, and of safe abortion, although not measured, are known to be very weak indeed (they were nearly zero in the earlier study of 17 governorates). Those are the shortcomings that emerge as the weakest links in Egypt's national program. They serve as partial explanations of the current level of the contraceptive prevalence rate (CPR).

## **2. Governorate Differentials in Program Effort**

Within the national picture, results for individual governorates vary considerably. This section discusses differences among the governorates regarding their levels of program effort.

The best total effort has been achieved by Behera, Suez, Port Said, and Kafr-El Sheikh, all with mean scores of 3.6. The worst performance levels appear for Fayoum, North Sinai, and the Red Sea, with mean scores below 3.0 (Figure 2).

Governorates differ considerably across the four program components (Policy and Stage-setting Activities, Service and Service-related Activities, Record Keeping and Evaluation, and Availability of Methods). These comparisons are presented next.

Although the mean score for the policy and stage-setting component is high (3.5), the range is large across the governorates: from 3.1 to 3.9 with a mean of 3.1 and a standard deviation of 0.5. As shown in Figure 3A, Dakahlia and Aswan stand at the top in policy effort (mean score 3.9), whereas Assuit, Alexandria, and Fayoum are at the bottom.

As mentioned above, national effort in the services component is moderate, with a mean of 3.1. Again, diversity is considerable: the range is from 2.6 to 3.7 with a standard deviation of 0.6, reflecting that diversity. The scores range from 3.7 in Behera and 3.6 in Port Said, Kafr El Sheikh, and Suez, to a low of 2.6-2.7 in Beni Suef and Fayoum (Figure 3B).

The record keeping and evaluation scores are generally low at an overall mean of only 2.8 and the highest of the standard deviations, at 0.7. Differences among governorates are extreme (Figure 3C). The scores range from the highs of 3.8 in Assuit and 3.6 in Sharkia and Souhag to the low of 1.6 in the Red Sea governorate.

For the availability dimension, the mean and the governorate scores are nearly all high, at 3.8 overall, with a small range from 3.3 to 4.0, and the smallest standard deviation of 0.2 (Figure 3D). (To repeat, only three contraceptive methods are involved.)

### 3. Component Differentials in Program Effort

The governorates are uneven in their efforts across the various effort components, and they are uneven in different ways. The next to last row in Table 1 gives the standard deviation across the 26 items for each governorate; these range from a low of only 0.5 for three governorates to a high of 1.2 in Cairo and South Sinai and 1.1 in five other governorates. In general, the higher the standard deviation the lower the mean. Against the score ceiling of 4.0 uneven performances push down the possible mean value. Therefore, many of the same governorates with weaknesses noted above appear again here.

On which items do governorates differ most in their effort levels? That question is answered in the next to last column of Table 1, where a large standard deviation reflects large variation in types of effort. Based on an arbitrary minimum cut-off of 0.5, there are nine program items for which the governorates are especially uneven in the effort types they stress. These items are often neglected in governorate-level programs, and Table 1 shows where.

The items that reflect strong differences among the governorates are the following, listed in order of their standard deviation values:

- Postpartum programs
- Community-based distribution
- Management use of evaluation findings
- Adequacy of administrative structure
- Multi-ministry and governmental involvement
- Home-visiting workers program,
- Program evaluation
- Program incentives/disincentives
- Private sector involvement

***Postpartum Programs.*** As shown in Figure 4A, postpartum scores range from nearly 4.0 to nearly zero, but most are quite deficient. Thus the provision of contraceptive information and services in the postpartum period is lacking in most of the country. The best performing governorate is Kafr El Sheikh; the worst are Giza, South Sinai, Menoufia, Fayoum, Gharbia, Beni Suef, and Menya.

***Community-Based Distribution.*** Second in terms of areal variation is the use of CBD for the provision of services. Cairo claims no use at all of CBD, and the Red Sea scores only 1.8. Highs occur in the two urban areas of Port Said and Suez, and in Behera, Ismallia, and Giza (Figure 4B).

***Management Use of Evaluation Findings.*** Governorates also vary substantially in this element, and many are low. Assuit, Souhag, Port Said, and Suez show the highest effort levels with scores of 3.5 or more, whereas Red Sea, South Sinai, Matroh, Giza, Qena, Menya, and Damietta governorates are all below 1.5 (Figure 4C).

***Adequacy of Administrative Structure.*** As Figure 4D dramatizes, well over half of all governorates claim top scores here, so administrative action can focus on a relatively small number of locations. A few governorates fall down to nearly 1.5. Two, Fayoum and Assuit, are at that low level, and two others, New Valley and Giza, are near it.

**Multi-Ministry Involvement.** Efforts across the governorates vary from moderately high scores in many locations to much lower values in others, and down to only 1.3 and 1.5 as in Menya, Fayoum, and Giza (Figure 4E).

**Home-Visiting Workers.** Variation is around the exceptionally low mean of 1.8, and only four governorates score 3.0 or more. Some are low indeed: 0.3 in Cairo (just as with CBD), and low in South Sinai. Interestingly, South Sinai scored 3.7 for CBD, and Red Sea, which had only 1.8 on CBD, scored 2.1 on home visitors. Perhaps CBD and home visitors are confused in the respondents' minds, or perhaps the two activities are chosen by the programs as alternatives (Figure 4F).

**Program Evaluation.** Along with the postpartum, home visitor, and private sector features, program evaluation has one of the lowest mean scores of all 26 program indices. Figure 4G portrays the low values that predominate throughout most of the country. The closely related indicator of "management use of evaluation" (above) is also deficient, which compounds this unfortunate picture. Values are below 2.0 for over half of governorates. This clearly suggests that attention is needed to enhance evaluation resources, including training activities to raise skill levels and give telling examples to managers.

**Program Incentives and Disincentives.** Scores are moderately high, at 3.0 or above, for most governorates, but they are quite low for Fayoum, Beni Suef, Souhag, and Menoufia (Figure 4H). To clarify this score, the questionnaire asked for any payments in cash or kind made to clients or staff in providing contraceptives.

**Private Sector Involvement.** This is the worst feature of all. The overall mean is only 1.7, and all but four governorates score 2.0 or less (Figure 4I). This is especially remarkable since the questionnaire lists numerous agencies in the private sector as candidates for helpful action. National DHS indicate that private pharmacies and medical personnel account for over half of contraceptive supplies and services, but clearly the officials responding in this study do not perceive that.

Note that the nine features above are the same nine discussed earlier that have weighted means below 3.0. Again, high standard deviations go along with low means. Uneven performance across the 26 elements of effort forces down the average score. For administrative corrections, these data can be employed to organize the most efficient action, by identifying which governorates contain the largest deficiencies on which key effort items.

#### **4. Regional Differentials in Effort Levels**

The remarkable discrepancies in effort levels across governorates and effort items can be simplified by regional aggregation. The conventional four regions are:

- Urban: Cairo, Alexandria, Port Said, and Suez
- Lower Egypt: Damietta, Dakahlia, Sharkia, Sharkia, Kayubia, Kafr-El Sheikh, Gharbia, Menoufia, Behera, and Ismailia
- Upper Egypt: Giza, Beni Suef, Fayoum, Menya, Assiut, Souhag, Qena, and Aswan
- Frontier: Red Sea, New Valley, Matroh, North Sinai, and South Sinai

The program effort scores by region and program item appear in Figure 5. The Urban region ranks at the top in total effort, followed by Lower Egypt, Upper Egypt, and the Frontier governorates. However, this order is repeated for only two of the components, since the four regions are nearly equal on the policy and availability dimensions. The evaluation dimension shows the largest difference among regions (from 3.2 down to 2.1). The availability dimension, for the three contraceptive methods that were included in the study, stands highest, in fact so high as to raise questions concerning the reliability of those scores, particularly for the more rural and remote populations and for the actual presence of clinical supplies and services when women visit the service points.

The profile for all program features appears in Figure 6. The bars reflect the general patterns just described, and fill out the details for all 26 indices.

An earlier question, addressed for the 26 governorates, recurs for the four regions, which program elements account for most variation? In fact, the same features that emerged in the governorate analysis drive the overall regional differences. Seven of these are given in Figure 7.

Differences among the regions are large for all seven. Interestingly, the rank order of regions changes among the seven. The Urban region is best in only four; the Lower Egypt region is second best in five; the Upper Egypt region is mixed and never first; and the Frontier region is mixed but ranks first in two cases. The conclusion for administrative concerns is the same as in the governorate discussion: corrective actions should be selective, tailored separately to each region's needs.

Upper Egypt comes at the bottom in effort levels for postpartum programs, multi-ministry involvement, and program incentives and disincentives. The Frontier region ranks least on private sector involvement and on both evaluation and management use of evaluation. When population sizes are considered, however, the Urban and Lower Egypt regions gain in significance. All regions are weak on postpartum programs and on the private sector.

## **5. Program Effort, Socioeconomic Setting, and Contraceptive Prevalence**

The introductory section posed questions as to the relative influence of program effort and socioeconomic setting upon contraceptive prevalence. This section uses the human development index (HDI) as reported in the 1997 HDI Report as an indicator of socioeconomic setting and the contraceptive prevalence levels (CPR) in the 26 governorates as measured in the 1997 national DHS. Because the reliability of the responses on the availability of contraceptive methods is suspect, the mean scores for effort exclude the availability component.

The interrelationships appear in Table 2, which sorts the values of program effort and HDI for convenience into three groups (using equal parts of the observed range for each.) CPR values for 21 governorates appear in the cells, along with cell means.

As expected, the governorates with the highest combination of HDI and program effort (Suez and Port Said) have the highest CPR values. In general, CPR values rise along the diagonal, from low-low to high-high. Thus, both development level and program effort matter in controlling contraceptive prevalence, and they work in combination.

As seen in the row means and column means, the HDI gradient is more consistent than the rather irregular one for program effort, but overall the two seem about equally important since both gradients run from about 40 to about 60. Details follow:

- Six governorates are consistent at the low end, with low or medium program effort and low HDI. These have the lowest CPRs (Fayoum, Beni Suef, Menya, Assuit, Souhag, and Qena).
- However, three governorates with low HDI appear strongly affected by their high program effort scores, since they do well on CPR values, at 53–59 percent: Behara, Kafr-El Sheikh, and Sharkia. Four others with good effort also do well even with only moderate HDI values: Alexandria, Ismailia, Damietta, and Dakahlia. All seven of these governorates are in Lower Egypt.
- Menoufia governorate shows a peculiar pattern (high CPR at low program effort and low HDI).
- Giza and Cairo also show high CPRs despite a low level of program effort; they register moderate and high levels of HDI, respectively.

Thus, there are inconsistencies as well as consistencies in the patterns. The general trend nevertheless stands out, as in the international studies: within any category of socioeconomic setting, a determined program effort can make a difference. Further interventions to raise the level of program effort in these governorates can result in further increases in contraceptive use.

To gain further insight into programmatic features, two extreme groups are compared: Group A is composed of governorates that have high program effort and high CPR (53–59 percent), despite low HDI (Behera, Kafr El-Sheikh, and Sharkia). These represent the special impact of program effort in an unfavorable setting.

Group B is composed of governorates that have low or medium program effort and low CPR (22–34 percent), and also low HDI (Assuit, Souhag, Menya, Qena, Beni Suef, and Fayoum). These represent rather weak program effort, also in unfavorable settings.

The question is which particular program features appear to drive the differences in CPR between the two groups? Strengthening these features may go far in helping to raise the CPR in the more difficult governorates.

Figure 8 tells the story. (Note that, as above, availability measures are omitted). Group A shows a decided advantage on the same program elements that already emerged as causing the greatest variation across governorates. Postpartum programs distinguish best, then multi-ministry involvement, and then four others: home visitors, CBD, incentives, and adequacy of administrative structures. These provide important leads for administrative action to strengthen the governorate programs.

## ***CONCLUSION***

This innovative study of program effort in each of the 26 governorates provides numerous guidelines for administrative improvement. It not only shows the considerable

differences among regions and governorates in total effort, but it also shows the irregularities of effort across the 26 features of the programs.

Against a maximum possible score of 4.0, the overall mean for all governorates and all effort types is 3.3, or 82% of maximum. However, without the Availability component, this falls to 3.1, or 78% (unlike the international study, only three methods, the IUD, pill/injectable, and condom, were included, omitting the very low scores that would have been incorporated for availability of male and female sterilization and abortion).

In overall effort the regions are ranked as follows: first Urban, then Lower Egypt, then Upper Egypt, then the Frontier region. This is somewhat irregular, however, within the four main components of effort: it is clearest for Record Keeping and Evaluation and for Services and Service-Related Activities, but the ranking is mixed for Policy and State-Setting Activities and for Availability of Methods.

Variation across the 26 kinds of effort is marked; the average scores vary from 1.7 to 3.9. Especially low scores appear for postpartum programs, home visits, and incentives/disincentives, as well as management use of evaluation findings, and multi-ministry involvement in service arrangements. High scores appear especially for the availability of the three methods mentioned above, as well as for supportive public statements by leaders.

A principal finding is the need for selective administrative action to improve the programs, rather than across the board measures. The need for selectivity emerges from the large variations among the governorates and from the diversity in their strengths and weaknesses across the kinds of effort.

This application of the FPE methodology to subnational areas in Egypt has proven the feasibility and value of the approach. It is inexpensive and can be applied quickly, and it offers comparisons across the governorates, at one point in time, that cannot be obtained in any other way.

## **REFERENCES**

Bongaarts, J., W.P. Mauldin, and J.F. Phillips. 1990. "The demographic impact of family planning programs." *Studies in Family Planning* 21(6): 299-310.

Bongaarts, J. 1994. "The impact of population policies: Comment." *Population and Development Review* 20(3): 616-620.

Mauldin, W.P. and J.A. Ross. 1994. "Prospects and programs for fertility reduction, 1990-2015." *Studies in Family Planning* 25(2): 77-95.

Pham, S.B. et al. 1999. "Measuring family planning program effort at the provincial level: A Vietnam application." *International Family Planning Perspectives* 25(1): 4-9.

Population Action International. 1995. Wall Chart on Access to Services.

Pritchett, L.H. 1994. "Desired fertility and the impact of population policies." *Population and Development Review* 20(1): 1-55.

Ross, J.A., and W.P. Mauldin. 1996. "Family planning programs: Efforts and results, 1972-1994." *Studies in Family Planning* 27(3): 137-147.

Schultz, T.P. 1994. "Human capital, family planning, and their effects on population growth." *American Economic Review* 84(2): 255-260.

## ***APPENDIX A***

The 26 program effort indices used in this study appear below, listed according to the four components, or dimensions, of effort.

### **Policy and Stage-Setting Activities**

1. Public statements by leaders
2. Advertising in mass media
3. Extent of program leadership
4. Multi-ministry involvement

### **Service and Service-Related Activities**

5. Social marketing
6. Task execution
7. Logistics and transport
8. Training
9. Use of civil bureaucracy
10. Supervision
11. Mass media for IEC activities
12. Adequacy of administrative structures
13. Community-based programs
14. Incentives/disincentives
15. Home-visiting workers
16. Postpartum programs
17. Private sector involvement

### **Record Keeping and Evaluation**

18. Record keeping
19. Evaluation
20. Management use of evaluation findings

### **Availability of Contraceptive Methods**

21. IUD, program sources
22. IUD, all sources
23. Pill/Injectable, program sources
24. Pill/Injectable, all sources
25. Condom, program sources
26. Condom, all sources

***APPENDIX B***

***Detailed Tables***