

PN-ABB-342  
1511 58999

# Center for Policy Studies

No. 69  
May 1981

304

WITHDRAWN  
N881

## Working Papers

### MEASUREMENT OF FAMILY PLANNING PROGRAM INPUTS IN DIFFERENT PROGRAM STRUCTURES

Dorothy L. Nortman

THE POPULATION COUNCIL

One Dag Hammarskjöld Plaza • New York • New York 10017 • U.S.A.

### Abstract

This paper is more concerned with the difficulties of compiling an adequate data base for measurement of family planning program input than with providing a prescription of what input to measure and how. The poor communication network of many developing countries, the nonquantifiable but strong impact of the political-administrative system on program input, the structural integration of family planning with other programs, the involvement of foreign advisors and donors, and the interaction of the public with the private sector are factors that complicate recordkeeping procedures necessary for program evaluation. It is hoped that the data base will improve with time, but at present measurement of program input is largely impressionistic.

#### POPULATION COUNCIL LIBRARY CATALOGUING-IN-PUBLICATION DATA

Nortman, Dorothy I.

Measurement of family planning program inputs in different program structures / Dorothy I. Nortman.  
— New York : The Population Council, May 1981.

p. — (Population Council. Center for Policy Studies. Working paper, no. 69)

1. Birth control programs. 2. Birth control — Evaluation.  
3. Evaluation research (Social action programs).  
I. Title. II. Series.

HB382.P66 no. 69 [HQ766]

5.81.hnz

---

Dorothy Nortman is Associate, Center for Policy Studies, The Population Council.

---

This paper was prepared for presentation at the General Conference of the International Union for the Scientific Study of Population, Manila, December 1981.

## Measurement of Family Planning Program Inputs in Different Program Structures

In evaluating family planning program performance and impacts, analysts have been keenly aware of the difficulties of measuring the inputs into programs and the deficiencies of the available information and data. It is almost a decade since Lapham and Mauldin published their list of 15 criteria for measuring the strength of family planning programs; yet, as they noted at the time, the exercise of measurement is still largely subjective and based on poor-quality data.<sup>1</sup> As recently as 1979, it was the consensus of the United Nations Second Expert Group Meeting on the measurement of the impact of family planning programs on fertility that "there has been a failure in the field to develop a conceptual scheme that could serve as a framework for gathering and analyzing data relating to program inputs."<sup>2</sup>

Ongoing research will doubtlessly contribute to the theoretical understanding of the determinants of fertility and, as part of that exercise, of the role of family planning programs in hastening fertility decline. However, the growing diversity and complexity of family planning program structure, organization, and operation; the increasing integration of programs with development as well as health projects; the decentralization of administrative control, with increasing involvement of community-level leaders; and the blurring of the public and private sectors of the economy in the provision of family planning services and supplies can be expected to add to the problems of concept, definition, and measurement of governmental program input.

Measurement of program input is necessary from several perspectives. First, from the perspective of planners, in a world of scarce resources, allo-

cations to one set of programs or projects reduce resources available for other meritorious programs, in the short run at least. Thus, social programs, no matter how beneficial to their recipients, require justification on the ground that their benefits to society outweigh their cost. Otherwise they are seen as charity. Second, to meet program objectives, especially demographic targets, administrators require insight into and knowledge of the nature and dimensions of programs capable of achieving their objectives. In this connection, it might be noted that the inconsistency between ambitious demographic goals and the limited clinic-based operations of the early family planning programs contributed substantially to their appraisal as failures.<sup>3</sup> While administrators may find it difficult to press for compatibility between program allocations and objectives, to do so is in their own interest. Third, from the perspective of program efficiency, input must be monitored and measured on an ongoing basis, in order to arrive at empirical estimates of the likely or best return from a given level of input under different operational modes and structures.

#### Measures of Program Input

In a recent paper by Mauldin and Lapham on "Measuring the input of family planning programs," a distinction was drawn between program "effort" and "input."<sup>4</sup> The former concept subsumed the latter but included, in addition, policy considerations and decisions plus the legalities affecting fertility control practices. Measurement of the policy, structural, and management aspects of effort are probably the most neglected in current family planning research. However, they have too strong an influence on program

performance, both directly and indirectly through the more tangible inputs, for continued oversight in assessing output as a function of input.

To cite one example, Ness found in applying a regression model to a group of ESCAP countries that his three independent variables (strength of the political-administrative system, assessed by a scalar measure, agricultural density, and an economic modernization index) "explained" 26 percent of the variance in the timing of 21 governments' antinatalist decisions, 88 percent of the variance in family planning program strength (16 countries); and 89 percent of the variance in the percent decline in the crude birth rate between 1960 and 1973 (16 countries). Most of the explanation stemmed from the joint effect of the three independent variables; alone, each contributed little toward the dependent variables, but of interest here is the finding that the political-administrative system was much more closely associated with the timing of the decision and the strength of the program than the other two independent variables.<sup>5</sup>

A simple taxonomy of family planning inputs is therefore to dichotomize them into quantitative versus qualitative categories. The former encompasses funds, including monetary incentives or reimbursements (current or delayed), facilities, and personnel; the latter embodies political commitment to the program; its structure, organization, and administrative capacity; managerial efficiency; types of delivery systems; feedback mechanisms; record-keeping procedures; and research and evaluation units and processes. Allocation of resources, mix of methods and personnel, regional distribution of program activities, training and supervision, and information, education and promotion activities can be viewed as operational decisions within the components of the quantitative-qualitative categories.

Because they are quantitative and tangible, it would seem that funds, facilities, and personnel utilized by or available to the program can be readily measured. Relative to the qualitative items, they are. Nevertheless, for a variety of reasons, they are remarkably difficult to measure, even under highly centralized, single-purpose programs, let alone under more diffuse, multipurpose, integrated programs.

### Funds

Sensitivity to the shortcomings of so quantitative an input measure as funds prompted the United Nations Population Division to comment that "As an input variable, funds appear to be associated with so many limitations that its use for reliable analyses is questionable, and is thus not recommended" (underscore added).<sup>6</sup> The recommendation ignores the economic reality that to attract funds, programs must be understood to yield favorable cost-benefit ratios and to be cost-efficient. The dependence of such analyses upon the measurement of funds going into programs is self-evident.

The looser the program structure, and the more multipurpose the objectives, the greater is the difficulty of measuring financial cost. Even under a centralized bureaucracy and management, however, reliable data on funds are difficult to compile. Among the reasons are the following:

- De jure allocations are not always de facto.
- Grants and allocations authorized at one point in time become available over a subsequent interval of time.
- Expenditures flow through a "pipeline" at varying rates so that decisions on the cross-section at which to measure them yield different estimates.

- Moreover, the length of the "pipeline" varies with type of expenditure.
- Infusions into the "pipeline" at points other than the major reservoir are not always accounted for, and when considered, are not easily subject to tests of reliability.
- Contributions are often in kind, rather than cash, requiring conversion into monetary units.
- Foreign aid is often significant, thus involving imprecise and fluctuating exchange rates.
- Last but not least are the problems of "joint" and "shared" costs. Many programs from their inception have operated within the health ministry and been administratively integrated into the country's maternal and child health network. Direct appropriations for the added load of family planning activities are recognizable, but the time, space, and overhead contribution to the program from multipurpose personnel and facilities have rarely been appraised, even as gross orders of magnitude.
- Relative to the direct input, the indirect input may have been inconsequential in the past, but with the growing tendency to deliver a package of human services, isolation of the family planning from other activities for the purpose of allocating joint or shared costs may become increasingly difficult.

To put cost data together, analysts may have to consult a variety of sources and then worry about possible overlap. In the Philippines, for example, the program is coordinated by a Population Commission directly responsible to the office of the President. Yet for a cost-effectiveness study, the analyst noted that "information on the financial aspect of the program was obtained from the reports of the different participating organiza-

tions . . ." and specifically mentioned five organizations in addition to the Family Planning Organization of the Philippines.<sup>7</sup>

If funds come from a pooling of resources that presumably would have gone toward fulfillment of the several objectives of an integrated program, a highly coordinated, cooperative, and sophisticated management is needed to ensure that no one purpose is served at the expense of another and to maximize the benefits derived from the interaction of the program components.

Difficult as it is to assemble total monetary input, classification of expenditures by function or type is even more troublesome. In the latest edition of the Population Council's Fact Book, for example, 24 countries provided data on total annual funds (not always up-to-date, and generally giving allocations or proposals rather than expenditures), but 6 of the 24 countries failed to answer the questionnaire on distribution of funds by function and 10 gave no data on the distribution by type.<sup>8</sup> Of 16 country replies recently received for the next edition, only 5 countries furnished a breakdown of funds by both function and type (El Salvador, Hong Kong, Malaysia, Mauritius, and Singapore); 4 provided the breakdown by type but not function (Colombia, India, Korea, and the Philippines); 1, Pakistan, gave data on function only; and 6 of the 16 countries failed to answer the questions on how funds are utilized (Costa Rica, Egypt, Indonesia, Mexico, Peru, and Taiwan). It is understandable why the United Nations recommended that fund data not be utilized in family planning program analyses, but given the cogent need for cost input, for operational as well as research and evaluation purposes, programs require improved monitoring, accounting, record-keeping, and administrative procedures regarding funds going into programs.

Personnel

Two problems arise in measuring personnel input into family planning programs. The first is to classify the various types and functions into a meaningful but limited number of categories. The second is to derive measures in terms of person-hours per week or month rather than a raw count.

Various classification schemes have been proposed, by type of personnel, functional responsibility, qualification for the job, but any one vector system seems too simplistic for useful comparative analysis. For example, a classification based on qualification--for example, counting personnel as medical, paramedical, and other<sup>2</sup>--yields little if any insight into the functional disposition of the personnel. On the other hand, functional categories do not disclose the level of background and training, and in addition, numerous people perform a variety of functions.

A two-way classification scheme is suggested in Table 1 as a parsimonious yet useful paradigm for identifying family planning personnel. The two dimensional classification does not eliminate but can help to ease boundary

Table 1. Proposed classification of family planning personnel

Function	Qualification		Non-medical		Residual
	Medical	Para-medical	Professional	Para-professional	
Administration	Illustration of data per category				
Provision of fertility control services and supplies		<u>Number</u>	<u>Average weekly hours worked</u>		
	Full time	10	40		
Information, education, and communication	Part time	20	8		
	Full time-equivalent	14*	x		
Research and evaluation	* (10) + (8/40) (20) = 14.				
Other					

problems, and can lead to a more useful index of personnel input than any one-dimensional classification. Other difficulties of quantifying personnel for analytical purposes stem from the administrative logistics of keeping track of positions prescribed, filled, and vacant throughout the network of delivery points fully or partially subsidized by the government program. This is further complicated by the fact that in nonintegrated as well as integrated programs, many personnel work on a part-time basis. One approach, attempted in the Council's Fact Book, is to convert all personnel in various categories into full-time equivalents. An alternative is total person-hours of input. The data furnished to the Council on full-time equivalents have improved over time, but even in the 1980 edition, 11 out of 29 countries that provided a count of personnel failed to give the full-time equivalent, and among the 18 that did, full time was obviously an educated guess--1/2, 1/3, or 1/4 of total--not a synthesis of actual hours worked.

Measuring person-hours of input is a problem not only because of part-time workers but more importantly because of multipurpose workers, characteristic of integrated programs. Personnel can be requested to keep track of the time spent on their different activities, but to do so encroaches upon other duties, and separation of family planning from maternal and child health services, for example, is not always identifiable. Family planning variables used as input items to investigate the factors associated with fertility decline have frequently been a cross-sectional summation of program workers per capita or per married couple.<sup>10</sup> This is a key variable in program evaluation, yet its measurement remains poor. A more innovative index was recently employed in Colombia using regional per capita physician-equivalents over a specified period. The index purportedly incorporated personnel by type, family planning hours of work, and type of facility--hospitals, clinics,

public health centers, and public health posts. Although a conceptual improvement, probably because of data limitations, the index was constructed with faulty weights--for example, giving equal weight to doctors, nurses, and motivators, and assuming part-time as equal to half-time.<sup>11</sup>

### Facilities

Government family planning programs utilize a great variety of facilities, ranging from large, modern hospitals and more specialized clinics and/or health centers to offices of private physicians who are paid on a fee-for-service basis, pharmacies, general retail stores, and community delivery posts. Factories and other places of employment, the army, mobile teams, special projects, and ongoing or sporadic arrangements with private sector distributors are also channels of government input into the provision of family planning services and supplies. It is not so much the variety that complicates the measurement of facilities as an input item as assessing their locations in relation to the distribution of the population, hours of operation and availability, scope of services, and quality of the facility and its personnel in dealing with clients. It might be noted that the number of persons using a facility, especially as a proportion of the population with access to it, is suggestive of the quality of the facility; but strictly speaking, this is an output, not an input.

Although facilities are an important input parameter, they are not easily converted into quantitative measures of input. While administrators can provide data on the number of hospitals, clinics, centers, and even community delivery posts operating in their programs, unless tempered by an assessment

of the quality of these facilities, the hours of operation, and the proportion of the population with access to them, the count is inadequate as an analytical tool. Integration of the program into the health network means theoretically that all government medical facilities are authorized to provide family planning services. The count of facilities by type frequently reflects this authorization, without regard to the nature, quality, or degree of its implementation. In reports furnished to the Council for its Fact Book, few countries are able to provide data on full-time equivalence of facilities in hours of operation.

#### Qualitative inputs

Qualitative inputs relate largely to the organizational and managerial aspects of the program. By now, most programs have developed an institutional capability for research in demography and communication, but despite a great interest in and many seminars on management issues, management research has yet to produce findings that have more specific applicability than prescriptions embodied in basic management principles. According to J.K. Satia of the Indian Institute of Management, for example, "Training in management tends to be theoretical and not related to problems of field operations. Research is chiefly concerned with identifying problems and gaining insights into them rather than concrete solutions."<sup>12</sup>

There are two schools of thought on the question of whether family planning programs entail management issues different from those confronting other social programs. One argues that competent administrators, trained in basic management principles, can suffice. The other claims that because of

complex organizational structures, geographic dispersement, multipurpose objectives, and the sensitive nature of the services rendered, special contextual administrative research and training are required for efficient management and operation.

Among the input items affected by management are the following:

- The government's political commitment to the program, policy considerations, and program objectives. Although these factors may be considered the environment in which family planning programs operate and therefore largely beyond the direct control of program administrators, to some extent they are manipulable. Research in this area tends to focus on process rather than measurement, but it is a prima facie proposition that strong leadership will increase productivity which in turn influences government commitment to the program. No matter how strong or prominent the leadership, however, the upper limit of government commitment is determined by the program's objectives. Health and human rights are now almost universally seen as family planning benefits, but the program's strength derives from the intensity of the government's commitment to development and its perception of the population growth rate as an obstacle to development.<sup>13</sup> Perhaps measurement of this commitment and perception is unavoidably impressionistic, but researchers are aware of the need for improved measures and the importance of incorporating these factors into analyses of program impact on fertility.<sup>14</sup>

- The allocation of resources. Information and education campaigns, capital construction, and administrative and fixed overhead compete with funds allocated for the direct provision of services and supplies. Decisions on this matter seem to be ad hoc, with little understanding of the best mix to maximize births averted next year, or over the next five years, or to serve

some other purpose. The data in the Council's Fact Book on this subject show wide variations among countries, ranging, for example, for expenditures on contraceptive services as a percent of total from 18 percent in Ghana (1977) to 78 percent in India (1977), with a median among 18 countries of 52 percent; for information and education, from 3 percent in India and the Philippines (1978) to 29 percent in Ghana, with a median of 12 percent; and for administration, from 1 percent in India to 56 percent in Malaysia (1978), with a median of 17 percent. In India, the distribution is distorted by the omission of local government funds.

Classification effects also account for some of the differentials, but the diversity reflects in large measure the ad hoc basis of resource allocation and, to some extent, differences in program maturity.

- The mix of methods. The "cafeteria" approach is usually recommended to maximize the probability of contraceptive acceptance and use. In practice, the methods promoted are those considered feasible in the society and compatible with the mode of delivery. The data base is scanty for such important questions as the cost per averted birth per method per unit of time and the optimum mix of methods to achieve objectives.

- Training and supervision. Although the training needs and levels of competence of various categories of personnel have received much attention over the years, with considerable improvement in prescribed qualifications for various positions and within different modes of service delivery, staff composition is a neglected area of research. The importance of clear lines of authority has been recognized, but ways to measure this factor as an input item have yet to be devised.

- Other input imponderables. The quality of the publicity and promotional campaigns, staff morale, client satisfaction, the relationship between the managerial and evaluation staffs, the logistics of data-collection and record-keeping procedures, the promptness in paying personnel, the adequacy of the stock and flow of contraceptive supplies, and other aspects of managing a major enterprise are difficult-to-measure input items, yet a program can stand or fall on the basis of their performance. Deficiencies in these matters are frequently recognized but the defect is often seen as intrinsic to the system, culture, or stage of economic development, and therefore as not amenable to pronounced correction. The intense scrutiny to which family planning programs have been subjected has come mostly from demographers and other social scientists concerned with their impact on fertility. Relatively little attention in social science research and evaluation has been directed to the more imponderable input items in program management and operation.

#### Program Structures

The dominant theme thus far has been that input items into family planning programs are difficult to measure regardless of program structure. A subtheme is that cost measurement is more difficult in integrated programs. Integrated programs were decreed to be the effective way to deliver family planning services and supplies following the World Population Conference in Bucharest in 1974.

The record on performance of integrated versus single-purpose programs has not yet been established. Indeed, given the many varieties of integration and the diversity of settings in which programs operate, there may be no

universal answer to the question of which type is to be preferred. In talking of integrated programs, it is important to distinguish between administrative and service integration. The former implies that an umbrella organization has administrative control over a mixture of specialized services; the latter means that specialized services are linked together at the point of delivery. The existence of one neither precludes nor implies the other.

The relative merits and demerits of integrated versus nonintegrated programs have been considered mostly in the field of public administration and in connection with the delivery of human services. Although a review of the argument is beyond the scope of this paper, it may be noted that specialization, that is, nonintegrated programs, is seen as having advantages for both skill and motivational development, while integration promotes more effective service through interactive linkages between specialized activities. A technical working group meeting in 1978 on integration of family planning with rural development raised and answered the following question:

"If specialization has advantages for both skill and motivation development, yet interactive linkages between specialized activities also provide more effective service, how can we create an integrated structure that promotes both and avoids the dangers associated with administrative integration? We suggest here that what is needed is not integrated programmes, in the sense of bringing all activities under the direction of one administrative center, but a series of specialized organizations/elements, with lines of interaction built to provide those linkages that are specifically required to produce more effective service."<sup>15</sup>

Reviews of some of the empirical programs evaluated by the technical group indicated that "there is considerable support here for the proposition that interactive linkages between specialized agencies or activities at the level of the service delivery provides more and better services to the clients."<sup>16</sup> On the other hand, some reviews "showed that the greater cost-effectiveness expected of the integrated structures did not materialize. Integration actually increased programme costs."<sup>17</sup>

Integration of family planning with food, nutrition, health, and development projects at both the administrative level and service delivery points, especially at the community level, is increasingly in evidence.<sup>18</sup> The relevance of separating the family planning component for input-output analysis depends largely upon the government's family planning objectives. If fertility control is a major goal, as is often the case, the government is more likely to address structural features that can help maximize contraceptive prevalence. It might be argued that "taking the user perspective into account" and "delivering a package of synergistically related services" are basic management operational principles, applicable to business enterprises as well as social programs. The parameters of implementation, however, are highly specific, not easily identifiable, and difficult to measure.

#### Output Measures

Acceptors, continuation rates, and contraceptive prevalence are operational measures of family planning program output. These, in turn, serve as intermediate program variables to measure the final outputs that influence policymakers' decisions, namely, births averted and cost-benefit and

cost-effectiveness considerations. The beneficial relation between family planning practice and health and human rights is now considered to be so self-evident as to require little, if any, analytical demonstration.

Of concern to policymakers is the annual number of births averted by public family planning programs beyond the expected number of births averted through family planning methods supplied by the private sector in the absence of the programs. No matter how excellent the data on the intermediate program variables--the count and characteristics of acceptors and continuation rates of contraceptive use--the question of births averted per year by program clients that would not have been averted had there been no program remains speculative and therefore controversial. The rich literature on this subject and methodologies to deal with it need not be documented here.

Cost-benefit analysis compares in monetary terms the present value of the cost-input of a project with the present value of the benefits the project is expected to generate over time. If the benefits exceed the costs, the project is efficient. Among competing projects, the higher the benefit-cost ratio, the more desirable is the project. Although conceptually simple, cost-benefit analysis is difficult to employ because as we have seen, many important input and output variables cannot readily be expressed in terms of current market prices, especially since the benefits to family planning are mostly in the future.

Cost-effectiveness analysis is a less ambitious but more practical pursuit. This looks upon outputs as desirable goods, but makes no attempt to place a monetary value on them. The point of the exercise is to seek the most effective, or least costly, way of achieving objectives. In the case of family planning programs, averted births are defined as a "good" and the

objective is to manage the program so as to avert the greatest number of births per monetary unit of cost.<sup>19</sup>

#### Comment

Had this paper answered the questions it raised regarding the identification and measurement of family planning program inputs, it might be more useful. As suggested by the references, the literature is rich with scholarly research and advice on variables to consider, record-keeping procedure for their measurement, and techniques of analysis and evaluation. Yet the data base for measuring program input remains generally weak, despite the operational and policy need for reliable and valid information.

This paper has been more concerned with the reasons for the difficulty of measurement than with prescriptions of what to measure and how. Differences in program objectives; the nature and complexity of the services; the variety of methods, personnel, and distribution points; the integration of family planning with health and development programs; the involvement of foreign advisors and donors; and the interaction of the public with the private sector are factors inherent in the programs that complicate identification and measurement of both input and output. Exogenous factors also militate against the maintenance of an adequate and reliable data base. In many developing countries, the communication network is poor, whether it be by road, mail, or telephone; administrative and evaluation personnel are in short supply; and computer facilities are inadequate and often not recommended in countries with high unemployment. To provide universal answers with regard to measurement of family planning program input that fail to take into account the endogenous

and exogenous factors that are largely beyond the control of program administrators is not very helpful.

The data base for measuring program input is likely to improve with time. Ongoing research will also provide techniques for assessing the impact of the political-administrative system on program input and effort. At present, measurement of program input remains largely impressionistic.

## Footnotes

1. Robert J. Lapham and W. Parker Mauldin, "National family planning programs: Review and evaluation," Studies in Family Planning, 3, no. 3 (March 1972).
2. United Nations Second Expert Group Meeting on Measuring the Impact of Family Planning Programmes on Fertility, Rapporteur's Report No. 11, Utilization of Indicators in Evaluation Methodology, Geneva, 19-26 March 1979. p. 1. (mimeo).
3. Dorothy Nortman, Status of national family planning programmes of developing countries in relation to demographic targets," Population Studies, 26, no. 1 (1972): 5-18.
4. W. Parker Mauldin and Robert J. Lapham, "Measuring the input of family planning programs." Paper prepared for meeting of the U. S. National Academy of Science's Panel on the Determinants of Fertility Change in Less Developed Countries, 17-18 March, 1980, p. 2 (mimeo).
5. Gayl D. Mess, "Politics and population growth," Populi, v.4, no.3 (1977): 18-26 (Journal of the United Nations Fund for Population Activities).
6. United Nations Population Division, "Methodology of determining the relationships between family planning programme inputs and family planning programme outputs." ESA/P/AC.12/1, March 1979, p. 10 (mimeo).
7. Trinidad S. Osteria, "Cost effectiveness and cost benefit from the Philippine Family Planning Program." Regional Workshop/Seminar sponsored by the government of Japan on the Financial Management of Population/Family Programmes, Manila, Philippines, 15-17 March 1976. IGO Secretariat Report, Kuala Lumpur, Malaysia.
8. The classification scheme is not the likely source of difficulty in responding to the questionnaire because the categories are sufficiently broad and clear to accommodate different kinds of accounting systems. By function, the categories are salaries and wages; contraceptive supplies; maintenance and operation; capital construction and improvement; and other (residual). Categories by type are contraceptive services; information and education; research and evaluation; personnel training; administration; and other (residual). Dorothy L. Nortman and Ellen Hofstatter, Population and Family Planning Programs: A Compendium of Data through 1978, tenth edition, (New York: The Population Council, 1980), Tables 11 and 12.
9. See, for example, U.N. Population Division, cited in note 6.
10. Albert I. Hermalin, "Regression analysis of a real data," in Measuring the Effect of Family Planning Programs on Fertility, ed. C. Chandrasekaran and A. Hermalin (Belgium): Ordina Editions, 1975.

11. Paul A. Richardson, M. E. Conroy, F. D. Bean, and A. Hernandez G., "Female status, sociodemographic context and fertility in Colombia: A regional cross-section analysis." Draft final report under U.S. AID Grant No. AID/pha-G-1180, August 1980, p. 191 (mimeo).
12. J. K. Satia, "A review of management research in population programs of India, Pakistan, Bangladesh, Sri Lanka, and Nepal," in Management Research in Population Programs: An International Survey, ed. Sagar C. Jain (Chapel Hill: Carolina Population Center, University of North Carolina, 1980), p.45.
13. R. Kenneth Godwin, "A cross-sectional analysis of population policy determinants using situational data," in Comparative Policy Analysis, ed. R. Kenneth Godwin (Lexington, Mass.: Lexington Books, D. C. Heath and Co. 1975), pp. 75-124.
14. K. S. Srikanta, The Family Planning Program in the Socioeconomic Context. (New York: The Population Council, 1977).
15. United Nations Fund for Population Activities, On Integration of Family Planning With Rural Development, Policy Development Studies Number 1. (New York: United Nations, 1979), p. 28.
16. UNFPA, cited in note 15, p. 24.
17. UNFPA, cited in note 15, p. 22.
18. See, for example, Japanese Organization for International Cooperation in Family Planning, Workshop/Seminar For More Effective Promotion and Management of Integrated Projects (Family Planning, Parasite Control and Nutrition), (Kuala Lumpur: IGCC Secretariat, 1980).
19. Robert H. Haveman, "Benefit-cost analysis and family planning programs," Population and Development Review, 2, no. 1 (March 1976): 37-64. See also Warren C. Robinson, "Cost benefit and cost effectiveness in family planning programs." Regional Workshop/Seminar sponsored by the Government of Japan on the Financial Management of Population/Family Planning Programs, Manila, Philippines, 15-17 March 1976. IGCC Secretariat Report, Kuala Lumpur, Malaysia.

1579

No.

- |   |   |
|---|---|
| <p>39 Paul Demeny, "On the End of the Population Explosion," March.</p> <p>40 Bernard Berelson and Robert H. Haveman, "On Allocating Resources for Fertility Reduction in Developing Countries," March.</p> <p>41 Samuel S. Lieberman, "Prospects for Development and Population Growth in Iran," May.</p> <p>42 John Bongaarts, "The Fertility Impact of Traditional and Changing Childspacing Practices in Tropical Africa," May.</p> <p>43 Mead Cain, Syeda Rokeya Khanam, and Ghansam Nahar, "Class, Patriarchy, and the Structure of Women's Work in Rural Bangladesh," May.</p> <p>44 Bernard Berelson, W. Parker Mauldin, and Sheldon J. Davis, "Population: Current Status and Policy Options," May.</p> <p>45 Paul Demeny, "Research in Population and Development: Issues and Comment," May.</p> <p>46 Geoffrey McNicoll, "Technology and the Social Regulation of Fertility," June.</p> <p>47 Veena N. Thadani and Michael P. Todaro, "Female Migration in Developing Countries: A Framework for Analysis," August.</p> <p>48 Bernard Berelson and Jonathan Lieberman, "Governmental Intervention on Fertility: What is Ethical?" October.</p> <p>49 Moni Nag, "How Modernization Can Also Increase Fertility," November.</p> <p>50 Michael P. Todaro, "Urbanization in Developing Nations: Trends, Prospects, and Policies," November.</p> <p>51 John Bongaarts, "Malnutrition and Fecundity: A Summary of Evidence," December.</p> | <p>57 John Bongaarts, "The Fertility-Inhibiting Effects of the Intermediate Fertility Variables," May.</p> <p>58 Samuel S. Lieberman, "Afghanistan: Population and Development in the 'Land of Insolence,'" June.</p> <p>59 Geoffrey McNicoll, "Institutional Determinants of Fertility Change," June.</p> <p>60 Dorothy L. Nortman, "Sterilization and the Birth Rate," August.</p> <p>61 Paula E. Hollerbach, "Recent Trends in Fertility, Abortion, and Contraception in Cuba," September.</p> <p>62 Veena N. Thadani, "Property and Progeny: An Exploration of Intergenerational Relations," November.</p> <p>63 John Bongaarts and Sharon Kirmeyer, "Estimating the Impact of Contraceptive Prevalence on Fertility: Aggregate and Age-Specific Versions of a Model," December.</p> <p>64 Dorothy L. Nortman, "Empirical Patterns of Contraceptive Use: A Review of the Nature and Sources of Data and Recent Findings," December.</p> |
|---|---|
- 
- |   |  |
|---|--|
| <p align="center"><u>1980</u></p> <p>52 Charles B. Keely, "Asian Worker Migration to the Middle East," January.</p> <p>53 Paula E. Hollerbach, "Power in Families, Communication and Fertility Decision-Making," January.</p> <p>54 Tomas Frejka, "Fertility Trends and Policies: Czechoslovakia in the 1970s," February.</p> <p>55 Samuel S. Lieberman, "Rural Development and Fertility Transition in South Asia: the Case for a Broad-based Strategy," March.</p> <p>56 Mead T. Cain and A.B.M. Khorsheed Alam Mozumder, "Labor Market Structure, Child Employment, and Reproductive Behavior in Rural South Asia," May.</p> | <p align="center"><u>1981</u></p> <p>65 Paul Demeny, "The North-South Income Gap: A Demographic Perspective," January.</p> <p>66 Tomas Frejka, "World Population Projections: A Concise History," March.</p> <p>67 Mead Cain, "Risk and Insurance: Perspectives on Fertility and Inequality in Rural India and Bangladesh," April.</p> <p>68 Christopher Tietze, "Abortion in the Seventies," May.</p> <p>69 Dorothy L. Nortman, "Measurement of Family Planning Program Inputs in Different Program Structures," May.</p> |
|---|--|

No.                      1977

- 1 "Center for Policy Studies Program Statement 1977."
- 2 Bernard Berelson, "Where Are We Going?: An Outline," May.
- 3 W. Parker Mauldin and Bernard Berelson, "Cross-Cultural Review of the Effectiveness of Family Planning Programs," May.
- 4 Paul Demeny, "Population Policy and the International Donor Community: A Perspective on the Next Decade," May.
- 5 Michael P. Todaro, "Development Policy and Population Growth: A Suggested Practical Framework for Developing Country Planners," May.
- 6 W. Brian Arthur and Geoffrey McNicoll, "Samuelson, Population and Intergenerational Transfers," May.
- 7 John Bongaarts and Hernan Delgado, "Effects of Nutritional Status on Fertility in Rural Guatemala," June.
- 8 Tomas Frejka, "Future Population Growth," May.
- 9 W. Parker Mauldin, "World Population Situation: Problems and Prospects," July.
- 10 John Bongaarts and Christopher Tietze, "The Efficiency of 'Menstrual Regulation' as a Method of Fertility Control," June.
- 11 Moni Nag, Benjamin N.F. White and Robert Creighton Peet, "An Anthropological Approach to the Study of Economic Value of Children in Java and Nepal," June.
- 12 John Bongaarts and Jane Menken, "Reproductive Models in the Study of Nutrition-Fertility Interrelationships," July.
- 13 Geoffrey McNicoll, "For and Against Large-Scale Simulation Models in Population and Development: Review of an Exchange," September.
- 14 W. Parker Mauldin, "The Role of Population Research in Policy Formation and Implementation (A Preliminary Note)," September.
- 15 Geoffrey McNicoll, "Population and Development: Outlines for a Structuralist Approach," October.
- 16 Bernard Berelson, "Ethnicity and Fertility: What and So What?" December.
- 20 W. Brian Arthur and Geoffrey McNicoll, "An Analytical Survey of Population and Development in Bangladesh," March.
- 21 Veena N. Thadani and Michael P. Todaro, "Towards a Theory of Female Migration in Developing Countries," May.
- 22 W. Parker Mauldin and Bernard Berelson, with a section by Zenas Sykes, "Conditions of Fertility Decline in Developing Countries, 1965-75," May.
- 23 Dorothy L. Nortman, "India's New Birth Rate Target: An Analysis," June.
- 24 Michael P. Todaro, "Current Issues in Economic Development," August.
- 25 Geoffrey McNicoll, "The Demography of Post-Peasant Society," August.
- 26 Veena N. Thadani, "The Logic of Sentiment: The Family and Social Change," September.
- 27 Michele Goldzieher Shedlin and Paula E. Hollerbach, "Modern and Traditional Fertility Regulation in a Mexican Community: Factors in the Process of Decision Making," September.
- 28 Mead T. Cain, "The Household Life Cycle and Economic Mobility in Rural Bangladesh," September.
- 29 Christopher Tietze and Anrudh Jain, "Repeat Abortion: A Model-Building Approach," October.
- 30 W. Parker Mauldin, "Experience with Contraceptive Methods in Less Developed Countries," October.
- 31 Bernard Berelson, "Programs and Prospects for Fertility Reduction: What? Where?" November.
- 32 John Bongaarts and Robert Sendek, "The Population Council Data Bank System: A User's Guide," November.
- 33 Michael P. Todaro, "Internal Migration, Urban Population Growth, and Unemployment in Developing Nations: Issues and Controversies," December.
- 34 Bernard Berelson, "Romania's 1966 Anti-Abortion Decree: The Demographic Experience of the First Decade," December.
- 35 Geoffrey McNicoll, "Notes on Fertility Policy Research," December.

1978

- 17 "Center for Policy Studies Program Statement 1978."
- 18 John Bongaarts, "A Framework for Analyzing the Proximate Determinants of Fertility," January.
- 19 Richard Cates, Jr. and Christopher Tietze, "Standardized Mortality Rates Associated with Legal Abortion: United States, 1972-1975," January.
- 36 Moni Nag, "Economic Value and Costs of Children in Relation to Human Fertility," December.
- 37 Paul Demeny, "Country Reports on Population and Development: Why, What, and How? A Selective Outline of Issues," December.
- 38 Paul Demeny, "Patterns of Population Growth and Structural Change in the World Economy: A North-South Perspective for the 1980s," December.