

THE CORNELL INTERNATIONAL POPULATION PROGRAM

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The International Population Program (IPP) at Cornell was initiated in 1962 with the purpose of creating a research and training program in *social demography*. Financing for fellowships and research was provided by the Ford Foundation for a five-year period, and National Defense Education Act fellowships for American students have been provided for the first two years. Since the program has barely celebrated its first birthday, this paper necessarily deals more with program projections and predictions than with historical description and analysis. Moreover, since the program attempts to blend training and research, it is necessary to discuss both aspects in this paper.

AIMS OF THE PROGRAM

Increasing demands from all parts of the world for demographic skills, the growing quantity and quality of international statistics, and the inability of traditional demographic theory and techniques to cope with many of the applied problems stemming from world population growth suggested the need for a program designed to develop broad demographic skills in comparative population analysis.

In modernizing countries today, and especially in Latin America, the effective demand for the traditional type of demographer is highly limited. The demand for demographers with economic, sociological, social psychological, or general methodological skills is much greater. Moreover, for the kinds of problems which demographers today are being asked to solve, such orientations are not only demanded, but are, in our opinion, *required*. In order to ask the right questions and be able to interpret the answers, both social science training and a general knowledge of the culture are required.

For these reasons our graduate students majoring in Demography-Ecology within the Department of Sociology normally take a minor in one of our area programs, and another minor in Research Methodology, Social Psychology, Agricultural Economics, or Economics. Students interested in the demography of Latin America minor in Latin American Studies—a graduate program aimed at providing a broad background in the language, culture, and social structure of Latin America. This is accomplished by means of a complex of courses on Latin America offered by the departments of History, Anthropology, Rural Sociology, Modern Languages, Literature, Industrial and Labor Relations, Agricultural Economics, and Sociology. In addition to formal courses, a faculty specialist on Latin America from one of these departments sits as a minor member on the student's doctoral committee and participates in the planning both of the student's course work and dissertation.

We believe that this minor is as important for Latin American as for North American students. Traditionally, Latin American universities have been oriented primarily to Europe and secondarily to the country in which they are located. While a North American scholarly orientation is replacing the European, it is still the case that information about and communication with other Latin American countries are minimal. There is a very great need for the Latin American student to think more in regional terms; to recognize those problems facing his country that are common to neighboring countries; to profit from experiences of other nations in similar circumstances; and to be able to distinguish precisely in what ways, if any, his country's problems are unique. In short, we believe that the Cornell program in Latin American Studies, which emphasizes international comparisons within Latin America and cultural and economic aspects common to regions of Latin America, is precisely what is needed for the Latin American social scientist.

In addition to the normal academic program we are making a serious

effort to give the student of demography experience in research while in residence at Cornell. We use the term "serious effort" because all too often graduate research assistants go unsupervised, are assigned "busy work," or engage in projects of relevance to the professor rather than to the student. We are taking several steps to build a research training program that avoids such pitfalls.

1. We attempt to have students work on materials from the region of their specialization. Thus far the program has sponsored and developed field and census research in those countries from which we have students.

2. We plan to add a staff member of Senior Research Associate rank, at least half of whose time would be devoted exclusively to the design and supervision of didactic research projects for students. At the present time this responsibility is shared by three of the teaching staff and a Research Analyst.

3. A summer research program is being developed in which selected students, at least one year prior to completion of graduate course work, will be sent abroad to spend the summer in a pilot project directed towards their dissertation topics.

4. We are currently working out a series of short technical training programs to be taken during vacation periods. This summer our students are attending a special course in computer techniques at the Cornell Computing Center. During the year we expect to arrange other programs with the United States Bureau of the Census, the National Center for Health Statistics, and the United Nations.

5. Informal seminars are held during the academic year at which staff and students discuss current research projects.

6. We believe that teaching experience is also an integral part of the training program. In the coming semester we will experiment with the use of advanced graduates in an introductory course in Population Problems. A required course for undergraduate majors in Sociology, the format consists of approximately 10 weeks of assigned reading followed by six weeks' preparation of a term paper. The experimental class will be divided into small groups of six each that will work on demographic topics pertaining to a particular topic or region—Latin America, the Middle East, the Far East, Europe, and the United States. Whenever possible a graduate student with particular competence in the subject will meet weekly with the small group, to guide them in the preparation of their term reports.

Of course, another function of this procedure is to motivate outstanding undergraduates to undertake further work in the field of demography. In this connection, we shall award two International Population Program Summer Research Apprenticeships for undergraduates who do particularly well in the introductory course.

THE RESEARCH PROGRAM IN LATIN AMERICA

Two basic principles underlie the location, content, and techniques of our research program.

1. We are endeavoring to investigate certain research propositions with respect to fertility and internal migration first by analyzing particular countries in depth, and subsequently by extending these analyses to the entire region for cross-national verification studies. An additional step involves interregional comparisons.

2. We contend that a fruitful elaboration and testing of these hypotheses requires a tight co-ordination between census analysis and specially designed field surveys.

At the moment, two Latin countries are being studied in some depth—Peru and Puerto Rico. Peru was selected because of Cornell's extensive anthropological studies there, and Puerto Rico because of the senior author's previous field surveys of human fertility on the island. A brief description of our research projects in each place will illustrate more clearly the two principles outlined above.

Peru

Two types of studies have been carried out in Peru, each of which has led to further international investigations. The first involved analysis of the 1940 Peruvian census by means of ecological correlations between fertility and socio-economic characteristics for the nation's 118 departments.¹ This exercise proved so useful that the analysis is being duplicated and expanded for all Latin American nations for which 1950 census data are available. We anticipate that this project (entitled LASA—Latin American Subunit Analysis) will accomplish two major objectives:

First, it should broadly establish the socio-economic characteristics associated with differential fertility ratios in the various provinces and

departments within nations in Latin America. Characteristics available for subunits in most countries include frequency distributions on literacy, labor force, urbanization, ethnic status, marital status, and age.

Second, it will permit delineation of regional patterns in Latin America according to these characteristics and the pattern of relationships among the characteristics. These analyses are useful not only in their own right, but will lead directly to special sample surveys, both by generating specific questions and hypotheses, and by establishing relevant geographical frames for sample selections.

The second type of study carried out in Peru was a sample survey of fertility and attitudes towards fertility. Unfortunately, the ecological analysis described above was not yet complete at the time the survey was designed, but regional characteristics within Peru were recognized as a major element in the study design. Four community types were selected for sampling—the capital city of Lima, a relatively industrialized and smaller “boom city,” a small mestizo coastal community, and a highland bilingual community.² Since comparative materials were desired for other Latin American countries, the senior author went to Chile to investigate the possibilities of initiating a survey there, only to discover that one had just been completed by CELADE for the city of Santiago. This prompted a number of discussions over the next two years which resulted in the CELADE-IPP project for a series of comparative studies in seven or more Latin American cities.

The CELADE-IPP Fertility Project

Over the past decade a considerable number of sample surveys dealing with differential fertility and attitudes related to fertility have been conducted in this country and abroad. A major limitation of such research has been the difficulty of making cross-country or often even within-country comparisons because of differences in sampling design, questionnaire content, and question wording. On the other hand, the approach in which a survey group moves from country to country repeating a given survey ensures comparability but stifles local initiative and leaves no residue of trained personnel in the countries involved. The CELADE-Cornell IPP project is specifically designed to provide comparable cross-national survey data, at the same time that local personnel are given wide scope for development of their survey skills.

The dual objectives of comparability and local autonomy have been accomplished by the following procedures:

1. Surveys will be carried out in all the participant countries within a one-year period.

2. The population unit to be sampled in all participating countries will be the capital city.

3. Approximately 2,000 women aged 20–50 will be interviewed in each city, selected by means of a probability sampling scheme devised at CELADE. In most countries a census has been conducted in the past few years, permitting the utilization of blocks as the primary sampling unit, with probability proportional to population size.

4. Essentially the same questionnaire, devised by CELADE and IPP staffs, will be used in all countries.

5. The selection of national study directors was made by CELADE personnel; in six of the seven countries, the national directors are former fellows of CELADE.

6. A three-week training program for study directors was held in Santiago during July 1963.³ Conducted by CELADE and IPP staffs, the training involved exposition and discussion of the survey's objectives, design, sampling procedures, questionnaire, interviewing procedures, and coding operations. During this training a pre-test of the questionnaire was conducted, involving about 100 interviews, the contents of which were subsequently hand tabulated by the participants.

Financial assistance for this program was provided by the Population Council. After an agreement is signed by the sponsoring national institutes and CELADE, funds sufficient to cover direct costs of the survey are transmitted to the national institution which then has the direct responsibility for execution of the study. Although a minimum list of tabulations will be suggested, each country has complete freedom to analyze and publish the data collected under its auspices. A duplicate set of IBM cards is provided for CELADE and for Cornell, the latter institutions then sharing responsibility for the intercountry analyses.

If successful, we hope to expand the project to include not only other countries and other areas, but to study other demographic phenomena in the fields of migration and mortality. By this time the subunit analyses of the 1950 and 1960 censuses should give important guidelines for the specific direction of the field studies. It is our belief that we are beginning to hit diminishing returns with broad-gauged studies employing representative samples. The next stage, based on census analysis and the results of the international field surveys, will be field surveys pin-pointed both with respect to sample and substance. Interweaving

of census-analysis and field surveys is very much needed to carry us towards a more refined level of investigation.

To give a practical example of what we mean, it is customary in fertility surveys in modernizing areas to take representative samples of the nation, or of a subunit within the nation. Such surveys typically uncover only a very small proportion of couples practicing contraception. The absolute number is often so small in the sample that little detailed analysis can be accomplished on this highly crucial group. Massive family planning programs are being launched with no real understanding of how and why certain small classes of families adopt family planning in the normal course of events. If we knew more about the processes by which these individuals adopt family planning, this knowledge might be utilized in accelerating its adoption on the part of others.

Puerto Rico

As a laboratory for demographic study Puerto Rico has much in its favor: It has a longer history of good censuses and vital statistics than most Latin American countries; its small size and homogeneity make it relatively easy to study, and its rapid social and economic development over the past two decades make it a useful subject of inquiry for both theoretical and applied reasons. It is true that many Latin Americans regard Puerto Rico as unrepresentative of Latin America because of its economic, political, and social ties with the United States; but we feel that the social scientist finds enough similarities to make the island a useful pilot area for further work in Latin America. These reasons, in addition to the fact that a considerable amount of demographic research has already been done in Puerto Rico by means of sample surveys conducted by the senior author and others, have convinced us that a major investment in the analysis of published and unpublished Puerto Rican census materials could be highly valuable. Through the co-operation of the Puerto Rican Planning Board and the generous assistance of Howard Brunsman of the United States Bureau of the Census, the IPP is now engaged in a series of analyses which should have implications for future field and census studies in other nations.

1. Fertility: Under the technical direction of Mr. Brunsman, the Planning Board has prepared a "family card" from 1960 census data, containing selected characteristics of the entire household, including characteristics of husband and wife. Thus, it will be possible to examine

not only the fertility of women according to their own characteristics, but in relation to those of husband and household. It may well be that the interaction of these characteristics predicts fertility better than the characteristics of the wife alone. Sample survey data over a decade ago indicated this likelihood.⁴

Further, since data can be classified according to very fine subunits—census tract in urban areas and *barrios* in rural areas—we can perform quite refined ecological studies of fertility in Puerto Rico.

An especially important question is the relation of female employment to fertility. We have already found that a relation persists, even after age, marital status, years of schooling, and residence are controlled. We now must determine whether the differential is stronger in certain types of occupations and in certain types of households. Of ultimate interest is the extent to which the relation is due to conscious controls on fertility, age at marriage, or natural fertility differences which allow women of lower fertility to work. The latter set of questions can be answered only by field surveys relating fertility and marital histories to job histories. Our surveys in other Latin American countries are already attempting to get necessary information on these points.⁵

2. Modernization: We feel it is important to our research program to examine specific demographic events and developments within a broader context, which a recent United Nations report has termed the "balance of economic and social development."⁶ By this we mean a general process of social change in which a number of the social and economic aspects are undergoing concurrent and possibly integrated development. The crucial dimensions of the more general process of modernization are commonly embraced by terms such as urbanization, industrialization, social differentiation, cultural integration, economic growth, changing style of life, and demographic changes in death rates, birth rates, increased population mobility, and changes in family size and composition.

All of these components of change are certainly interrelated, but the exact nature of these relationships has not been closely examined. A knowledge of the developmental pattern and sequence of these changes is essential to a full understanding of changes occurring in any single aspect of the society or to planning for the introduction of change. The importance of demographic factors in this developmental process has been noted for some time, but the precise role they play with respect to

the entire process of development has not been extensively examined from a processual point of view. A large measure of our present research program is devoted to analyzing dynamics of demographic change in Puerto Rico within the context of the other changing features of this society.

Indexes of each aspect of societal change are being developed for Puerto Rican *municipios* for the past three census periods. An analysis of static aspects at each census as well as their changes between censuses should provide important information as to the timing of induced and natural demographic change and its effects upon the development of the rest of the social system.

Further, our study of migration incorporates these views on modernization. Migration, as we view it, is one of the fundamental means by which a country becomes an integrated economic and social unit, moving from a largely peasant way of life to an urbanized, industrialized complex. In Puerto Rico, our studies indicate a substantial increase in all types of migration in 1960 compared with the situation in 1940. Of course, too rapid a redistribution of population also poses problems, as studies of certain Latin American cities have revealed so forcibly.⁷

For reasons cited previously, the rich statistical information on Puerto Rico affords us an opportunity to examine regional development for a country over a period of time covering its entry into and transition through a stage of modernization. Internal migration in Puerto Rico is being studied, using various special tabulations from the 1960 census and published materials from the 1940 census. From detailed data on the characteristics of both in- and out-migrants and non-migrants for each *municipio*, it is possible to examine this demographic process in terms of the communities which are involved, as well as the characteristics of migrants.

In addition, data on the characteristics of persons in the actual streams of migration between specific *municipios* are available. Migration stream data will also permit other intensive analysis of social differentials between the streams and the communities of origin and destination. The findings are also being used to test several gravity-type models of migration. In connection with our interest in developing more sophisticated models of demographic behavior, a dynamic stochastic process model, applicable to the study of human migration is being investigated.⁸ A major component of this model and one which gives it its

nonstationary characteristic is the axiom that the probability of leaving a state is inversely related to the duration of residence in that state. The model is about to be tested against a set of data describing migration histories in the continental United States.

This stochastic process model should serve as a basis for characterizing and contrasting both internal and international migration patterns in Latin America. This approach permits the migration behavior of a cohort to be characterized by just two parameters. Thus, it would be possible to locate any set of units, whether cities, regions, or nations, in a simple two-dimensional space. In keeping with our efforts to work from ecological studies to selective field surveys, the interrelation of migration and fertility is being given attention. In an analysis of cross-tabulations of 1960 data, we have found much lower fertility among migrants and movers than among stable residents. Controlling for urban-rural residence differences, and standardizing for marital status and age does not reduce this differential. Yet, other studies of migration and fertility have indicated that rural-urban migrants, in particular, tend to demonstrate higher fertility experience than permanent urban residents. The role of such factors as selective migration of younger unmarried persons, childless families, or families with small numbers of children; the more traditional orientation of rural-urban migrants which supports larger families; the coincidence of migration and matrimony, the movement to gain more housing space for an expanding family; and the movement to gain additional support for a family, are confounded in most existing studies. Inadequate evidence can also be cited in virtually all studies of this type. What is clearly needed are field surveys designed to obtain both fertility and migration histories, so that the full effects that changing residence, with its increased exposure to different cultural and social conditions, have upon fertility behavior can be ascertained.

RESEARCH IN NON-LATIN COUNTRIES

Although the backbone of the International Population Program's research activities is Latin America, we also regard comparisons across world regions as essential. Thus, we are very interested in determining whether generalizations emerging from both the ecological and field

investigations in Latin America are valid for other regions at comparable stages of economic development, but with highly different cultural patterns. For example, a census tract analysis of fertility variations within the city of San Juan will be complemented by a parallel study of the city of Cairo, Egypt.⁹ Our fertility field studies in Latin American countries will be complemented by a comparable investigation now under way in Turkey.

Finally, at the most general level of international comparison, we should mention the Cornell Demographic Inventory. This is an inventory of annual statistics of vital events, economic levels, and other related social and economic data for each nation in the world, which is being compiled on punch cards. Electronic data processing will make possible immediate information retrieval for time series or comparative purposes. In addition to being a "data bank," this inventory will offer an opportunity to study the temporal aspects of demographic transition using regression, correlational, and other time series techniques of analysis.¹⁰ The project now provides coverage for all of Latin America, and the inventory will be expanded to cover the entire world during the coming year.

SUMMARY

The Cornell International Population Program is a research and training program in social demography. Training emphasizes not only traditional demographic skills, but entails area competence and acquaintance with the methods and theories of other social sciences. Research is currently concentrated geographically in Latin America, substantially on fertility and migration, and methodologically on ecological and sample survey investigations. A major orientation of the program concerns the interplay between broad ecological studies utilizing published data and field projects to explore specific questions generated by these data. Both types of studies are extensive in terms of international coverage and dynamic in their attention to social and demographic changes over time.

REFERENCES

1. Stycos, J. Mayone, Culture and Differential Fertility in Peru, *Population Studies*, 16, 257-270, March, 1963.
2. For a substantive report stemming from this survey, see Stycos, J. Mayone, Social Class and Differential Fertility in Lima, Peru, *Transactions of the 1961 Meetings of the International Union for the Scientific Study of Population*. (In press.)
3. Representatives from seven countries attended the training conference: Argentina, Brazil, Colombia, Costa Rica, Panama, Mexico, and Venezuela. Since similar surveys have been conducted in Santiago and Lima in the past few years, Chile and Peru were not included.
4. McGinnis, Robert, Similarity in Background Characteristics and Differential Fertility, *Social Forces*, 34, 67-72, 1955.
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6. REPORT ON THE WORLD SOCIAL SITUATION; WITH SPECIAL REFERENCE TO THE PROBLEM OF BALANCED SOCIAL AND ECONOMIC DEVELOPMENT, New York, the United Nations, Department of Economic and Social Affairs, 1961.
7. Hauser, Philip M., URBANIZATION IN LATIN AMERICA, New York, International Documents Service, 1961.
8. McGinnis, Robert, Pilger, John, and Myers, George C., Internal Migration as a Stochastic Process; a paper presented at the meetings of the International Population Union, Ottawa, Canada, August 1963.
9. The special fertility tabulations for Cairo were provided by the Egyptian Department of Statistics.
10. An application of such a technique is contained in an article by George C. Myers, Variation in Urban Population Structure, a paper presented at the annual meeting of the Population Association of America, Philadelphia, April 1963.

DISCUSSION

Dr. Oscar Harkavy: In asking me to say a few words, Dr. Kiser is not seeking demographic erudition, but rather a few words from one of the participating sponsors of the Cornell International Population Program. I shall note with satisfaction certain aspects of Professor Stycos' program and shall also make a few remarks with at least a tangential relationship to his presentation.

Referring to the program at Cornell, I favor the practice of involving graduate students on fellowships in the teaching program. This is consonant with the arguments advanced by Professor John Kemeny of Dart-

mouth, in the *Sunday Times* of a few weeks ago, who decries the high status given to the pure research fellowship and the low status given to teaching assignments as a part of graduate work.

I also favor the proposed experiment with a few fellowships or research apprenticeships for undergraduates to catch them up early in this mysterious business of demography. I am impressed with the fact that traditional academic career lines seldom are congruent with great problems facing the world. Out of a sample of 100 American undergraduates I wonder whether 40 per cent would have a reasonably accurate notion of what demography means. There is need to get young people involved early in a discipline that can make a major contribution to the understanding of one of the world's great problems.

Turning to the CELADE-IPP project, I am pleased that groups indigenous in each participating country will carry out comparable surveys. This is preferable to a procedure in which a high-powered, imported survey group would do all the surveys, write a book, and be gone, but would not leave behind a residue of research skill with which to carry on.

In his paper Professor Stycos says: "Massive family planning programs are being launched with no real understanding of how and why certain small classes of families adopt family planning in the normal course of events. If we knew more about the processes by which these individuals adopt family planning, this knowledge might be utilized in accelerating its adoption on the part of others."

Massive family planning programs have, in fact, been launched only in countries that have adopted an official policy of fertility limitation. One school of thought contends that the way to design an effective family planning campaign is to try out a number of experimental approaches and determine what works and what does not. Attitude surveys, *in the absence of* action programs, it is contended, are not likely to provide very much of practical usefulness in the design of a campaign. On the other hand, these surveys are useful *in conjunction with* an action program to determine whether the action program has produced changes in attitudes toward family planning.

As a final point, let me make a plea that demographers in Latin America and in other parts of the world who are anxious to get the demographic facts of life before policy-makers provide simple projections to show the implications of population growth on school capacity, on housing, and particularly on the need to provide productive employ-

ment. Perhaps through the proposed Cornell inventory of demographic data, such projections might be collected and disseminated in a form useful to policy-makers.

Dr. Stykos: With regard to "Bud" Harkavy's criticism, I will briefly comment on his statement about the need for experimental approaches to family planning. We have discussed this at other conferences, I think. I do not see a conflict here at all. I would never suggest that we should not go ahead with experimental approaches to try things out, so long as they are effectively evaluated. That is, we should not wait for the basic research to occur. However, my feeling is that in many of the surveys that are being done in less developed countries we do not learn enough about that very small proportion of the population that adopted family planning without government programs, without any big publicity, without any volunteer organizations. Such a small proportion of them turn up in any particular survey, and there are so few questions devoted to them, that we really have very little information. This is true, I think, of any country that we could mention.

I think if we learn more about this sort of avant-garde that adopted family planning through its own motivation and resources, if we find out the channels of communication, and if we find out the kind of influences that were important in making decisions, it would contribute to our knowledge of what kinds of experimental programs to try out. I do not think either of these approaches by any means obviates the other. I think both are necessary because of the pressure of time and importance of the problem.