***Demography** India*
Vol. 18 (1989), pp. 237-248

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Development of Demography in India

INDIA has the second largest number of demographers, next only to the USA. In any international meet of demographers, India is represented in strength. A number of Indian demographers have been working in international organisations and in other countries. Demography has taken root in India and is showing signs of lusty growth. It is time someone took a critical look at the growth of demography in India and suggested, before it is too late in which direction it should grow; for a plant can be bent but not a tree. To be sure, the subject has been discussed, by at least four academics. Among them, Chandrasekaran (1959: 249-58) surveys briefly the status of demography in India, praising large-scale surveys. Bose (1970: 17-49; 1988: 1-31) has been more ardently critical, justifiably, of the direction in which demography has been growing in India. But his thoughts need to be more systematically organised, particularly regarding the direction it should take. Desai (1975) and Jain (1975) merely review demographic studies in India and the reviews, so to speak, are listless. In the present article, I propose to discuss both the direction in which the discipline has been growing and the direction it should take.

Teaching

At least five universities and two institutes in India offer post-graduate and doctoral degrees in demography/population studies. These include Annamalai University, Annamalainagar, Tamil Nadu; Bharathiar University, Coimbatore, Tamil Nadu; Jawaharlal Nehru University, New Delhi; Sri Venkateswara University, Tirupati, Andhra Pradesh; University of Kerala, Trivandrum, Kerala; Centre for Development Studies, Trivandrum, Kerala; and, International Institute for Population Sciences (a deemed university), Bombay. The standard of teaching and guiding doctoral students varies widely. In general, the two institutes have maintained better standards than the universities. There is an urgent need to improve the standard of teaching and doctoral research in the universities, because we reap as we sow.

In addition, a number of universities offer a paper in demography/population studies to their post-graduate students in statistics, economics, sociology, political science, commerce, etc. The objective is to expose students to the rudiments of the discipline and enable interested students to pursue it further.

Unemployment has been growing among students of demography/population studies. In view of this, it is prudent to ask whether the admissions to post-gf aduate and doctoral courses should not be limited.

Although demography/population studies has been taught in India for a long time, it is not included among the subjects for the competitive examinations for central services like the 1AS, IPS, IPS, etc., apparently because it has not been regarded as an independent discipline. But when post-graduate and doctoral degrees are given in a subject, it can and should be included among the subjects for various competitive examinations. It is high time influential demographers tried and got it included.

Research

My concern has been more with the methods of data collection and techniques of analysis in demographic research in India. The epistemological problem pervades all research, and seems to be more serious in demographic research which is characterised by large-scale surveys.

A sample size smaller than 5,000-10,000 households and twice that number ot respondents is ridiculed. The instruments of data collection have, therefore, necessarily been lengthy questionnaires and interview schedules. The weaknesses of this macro-approach, which clearly outweigh its strength, are beginning to be realised. There are perhaps historical reasons for this monopoly of the macro-approach to demographic research in India. One is that the scope of demography has been narrowly conceived and confined to the measurement of the size and growth of population through fertility, mortality and migration. Another is that in India, unlike in other countries, statistics departments in universities were perhaps the first to offer to their students a paper or two in demography. And that is how people trained in statistics became the first to enter the field of teaching and research in demography. Some evidence of this is available in the claim that—

> It was after the development of modern statistical science in the country... that statisticians began to take an interest in demographic research. The presence of trained statisticians not only helped in the evaluation of the accuracy of routine population data but also made it possible to obtain fresh data by *ad hoc* surveys, (Chandrasekaran 1959:252).

In spite of India embarking on mortality and fertility control programmes, and the need for proper understanding of the demographic process, the scope of demography and the methods of demographic research have remained surprisingly the same.

Methodological Exclusivism

A review of demographic literature (Rao and Mullick 1974; Desai 1975; Jain 1975) reveals that survey has been the method adopted, and lengthy questionnaires and interview schedules have been the instruments of data collection, in demographic research in India. The methodological exclusivism is so pervasive that even when the sample size does not exceed 100 households and 200 respondents, the method and instruments of data collection remain the same (Mukhopadhyay 1981: 479-89). Thus, Indian demographers seem to believe not only in the spirit but also in the letter of G.W. Allport's *obiter dictum,* "If you want to know why people behave the way they do, why don't you ask them?"

Nevertheless, the weaknesses of large-scale demographic surveys are beginning to be realised. For example, while reviewing demographic research in India, Desai (1975: 94-5) observes,

> It must be recognised that data collection remains the weakest link in the chain of processes involved in population research in spite of the increased emphasis we have come to place on sample surveys in this regard. The instruments used for collecting data, particularly in the host of demographic, fertility and family planning surveys conducted during the last two decades, have drawn heavily, and often uncritically, upon the corresponding experimentation with survey research in Western countries where most of our demographers have had their training.

What have the demographic surveys achieved? They have failed to reveal fairly accurate birth, death and population growth rates, leave alone the factors influencing them. Tracing the evolution of demographic research in India, Bose (1970: 20) laments,

> The sad fact is that in spite of the massive data which have been collected in recent years, we do not know with a fair degree of accuracy the birth rate, the death rate and the rate of population growth in India (apart from the decade growth rates revealed by the successive censuses actuary)...

The 'sad fact' remains with us even two decades after this writing.

Many Indian demographers seem to believe that the *summumbonum* of their existence is to help implement the family planning programme successfully and bring down the birth rate in the country. I am not suggesting that they should not do this, but this should be only one of their responsibilities. In spite of their preoccupation with the promotion of family planning, birth rate in the country has remained constant at about 33 per 1,000 population for about a decade, although the proportion of the eligible couples practising family planning has soared from about 20 per cent to more than 40 per cent. The present author has analysed the reasons for this anomaly elsewhere (Reddy 1988: 1809-12).

Some Indian anthropologists and sociologists have been advising against the employment of large-scale surveys and lengthy questionnaires and interview schedules in social research. For example, Ishwaran (1968: XIII) cautions:

> Coupled with the vast store of sophisticated justification for his way of life, he (the Indian peasant) shares with peasants everywhere suspicion and mistrust of the outsider. This makes it very difficult to gain his confidence and elicit reliable and valid information from him. Questionnaire techniques, whether written or oral, are practically useless, firstly, the villager has a rather lackadaisical conception of time, so that he feels no compulsion to finish the questionnaire or to cooperate with the questioner in getting through a schedule. He is, furthermore, totally unused to answering questions about the kinds of things most questionnaires are designed to answer. Finally, he is not used to those habits of precision which are necessary if a short, single answer is to have much value.

Questionnaires and interview schedules in demographic surveys include complex questions, those which pertain to the private life of respondents, and demand precise and concise answers. Ishwaran's remark remains true even today not withstanding that survey directors often 'train' interviewers in 'establishing rapport' with respondents and 'putting them at ease', which is easier said than done.

Surveys, including demographic surveys, require more personnel, and large sums of money, if done on a large scale. To complete the surveys within the limited money available, survey researchers hasten the process of data collection by setting targets to interviewers. Each interviewer is generally required to complete a specified number of interviews every day. He or she is also required to note on the interview schedule the time taken on each interview. All these mechanism exert pressure on the interviewers to complete data collection as early as possible. In the process, they become fleeting tourists with no time to establish rapport with respondents and no time to evaluate the validity and reliability of the data being collected. Pressed for time or out of sheer laziness or because the issues dealt with are sensitive and awkward, some interviewers fake the data, filling up the interview schedules with imagined answers. The last practice has made the whole area of survey data and findings suspect:

> As a callow researcher in Bombay, I was shocked when I first learnt of the faking of responses to a questionnaire on the sex habits of white collar employees in firms. The way the investigator obtained responses evoked hilarious laughter, and since then I have had a healthy distrust of data gathered by investigators, a distrust which has not diminished with the years. (Srinivas 1977:36).

More important, respondents are under no obligation to divulge personal information and may even give distorted information which the fleeting interviewer has no way to verify.

It is argued in defence of large-scale surveys that they have *breadth* that they cover large areas and vast populations. Another argument, that follows from this, is that the findings of surveys permit generalisation. How misleading these arguments are becomes clear once we realise the existence of what I prefer to call the demographic gap the difference in the pace and pattern of demographic change in different geographic and socio-economic units. The existence of such a demographic gap among different states within the country in well known. Thus, while the 1971-81 decadal population growth rate was 25.0 per cent in the country as a whole, it was only 17.50 per cent in Tamil Nadu and 19.24 per cent in Kerala. Again, although the 1971-81 decadal population growth rate was lower in Tamil Nadu than in Kerala, birth rate and infant and general mortality rates were higher in the former. Kerala's pattern of demographic change was thus a more desirable one than Tamil Nadu's. It is axiomatic that similar demographic gaps exist in different districts within a state, in different blocks within a district, in different villages within a block and in different socio- economic groups within a geographic unit. If this is admitted, the wisdom of covering large geographic areas and vast populations through surveys becomes questionable, as also the assertion that survey findings can be generalised. Few seem to ask: generalisation for what? To have uniform policy and programme throughout the country? Why the urge for uniformity when there are wide differences in the social, cultural, economic, political and demographic factors

in the country? Why should the demographic goals be uniform for the country as a whole, or even for groups of states as has been recommended by a Working Group on Population Policy (Planning Commission 1980), when there are wide variations in the pace and patterns of demographic change? Similarly, it has been pointed out (Reddy 1980: 123-4) that there is need for flexibility in the health and family welfare programme in the country. In a state like Kerala population density is as high as 655 per square kilometre and more than 80 per cent of the rural people live in villages each with a population of 10,000 or more, while in a state like Himachal Pradesh population density is only 77 per square kilometre and more than 65 per cent of the rural people live in villages each with a population of less than 500. It is therefore inappropriate to have a uniform programme of one Primary Health Centre and one Sub Centre for a specified population size. The differences in density and proportions of rural people living in villages of different sizes make for differences in the distance between service delivery institutions and people, and ultimately for differences in the provision and utilisation of services (Mouli and Guruswamy 1979:28-37). The performance of family welfare programme has been uneven in different parts of the country partly because it is uniform, and not based on the differences in the social, cultural, economic, political and demographic factors. Within a broad framework, it is not only desirable but also necessary to have flexibility in the population policy and family welfare programme.

KAP Gap

During the 1960s and 1970s, there was a great outburst of surveys of knowledge, attitudes and practice (KAP) of family planning. These surveys added little, if any, to our understanding of knowledge, attitudes and practice of family planning. They assumed that people did not practise family planning because of unfavourable attitudes, which were, in turn, formed due to ignorance about family planning methods. In other words, if knowledge about family planning methods was imparted, people's attitudes towards family planning would turn favourable, leading to the practice of family planning. But the KAP survey researchers were in for disillusionment; for their surveys revealed that there was no complete correspondence between knowledge and attitudes, and between attitudes and practice of family planning methods. This is what they called the KAP gap.

Some knowledgeable people questioned the validity and reliability of data collected through the KAP surveys and advised their termination. Fawcett (1970:189) opined that "in repeated KAP surveys of a single target group respondents usually exhibit considerable knowledge and attitude change over time, but they do not always exhibit corresponding changes in contraceptive practice". Even the reported knowledge and attitude changes are quite often artifacts of KAP surveys rather than real. In a KAP survey of six villages near Delhi (Agarwala 1970: 115), several men and women reported having knowledge about a non-existent family planning method. In surveys which are characterised by formal interviews, respondents tend to think that they should give some answer to each question, and, if possible, a best answer. Indian anthropologists and sociologists believe that it is difficult to understand fertility behaviour on the basis of data obtained through surveys. 'It would also appear that survey research techniques of demographers are ill-suited for understanding

fertility... firing questions at "respondents" with pen and paper in hand may not be the best research tool' (Srinivas and Ramaswamy 1977:28-29). Mandelbaum (1974:14) makes the same point with a romantic description of interviewers and more forcefully when he says:

> The manner in which survey workers elicited information was not always conducive to providing useful data. Commonly, for example, a village woman finds herself suddenly confronted by a young lady, carrying official-looking papers, who fires a series of questions at her. The village woman takes in the young lady's austerely elegant sari, her thin, expensive bangles, her carefully tended hair, smooth complexion, and her soft hand cleverly manipulating a ball-point pen. She is likely to give the kind of answers that she believes an educated person would like to hear.

But the KAP survey researchers refused either to learn the lesson from their own experience or to heed wiser advice. They rather thought that something was wrong with their questionnaires and interview schedules, and went on revising them, altering the structure and sequence of questions, with the hope of bridging the KAP gap. The typical thinking of KAP survey researchers is reflected in the following statement: 'the solution to the (KAP gap) problem, therefore, lies in improving the methodology of surveys by refining the instruments used for collecting the information' (Bhende and Rao 1977:278). We shall have occasion to argue that whatever may be the dress and deportment and howsoever refined the instruments of data collection may be, surveys will always reveal a KAP gap.

Another gap revealed by the KAP surveys is the one between desired or ideal number of children and the actual number. Several KAP surveys revealed that many respondents had, either at the time of survey or later, more children than they said was the ideal or desired number. It may be pointed out that KAP surveys have currently married women in the reproductive age or couples with wives in the reproductive age as respondents. It is true that the actions of the couples determine their fertility. But the couples do not live in a vacaum. They live in families and communities to whose norms they conform. The point I am trying to make is that while the actions of the couples determine their fertility, their actions are determined, first, by their familial norms and, second, by their community norms. Therefore, the ideal or desired number of children expressed by the couples through verbal attitudes need not or cannot correspond with the actual number. Referring to this gap, Caldwell (1982: 127) rightly observes:

> the 'ideal family' questions ultimately fail to measure likely fertility behaviour even under conditions of adequate access to contraception because they are imported almost undigested from Western society and contain a range of assumptions about non-Western societies that will not bear up under examination. The fundamental problem is the questioning of a woman about the 'best' number of children, as if the chief cultural thrust were optimization of family size instead of a range of other concerns such as meeting the expectations of husband and other relatives, conforming with peer group behaviour, and so on. The 'ideal family' question was shaped by Western, middle-class researchers, living in conjugal families in which husbands

and wives consult each other over matters of reproduction and sex, and it achieves its greatest reliability among such couples.

In a society like ours, fertility behaviour of couples is determined by the attitudes of family and community members also. It follows, therefore, that the attitudes of the members of the couples' families and communities also should have been studied, if not to the same extent as those of the couples. Partly jocularly and largely seriously, the KAP survey researchers have, for long, been accusing the Indian mother-in-law of coming in the way of her daughter-in-law regulating her fertility. But no KAP survey researcher seems to have thought of constructing and administering a special interview schedule to the much-maligned Indian mother-in-law.

Instead of thinking on the foregoing lines and giving up the KAP surveys, many KAP survey researchers thought that there was something wrong with the question initially put to respondents and that a revised version of it would close the gap. One of the articles on the subject opens with the statement, 'Normally one would expect a strong correlation between the expressed desire of a couple for a certain number of children and the actual number of children born to the couple' (Mukherji 1977: 16). But on noticing a wide gap between the desired and actual number of children, the article ends with the statement. 'A direct question on the desired number of children or minor variations in that question may lead to contradictory answers. The question is important in family planning or family composition studies. A modification of the question is required' (ibid: 22). As a result of such thinking, more KAP surveys were undertaken with modified questions in the questionnaires and interview schedules. A typical modified question asked in the KAP surveys was, 'If you had to do it all over again, how many children would you like to have?' (Bhende and Rao 1977:282). The modified questions notwithstanding, the KAP gap, and the gap between the desired and actual number of children, have remained as wide as ever.

It is unfortunate that many KAP survey researchers still believe that the two gaps are caused by the structure and sequence of questions, not by the surveys as such. It is a clear case of mistaking the trees for the forest. Lapiere's (1934: 230- 7) classic study conducted about two generations ago revealed that there will always be some discrepancy between the attitudes verbally expressed in surveys and actual behaviour. Although social science research, demographic research included, is said to be cumulative, we do not seem to learn lessons from research conducted in the past. The KAP gap, and the gap between the desired and actual number of children, are perhaps widened by the new values being spread by the elite and the family planning programme. It must be emphasised that the findings of KAP surveys contributed to the initial euphoria in setting ambitious targets of lower birth rates by specified years, and to the later despair in repeatedly revising the targeted birth rates upwards or deferring them to later years.

'Caste System'

In some demographic centres in India, a distinction is made between 'technical' demography and 'substantive' demography. The implication is that there are 'technical' demographers who alone are capable of employing various statistical techniques as contrasted with 'substantive' demographers who cannot. In this 'caste system' among the Indian demo-

graphers, more often explicitly than implicitly, the "technical" demographers put on airs. Because the technical demographer from the overwhelming majority and especially because of the influential positions some of them hold and the disdain with which they view 'substantive' demography, the 'substantive' demographers refrain from protesting in public against the invidious distinction. Several senior 'substantive' demographers, however, told the present author that the claim to superiority of the 'technical' demographers is a doubtful one. Even an excellent analysis of demographic processes, if done without sophisticated statistical or manipulative techniques, the latter label as 'journalism' and the analyst as 'journalist', erroneously implying that journalism is an easy and amusing discipline, and that the journalist is a lesser human being in shaping national policies and programmes. Thus, Gresham's Law is at work in demographic research wherein quantitative research is driving out qualitative research. The 'technical demographers' continuing antediluvian attitude towards qualitative research has been hindering rather than advancing the cause of the discipline of demography in India.

Indeed, the "technical" demographer is basically a statistician, untrained in any social science. He usually analyses secondary data or data collected by interviewers in large-scale sample surveys; statistical techniques are his tools of analysis. The 'substantive' demographer is basically a social scientist, untrained in advanced statistics. He analyses data that he has painstakingly collected in the study areas; he does not employ sophisticated statistical techniques, but he supports the analysis of survey data with observations made and insights gained during his sojourn in the study areas. The 'technical' demographer's limitation due to lack of training in any social science and the consequent lack of social perspective into demographic issues is as severe as, if not more severe than, the 'substantive' demographers due to his lack of training in advanced statistics and consequent in ability to employ sophisticated quantitative techniques.

'Quantophrenia'

All research needs quantification, all the more in demographic research. But then, there are limits to quantification. Many Indian demographers go on employing statistical techniques and tests with mindless monotony. Sorokin (1966: 66) called it 'quantophrenia' and 'testomania'. In spite of innumerable demographic surveys conducted, and countless statistical techniques and tests employed, we know as little of the demographic processes today as we did about three decades ago when India became the first country in the world to have started an official family planning programme.

Two-variable correlation analysis is very common in demographic research. A dependent variable like fertility, for example, is often correlated with an independent variable like religion or an 'intermediate' variable like age at marriage. But correlation is not causation, it is only co-variation. Two completely unrelated variables may be highly correlated, positively or negatively. There may be, for example, a high positive correlation (+0.75) between temperature in New Delhi and divorce rate in New York, but it does not mean that one causes the other. Mintzbag commented (1979: 588) that 'everything in the world correlates with everything else at 0.3'. The New Delhi-New York example reveals two facts. One, in correlation analysis, causation is doubtful. Two, even if there is causation, its

direction is doubtful. Two more observations are pertinent here. First, causation may be two-directional. For example, it was and still is being argued that high infant mortality rate causes high fertility rate. But it is now being asserted that high fertility rate also causes high infant mortality rate. Secondly, a third variable may be influencing the two variables under correlation analysis. For example, the recent upsurge in dowry may at the same time be increasing age at marriage and reducing fertility. It would, therefore, be misleading to conclude, on the basis of a two-variable correlation analysis, that increase in age at marriage is reducing fertility.

An improved version of two-variable correlation analysis is said to be made by holding all other variables constant or by controlling all of them. But, is this feasible? 'Researchers who focus on two variables at a time-who catch what someone has called "economists' plague" holding all other things constant—seem to cloud issues almost as often as they clarify them. We shall never have closure so long as we pretend that other things can be held constant' (Mintzberg 1979: 588).

Economics went quantitative a long time ago, but, of late, there is a growing concern among some leading economists about where excessive quantification is leading them. Leontiff (1982: 104), a Nobel laureate in economics, wrote:

> "Not having been subjected from the outset to the harsh discipline of systematic fact finding, traditionally imposed on and accepted by their colleagues in the natural and historical sciences, economists developed a nearly irresistible predilection for deductive reasoning. As a matter of fact, many entered the field after specializing in pure or applied mathematics. Page after page of professional economic journals are filled with mathematical formulas *leading the reader from sets of more or less plausible but entirely arbitrary assumptions to precisely stated but irrelevant theoretical conclusions."*

The same can be said of many Indian demographers who entered the field of demography after training in statistics. Even if one employs sophisticated statistical techniques or mathematical models, his writing ought to be lucid and clear not only to the professionals of the same discipline but also to those of other, related disciplines. The writings of some Indian demographers are not clear even to fellow demographers, leave alone professionals of other disciplines. What Galbraith (1981:535-6) wrote about the writing of economics equally well applies to demographic writing:

> there is no idea associated with the subject (economics) that cannot, with sufficient effort, be stated in clear English. The obscurity that characterizes professional economic prose does not derive from the difficulty of the subject It is the result of the incomplete thought; or it reflects a priestly desire to differentiate one's self from the plain world of the layman; or it stems from a fear of one's inadequacies found out. Nothing so protects an error as an absence of readers or understanding.

Methodological Pluralism

Large-scale surveys are perhaps necessary in demographic research to estimate the size of population, its distribution by various characteristics, birth rates, death rates, infant mortality rates, etc. They may also be useful in estimating the association between different variables, though not in identifying the variables for studying the association between them; they may not be helpful, also, in offering explanation for a given degree of association between different variables.

For a proper understanding of demographic processes, micro-approach to demographic research is essential. By micro-approach is meant the employment of a variety of data collection techniques, including observation, both participant and non-participant, focus group interviews, small-scale surveys and informal discussions. Data obtained through such methods ensure both internal and external consistency, and provide a holistic view of the issues under study. Micro-approach has *depth.* It requires the investigator(s) to live in the study setting for at least one year to cover all the seasons. This means that the study area is necessarily small. It is not correct to say that some of the criteria of large-scale surveys cannot be applied in micro-approach. Typical, or even representative settings, can be selected for demographic investigation. Similarly, meaningful quantification of data obtained through micro-approach is also possible.

There is need to broaden the scope of demography. Demography has traditionally concerned itself with the measurement of the size, and growth of population through fertility, mortality and migration. But, in the present context, it should also concern itself with the causes and consequences of each of the three components of population growth. Once this is recognised, the need for micro-approach to demographic research becomes obvious.

The need for micro-approach can be exemplified in several ways. Had the micro-approach been employed and the actual behaviour of people observed in different contexts, the KAP gap, and the gap between the desired or ideal number of children and their actual number, would not have been as wide as are revealed by the KAP surveys. To cite another example: it is well known that malnutrition is a major killer of infants and young children in India. Unless we know the dietary patterns of people in general, and infants and young children in particular, we cannot really explain the causes of malnutrition and mortality among infants and young children. Certainly survey is not the best method of collecting data on the caloric and protein consumption: the method of observation is much more opt. Micro-approach has been employed successfully to study the causes of demographic change in south India (Caldwell, Reddy and Caldwell 1988a). The experience with the experiment in micro-approach has been reported elsewhere (Caldwell, Reddy and Caldwell 1988b: 25-38).

It has sometimes been pleaded, rather passively, that it is advisable to do a study in a small geographic area adopting participant observation method and identify issues before undertaking a large-scale survey. It is perhaps wise to say that no single approach is adequate in studying human behaviour, including demographic behaviour. There is need to adopt what is called methodological pluralism (Roth 1987) or methodological triangulation which is broadly defined as 'the combination of methodologies in the study of the same phenomenon' (Denzin 1978: 291). A further advantage of methodological triangulation is that it is likely to lead to theoretical triangulation, that is, diverse theories are brought to bear on a common problem (ibid:295). It has been obsevered that '(methodological) triangulation may also

serve as the critical test, by virtue of its comprehensiveness, for competing theories' (Jick 1979: 609). Since the benefits of methodological pluralism are many, Indian demographers would do well to adopt it in their future research studies.

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