

## **Book Reviews**

*Kerala's Demographic Transition—Determinants and Consequences* edited by K. C. Zachariah and S. Irudaya Rajan, Sage Publications India Private Ltd., August, 1997, 366 pp., Rs. 450.00.

KERALA'S demographic transition in 1980s has attracted world wide attention particularly in view of its poor performance in agricultural and industrial sectors. The AKG Centre for Research and Studies, Trivandrum had in August 1994 organised an international congress on Kerala studies at Trivandrum bringing together scholars from different parts of the world. One of the sessions for the conference was on demographic transition. The papers presented in this session have been edited by eminent demographers, Dr. K. C. Zachariah and Dr. S. Irudaya Rajan, and presented in this book.

Based on the topics covered, the book has been divided into four parts. Part A: Demographic Transition, Part B: Determinants of Demographic Change, Part C: Consequences of Demographic Change and Part D: Migration. An overview on 'Kerala's Demographic Transition' has been provided by K. C. Zachariah and S. Irudaya Rajan.

Four papers all by well known demographers have been included under Part A: Demographic Transition. The first paper is on 'Demographic Transition since Independence' by P. N. Mari Bhat and S. Irudaya Rajan. This paper highlights the decline in Kerala's fertility, infant and child mortality and argues that it is not due to any policy interventions made by the Kerala Government or due to higher female autonomy or due to the postponement of age at marriage. The authors conclude that female adult literacy, i.e. female literacy in the age group 15 and above is the most significant factor responsible for reduction in child mortality. Similarly in case of fertility, the authors argue that the fertility decline is due to the female age at marriage. A multiple regression analysis has been used to justify the results.

While the consequences are very interesting and demonstrate the importance of female education, in the reviewer's view, the question of female autonomy and provision of better health facilities in Kerala has not been dealt adequately in the regression analysis. Any how in view of the inter relationships of various factors with female literacy and fertility a simultaneous equation model would have brought out the differentials much more clearly than simple multiple regression attempted in the paper. The various policies and programmes have been implemented over a time space. A cross sectional analysis would have difficulty in disentangling the effect of such policies. This aspect seems to have been over looked in the analysis.

Despite these limitations, the paper is an important contribution to understanding Kerala's demographic situation. The interesting question that has been raised which will have far reaching implication is whether the demographic transition achieved through social development would also be of use in bringing about economic transformation of the state. The authors have with the help of data argued that this may not be possible without policies and programmes suitably devised to take advantage of the savings in various social sectors and invest them in other economically productive sectors. In case of Kerala the benefits of fertility decline resulting in reduction in the school age population has not been made use of by the planners. While the total enrolment in primary and secondary level increased by only 75% from 1960 to 1987, the real expenditure on education increased by more than 300 percent. Neither was this additional expenditure used to improving the quality of education particularly higher and technical education. Further there was a lack of well thought out employment generation programmes keeping in view the demographic transition in general and fertility decline in particular. The suggestion that Kerala Government should slowly move away from heavily subsidising primary and secondary school education to attacking the unemployment problem particularly employment of females is an advice that needs serious consideration.

The second paper titled "A Response to Official Policies and Programmes" by Dr. Zachariah is a very well argued paper indicating that the health programmes particularly MCH and universal immunization programmes had a good impact on the fertility and the infant mortality conditions in Kerala, because these were introduced at a time when many of the preconditions for their success such as low infant mortality rate, high female literacy, redistributive policies had already been implemented. However, the author cautions that while the Government sponsored family planning programme did have an impact on the fertility rates in all social strata, the success itself is more due to the efficient delivery of services and a higher interaction between family planning services and socio-economic conditions. In the

author's view land reforms and redistributive policies introduced in 1960s, continued to accelerate the need for healthier, well educated children as it was no longer possible for children to depend on income from inherited land. MCH and immunisation services were introduced at the right time when Kerala was about to take off in female education. Thus the programme had a great impact. Otherwise the impact might have been less.

The third paper by Dr. P. S. Nair is an analysis of the fertility, mortality and contraceptive prevalence in Kerala based on the National Family Health Survey. This was a most recent and comprehensive data set available at the time of the conference. It is a happy coincidence that the fertility and child mortality levels indicated by the NFHS in Kerala were in agreement with those of the Sample Registration System (SRS) of the Office of the Registrar General of India. While the office of the Registrar General of India presents only broad levels and trends at macro level, the survey has been able to bring out these trends in fertility for different socio-economic groups and also provide insight into a number of interrelated issues such as quality of services etc.

The fourth paper on the 'Onset of Mortality and Fertility Transition in Kerala: New Evidence from Parish Records' by Irudaya Rajan, Mari Bhat and Tim Dyson is an interesting one. The data pertaining to six parishes in Trivandrum diocese have been culled out and the limited information that can be drawn from them have been compared for Trivandrum and Bombay. Two indices, birth-death ratio and birth-marriage ratio have been computed. These indicate that among the Roman Catholics of Trivandrum the fertility started declining in the second half of 50s and early 60s. The date of on set of mortality transition is not clear as the parish records are available only from 1920 onwards and the on set of mortality decline seems to have occurred even before that. The paper is recommended more for the novelty in the use of limited data than for the conclusions drawn. This paper certainly opens up a new area of study in Indian demography at local areas and for selected communities.

While the first part deals with the demographic transition, the three papers in Part B of the book discuss the determinants of demographic change.

It has been argued by a few demographers that the decline in Kerala's fertility has been "poverty induced". These demographers had argued that the decline in fertility among agricultural labourers cannot be seen as an improvement in quality of life but may equally be due to greater poverty. This hypothesis has been examined by James K. S. with the help of field survey data collected in the districts of Palakkad and Alapuzha as part of a World Bank project in 1980. Palakkad was poorer than

Alapuzha. The analysis indicated that poorest have the highest fertility and there is a systematic reduction of fertility with improvement in poverty situation. He concludes that there is no sign of poverty induced fertility transition.

The paper "Education and Fertility: Is there any Link" by Radha Devi highlights that while education has an impact on fertility decline, the social and cultural milieu in which a woman lives are important. With the help of data for the women of same educational level in Madhya Pradesh and Kerala it has been argued that the decline in fertility of women in Kerala is much faster than women in Madhya Pradesh. The author suggests that the socio-economic and cultural milieu in which a person lives has a definite impact overriding the individuals educational characteristics in a determining fertility.

While Part B concentrates on determinants of fertility and mortality decline, Part C examines the consequences of these changes. Five papers have been presented. Of these only one on 'Population Ageing: Causes and Consequences' by S. Irudaya Rajan and V. S. Misra can fit into the section. The paper on 'Inter Regional Comparison of Demographic Condition' by P. Mohana Chandran Nair should have logically been included in the section on Demographic Transition. Other three papers could have been better classified into a separate group titled some aspects of 'Labour Force, Nutrition, Age at Marriage'.

The paper by P. Mohana Chandran Nair discusses in depth the various social and economic factors in the two areas Malabar and Travancore Cochin. The former consists of six districts in north namely Kasargod, Kannur, Wayanad, Kozhikode, Malappuram and Palakkad while the remaining eight districts constituted the erstwhile Travancore-Cochin. Data on twenty two variables, four on demographic characteristics, three on education, three health related, four on family planning, four on social factors and three economic variables and six economic variables were compiled for the period 1965-67 and 1991 -92 separately for North and South. The distance between the regions was analysed using Mahalanobis'  $D^2$ . The analysis indicated that while the two regions differ in respect of demographic variables and social variables by 1990-92, the distance between North and South has reduced substantially. In 1990-92, the variables that contributed to differences were different. These are fair price shops, ration cards, agricultural credit societies, number of higher educational institutions etc. The paper uses sophisticated techniques of analysis. The author should have however paid more attention to the reliability of data used. A birth rate of 22.67 and 22.03 in 1965-67 for North and South regions appears doubtful. Similarly, the source of figures of on net domestic product presented could have been better explained in the paper.

The paper on 'Dynamics of Age at Maternity' by V. S. Mishra and S. Irudaya Rajan brings out an interesting aspect of the fertility transition. By analysing the age specific fertility rates of Kerala for the period of 1971-1992 the authors demonstrate that effective reproductive span, that is the difference between the mean maternal age at first birth and last birth, has declined from 13.22 years in 1971 to a mere 4.33 years in 1992 in Kerala. In 1990 it was over 16.3 in Bihar and Uttar Pradesh. While the conclusions are interesting, it would have been better if the authors had given references to the methodology used for deriving mean age first birth and mean age at last birth as these are not readily available in standard text books. In particular the method of getting single year age specific fertility rate from 5 year age specific fertility rate and the method followed to integrate in maternity function to obtain mean age at first birth and subsequent births would merit elaboration. The figures derived may be sensitive to these procedures.

Dr. R. S. Kurup's paper on 'Low Birth Weight and Need for Nutritional Care of Pregnant Women' is an excellent attempt to study the extent of low birth weight babies from the records of the major hospitals in Kerala in the two hospitals selected for the study. Roughly one third of new born babies were underweight. The mothers of these babies were agricultural labourers or coolies. A follow up study of mothers has been attempted but the results have not been reported as the survey was not completed in 1994 when the paper was written. In any case lack of nourishment to mother at pregnancy seems to emerge as a major cause.

One of the significant aspects of the Demographic transition of Kerala is the rise in the old age population. S. Irudaya Rajan and V. S. Mishra discuss the consequences of demographic transition. Due to population ageing, the young age dependency ratio (YDR) i.e. number of children aged 0-14 years per 100 persons in the working age group (15-59 years) has decreased from 82.71 in 1961 to 61.5 in 1981 and is expected to decrease further to 37.3 in 2026. The old age dependency ratio (ODR) i.e. number of persons aged 60 years and over to 100 persons in the working age group 15-59 years is expected to increase from 14.12 in 1991 to 30.90 in 2026. In absolute terms, the number of persons aged 60+ is likely to increase from 2.6 million in 1991 and about 8.3 million in 2026. As a consequence percentage of old age population is likely to increase from 8.8% to 18.4% in some period. The paper also discusses the social society and welfare system for old age persons in Kerala.

Apart from fertility and mortality, migration has also played an important role in Kerala's population growth. Three papers have been included. The first paper by Joseph K. V. on 'Peasant Migration from Travancore to Malabar' traces the

emergence of new land owning farmers in Travancore in 1865 through an Act by which State transferred the titles of lands owned by it to the tenants and the consequent creation of a class of forward looking farmers. The peasants started moving to other areas and brought under cultivation areas which were not cultivated earlier. The 1930's saw this group moving to the then Malabar which was part of British India. The process of migration, the factors behind such migration have been discussed well. The paper summarises the factors behind the rise of peasant farmers in Kerala and their role in transforming Kerala's agrarian economy. The weakest link seems to be the lack of data to quantify the migration stream.

Keralites migration of Gulf countries and the social and economic consequences are part of Kerala's Demographic Studies. Thomas Issac's paper examines the studies on the consequence of migration on (a) domestic employment situation, (b) savings, consumption and investment, (c) problems of readjustment of return migrants and (d) implication for distribution of assets and income.

The important conclusions that emerge are that the explosive unemployment situation in Kerala was to an extent diffused by Gulf migration. Even though substantial savings of the migrants was remitted to Kerala, lack of institutional mechanism to convert this savings into productive investment in the state resulted in stunted growth of the economy. Specifically this contributed to the shifting in the cropping pattern. This also resulted in privatisation and commercialisation of educational and health services. Religious fundamentalism has also been fuelled by the Gulf money.

Leila Gulati through her case studies focuses on the social consequences of International migration particularly among women left behind by migrants. Though often dependent on close relatives and friends for support and help during male migrants absence, the females, even illiterate ones have coped remarkably with husband's long absence in management of funds, child care and education.

The overview by the editors summarises the papers, succinctly, and adds three sections; first on Kerala's future population growth, the second on applicability of Kerala model of fertility transition to other states of India and the third on research priorities for the future. Female education and efficient delivery of MCH services have been identified as important factors. The authors however recognise that with lower female literacy, adjoining Tamil Nadu has also succeeded in reducing fertility. The socio economic problems of ageing and the need to move away from sterilisation programmes have been identified as research priorities.

In overall the book is an useful addition to the growing literature on Kerala's demographic transition.

*Basic Demographic Techniques and Applications* by K. Srinivasan, New Delhi: Sage Publications India Private Ltd., 1997, 224pp. Rs. 295.00.

THIS is a text book on Demographic Techniques and Applications which will cater to the masters level students of Population Studies. One very important distinguishing feature of this book is that, besides providing fundamentals of technical demography, it deals with the application of demographic techniques for health policy and management, and evaluation of programmes. Because of this feature the book will be useful for the field workers in the field of health and family planning as well as to the students of demography. In this text book Prof. Srinivasan has described all the important statistical and analytical tools required by any one using demographic methods. The lucid and straightforward presentation of the book has made it student friendly.

In ail, there are 13 chapters which deal with various aspects of technical demography. Chapter 1 opens with definition and scope of demography, and touches upon two important topics which are not covered in other books on formal or applied demography namely, the linkages of demography with epidemiology and public health and applications of demography in health policy and management of programmes. Following topics are covered in the text book:

- basic concepts and measures such as rates, ratios and proportions and demographic transition theory
- demographic data sources, compilation and presentation of basic demographic data, such as, age and sex structure of the population
- basic measures of fertility
- basic measures of mortality and construction of Life Table
- nuptiality analysis (analysis of marriage data)
- population projections
- evaluation of the quality of data and adjustment
- evaluation of programmes
- application of health policy and management

Chapter 13 provides information about selected software packages which is another very useful aspect for the teachers and learners of demography. Appendix I describes Key Concepts in Health from Medical Sociology, Epidemiology and Health Care Administration. Appendix II provides Glossary of selected demographic measures, and other useful measures such as nutritional status measurement. In

order to make the presentation more meaningful and interesting, data and examples used are drawn from the real life experiences of Kerala and Rajasthan. At the end of some chapters exercises are provided for the student.

The relationship between population sciences and epidemiology and the commonality of approach between the formal demography and epidemiology is explained in an easy manner with the illustrations from the day to day experiences. For example, the necessity and importance of data on the population size of the elderly people by the age, sex, marital status distribution etc., separately for the rural and urban areas, for planning health programme for the aged in the population is explained by taking various dimensions of the problems of the elderly population.

Chapter on Evaluation of Programmes discusses various approaches to evaluation and points out the importance of the evaluation of the quality of care in health delivery services. For example, the author suggests that the evaluation of the MCH programme should include following six dimensions of service delivery:

1. Availability of service facility at short distance;
2. Availability of relevant information to pregnant women and mothers who have delivered recently at their home or in the neighbourhood;
3. Technical competence of service providers;
4. Client-provider interaction;
5. Continuity of care and appropriateness and
6. Acceptability of services.

The same chapter brings out a relevant point regarding the need for numerator based indicator system for evaluation. In many developing countries denominator data to compute rates and ratios are not available or are of poor quality. In such circumstances, development of appropriate indicators concentrating on numerators only could be very useful. The characteristics of the events such as births, infant deaths, maternal deaths do reflect the underlying mortality and morbidity conditions in the population and this type of numerator analysis seems to offer exciting possibilities for the evaluators of the programmes.

While discussing the applications of demographic techniques in health policy and management the author has introduced a relatively new applied science of Health Demography. The interdependence of health status, health care and demographic characteristics is explained by taking contrasting examples of two Indian states namely, Kerala and Rajasthan and with the simple diagram.

The application of various demographic techniques in the policy formulation and management of health programmes including family planning programmes, are

directed towards assisting the policy makers and programme managers in finding answers to the following six questions confronted by them in any situation:

1. What is the magnitude of the problem or a disease situation under investigation in the area?
2. What is the relative priority in relation to other diseases of similar kind and the extent of societal and political concerns?
3. How effective are the existing programmes in dealing with the disease or problem either in tackling or controlling the problem or in terms of cost-effectiveness?
4. What are the socio-cultural and programme related factors closely associated with the prevalence of the disease or the problem under study?
5. What are the significant action points at which monitoring and evaluation of the programme can be undertaken?
6. What are the recommended new interventions or modifications in the old interventions that are under implementation that are needed for improving the effectiveness and efficiency of the programmes and what are the financial and other resources needed for the same?

At the end, the author introduces three computer software packages, namely, DEM-LAB, Dem Proj and PAS. DEM-LAB is specifically intended for the course "Teaching Demography through Computers", the Dem Proj is a demographic projection model and PAS (Population Analysis Spreadsheets) provides illustrated application of the demographic techniques.

This text book is important as it deals with formal demography and the applications of demographic techniques to other related fields of evaluation of programmes and health. It is unique in this sense. The student of demography for whom this book is intended will no doubt draw benefits. This book will be also useful to the students of sociology, economics, anthropology and public health and programmes and policy makers in the field of population and health.

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