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Migration and Fertility in India

IN recent years, there has been a rapid growth of interest in the study of the relationship between migration and fertility. This interest has been particularly widespread in USA and Latin American countries, for which a large number of studies on migration and fertility have come out. The subject, however, has not been studied seriously in other parts of the world, more specifically in the developing countries of Africa and Asia. For instance, in India where, an extensive search into the population literature, that has greatly proliferated since the initiation of the official family planning programme in 1952, has revealed only four studies dealing with certain aspects of migration and fertility. But, inspite of the vastness of the country with its variegated phenomenon, all these studies have been reported from Bombay only. This neglect seems to be mainly because of the prevalent belief that the populations of these regions are immobile.

Immobility of India's Population—Myth or Reality

The migration statistics are being collected in the Indian Censuses since 1872 and in support of the thesis that mobility of India's population is very low, data from these reports, which are based on place of birth, have often been cited. In all decennial censuses since 1891, the proportion of persons enumerated in a state other than those of their birth have consistently been

shown to be around 3 percent[1]. It was on the basis of these statistics that Kingsley Davis observed, quarter of a century ago, that the population of India "like that of most peasant regions is relatively immobile."[2] The reason attributed by Davis for this immobility were economic, social and cultural.* The reorganisation of states in India, whose boundaries have been fixed primarily on linguistic considerations, has further been thought to be a factor inhibiting the movement of people from one state to another.

The mobility figures derived from the earlier Indian censuses are indeed very low and indicate very limited mobility among India's population. It may, however, be noted that these statistics relate only to inter-state and not to the total migration. But, in the Indian context intra-state migration is more impor* tant, in view of the fact that an Indian state equals in population size and area to many a country of the world. According to the 1961 Census, of the total internal migration, inter-state migration accounts for only 10.8 percent, while the remaining 89.2 percent is intrastate migration.[5]

The 1961 census further shows that about one-third of the total population of India was involved in internal migration[8], which is quite a substantial amount. This also, to some extent, is an underestimate since it is based on place of birth statistics which do not take into account the multiple moves and return migration. Zachariah in his migration study of Greater Bombay found a heavy outmigration among the former migrants to Bombay. This rate was

J. Bose, Ashish. "Migration Streams in India". *Paper presented at the Sydney conference of the International Union for the Scientific Study of Population, 1967,* mimeo pp. 598. **Also** Mehrotra, G. K. *Birth Place Migration in India,* Census of India 1971, special monograph number 1, New Delhi, Registrar General India, 1974, pp. 21.

2. Davis, Kingsley. *The population of India and Pakistan.* New Jersey, Princeton University Press, 1951, The later estimates made by Davis, however, showed *a.* substantial amount of internal migration in India. See Davis, Kingsley. "Urbanisation in India : Past and Future" In : Turner, Roy (ed.), *India's Urban Future,* Berkley, University of California, Press, 1962, pp. 20-22.

3. Davis, Kingsley, *The population of India and Pakistan op. cit.,* pp. 108.

4. Suprounovich, B. P. "Migration and changes in the geography of rural population and agriculture in India". In : *Census of India 1971 — Economic and Socio-cultural Dimensions of Regionalisation.* Census Centenary Monograph number 7, New Delhi, Registrar General India, 1971, pp. 279.

5. Census of India 1961, Vol. I, India, Part II-C (iii) and (iv) *Migration Tables,* New Delhi, Registrar General India, 1966.

6. Bose, Ashish. "The process of urbanisation in India : some emerging issues". IB : Fox, Richard, G. (ed.), *Urban India ~ Society, Space and Image,* Duke University Press, 1969.

particularly high among the higher age groups.[7]

Apart from the census statistics, there are a number of empirical investigations which give us the magnitude of migration in India. The socio-economic surveys of many Indian cities sponsored by the Research Programme Committee of the Planning Commission has shown that the migrants constitute from 15 to 40 percent of the population of various cities studied.[8] A special study of the National Sample Survey (NSS) on internal migration has also revealed that 369 out of 1000 residents in the urban areas arc migrants and this proportion is more than half in big cities.[0]

. 7. Zacharia, K. C. *Migrants In Greater Bombay.* London, Asia Publishing House, 1968, pp. 338-39' Some other studies have also found a considerable amount of stepwise and return migration in India. Desai in a survey of a small town of Mahuwa in Gujarat state found that 60 percent of the incoming migrants to this town halted at three or more places before coming to Mahuwa. Similarly, Agarwal on the basis of a Survey carried out in 1966 in the state of Maharashtra found that for every 100 life time incoming migrants, there were 9 return migrants. See Desai I. P. "Small towns-facts and problems". *Economic Weekly,* **XVI** (16), April 18, 1964 and Agarwala, S. N. "Socio-economic and demographic characteristics of the rural migrants and non-migrants". *Journal of the Institute of Economic Research,* III (2), 1 July 1968. Rele has also reported excessive return migration of 'elderly people back to their place of birth. Rele, J. R. "Trend and Significance of internal-migration in India:" *Sankhya : The Indian Journal of Statistics,* Series B, 31 1969, 3-4.

. The Research Programme Committee of the Planning Commission, Government of India, sponsored the surveys of 21 Indian cities. Bulsara has reviewed the findings of some of these surveys in a book. In his review, he observed that some of [he migrant families have one or more members of their family living in their original home (see Bulsara, Jal F., *Problems of Rapid Urbanization in India,* Bombay, Popular Prakashan, 1964, pp. 37-38). It was also found that in the various cities surveyed 33 to 92 percent of the families maintained their ties with native place (Bulsara, *ibid.,* pp. 26). Thus these migrants usually return to their place of birth in the event of sickness or unemployment. Those persons at the time of census enumeration do not get recorded as migrants.

8. Bulsara, Jal F. *Ibid.,* pp. 5.

9. Government of India, National Sample Survey (NSS) 13th round, May 1955-58,' *Number 53—Tables with notes on internal migration,* pp. 3. The N. S. S. has, however, used different definition of a migrant. When the informant was enumerated at a place other than that of his native place, he was considered as a migrant, the native place being the place where the parents or forefathers of the person reside more or less permanently, and with which the person has or had at least some occasional connection.

'- The magnitude of migration in India is also available from some local studies. In a study of urban community near Hyderabad, it was found that 68 percent of the population of the[1] area were locally born and the migrants constituted 32 percent. Ninetyfour percent of these migrants were from within the state and only 6 percent from outside the state (see Gopi, K.-N. "Demographic and social structure of a metropolitan fringe community". *The Journal of Social Work,* **XXXVI** (3 and 4) (October 75-Jan. 76, pp. 312).

Thus, the population of India is not as immobile as it has often been portrayed. The earlier thesis about the immobility of Indian people was based primarily on inadequate data and the new light shed by the 1961 census explodes the myth of an Indian's proverbial "attachment to his locale".

Inspite of the fair mobility of India's population[10], only one-fifth of its population live in the urban areas. With increasing economic opportunities, rising expectations, social integration, development of transport and communication facilities, the volume of migration in all directions is likely to increase tremendously in the foreseeable future. Since desperate efforts are being made in India to reduce its population pressures, the subject of migration and fertility is of considerable current interest.

Previous Studies on Migration and Fertility in India

During the last four decades, a number of studies have been reported from all over the world which investigate the relationship between migration and fertility.[11] A brief review of studies carried out in India is given below.

Visaria pointed to the virtual absence of rural-urban fertility differentials in India and cited the National Sample Survey (NSS) data in support of his assumption. He mentioned that on the one hand the high fertility of the recent migrants might inflate the overall urban fertility, while on the other the lower fertility of the rural women whose migrant husbands had separated from them may lower the overall rural fertility levels. These two possible forces operating in opposite directions may be responsible for reducing the overall fertility differentials in the rural and urban areas, but may nevertheless cloud the lower fertility norms and behaviour of the urban natives and long term migrants to urban areas. In order to examine the effect of husband's separation on the wife's fertility, he collected data from 23 villages in two districts of Gujarat and Maharashtra states. In both these districts the fertility of women whose husbands were absent for more than six months was found to be lower than

10. Approximately one-third of India's population is involved in internal migration. Though, this mobility is in no way comparable to that found in the industrialised countries of the West, for the stand-point of a developing country, it is quile substantial.

11. This is not intended to be a comprehensive review of the existing literature on migration and fertility. For an exhustive review of studies of the fertility of migrants arid non-migrants in urban areas, see Zarate, A. O. and Zarate, A. U. "On the reconcilation of research findings of migrant-non-migrant fertility differentials in urban areas". *International Migration Review, 9,* 115-56. Also see Myers, George C and Maciso, John J. Jr. *"Selective bibliography on migration and fertility".* Duck University, Centre for Demographic Studies, 1972 (mimeo).

those with husbands present. Interestingly, he found that the fertility of women with husbands born in other places was highest. Information about the women who had migrated from the surveyed villages to Greater Bombay was also collected from their relations living in these villages and was verified by interviewing a sample of these women in Bombay. Some discrepancies in the reported age of women, number of children born and surviving were observed. The analysis revealed that the fertility of migrant women living in Bombay was lower than those who had not migrated from the surveyed villages. But, Visaria mentioned that the group who had migrated to Bombay had higher education and a higher socio-economic status. In his analysis, the socio-economic variables, however, were not controlled.[12] Furthermore, on the basis of NSS data, he contended that there is virtual absence of rural urban, fertility differentials in India and attributed this to the higher fertility of recent migrants in relation to urban born natives. But, thus far, there is no conclusive evidence of the presence or absence of fertility differentials between the urban and rural areas and the results of various studies in this regard are contradictory.[13] In addition to Vlsaria's basic premise of virtual absence of rural-urban fertility differentials for which there is no conclusive evidence as yet, he had not compared the fertility of the migrants with those of urban natives at the place of destination. His information about the fertility of the migrants, in addition, was based on the information obtained from their nonmigrant relations and

12. Visaria, Pravin M. "Urbanisation, migration and fertility in India". In : Campbell Arther *et al.* (eds). *The Family in Transition.* Fogerty International Centre, Proceedings number 3, 1971, pp. 257-83.

13. Kingsley Davis after calculating the child woman ratios from the census data found that there are not only rural-urban fertility differentials but inter-city differentials also exist. His analysis revealed inverse relationship between fertility and size of town. (Davis, Kingsley, 1951 *op. cit.,* pp. 71). Robinson after examining the child woman ratios from the 1921-51 census data, however, pointed out that large rural-urban fertility differentials found in the past have been declining and by 1951 these differences remained only marginal. He attributed 40 to 50 percent of the previous differences to the variations in the infant mortality rate between the rural areas have tended to show higher child woman ratios for the urban areas and consequently a narrowing down of fertility differentiats based on child-woman ratios. He mentioned to the possibility of a large inflow of migrants to urban areas exhibiting higher fertility and thereby bringing about convergence of rural-urban fertility ratios. (Robinson Warren C., "Urban-rural differences m Indian fertility." *Population Studies,* XIV(2,) 1960., Sovani after examining the available material came to the following conclusion "Taking the evidence as a whole, it may be said that differences do exist between rural and urban fertilities but they are not very marked". (Sovani, N. V., *Urbanisation and Urban India.* New **York,** Asia Publishing House, 1966, pp. 65).

when checked with the sample of migrants themselves certain discrepancies were observed in the information obtained from both these sources.

Zacharia in a study of migrants in Greater Bombay pointed out that migration might affect fertility through factors, which may operate singly or jointly, viz., (1) change in the proportion ever marrying; (2) changes in the age at marriage; (3) physical separation of husbands from wives; (4) changes in marital fertility by means other than through physical separation of husband and wife. On the basis of an analysis of special tabulations of 1961 census, he examined some of these variables and found the average age at marriage and the percentage never marrying among the women who came to Bombay before marriage to be considerably higher than those in place of origin. He estimated a 30 percent reduction in fertility on these counts for the migrants who came to Bombay before marriage. Since 40 per cent of women were not married at the time of migration, the overall reduction in fertility among the migrants was estimated to be 12 percent. He estimated a further 30 percent reduction in fertility due to the separation of migrant husbands from their wives. For Bombay, his analysis revealed that approximately two-fifths of the migrant males were living without their spouses and thus, according to him, the overall fertility reduction among the migrants due to husband-wife separation to be another 12 percent.[14] As mentioned above, Zacharia studies the effect of migration on fertility as part of his larger study of migrants to Greater Bombay based on the special tabulations of the 1961 census. He did not compare the fertility of migrants with those of urban natives at the place of destination. Moreover, his estimates of reduction in fertility due to separation of migrant husbands from their wives is based on the assumption of periodicity of return visits and frequency of coitus for which little data are available.

Based on the 1966 fertility survey carried out among 7872 currently married women in Greater Bombay, Rele and Kauitkar analysed the relationship between fertility and residential status. They grouped these women into three categories; i.e., rural migrants, urban migrants and non-migrants according to the place where they had spent most of their lives prior to their coming to Bombay. The definition of rural adopted by them was different from that of the Indian census. Their analysis revealed the fertility of rural migrants to be highest and those of urban migrants to be lowest. The fertility of non-migrants was between these two extremes. However, controlling the effect of woman's education considerably reduced these differentials. Thus, in this study educational background of the women was found to be more important than migra-

14. Zacharia, K. C, 1968, *op. cit.,* pp. 148-54.

tion status in explaining fertility differentials.[15] This study, to some extent, is an improvement from other studies reported from India, in as much as the fertility of the rural as well as urban migrants was compared with those of non-migrants at the place of destination. But, besides education no other socio-economic variables were used as controls.

EI-Badry in his study of differential fertility in Bombay analysed information contained on the birth certificates for a sample of 1000 women between the ages of 15-39 who gave births during the year 1960. His analysis revealed fertility differentials according to the place of origin of the husbands of these women. Women whose husbands migrated from southern parts of India had the lowest fertility while those with husbands from north had the highest fertility. EI-Badry attributed these differences to the possible variations in their socio-economic and educational status, but he lacked sufficient data to control for these variables. Interestingly enough his analysis revealed consistent increase in age-standardised parity averages with increase in the duration of stay in Bombay irrespective of the region of origin. His explanation for this phenomenon was that in Bombay there is little assimilation among the migrants coming from different parts of India, as well as among the migrants and the native population,[1]*

Majumdar and Das carried out a study on some aspects of adoption of family planning practices by migrant and old-settlers in five villages of West Bengal. The study revealed that migrants had a more favourable attitude towards family planning practices than the old settlers and that migrants adopted institutionalised sources of family planning more than the old settlers.[17]

The above review reveals inconsistency of the findings of the various studies which have looked into the relationship between migration and fertility in India. Similar inconsistencies have been found in studies reported from other countries. While some studies have reported higher fertility for the migrants than the non-migrants at the place of destination, others have shown the fertility of natives to exceed that of the migrants. These inconsistencies are partly due to diversity of socio-economic and cultural conditions of the areas studied, varied definitions of migration and fertility used and differences in methodolo-

15. Rele, 3. R. and Kanitkar, Tara, "Residence background and fertility in Greater Bombay", *Population Studies,* 28, July 1974, 299-308.

16. EI-Badry, M. A. "A study of differential fertility in Bombay." *Demography,* IV (4), 1967, 625-40.

17. Majumdar, A. K. and Das, K. D. "Some aspects of adoption of family planning practices in Indian villages." *The Journal of Family Welfare,* **18** (3), March 1972, 55-64.

gtcal orientations. A few studies have used some socio-economic variables as controls, but majority of them have not done so. Thus, despite numerous studies investigating the relationship between migration and fertility from all over the world, there is no conclusive evidence that the process of migration influences the reproductive behaviour *per se* and the picture has remained confused.

Purpose

The main purpose of this paper is to study the relationship between migration and fertility in India by using the state as a unit of analysis. An attempt is made to study the effect of both rural-urban and urban-rural migration on the overall fertility levels at destination as well as at origin.[18] Some relevant hypotheses have been formulated and tested on the basis of an analysis of 1961 Indian census data.

Hypotheses

Many studies in India have shown that since migrants to urban areas are more active, dynamic, educated and belong to higher socio-economic levels, they probably exhibit lower fertility.[19] Furthermore, since the migrants are younger in age and many of them migrate when single and delay their marriages, and those who are married leave their families behind and bring them only when they have accumulated some money and acquired a suitable place of living, the

18. Although rural to rural migration numerically is the major form of internal migration in India, it has not been considered in the present analysis since it is predominantly female migration and is mainly for marital purposes. Village exogamy is practiced in most parts of India and women after marriage usually leave for the villages of their husbands. According to another custom, the women also return to their parents homes for the birth of their child-Ten, particularly the first child. Thus, the children are counted as migrants. These two types of migration are essentially involuntary and are assumed to have not much effect on fertility.

19. The socio-economic surveys of Indian cities have shown that on the whole migrants form a more literate, more talented and more enterprising sections of the urban populations. Their average earnings are higher than those of the resident earners and unemployment is low among the immigrants than among the residents (Bulsara, Jal F,, 1964, *op. cit.,* pp. 175). Rele also observed a greater degree of selectivity among male migrants from the villages. The male migrants are in general better educated compared to the populations to which they belong (Rele, J. R. 1966, *op. cit.,* pp. 506). Eames in study in Uttar Pradesh also found that the "propensity to migrate is greater among the higher castes (Eames, Edwin. "Urban migration and joint family in a North Indian Village". *Journal of Developing Areas, 1,* Jan. 1967,163-78).

husband-wife separations probably result in reduced fertility levels.[20] It is, therefore, held that the fertility of the migrants as a class is lower than those of the urban natives. On the basis of this proposition, it is hypothesised that higher the flow of rural migrants to urban areas of a state, the lower its overall urban fertility level. Secondly, the urban to rural migrants are assumed not only to manifest lower fertility themselves, but may also diffuse the lower fertility norms in the rural areas, and thus prove as catalysts of change. It is, therefore, hypothesised that higher the rate of urban-rural migration in a state, the lower is its overall rural fertility level. Since both rural to urban and urban to rural migration are hypothesised to result in lower fertility, the combined effect of these two streams of migration may be reduction in the overall state fertility level. The third hypothesis proposed is that higher the combined rate of rural-urban and urban-rural migration, the lower the general fertility level of the state.

Sources of Data and Methods Used

The analysis has been attempted separately for rural areas, urban areas and the state as a whole. In view of the shortcomings of the Indian birth registration data and considerable variations in the available estimates of birth rates, the measure of fertility used is child-woman ratio (children 0-9 years/women 15-49 years).[21] The migration considered is life time migration based on place of birth statistics. For the purpose of this analysis, any person whose place of birth was different than the place of residence at the time of census enumeration is considered as a migrant. Furthermore, only intrastate migration has been taken into account and this constitutes approximately 90 percent of the

20. The survey of Indian cities also reported that a substantial number of migrants leave their families behind (Bulsara, Jal F., 1964, *op. cit.*, 37-38). This is also evident from a great disparity of sex ratios among the immigrant population in the cities. The NSS study on internal migration has shown that in the big cities, the migrants had sex ratio of 154 while it was 104 for the non-migrants (NSS 1955, *op. cit.*, pp. 9). In another study in the state of Maharashtra, it was found that nearly two-thirds of the migrants left at ages 10-24 and that 64 percent of the male migrants were single at the time of migration (see Rele, J. R., 1964, *op. cit.*, pp. 506).

21. In this analysis the age group used for calculating the child-women ratio is 0-9 rather than customary 0-5 age group. This is because in India generally there is underenumeration of children in the age group 0-4 and excess in age group 5-9. The number enumerated for age group 0-9, however agree quite closely with the smooth age distribution for the states (see Kleinman, David S. "Fertility variation and resources in rural India (1961)". *Economic Development and Cultural Change*, 21 (4), part I, July 1973, 685).

total internal migration in India. The rates for different streams of migration have been worked out separately for males, females, as well as for both sexes taken together. The rural-urban migration rates have been computed by taking all the subjects who at the time of 1961 census were living in the urban areas of a particular state but were born in the rural areas of the same state and divided by the total rural population of that state. Similarly, urban-rural migration rates have been derived by using all those persons who were living in the rural areas of a state but were born in the urban areas of that state as numerator, and the total urban population of that particular state as a denominator. The combined rural-urban and urban-rural migration rates have been computed by adding rural-urban and urban-rural migrants and dividing it by the total population of the state.

Since fertility is likely to be affected not only by the magnitude of migration, but also by certain other socio-economic variables, it has been thought expedient to include a few intervening variables such as literacy level (male, female and total), age at marriage, female labour force participation rates, and the per capita income, as controls.

The data for computing the statewise rates for these variables have been obtained from the 1961 census reports, except for the per capita income.[22] The statistical techniques used in this analysis are zero order and partial correlation.

Findings

The analysis of data relating to sex distribution of different streams of migration for the various states of India reveals certain interesting characteristics. Firstly, there are considerable inter-state variations in the migration rates; secondly, while in the rural to urban migration there are no significant differences in the male and female migrations, in the urban to rural migration females predominate. The total number of rural to urban migrants per 1,000 rural population range between 11,96 and 69.10 among the states 'with a mean of 40.77 and standard deviation of 22.54. The corresponding ranges for males and females, taken separately, are 13.66-92.17 and 10.05-79.80, with respective means of 39.88 and 41.80, and standard deviations of 22.73 and 22.28. The comparative inter-state variations in the urban-rural migration rates are, how-

22. The statewise rates for rural and urban per capita incomes have been adopted from Greenwood and state per capita income (rural and urban combined) has been computed by taking total rural and urban population of the respective states as weight (Greenwood, MechaelJ. "A regression analysis of migration to urban areas of a less developed country : The case of India". *Journal of Regional Science,* H (2), 1971, 259).

ever, smaller than in the rural-urban streams, though the the differences between the states still remain very large. The total number of rural to urban migrants in the different states of India varies between 23.31 and 93.95, with a mean of 54.30 and standard deviation of 16.37, and this rate among the various states of lndia ranges between 20.39 and 82.75. The lowest and highest urban-rural migration rates for females are 34.76 and 105.25, with a mean and standard deviation of 72.44 and 21.76, respectively. So far as combined rural-urban and urban-rural rates are concerned, the mean and standard deviation for both sexes taken together are 41.82 and 19.71, the minimum and maximum migrants per 1,000 state population being 13.67 and 79.54. The average rate for the males is 38.47, with a standard deviation of 18.37 and this rate ranges between 15.00 and 78.41. The mean number of female migrants works out to be 45.68, with a standard deviation of 21.76. This rate among the various states ranges between 12.14 and 80.74.

The data about fertility for the rural areas of the various states oflndia show considerable variations in the general fertility rate, as represented by child-woman ratio, from 1.06 to 1.62, with a mean and standard deviation of 1.34 and 0.14, respectively. As regards urban fertility in the states, the range is 1.06 to 1.47, with a mean and standard deviation of 1.27 and 0.12, respectively. Similarly, there are considerable variations in the rates for other control variables used. When urban and rural areas are combined and the entire state is taken as a unit, the general fertility rate ranges from 1.06 to 1.61, with a mean of 1.32 and standard deviation of 0.13. The interstate variations also exist in the combined rates for other socio-economic indices.

For the purpose of testing the significance of relationship between fertility and migration, the zero order and partial correlations between fertility rates of the various states (1) migration and few socio-economic variables have been considered. These variables are; rural urban migration rate—both sexes (2); rural-urban migration rate—male (3); rural-urban migration rate—female (4); urban-rural migration rate—both sexes (5); urban-rural migration rate—male (6); urban-rura\ migration rate—female (7); combined rural-urban and urban-rural migration rate—both sexes (8); combined rural-urban and urban-rural migration rate—male (9); combined rural-urban and urban-rural migration rate—female (10); literates per thousand population—both sexes (11); literates per thousand population—male (12); literates per thousand population—female (13); percentage of females 15-19 years even married (14); percentage of females in labour force (15); and per capita income in rupees (16); The analysis has been attempted separately for rural areas, urban areas, as well as for the entire state. The variables 2 to 10 have same values in all these tables. But, in Tables 1 and

TABLE 1—COFFICIENT OF CORRELATION OF ZERO ORDER (r_{ji}; $i \neq j$) URBAN GENERAL FERTILITY, MIGRATION AND SOCIO-ECONOMIC INDICES VARIABLES (x_j)

Variables	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*
1		(—.52)	(—.51)	(—.52)	(—.48)	(—.62)	—.41	(—.55)	(—.55)	(—.53)	—.26	—.36	—.30	—.23	(—.56)	—.07
2			(—.99)	(—.99)	.20	.16	.15	(.99)	(.99)	(.98)	.22	.32	.12	—.27	.35	.33
3				(.96)	.16	.15	.11	(.97)	(.98)	(.95)	.25	.33	.15	—.28	.31	.37
4					.25	.16	.19	(.99)	(.97)	(.99)	.17	.29	.07	—.24	.38	.27
5						.57	(.94)	.33	.30	.36	.08	.21	.10	—.18	(.67)	—.37
6							.41	.24	.26	.23	(.43)	.38	(.50)	—.39	.37	—.33
7								.27	.23	.30	—.03	.14	—.03	.19	(.59)	—.22
8									(.99)	(.99)	.19	.30	.10	—.26	.42	.23
9										(.97)	.25	.34	.16	—.31	.40	.26
10											.14	.27	.05	—.22	(.43)	.20
11												(.94)	(.96)	(—.56)	.12	.25
12													(.86)	—.37	.34	.38
13														(—.67)	.06	.09
14															(.50)	.22
15																—.05
16																

Coefficients which are significant at 5% Level are given in parenthesis. Variables are read as follows : 1. Urban general fertility; 2. rural urban migration rate (total); 3. rural urban migration rate (male); 4. rural urban migration rate (female); 5. urban rural migration rate (total); 6. urban rural migration rate (male); 7. urban rural migration rate (female); 8. rural-urban and urban rural migration rate combined (total); 9. rural urban and urban rural migration rate combined (male); 10. rural urban and urban rural migration rate combined (female); 11. urban literates per 1000 population (total); 12. urban literates per 1000 population (males); 13. urban literates per 1000 population (females); 14. percentage of females 15-19 ever married (urban); 15. percentage of females in labour force (urban); 16. urban per capita income (in rupees).

2, the variable 1 corresponds to urban fertility rate, and the variables 11 to 16, on which these coefficients are based, pertain to urban areas only. Similarly,

TABLE 2-PARTIAL CORRELATION COEFFICIENTS OF FIRST ORDER *(rlij i = < j)* URBAN GENERAL FERTILITY, MIGRATION AND SOCIO-ECONOMIC INDICES

Correlation ofzero order (rlij)	*Variables held constant*					
	11	*12*	*J3*	*14*	*15*	*16*
r 1,2	—0.49	—0.46	—0.51	—0.49	—0.52	—0.53
r 1,3	—0.47	—0.44	-0.49	—0.47	—0.50	-0.52
r 1,4	—0.51	-0.47	-0.53	—0.50	-0-53	-0.53
r 1,5	-0.48	—0.45	-0.47	-0.49	-0.48	—0.55
r 1,6	—0.60	-0.57	-0.58	-0.60	—0.64	-0.69
r 1,7	(-0.42)	(-0.39)	—0.44	—0,48	(—0.40)	-0.44
r 1.8	-0.52	-0.49	—0.53	—0.52	—0.56	—0.54
r l . 9	—0.52	—0.48	—0.54	—0.51	—0.55	—0.53
r 1,10	—0.52	—0.48	-0.54	-0.51	-0.55	-0.53

Coefficients which are not significant at 5% level are given in parenthesis. Variables are read as follows: 1 . Urban general fertility; 2. Rural urban migration rate (total); 3. Rural Urban migration rate (male); 4. Rural urban migration rate (female); 5. Urban rural migration rate (total); 6. Urban rural migration rate (male); 7. Urban rural migration rate (female) ; 8. Rural-urban and urban rural migration rate combined (total); 9. Rural urban and urban rural migration rate combined (male); 10. Rural urban and urban rural migration rate combined (female); 11. Urban literates per 1000 population **(total); 12.** Urban literates per 1000 population (males); 13 . Urban literates per 1000 population (females); 14. Percentage of females 15-19 even married (urban); 15. Percentage of females in labour force (urban); 16. Urban per capita income (in rupees **).**

in Tables 3 and 4, the variable 1 is the rural fertility rate and variables 11 to 16 contain information for rural areas only. The variable I in Tables 5 and 6 shows the state general fertility rate, and under variables 11 to 16, the co-efficients have been calculated by taking the rates for the entire state.

First, we consider the relation betweeq rural to urban migration and urban fertility levels. Table 1 reveals a negative corretlaion between urban general fertility rate and rural-urban migration rate for males and females. The respec-

TABLE 3—COEFICIENT OF COORELATION OF ZERO ORDER *(rij; I =<j)* RURAL GENERAL FERTILITY, MIGRATION **AND SOCIO-ECONOMIC** INDICES **VARIABLES (xj)**

Varia-hies(xi).	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*
1		—.28	—23		-32	(—52)	—.22	(—.53)	—.33	—.30	—34	—.04	—.08	—.05	—06	—.31	.26
2			(.99)	C	.99)	.20	.16	.15	(.99)	(.99)	(.98)	.15	.22	.10	.009	.39	—01
3				<	.96)	.16	.15	.11	(.97)	(.98)	(.95)	.15	.22	.12	—.005	.37	—.00
4						.25	,16	.19	(.99)	(.97)	(.99)	.15	.20	.08	—.12	.42	—.03
5							(.57)	(.94)	.33	.31	.36	(.46)	-41	(-50)	—.27	.39	—.13
6								.41	.24	.26	.23	(.66)	C-62)	(-47)	—30	—.30	—.30
7									.27	.23	.30	.26	.25	(-43)	—.07	.38	—.01
8										(.99)	(.99)	.20	.24	—.02	—.12	(-43)	.01
9											(.97)	.24	-29	.03	—.13	.40	.05
10												.17	.21	.01	—.10	(.46)	.02
11													(-97)	.23	(—79)	—.26	(.76)
12														.19	(-.75)	—.24	(.70)
13															.08	.28	.14
14																.28	(—.69)
15																	(-.68)
16																	

Coefficants which are significient at 5% level are given in parenthesis : Variables are read as follows : (1) Rural general fertility; (2) rural urban migration rate (total); (3) rural urban migration rate (male); (4) rural urban migration rate (female); (5) urban rural migration rate (total); (6) urban rural migration rate (male); (7) urban rural migration rate (female); (8) rural urban and urban rural combined migration rate (total); (9) rural urban and urban rural combined migration rate (male); (10) rural urban and urban rural combined migration rate (female); (11) rural literates per 1000 population (total); (12) rural literates per 1000 population (male); (13) rural literates per 1000 population (female); (14) percentage of females age 15-19 even married (rural); (15) percentage of females in the labour force (rural); (16) per capita income (rural) in rupees.

TABLE 4-PARTIAL CORRELATION COEFFICIENTS OF FIRST ORDER *(rlij; i =< j)* RURAL GENERAL FERTILITY, MIGRATION AND SOCIO-ECONOMIC INDICES

Correlation of Zero Order (rli)	*Variables held constant*					
	11	*12*	*73*	*14*	*75*	*16*
r 1,2	(-0.27)	(-0.27)	(—0.28)	(- 0.27)	(-0.18)	(—0.28)
r 1,3	(-0.23)	(-0.22)	(-0.24)	(-0.23)	(-0-14)	(-0.24)
r 1,4	(-0.31)	(-0,31)	(-0.32)	(-0.31)	(-0.22)	(-0.32)
r 1,5	-0.57	—0.53	—0.57	-0.53	—0.46	-0.58
r 1,6	(-0.26)	(-0.22)	(—0.22)	(-0.22)	(-0.25)	-0.46
r 1,7	—0.54	-0.53	—0.56	-0.53	—0.47	-0.55
r 1,8	(-0.32)	(-0.32)	(-0.33)	(-0.32)	(—0.22)	(-0.34)
r 1,9	(- 0.29)	(—0.28)	(-0.30)	(-0.29)	(-0.20)	(-0.32)
r 1,10	(-0.34)	(-0,33)	(-0.34)	(-0.34)	(-0.24)	(-0.35)

Coefficients which are not significant at 5% level are given in parenthesis. Variables are read as follows : (1) rural general fertility; (2) rural urban migration rate (total); (3) rural urban migration rate (male); (4) rural urban migration rate (female); (5) urban rural migration rate (total); (6) urban rural migration rate (male); (7) urban rural migration rate (female); (8) rural urban and urban rural combined migration rate (total); (9) rural urban and urban rural combined migration rate (male); (10) rural urban and urban rural combined migration rate (female); (11) rural literates per 1000 population (total); (12) rural literates per 1000 population (male); (13) rural literates per 1000 population (female); (14) percentage of females age 15-19 ever married (rural); (15) percentage of females in the labour force (rural); (16) per capita income (rural) in rupees.

live correlation coefficients are: r12 = —.52;r13 = —.53 and r14 = —.52. These values are significant at 5 percent level. These rates remained significant at this level, when the effect of each of the intervening variables, such as literacy level (male, female and total), early marriage, female labour force participation, and percapita income were controlled one by one. The partial correlation co-efficients of first order are shown in Table 2.

This lends support to our first hypothesis that higher the rural-urban migration in a state, the lower its urban general fertility level.

The effect of urban to rural stream of migration on overall urban fertility rate of a state can also be seen from Tables 1 and 2. Interestingly, the zero

TABLE 5—COEFFICIENT OF CORRELATION OF ZERO ORDER *(rij; i = < j)* STATE GENERAL FERTILITY, MIGRATION AND SOCIO-ECONOMIC INDICES VARIABLES *(xj)*

Variables (xi)	*1*	*2*	*3*	*4*	*5*	*6*	*7*	8	9	*10*	*11*	*12*	*13*	*14*	*15*	*16*
1		—.37	—.33-	—.40	(—.52)	—.31	(—.52)	—.41	—.39	(-.43)	—.19	-.16	—.08	.05	—.26	,08
2			(.99)	(.99)	.20	.16	.15	(.99)	(.99)	(.98)	.35	.40	.27	—.18	.26	,48)
3				(.96)	.16	.15	.11	(-97)	(.98)	.05	.35	.40	.27	.16	.24	,51)
4					.25	.16	.19	(.99)	(.97)	(-99)	.33	.38	.27	—.20	.29	,44)
5						(-57)	(.95)	.33	.31	.36	.39	.37	(-44)	—.15	.24	(,51)
6							.41	-24	.26	.23	(-69)	(-64)	(.72)	—.36	-.06	(,49)
7								.27	.23	.30	.20	.21	—.21	—.02	.40	.08
8									(.99)	(-99)	.38	.41	.32	—.02	.31	(,46)
9										(-97)	.42	(-46)	.36	—.23	.27	(,50)
10											.35	.38	.30	—.18	.34	.42
11												(.98)	(-97)	(-.80)	—.26	(,79)
12													(.92)	(—75)	-.21	(,77)
13														(-.82)	—.27	(,74)
14															.34	(—.62)
15																(—52)
16																

Coefficients which are significant at 5%level are given in parenthesis; Variables are read as follows : (1) state general fertility; (2) rural urban migration rate (total); (3) rural urban migration rate (male); (4) rural urban migration rate (female); (5) urban rural migration rate (total); (6) urban rural migration rale (male); (7) urban rural migration rate (female); (8) rural urban and urban rural combined migration rate (total); (9) rural urban and urban rural combined migration rate (male); (10) rural urban and urban rural combined migration rate (female); (11) literates per 1000 population in the stale (male and female); (12) literates per 1000 population in the stale (male); (13) literates per 1000 population in the state (females); (14) percentage of females age 15-19 ever married (state); (15) percentage of females in labour force (state); (16) per capita income of the state (in Rupees).

TABLE 6—PARTIAL CORRELATION COEFFICIENTS OF FIRST ORDER *(rlij,i =j)* STATE GENERAL FERTILITY, MIGRATION AND SOCIO-ECONOMIC INDICES

Correlation of zero order (rli)	*Variables held constant*					
	.11	*12*	*13*	*14*	*15*	*16*
r 1,2	(-0.36)	(-0.34)	(-0.36)	(-0.37)	(-0.32)	-0.46
i- 1,3	(-0.32)	(-0.29)	(-0.32)	(-0.33)	(-0.28)	-0.43
r 1,4	(-0.39)	(-0.38)	(—0.40)	(—0.40)	(-0.36)	—0.49
r 1,5	—0.53	—0.51	—0.54	-0.53	-0.47	-0.53
r 1,6	(-0.33)	(-0.27)	(-0.36)	(-0.31)	(-0.34)	(—0.40)
r 1,7	—0.52	—0.51	—0.52	—0.52	—0.47	—0.52
r 1,8	(-0.41)	(-0.39)	(-0.41)	(-0.41)	(—0.36)	-0.51
r 1,9	(-0.38)	(-0-36)	(-0.39)	(-0.39)	(-0-34)	—0.50
r 1,10	(-0.42)	(—0.40)	(-0.42)	—0.43	(-0.37)	—0.51

Coefficients which are not significant at 5% level are given in parenthesis. Variables are read as follows : (1) State general fertility; (2) rural urban migration rate (total), (3) rural urban migration rale (male); (4) rural urban migration rate (female); (5) urban rural migration rate (total); (6) urban rural migration rate (male); (7) urban rural migration rate (female); (8) rural urban and urban rural combined migration rate (total); (9) rural urban and urban rural combined migration rate (male); (10) rural urban and urban rural combined migration rate (female); (11) literates per 1000 population in the state (male and female); (12) literates per 1000 population in the state (male); (13) literates per 1000 population in the state (females); (14) percentage of females age 15-19 ever married (state); (15) percentage of females in labour force (slate); (16) Per capita income of the state (in rupees).

order correlation coefficients reveal a fairly significant negative correlation between urban general fertility on the one hand, and urban-rural migration rate—both sexes (r15 = —.48), rural to urban migration rate—male (r16 = -.62) and urban to rural migration rate-female (r17 = - .41), on the other. Thedirection and significance of these relationships remained basically unchanged, when the effect of other intervening variables is controlled individually.

Since, both rural to urban and urban to rural streams of migration are negatively correlated with urban fertility, the combined effect of both these streams of migration on the urban fertility rates is obviously negative and significant. Thus, urban fertility rates of the states which have larger population movements

are significantly lower than those with relatively smaller movement, irrespective of the direction of these movements.

*The relationship between rural general fertility and different streams of migration could be seen from Table 3. As is evident from the table, rural to urban stream of migration also has negative, though not significant, effect on the overall rural fertility level. This inverse relationship, as indicated by partial correlation coefficients, shown in Table *4,* remains consistently non-significant.

As regards the effect of urban-rural reverse migration on the rural fertility level, the zero order correlation coefficients reveal that urban to rural migration for both sexes, as well as for females only, is negatively and significantly associated with rural general fertility (r15 •• = —.52 and r17 • = —.53). The negative relationship between urban to rural migration for males and rural general fertility is not significant when rural per capita income is controlled. Our second hypothesis that higher the rate of urban-rural migration in a state, the lower its overall rural fertility level, gets support from the results of this analysis.

The results of this analysis do not, however, reveal any significant effect of combined rates of rural-urban and urban-rural migration on the rural general fertility level of the state. The non-significance of this relationship remains steadfast when other intervening variables are controlled one by one.

The relationship between different streams of migration and the total general fertility rate of the state has also been examined. The zero order and partial correlation coefficients depicting the above relationships are given in Tables 5 and 6.

As could be seen from Table 5, the association between rural-urban migration and fertility of the state, though negative, is not significant at the level of 5 percent. However, the urban-rural migration rate (both sexes) and urban-rural migration rate (female) are negatively and significantly associated with the state general fertility (*r* 15 = —.52 and r17 -- —.52). But, the rate for this stream of migration for males does not appear to have significant relationship when only zero order correlation is considered. Similarly, the combined rate for the above two streams of migration for males only is significantly related with state general fertility (rl.10 = —.43). But, when the effect of state per capita income is controlled, the relationship between all streams of migration and state general fertility, as is evident from Table 6, approaches the level of significance. The only exception being the association between rural-urban migration (females), which drops from a significance t6a non-significance level but it nevertheless remains very close to it.

Our thir4 hypothesis that the higher the combined rate of rural-urban and urban-rural migration, the lower the general fertility level of the state, is also

supported by this analysis.

Summary and Discussion

An attempt has been made in the preceeding paragraphs to explore the relationship between migration and fertility in India on the basis of the 1961 Indian census data at the macro level with state as a unit of analysis. As a prelude to this exercise, different streams of migration and their relative magnitude in India has been discussed, which explodes to some extent, the prevalent belief about the immobility of India's population. Though a first look at the various findings presented in this paper would suggest them to be intriguing or contradictory, a little reflection would show that these are not greatly inconsonant.

The first finding emanating from this study is that of an inverse relationship between rural-urban migration rates and the urban fertility levels. When seen in the light of majority of 'migration and fertility' studies which have shown that rural to urban migrants generally exhibit higher fertility than the urban non-migrants, this finding appears a little unconventional. The impact of migration, however, depends not only on the rate of migration but on the characteristics of migrants also. It is widely assumed that in the developing countries, overcrowding in agriculture and poor living conditions in the rural areas pushes people out to the cities. Since, these people generally have a higher fertility, their influx to the urban areas inflates the overall urban fertility levels. But, in India, it has often been seen that migrants from rural areas are generally the most active, most dynamic and most enterprising and they belong to higher socio-economic and educational groups. The rate of unemployment among the migrants has also been found to be less than the urban natives, and the migrants in the cities are not economically worse off than than the residents. Thus rural to urban migration in India is primarily of a "pull" rather than a "push" type. The main indicator of the social status of these migrants at the place of their origin have been their family background, but at the place of destination, the social position and prestige is determined by occuptional achievement, income, consumption standards, educational attainment, etc. Since the children are perceived as a disadvantage to their social and economic well being, they try to restrict them. Furthermore, the most perceptible effect of migration is the breakdown of the joint family which has resulted in freeing the young migrant couples from the traditional family-fertility norms. The means to limit the number of children are more easily and readily available in the urban than in the rural areas. In the face of higher cost and standard of living in the cities, they are more amenable to family planning advice and practice.

Furthermore, rural to urban migration in India is highly selective of young single persons. These persons try to delay their marriages and those who are married at the time of migration usually leave their families behind. This is clearly evident from the extremely lower sex ratios in the urban areas of India. These delayed marriages and husband-wife separations probably depress the fertility of the migrants.

It appears that all these factors tend to lower the fertility of the rural to urban migrants to the levels considerably lower than those of urban natives so as to significantly affect the overall urban fertility rates.

Our second finding that rural general fertility of the states which have a higher rural-urban migration rates is also lower appears paradoxical. If the rural-urban migration in India is highly selective, then the common sense reasoning would suggest that the drift of enlightened people from rural areas should raise rather than lower the overall rural fertility levels. But the things are not as simple as they look on the surface. The migration situation in India is very complex. One of the important features of Indian migration is a very high degree of return migration. The life time migration statistics of the Indian census do not provide the magnitude of return migration, but obviously the states which have the high rural-urban migration rates should also have higher return migration rates. These return migrants not only have lower fertility themselves but also spread these norms in the rural areas. They usually return with new ideas, attitudes and values acquired during their stay in the cities and the people at their native place often seek their advice and listen to them with respect. Also, the other migrants who do not permanently return, maintain close kinship ties with their native place and often make visits and bring fresh ideas from the cities. These permanent returnees and temporary visitors prove as catalysts of change, and it is probable that the family welfare workers **seek** their help and assistance in moulding the behavioural patterns of the villagers. Furthermore, in contrast to those who in the first instance migrate alone and subsequently take their families, there might be many who would like to bring up their children in the 'congenial' rural atmosphere away from the 'corrupting' influences of city life and leave their families permanently at their native places. These women with comparatively lower fertility contribute to the overall lowering of rural fertility levels.

The above are some of plausible explanations for the inverse relationship between rural-urban migration and rural general fertility found in this paper. **This** relationship, however, is not very strong since the number of return migrants, as proportion to the total rural population, is very small.

There is also a considerable amount of urban to rural migration in India,

much of which may be caused by shortage of urban housing and lack of adequate employment opportunities in urban areas. This migration takes from urban to rural areas a large number of persons with socially strategic urban outlook and like the return migrants have a spread effect. This is probably the reason of inverse relationship between urban-rural migration rate and rural general fertility found In this paper.

In short, the analysis contained in this paper suggests that in India, the states with larger population movements have lower fertility as compared to those having smaller movements. The findings, however, since they are based on a macro analysis of Indian census data, with all their limitations, are not claimed to be definitive. These are indicative in nature and are presented with a view to provocate further research on the hitherto neglected area of migration and fertility.