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Multiple Decrement Migration Table Revisited: Results from India

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Abstract: The study of internal migration assumes special importance in any country in the process of development. By its very nature internal migration is related to a process of change occurring within the social system. Hence the broad objective of the study is to understand the pattern of internal migration in India from the perspective of all 4 streams of migration namely, rural to urban, urban to urban, rural to rural and urban to rural by using census 2001. Urban to urban and rural to urban are the two most dominating streams of migration in Indian context. However, rural to rural migration is comparatively high among females than males. Moreover, the general direction of migration is towards north. Migration expectancy reveals that people in rural areas and females are expected to move more than those in urban areas and those who are males.

Introduction: The study of internal migration assumes special importance in any country in the process of development. By its very nature internal migration, that is the movement of people across smaller units within the country, is related to a process of change occurring within the social system. There are two aspects to the study of internal migration, namely, quantitative and qualitative. The former deals with the numbers and characteristics of migrants and their role in the population re-distribution over a length of time. The latter is concerned with the structural changes that these movements within the population invariably accompany and their relationships with the overall process of transition of the entire community (Rele, 1969). There is a strong possibility that internal migration in India may have undergone a structural change in the context of the development activities of the Five Year Plans, with greater importance than before for urban-to-urban and rural-to-rural migration. This can be related to a shift of urban labour force from unorganized to organized industries in urban areas and rural labour force to sites in rural areas of large scale construction projects. There is a possibility of population movement from smaller to bigger towns without altering the proportion of the urban population.

Compared with fertility and mortality, surprisingly little attention has been given to the way that internal or domestic migration varies between nations (Bell et al., 2002). Age-specific migration rates provide a basis for investigating, at point in time, the association between migration and stages of life, there is much less information available directly on the number of times individuals migrate over their lifetime. In the absence of complete migration data for real cohorts, life table methods offer a means of estimating how many times people move house during their lives. The result is a measure of migration expectancy referring to the average number of moves individuals may be expected to make during their lives (Wilber, 1963).

Objectives of the study: The broad objective of the study is to understand the pattern of internal migration in India from the perspective of all 4 streams of migration namely, rural to urban, urban to urban, rural to rural and urban to rural. The specific objectives of the study are as follows:

- 1) To study migration effectiveness ratio for explaining pattern of internal migration in India.
- 2) To examine the direction of internal migration among states and union territories in India.
- 3) To revisit multiple decrement migration table.

Data source: Census 2001

Methodology: The multiple decrement migration tables have been calculated in the following ways:

Step 1: Migration rate given in column D are computed by dividing the number of in-migrants by corresponding total population in each age group.

Step 2: Column E (l_x) has been taken directly from SRS Abridge Life Table (1999-2003) of India. This has been done to take into consideration the mortality factor as well.

Step 3: Column F (${}_nL_x$) has been calculated by using the ordinary life table formula of ${}_nL_x$ i.e. ${}_nL_x = (n/2) * (l_x + l_{x+1})$

Step 4: The expected number of moves in a given age group in column G are obtained by multiplying the migration rate in column D by the stationary population in column F for the appropriate age interval.

Step 5: The cumulative number of moves in the given age group and all later ages in column H is directly comparable to the T_x column of an ordinary life table. This shows the expected number of moves the cohort will make during the rest of their live.

Step 6: To determine the expected number of moves per person in an age group and for all later ages, the cumulative moves in column H are divided by the survivors in column E and generate Column I.

Findings: In India, rural to rural migration rate is around 1 percent whereas rural to urban, urban to rural and urban to urban is around 2, 0.67 and 4 percent respectively (Table 1a). For males, it is around 1, 2, 0.55 and 3.4 percent respectively (Table 1b) whereas for females it is 2, 1.8, 1 and 4 percent respectively (Table 1c). Another important aspect to be noted is that, migrations from northern states are mostly confined to the north. Similar is the situation with southern states. However, migrations from central states are directed to the north as well as to the south. Migrations from eastern and western states are also directed towards north (Table 2a, 2b and 2c). Table 3a, 3b and 3c reveal that the migration expectancy in the age group 0-9 is highest and this expectancy is decreasing as the age is increasing. Younger cohort is more mobile than older cohort. People in the age group 0-19 are expected to move 5 times and in 20-29, they are expected to move almost 4 times. For males it is 3 and 2.6 times respectively and for females it is 7 and 6 times respectively. It can also be seen that rural areas have high migration expectancies than their urban counterparts. This may be because of urbanization, high unemployment rate in the rural areas etc. It is almost double up to age group 0-9 and 10-19 and triple in the age group 20-29. Moreover, females are more mobile than males. This may be due to the fact that in India, females have to move to her husband's place after marriage.

Conclusions: Urban to urban and rural to urban are the two most dominating streams of migration in Indian context. This implies that people are mainly attracted towards cities for better job prospects, education etc. However, rural to rural migration is comparatively high among females than males. This is in accordance with Ravenstein's law that short distance migration is dominated by females. Moreover, the general direction of migration is towards

north. Migration expectancy reveals that people in rural areas and females are expected to move more than those in urban areas and those who are males.

Table 1a: Total in-migration rate in India, Census 2001

States	R-T	R-R	R-U	U-T	U-R	U-U	T-T	T-R	T-U
Jammu & Kashmir	1.17	0.41	0.76	1.82	0.44	1.38	1.56	0.47	1.09
Himachal Pradesh	4.12	3.00	1.12	18.82	9.27	9.56	5.77	3.78	2.00
Punjab	7.15	3.34	3.81	5.97	1.06	4.92	7.18	2.71	4.47
Chandigarh	340.09	53.24	286.85	27.42	0.89	26.53	61.56	6.52	55.05
Uttaranchal	8.50	4.94	3.56	12.83	2.87	9.96	10.13	4.64	5.49
Haryana	12.09	7.20	4.89	12.25	2.30	9.95	12.66	6.04	6.62
Delhi	371.55	29.90	341.66	12.19	0.42	11.77	38.44	2.53	35.91
Rajasthan	2.58	1.85	0.74	4.13	0.96	3.17	3.08	1.71	1.37
Uttar Pradesh	1.36	0.99	0.37	2.44	0.57	1.87	1.70	0.97	0.73
Bihar	1.75	1.58	0.18	2.40	0.92	1.48	1.95	1.61	0.34
Sikkim	6.23	4.59	1.63	21.67	12.11	9.57	8.51	5.87	2.64
Arunachal Pradesh	10.93	7.02	3.91	13.45	5.80	7.66	12.39	7.33	5.07
Nagaland	2.73	1.29	1.44	8.13	2.52	5.61	4.10	1.77	2.33
Manipur	0.49	0.35	0.14	0.72	0.28	0.44	0.68	0.43	0.25
Mizoram	4.75	2.17	2.58	2.76	0.36	2.40	3.97	1.35	2.62
Tripura	1.80	1.58	0.22	2.14	0.85	1.28	1.99	1.55	0.44
Meghalaya	2.50	1.47	1.03	6.09	1.53	4.56	3.58	1.71	1.87
Assam	1.15	0.58	0.57	3.23	0.72	2.51	1.53	0.64	0.89
West Bengal	2.98	0.98	2.00	2.57	0.39	2.18	3.06	0.86	2.20
Jharkhand	6.09	2.34	3.75	6.18	0.88	5.30	6.42	2.11	4.31
Orissa	1.44	0.84	0.60	3.21	0.81	2.40	1.80	0.88	0.92
Chhattisgarh	3.46	1.62	1.84	7.81	1.25	6.57	4.49	1.60	2.89
Madhya Pradesh	2.89	1.57	1.33	5.08	0.68	4.40	3.59	1.37	2.22
Gujarat	4.52	1.02	3.50	3.47	0.35	3.12	4.31	0.80	3.50
Daman & Diu	42.09	35.76	6.32	29.58	13.26	16.32	38.73	28.45	10.28
Dadra & Nagar Haveli	27.17	16.41	10.76	35.60	11.77	23.82	30.54	16.26	14.28
Maharashtra	8.33	1.67	6.66	5.82	0.45	5.37	7.55	1.20	6.35
Andhra Pradesh	0.98	0.66	0.32	1.87	0.52	1.35	1.36	0.67	0.69
Karnataka	3.13	1.69	1.44	4.74	0.71	4.02	3.93	1.43	2.50
Goa	17.80	6.18	11.61	14.85	3.65	11.20	16.98	5.08	11.90
Lakshadweep	3.58	1.45	2.13	15.58	5.55	10.03	9.17	3.35	5.82
Kerala	1.04	0.72	0.31	2.13	1.00	1.13	1.43	0.86	0.57
Tamil Nadu	0.75	0.27	0.48	1.28	0.22	1.06	1.17	0.29	0.87
Pondicherry	45.15	17.85	27.30	14.83	2.38	12.45	25.94	7.71	18.22
A & N Islands	26.49	14.61	11.88	15.86	5.34	10.53	23.69	12.00	11.69
India	3.55	1.48	2.07	4.42	0.67	3.75	4.00	1.33	2.67

Table 1b: Male in-migration rate in India, Census 2001

States	R-T	R-R	R-U	U-T	U-R	U-U	T-T	T-R	T-U
Jammu & Kashmir	1.11	0.33	0.78	1.48	0.36	1.12	1.56	0.41	1.15
Himachal Pradesh	3.56	2.16	1.40	18.04	10.08	7.96	5.35	3.19	2.16
Punjab	6.61	2.15	4.46	4.66	0.70	3.95	6.38	1.80	4.58
Chandigarh	328.61	54.14	274.47	24.64	0.88	23.76	60.72	7.12	53.60
Uttaranchal	7.61	3.85	3.76	10.72	2.60	8.11	8.98	3.75	5.23
Haryana	8.91	3.95	4.97	9.23	1.46	7.77	9.45	3.42	6.03
Delhi	392.28	27.01	365.27	11.32	0.38	10.95	39.16	2.30	36.87
Rajasthan	1.34	0.66	0.68	3.14	0.78	2.36	1.91	0.77	1.14
Uttar Pradesh	0.64	0.32	0.32	1.60	0.27	1.33	0.94	0.36	0.58
Bihar	0.28	0.16	0.12	1.52	0.56	0.96	0.52	0.29	0.23
Sikkim	6.36	4.52	1.84	22.28	12.69	9.59	8.86	6.01	2.85
Arunachal Pradesh	12.33	7.85	4.48	14.60	6.52	8.08	13.90	8.19	5.72
Nagaland	3.32	1.53	1.79	9.27	2.93	6.34	4.88	2.09	2.79
Manipur	0.50	0.34	0.16	0.80	0.34	0.46	0.76	0.49	0.27
Mizoram	5.75	2.39	3.36	3.69	0.51	3.18	4.99	1.56	3.43
Tripura	1.69	1.47	0.22	1.90	0.75	1.14	1.86	1.45	0.41
Meghalaya	2.68	1.47	1.22	6.68	1.81	4.87	3.91	1.81	2.10
Assam	1.28	0.58	0.69	2.99	0.67	2.32	1.63	0.64	0.99
West Bengal	3.17	0.68	2.50	2.54	0.34	2.19	3.21	0.63	2.58
Jharkhand	4.73	0.89	3.84	5.12	0.66	4.46	5.11	0.91	4.19
Orissa	1.05	0.42	0.62	2.99	0.79	2.21	1.43	0.52	0.92
Chhattisgarh	2.96	1.05	1.91	7.10	1.21	5.90	3.97	1.14	2.84
Madhya Pradesh	1.67	0.50	1.17	3.80	0.44	3.36	2.34	0.51	1.83
Gujarat	5.37	1.03	4.34	3.36	0.35	3.01	4.79	0.80	3.98
Daman & Diu	48.06	42.45	5.61	34.25	17.77	16.47	44.92	35.62	9.30
Dadra & Nagar Haveli	30.84	18.09	12.75	37.13	13.87	23.26	33.74	17.88	15.86
Maharashtra	9.70	1.44	8.25	5.78	0.43	5.35	8.29	1.05	7.24
Andhra Pradesh	0.64	0.30	0.33	1.69	0.38	1.31	1.04	0.36	0.68
Karnataka	2.56	1.04	1.52	4.63	0.63	4.00	3.51	0.97	2.55
Goa	19.31	6.43	12.87	14.97	3.69	11.28	17.81	5.22	12.59
Lakshadweep	5.80	2.33	3.47	23.13	7.66	15.47	13.86	4.81	9.05
Kerala	1.12	0.76	0.36	2.20	1.06	1.14	1.51	0.90	0.61
Tamil Nadu	0.63	0.15	0.47	1.19	0.19	1.01	1.05	0.20	0.85
Pondicherry	34.12	11.04	23.08	13.06	1.91	11.14	21.01	5.10	15.90
A & N Islands	28.53	15.37	13.16	15.50	5.39	10.11	24.88	12.46	12.42
India	3.15	0.81	2.34	3.97	0.55	3.42	3.59	0.80	2.79

Table 1c: Female in-migration rate in India, Census 2001

States	R-T	R-R	R-U	U-T	U-R	U-U	T-T	T-R	T-U
Jammu & Kashmir	1.23	0.49	0.73	2.22	0.53	1.69	1.55	0.53	1.02

Himachal Pradesh	4.69	3.85	0.84	19.81	8.24	11.57	6.20	4.38	1.83
Punjab	7.76	4.68	3.08	7.52	1.47	6.05	8.10	3.76	4.34
Chandigarh	358.55	51.79	306.77	30.91	0.91	30.00	62.65	5.74	56.91
Uttaranchal	9.38	6.01	3.37	15.33	3.19	12.14	11.32	5.56	5.76
Haryana	15.75	10.96	4.79	15.82	3.29	12.52	16.38	9.08	7.29
Delhi	345.95	33.47	312.48	13.25	0.47	12.78	37.56	2.82	34.74
Rajasthan	3.91	3.12	0.80	5.24	1.17	4.08	4.36	2.74	1.61
Uttar Pradesh	2.15	1.73	0.42	3.40	0.91	2.49	2.54	1.64	0.91
Bihar	3.34	3.10	0.24	3.41	1.33	2.08	3.51	3.05	0.46
Sikkim	6.08	4.68	1.40	20.94	11.40	9.54	8.11	5.72	2.39
Arunachal Pradesh	9.39	6.12	3.28	12.05	4.91	7.14	10.70	6.36	4.34
Nagaland	2.10	1.02	1.07	6.75	2.02	4.73	3.23	1.41	1.83
Manipur	0.48	0.35	0.12	0.64	0.23	0.42	0.61	0.38	0.23
Mizoram	3.67	1.93	1.73	1.78	0.20	1.58	2.88	1.13	1.75
Tripura	1.92	1.70	0.22	2.39	0.96	1.43	2.14	1.67	0.47
Meghalaya	2.31	1.47	0.84	5.48	1.24	4.24	3.25	1.61	1.64
Assam	1.02	0.58	0.43	3.51	0.78	2.73	1.42	0.64	0.78
West Bengal	2.79	1.30	1.48	2.60	0.45	2.15	2.91	1.11	1.80
Jharkhand	7.50	3.85	3.65	7.40	1.13	6.27	7.83	3.39	4.44
Orissa	1.84	1.27	0.57	3.45	0.83	2.62	2.18	1.26	0.92
Chhattisgarh	3.95	2.19	1.76	8.58	1.29	7.29	5.02	2.07	2.95
Madhya Pradesh	4.21	2.72	1.49	6.51	0.96	5.55	4.96	2.31	2.65
Gujarat	3.63	1.02	2.61	3.60	0.35	3.25	3.79	0.81	2.98
Daman & Diu	31.89	24.35	7.54	24.83	8.67	16.16	30.01	18.34	11.67
Dadra & Nagar Haveli	22.87	14.44	8.42	33.39	8.75	24.64	26.60	14.26	12.34
Maharashtra	6.90	1.91	5.00	5.87	0.47	5.39	6.74	1.37	5.38
Andhra Pradesh	1.33	1.03	0.31	2.06	0.66	1.40	1.68	0.99	0.69
Karnataka	3.71	2.35	1.36	4.85	0.81	4.05	4.35	1.91	2.44
Goa	16.27	5.93	10.34	14.71	3.60	11.11	16.13	4.94	11.18
Lakshadweep	1.26	0.53	0.73	7.50	3.29	4.21	4.22	1.81	2.42
Kerala	0.96	0.69	0.27	2.06	0.93	1.12	1.34	0.81	0.53
Tamil Nadu	0.87	0.39	0.48	1.37	0.26	1.11	1.28	0.38	0.90
Pondicherry	56.30	24.73	31.57	16.59	2.84	13.75	30.87	10.32	20.54
A & N Islands	24.12	13.73	10.39	16.31	5.28	11.04	22.29	11.46	10.83
India	3.97	2.19	1.78	4.92	0.81	4.11	4.45	1.89	2.55

Table 2a: Total out-migration rate in India, Census 2001

States	R-T	R-R	R-U	U-T	U-R	U-U	T-T	T-R	T-U
Jammu & Kashmir	1.59	1.03	0.56	4.51	0.80	3.71	2.46	1.04	1.42
Himachal Pradesh	5.21	2.08	3.13	21.04	2.57	18.47	7.17	2.24	4.93
Punjab	5.49	3.31	2.18	8.10	1.07	7.03	6.70	2.68	4.02
Chandigarh	42.00	17.65	24.35	19.45	2.64	16.81	23.05	4.50	18.55
Uttaranchal	9.40	3.26	6.14	11.37	1.50	9.88	10.53	3.00	7.52
Haryana	7.56	4.17	3.39	8.44	1.10	7.35	8.22	3.43	4.79
Delhi	14.64	8.29	6.35	5.72	1.15	4.57	6.70	1.73	4.97
Rajasthan	4.04	1.86	2.18	5.53	0.64	4.89	4.62	1.65	2.97
Uttar Pradesh	5.07	1.36	3.71	6.29	0.64	5.66	5.57	1.27	4.30
Bihar	5.52	1.64	3.87	10.09	1.32	8.76	6.34	1.70	4.63
Sikkim	1.62	1.08	0.53	9.66	2.83	6.83	2.74	1.41	1.33
Arunachal Pradesh	1.42	0.93	0.49	3.68	1.18	2.50	2.08	1.09	0.98
Nagaland	7.63	6.14	1.48	6.26	1.63	4.63	8.00	5.79	2.21
Manipur	2.10	1.00	1.11	2.47	0.54	1.93	2.40	0.96	1.44
Mizoram	7.09	6.45	0.63	0.93	0.23	0.70	4.28	3.56	0.72
Tripura	1.41	0.83	0.58	4.39	0.77	3.63	2.05	0.87	1.18
Meghalaya	1.06	0.62	0.44	6.11	1.08	5.03	2.19	0.76	1.43
Assam	1.99	1.43	0.56	5.62	1.29	4.33	2.66	1.53	1.13
West Bengal	1.47	0.79	0.69	3.35	0.62	2.73	2.10	0.78	1.33
Jharkhand	5.26	3.36	1.90	4.97	1.10	3.86	5.47	3.01	2.46
Orissa	2.22	1.02	1.19	3.54	0.65	2.89	2.55	1.02	1.53
Chhattisgarh	3.90	2.64	1.26	3.97	0.75	3.22	4.14	2.41	1.73
Madhya Pradesh	3.00	1.90	1.10	3.69	0.66	3.03	3.33	1.64	1.69
Gujarat	2.19	0.68	1.50	3.10	0.42	2.68	2.66	0.62	2.04
Daman & Diu	6.17	2.91	3.26	9.90	3.15	6.74	8.02	3.14	4.88
Dadra & Nagar Haveli	2.71	2.10	0.62	4.92	1.88	3.04	3.50	2.22	1.28
Maharashtra	1.95	1.01	0.94	2.30	0.48	1.83	2.22	0.82	1.39
Andhra Pradesh	1.65	0.77	0.87	2.67	0.38	2.28	2.05	0.71	1.35
Karnataka	3.34	1.59	1.75	3.31	0.63	2.68	3.52	1.34	2.19
Goa	4.76	1.41	3.35	7.84	1.44	6.40	6.78	1.52	5.25
Lakshadweep	3.49	0.94	2.54	2.02	0.36	1.66	3.17	0.79	2.38
Kerala	2.11	0.48	1.63	5.77	0.57	5.20	3.31	0.54	2.77
Tamil Nadu	2.43	1.02	1.41	2.59	0.44	2.15	2.67	0.82	1.85
Pondicherry	9.16	5.21	3.95	8.67	2.89	5.78	10.53	4.50	6.03
A & N Islands	1.66	0.57	1.09	7.08	1.53	5.55	3.89	1.04	2.85
India	3.55	1.48	2.07	4.42	0.67	3.75	4.00	1.33	2.67

Table 2b: Male out-migration rate in India, Census 2001

States	R-T	R-R	R-U	U-T	U-R	U-U	T-T	T-R	T-U
Jammu & Kashmir	1.05	0.45	0.60	4.09	0.76	3.32	1.99	0.60	1.39
Himachal Pradesh	4.56	1.13	3.44	18.42	2.11	16.31	6.50	1.35	5.15
Punjab	3.93	1.92	2.01	6.78	0.90	5.88	5.22	1.70	3.52
Chandigarh	31.25	9.66	21.59	16.61	2.05	14.56	19.44	3.23	16.21
Uttaranchal	8.20	1.36	6.84	9.17	0.96	8.21	9.10	1.43	7.67
Haryana	3.90	1.03	2.86	6.33	0.65	5.68	4.95	1.04	3.91
Delhi	6.16	1.70	4.46	4.22	0.79	3.43	4.65	0.93	3.72
Rajasthan	3.06	0.73	2.33	4.93	0.48	4.45	3.72	0.72	2.99
Uttar Pradesh	5.20	0.81	4.39	6.04	0.55	5.49	5.63	0.81	4.82
Bihar	6.19	1.31	4.89	10.64	1.26	9.38	7.05	1.40	5.65
Sikkim	1.36	0.80	0.57	8.69	2.57	6.11	2.43	1.14	1.29
Arunachal Pradesh	1.18	0.69	0.50	3.57	1.22	2.36	1.89	0.91	0.98
Nagaland	2.50	1.12	1.38	5.27	1.19	4.08	3.57	1.52	2.05
Manipur	2.08	0.87	1.21	2.80	0.66	2.14	2.50	0.91	1.58
Mizoram	7.01	6.34	0.68	0.96	0.24	0.72	4.27	3.52	0.75
Tripura	1.35	0.72	0.63	4.50	0.72	3.78	2.02	0.77	1.25
Meghalaya	0.91	0.47	0.43	5.81	1.06	4.75	2.01	0.65	1.36
Assam	1.29	0.74	0.55	5.20	1.17	4.03	2.01	0.91	1.10
West Bengal	1.17	0.39	0.79	3.05	0.45	2.60	1.81	0.44	1.37
Jharkhand	3.80	1.64	2.16	4.07	0.76	3.32	4.11	1.56	2.56
Orissa	2.19	0.60	1.58	3.47	0.56	2.92	2.53	0.64	1.89
Chhattisgarh	3.00	1.71	1.29	3.20	0.57	2.64	3.26	1.61	1.64
Madhya Pradesh	1.83	0.79	1.04	2.69	0.42	2.28	2.19	0.75	1.44
Gujarat	1.75	0.26	1.49	2.75	0.42	2.33	2.25	0.35	1.90
Daman & Diu	4.44	1.50	2.94	8.71	2.57	6.14	6.23	1.97	4.26
Dadra & Nagar Haveli	1.23	0.73	0.51	3.96	1.56	2.40	2.10	1.03	1.07
Maharashtra	1.41	0.51	0.90	1.88	0.40	1.49	1.72	0.49	1.22
Andhra Pradesh	1.30	0.42	0.88	2.44	0.32	2.12	1.73	0.43	1.30
Karnataka	2.67	0.90	1.77	2.92	0.48	2.44	2.93	0.82	2.12
Goa	3.88	0.76	3.12	6.73	1.24	5.49	5.78	1.10	4.69
Lakshadweep	4.23	1.09	3.14	2.14	0.39	1.76	3.79	0.95	2.84
Kerala	2.25	0.46	1.79	6.06	0.60	5.45	3.49	0.53	2.96
Tamil Nadu	2.35	0.86	1.50	2.55	0.41	2.13	2.61	0.71	1.90
Pondicherry	5.61	2.07	3.54	7.24	2.19	5.05	8.29	2.95	5.34
A & N Islands	1.44	0.41	1.03	6.11	1.34	4.77	3.42	0.88	2.55
India	3.15	0.81	2.34	3.97	0.55	3.42	3.59	0.80	2.79

Table 2c: Female out-migration rate in India, Census 2001

States	R-T	R-R	R-U	U-T	U-R	U-U	T-T	T-R	T-U
Jammu & Kashmir	2.17	1.66	0.51	5.03	0.85	4.18	2.99	1.53	1.46
Himachal Pradesh	5.86	3.03	2.83	24.34	3.14	21.20	7.86	3.16	4.70
Punjab	7.25	4.87	2.37	9.65	1.26	8.39	8.39	3.81	4.59
Chandigarh	59.32	30.51	28.80	23.02	3.38	19.63	27.70	6.13	21.56
Uttaranchal	10.58	5.14	5.44	13.98	2.13	11.84	12.01	4.63	7.37
Haryana	11.79	7.79	4.01	10.95	1.62	9.32	12.02	6.21	5.81
Delhi	25.11	16.42	8.69	7.54	1.58	5.96	9.19	2.69	6.49
Rajasthan	5.09	3.08	2.01	6.20	0.82	5.39	5.60	2.65	2.94
Uttar Pradesh	4.92	1.97	2.96	6.58	0.74	5.84	5.50	1.78	3.72
Bihar	4.79	2.01	2.78	9.44	1.40	8.05	5.56	2.04	3.53
Sikkim	1.90	1.41	0.49	10.83	3.13	7.70	3.09	1.73	1.36
Arunachal Pradesh	1.68	1.19	0.48	3.80	1.13	2.67	2.28	1.30	0.99
Nagaland	13.23	11.63	1.60	7.46	2.16	5.29	12.92	10.53	2.39
Manipur	2.13	1.12	1.00	2.15	0.43	1.72	2.29	1.00	1.29
Mizoram	7.16	6.57	0.59	0.90	0.22	0.68	4.28	3.60	0.69
Tripura	1.47	0.95	0.52	4.28	0.82	3.47	2.09	0.97	1.11
Meghalaya	1.21	0.76	0.45	6.42	1.10	5.32	2.38	0.88	1.50
Assam	2.72	2.17	0.56	6.10	1.43	4.68	3.35	2.20	1.15
West Bengal	1.79	1.21	0.58	3.68	0.81	2.88	2.42	1.14	1.28
Jharkhand	6.78	5.15	1.62	5.99	1.50	4.49	6.91	4.55	2.36
Orissa	2.25	1.45	0.79	3.62	0.75	2.87	2.57	1.40	1.16
Chhattisgarh	4.80	3.56	1.24	4.80	0.95	3.85	5.03	3.21	1.82
Madhya Pradesh	4.26	3.09	1.17	4.81	0.93	3.88	4.57	2.61	1.97
Gujarat	2.65	1.14	1.51	3.50	0.43	3.07	3.10	0.92	2.19
Daman & Diu	9.12	5.30	3.82	11.10	3.74	7.36	10.53	4.78	5.75
Dadra & Nagar Haveli	4.45	3.70	0.75	6.32	2.35	3.97	5.22	3.69	1.53
Maharashtra	2.52	1.53	0.99	2.78	0.57	2.21	2.76	1.18	1.58
Andhra Pradesh	2.00	1.13	0.87	2.91	0.45	2.46	2.38	0.99	1.39
Karnataka	4.02	2.29	1.73	3.73	0.79	2.93	4.14	1.88	2.26
Goa	5.65	2.08	3.58	9.03	1.66	7.37	7.81	1.97	5.85
Lakshadweep	2.71	0.79	1.92	1.89	0.32	1.57	2.52	0.62	1.90
Kerala	1.98	0.50	1.47	5.50	0.54	4.97	3.13	0.55	2.59
Tamil Nadu	2.50	1.19	1.31	2.63	0.47	2.16	2.74	0.93	1.81
Pondicherry	12.75	8.38	4.36	10.09	3.59	6.50	12.76	6.04	6.72
A & N Islands	1.92	0.76	1.16	8.27	1.76	6.51	4.43	1.23	3.20
India	3.97	2.19	1.78	4.92	0.81	4.11	4.45	1.89	2.55

Table 3a: Migration effectiveness ratio (Total), Census 2001

States	R-T	R-R	R-U	U-T	U-R	U-U	T-T	T-R	T-U
Jammu & Kashmir	-15.27	-43.33	15.33	-42.60	-29.59	-45.77	-22.44	-37.92	-13.19
Himachal Pradesh	-11.66	18.25	-47.38	-5.56	56.64	-31.81	-10.81	25.45	-42.34
Punjab	13.14	0.50	27.19	-15.12	-0.43	-17.73	3.45	0.61	5.26
Chandigarh	78.01	50.20	84.35	17.00	-49.53	22.42	45.52	18.32	49.59
Uttaranchal	-5.01	20.49	-26.55	6.01	31.48	0.40	-1.94	21.41	-15.64
Haryana	23.02	26.65	18.04	18.38	35.44	15.03	21.23	27.54	16.00
Delhi	92.42	56.59	96.35	36.14	-46.65	44.07	70.32	18.92	75.68
Rajasthan	-22.04	-0.47	-49.48	-14.48	20.41	-21.41	-19.95	1.97	-36.93
Uttar Pradesh	-57.80	-15.65	-82.07	-44.13	-5.92	-50.23	-53.23	-13.51	-70.86
Bihar	-51.79	-2.12	-91.23	-61.57	-18.01	-71.10	-52.93	-2.84	-86.32
Sikkim	58.78	61.83	50.79	38.34	62.13	16.68	51.29	61.18	33.12
Arunachal Pradesh	77.03	76.65	77.71	57.08	66.18	50.83	71.29	74.01	67.50
Nagaland	-47.23	-65.32	-1.36	12.97	21.42	9.55	-32.26	-53.25	2.66
Manipur	-62.22	-48.47	-76.91	-54.89	-31.44	-63.09	-55.66	-37.85	-70.31
Mizoram	-19.72	-49.64	60.51	49.67	21.92	55.01	-3.68	-44.98	56.98
Tripura	12.27	31.20	-44.64	-34.52	5.40	-47.69	-1.45	28.19	-45.80
Meghalaya	40.53	40.87	40.05	-0.19	17.32	-4.95	24.06	38.34	13.37
Assam	-26.70	-42.21	1.10	-26.95	-28.37	-26.53	-27.00	-40.96	-11.93
West Bengal	33.85	10.99	48.89	-13.15	-22.18	-11.29	18.56	5.15	24.79
Jharkhand	7.32	-17.92	32.82	10.91	-11.19	15.70	8.04	-17.50	27.35
Orissa	-21.18	-9.72	-33.13	-4.94	10.78	-9.27	-17.15	-7.13	-24.90
Chhattisgarh	-6.08	-23.96	18.47	32.59	24.69	34.20	4.11	-20.09	25.09
Madhya Pradesh	-1.80	-9.55	9.24	15.80	1.87	18.32	3.77	-8.94	13.55
Gujarat	34.80	19.90	39.90	5.71	-9.11	7.69	23.68	12.87	26.46
Daman & Diu	74.43	84.97	31.93	49.86	61.58	41.52	65.70	80.12	35.67
Dadra & Nagar Haveli	81.85	77.36	89.17	75.70	72.46	77.34	79.43	75.93	83.60
Maharashtra	61.99	24.60	75.18	43.32	-3.08	49.29	54.63	18.89	63.97
Andhra Pradesh	-25.28	-7.55	-46.59	-17.55	14.78	-25.55	-20.48	-2.67	-32.54
Karnataka	-3.21	3.02	-9.60	17.75	6.13	20.08	5.39	3.35	6.59
Goa	57.79	62.79	55.25	30.88	43.30	27.29	42.96	53.90	38.74
Lakshadweep	1.30	21.09	-8.84	77.03	87.95	71.52	48.57	61.70	41.94
Kerala	-33.97	20.22	-67.61	-46.12	27.28	-64.27	-39.74	22.69	-65.87
Tamil Nadu	-52.83	-57.76	-49.43	-33.86	-32.81	-34.08	-39.29	-47.70	-35.85
Pondicherry	66.27	54.82	74.71	26.22	-9.63	36.59	42.25	26.32	50.27
A & N Islands	88.19	92.48	83.16	38.28	55.46	30.94	71.82	84.08	60.83

Table 3b: Migration effectiveness ratio (Male), Census 2001

States	R-T	R-R	R-U	U-T	U-R	U-U	T-T	T-R	T-U
Jammu & Kashmir	2.82	-16.10	13.50	-46.71	-35.65	-49.49	-11.92	-18.71	-9.21
Himachal Pradesh	-12.34	31.47	-42.13	-1.02	65.40	-34.40	-9.68	40.43	-40.87
Punjab	25.45	5.75	37.86	-18.59	-12.30	-19.62	9.99	2.99	13.01
Chandigarh	82.63	69.72	85.42	19.47	-39.90	24.00	51.51	37.63	53.57
Uttaranchal	-3.76	47.78	-29.12	7.77	46.22	-0.62	-0.68	44.77	-18.91
Haryana	39.15	58.46	26.88	18.65	38.41	15.55	31.22	53.31	21.31
Delhi	96.91	88.13	97.59	45.70	-35.61	52.31	78.76	42.30	81.66
Rajasthan	-39.01	-4.64	-54.88	-22.19	24.20	-30.79	-32.18	2.84	-44.80
Uttar Pradesh	-78.16	-43.20	-86.51	-58.10	-34.36	-60.92	-71.33	-38.02	-78.55
Bihar	-91.37	-77.83	-95.35	-75.00	-38.39	-81.44	-86.27	-65.87	-92.12
Sikkim	64.67	70.01	52.85	43.90	66.27	22.16	56.96	68.12	37.73
Arunachal Pradesh	82.52	83.94	80.08	60.68	68.53	54.86	76.03	79.92	70.73
Nagaland	14.10	15.64	12.81	27.53	42.32	21.68	15.45	15.71	15.26
Manipur	-61.11	-44.07	-76.08	-55.54	-31.40	-64.81	-53.53	-30.46	-70.92
Mizoram	-9.89	-45.24	66.46	58.82	36.10	63.23	7.79	-38.71	64.25
Tripura	11.25	34.37	-48.07	-40.68	2.44	-53.57	-4.18	30.31	-50.29
Meghalaya	49.44	51.10	47.49	7.01	26.35	1.23	32.09	47.39	21.20
Assam	-0.57	-11.72	11.22	-26.91	-27.29	-26.80	-10.47	-17.34	-5.37
West Bengal	45.98	27.17	52.08	-9.12	-13.61	-8.37	27.83	17.77	30.53
Jharkhand	10.92	-29.85	28.08	11.41	-6.61	14.69	10.76	-26.17	24.27
Orissa	-35.21	-17.32	-43.52	-7.44	17.06	-13.86	-27.58	-10.66	-34.54
Chhattisgarh	-0.72	-23.92	19.29	37.83	35.99	38.21	9.90	-17.41	26.67
Madhya Pradesh	-4.46	-22.76	6.25	16.98	2.39	19.20	3.27	-19.34	12.01
Gujarat	50.84	59.99	48.82	10.05	-8.87	12.75	36.10	39.59	35.42
Daman & Diu	83.09	93.16	31.27	59.45	74.70	45.72	75.64	89.50	37.19
Dadra & Nagar Haveli	92.31	92.26	92.38	80.72	79.79	81.27	88.28	89.09	87.37
Maharashtra	74.67	47.70	80.43	50.88	3.77	56.57	65.71	36.24	71.10
Andhra Pradesh	-34.34	-15.88	-45.37	-18.12	9.14	-23.66	-24.99	-8.59	-31.49
Karnataka	-2.10	7.10	-7.55	22.70	13.45	24.28	9.01	8.37	9.26
Goa	66.54	78.95	60.96	38.00	49.75	34.54	50.97	65.27	45.75
Lakshadweep	15.66	36.16	5.02	83.03	90.37	79.59	57.05	66.91	52.27
Kerala	-33.48	24.83	-66.44	-46.64	27.73	-65.45	-39.55	25.79	-65.86
Tamil Nadu	-57.96	-69.54	-52.01	-36.20	-37.60	-35.94	-42.54	-55.52	-38.21
Pondicherry	71.76	68.48	73.37	28.66	-6.66	37.59	43.38	26.68	49.72
A & N Islands	90.38	94.81	85.45	43.43	60.09	35.90	75.80	86.87	65.93

Table 3c: Migration effectiveness ratio (Female), Census 2001

States	R-T	R-R	R-U	U-T	U-R	U-U	T-T	T-R	T-U
Jammu & Kashmir	-27.77	-54.05	17.54	-38.76	-23.58	-42.33	-31.67	-48.50	-17.75
Himachal Pradesh	-11.12	11.88	-54.39	-10.27	44.83	-29.40	-11.80	16.12	-44.04
Punjab	3.43	-2.02	12.98	-12.39	7.80	-16.21	-1.80	-0.65	-2.77
Chandigarh	71.61	25.85	82.83	14.63	-57.78	20.89	38.68	-3.35	45.04
Uttaranchal	-6.00	7.81	-23.47	4.60	19.81	1.23	-2.95	9.09	-12.30
Haryana	14.36	16.90	8.95	18.20	33.94	14.65	15.35	18.81	11.31
Delhi	86.47	34.17	94.59	27.43	-54.31	36.38	60.69	2.21	68.50
Rajasthan	-13.12	0.53	-43.25	-8.37	17.70	-13.82	-12.45	1.71	-29.19
Uttar Pradesh	-39.20	-6.39	-75.20	-31.93	10.10	-40.24	-36.76	-4.17	-60.85
Bihar	-17.77	21.42	-83.89	-46.92	-2.34	-58.93	-22.66	19.90	-76.99
Sikkim	52.31	53.71	47.82	31.82	56.89	10.68	44.76	53.56	27.29
Arunachal Pradesh	69.70	67.34	74.29	52.05	62.51	45.61	64.84	66.15	62.95
Nagaland	-72.65	-83.84	-19.69	-5.00	-3.38	-5.67	-59.98	-76.46	-13.38
Manipur	-63.35	-52.20	-77.97	-54.06	-31.51	-61.01	-58.12	-45.50	-69.55
Mizoram	-32.28	-54.52	49.28	32.95	-4.46	40.05	-19.53	-52.17	43.67
Tripura	13.24	28.42	-40.49	-28.37	7.95	-41.53	1.19	26.31	-40.83
Meghalaya	31.14	31.68	30.21	-7.87	6.08	-11.30	15.38	29.12	4.49
Assam	-45.68	-57.71	-12.37	-26.98	-29.40	-26.27	-40.48	-54.72	-19.52
West Bengal	21.72	3.77	43.56	-17.16	-28.25	-14.39	9.21	-1.26	16.88
Jharkhand	5.08	-14.44	38.43	10.51	-14.02	16.53	6.22	-14.63	30.59
Orissa	-9.92	-6.82	-16.11	-2.39	4.85	-4.48	-8.19	-5.56	-11.54
Chhattisgarh	-9.72	-23.98	17.60	28.25	15.05	30.90	-0.09	-21.50	23.59
Madhya Pradesh	-0.62	-6.37	11.92	15.04	1.60	17.74	4.02	-6.03	14.73
Gujarat	15.58	-5.41	26.55	1.48	-9.37	2.82	9.92	-6.49	15.38
Daman & Diu	55.53	64.24	32.78	38.22	39.72	37.43	48.05	58.63	34.00
Dadra & Nagar Haveli	67.44	59.21	83.74	68.18	57.71	72.24	67.17	58.86	77.93
Maharashtra	46.44	10.92	66.82	35.65	-9.31	41.80	41.97	7.44	54.58
Andhra Pradesh	-19.93	-4.71	-47.88	-17.05	18.45	-27.28	-17.34	-0.27	-33.57
Karnataka	-3.98	1.26	-11.83	13.13	0.78	15.96	2.54	0.91	3.85
Goa	48.42	48.12	48.60	23.93	36.82	20.25	34.74	43.09	31.35
Lakshadweep	-36.49	-19.82	-44.75	59.77	82.17	45.74	25.16	48.68	11.93
Kerala	-34.50	15.80	-68.96	-45.57	26.81	-63.07	-39.94	19.59	-65.88
Tamil Nadu	-48.27	-50.18	-46.58	-31.63	-28.82	-32.26	-36.28	-42.17	-33.43
Pondicherry	63.08	49.37	75.71	24.38	-11.51	35.78	41.49	26.14	50.71
A & N Islands	85.25	89.53	79.89	32.72	50.03	25.78	66.84	80.60	54.40

Table 4a: Migration expectancy (Total), Census 2001

Total								
Age	Total population (2001)	In-migrants (2001)	Migration rate	Mortality pattern		Mortality & Migration		Migration expectancy (H/E)
				l_x	${}_nL_x$	Expected number of moves (F*D)	Cumulative number of moves	
A	B	C	D	E	F	G	H	I
0-9	238763954	1,51,83,856	0.064	100000	946700	60204	513218	5.132
10-19	225062748	1,65,76,946	0.074	89340	887080	65338	453014	5.071
20-29	173186525	4,39,58,032	0.254	88076	869990	220820	387677	4.402
30-39	144848129	1,27,05,157	0.088	85922	845045	74122	166857	1.942
40-49	103147273	49,61,632	0.048	83087	808580	38895	92735	1.116
50-59	64240906	23,63,521	0.037	78629	738985	27188	53840	0.685
60-69	47323734	14,34,321	0.030	69168	604630	18326	26652	0.385
70+	29298587	9,42,662	0.032	51758	258790	8326	8326	0.161
Male								
Age	Total population (2001)	In-migrants (2001)	Migration rate	Mortality pattern		Mortality & Migration		Total population (2001)
				l_x	${}_nL_x$	Expected number of moves (F*D)	Age	
A	B	C	D	E	F	G	H	I
0-9	123854445	78,53,623	0.06341	100000	951000	60303	346599	3.466
10-19	119572868	63,35,278	0.05298	90200	896130	47479	286296	3.174
20-29	87878696	74,94,270	0.08528	89026	879700	75021	238817	2.683
30-39	73400643	57,14,848	0.07786	86914	852760	66394	163797	1.885
40-49	54746601	29,79,705	0.05443	83638	809115	44038	97402	1.165
50-59	33434630	13,59,664	0.04067	78185	726165	29530	53364	0.683
60-69	23058450	7,03,192	0.0305	67048	574625	17524	23834	0.355
70+	14709877	387733	0.02636	47877	239385	6310	6310	0.132
Female								
Age	Total population (2001)	In-migrants (2001)	Migration rate	Mortality pattern		Mortality & Migration		Total population (2001)
				l_x	${}_nL_x$	Expected number of moves (F*D)	Age	
A	B	C	D	E	F	G	H	I
0-9	114909509	73,30,233	0.06379	100000	941470	60058	681013	6.810
10-19	105489880	1,02,41,668	0.09709	88294	876105	85058	620955	7.033
20-29	85307829	3,64,63,762	0.42744	86927	858345	366889	535897	6.165
30-39	71447486	69,90,309	0.09784	84742	835410	81735	169008	1.994
40-49	48400672	19,81,927	0.04095	82340	806495	33025	87273	1.060
50-59	30806276	10,03,857	0.03259	78959	751520	24489	54249	0.687
60-69	24265284	7,31,129	0.03013	71345	635615	19151	29759	0.417
70+	14588710	554929	0.03804	55778	278890	10608	10608	0.190

Table 4b: Migration expectancy (Rural), Census 2001

Total								
Age	Total population (2001)	In-migrants (2001)	Migration rate	Mortality pattern		Mortality & Migration		Migration expectancy (H/E)
				l_x	${}_nL_x$	Expected number of moves (F*D)	Cumulative number of moves	
A	B	C	D	E	F	G	H	I
0-9	2.76E+08	1,01,76,796	0.037	100000	941675	34729	591072	5.911
10-19	1.31E+08	1,30,20,244	0.099	88335	876425	86804	556344	6.298
20-29	1.1E+08	3,61,81,916	0.330	86950	857750	283389	469540	5.400
30-39	87523715	88,20,002	0.101	84600	830995	83742	186152	2.200
40-49	58732600	31,33,402	0.053	81599	792655	42288	102410	1.255
50-59	40623038	14,27,668	0.035	76932	721405	25353	60122	0.781
60-69	25946232	8,94,881	0.034	67349	586035	20212	34768	0.516
70+	10846513	633323	0.058	49858	249290	14556	14556	0.292
Male								
Age	Total population (2001)	In-migrants (2001)	Migration rate	Mortality pattern		Mortality & Migration		Migration expectancy (H/E)
				l_x	${}_nL_x$	Expected number of moves (F*D)	Cumulative number of moves	
A	B	C	D	E	F	G	H	I
0-9	1.44E+08	52,32,294	0.036	100000	946600	34502	353714	3.537
10-19	68875900	45,91,861	0.067	89320	886770	59120	319213	3.574
20-29	54065952	53,00,683	0.098	88034	868955	85193	260093	2.954
30-39	45302063	38,37,406	0.085	85757	840525	71198	174900	2.039
40-49	30836364	18,53,444	0.060	82348	795230	47798	103701	1.259
50-59	19719480	7,89,354	0.040	76698	710425	28438	55903	0.729
60-69	12817698	4,01,206	0.031	65387	556710	17426	27466	0.420
70+	5395181	235732	0.044	45955	229775	10040	10040	0.218
Female								
Age	Total population (2001)	In-migrants (2001)	Migration rate	Mortality pattern		Mortality & Migration		Migration expectancy (H/E)
				l_x	${}_nL_x$	Expected number of moves (F*D)	Cumulative number of moves	
A	B	C	D	E	F	G	H	I
0-9	1.32E+08	49,44,502	0.037	100000	937225	35003	822132	8.221
10-19	62584827	84,28,383	0.135	87445	866970	116756	787130	9.001
20-29	55448067	3,08,81,233	0.557	85949	847375	471937	670374	7.800
30-39	42221652	49,82,596	0.118	83526	822225	97031	198437	2.376
40-49	27896236	12,79,958	0.046	80919	791010	36294	101406	1.253
50-59	20903558	6,38,314	0.031	77283	734025	22414	65112	0.843
60-69	13128534	4,93,675	0.038	69522	615625	23149	42697	0.614
70+	5451332	397591	0.073	53603	268015	19548	19548	0.365

Table 4c: Migration expectancy (Urban), Census 2001

Total								
Age	Total population (2001)	In-migrants (2001)	Migration rate	Mortality pattern		Mortality & Migration		Migration expectancy (H/E)
				l_x	${}_nL_x$	Expected number of moves (F*D)	Cumulative number of moves	
A	B	C	D	E	F	G	H	I
0-9	87663835	44,75,060	0.051	100000	966800	49353	455860	4.559
10-19	58519295	30,77,892	0.053	93360	929185	48872	406507	4.354
20-29	48182418	67,67,445	0.140	92477	916590	128739	357635	3.867
30-39	38788667	34,43,568	0.089	90841	896375	79578	228896	2.520
40-49	25263935	15,70,651	0.062	88434	864740	53761	149318	1.688
50-59	14547088	7,80,845	0.054	84514	799425	42911	95557	1.131
60-69	8569367	4,31,119	0.050	75371	670760	33745	52646	0.698
70+	3743430	240744	0.064	58781	293905	18901	18901	0.322
Male								
Age	Total population (2001)	In-migrants (2001)	Migration rate	Mortality pattern		Mortality & Migration		Migration expectancy (H/E)
				l_x	${}_nL_x$	Expected number of moves (F*D)	Cumulative number of moves	
A	B	C	D	E	F	G	H	I
0-9	45932681	23,47,517	0.051	100000	970765	49614	400488	4.005
10-19	31385241	15,36,245	0.049	94153	937475	45888	350874	3.727
20-29	24853510	19,56,262	0.079	93342	924955	72805	304987	3.267
30-39	20615379	16,47,512	0.080	91649	901695	72060	232182	2.533
40-49	13883130	9,52,473	0.069	88690	861850	59129	160121	1.805
50-59	7449889	4,65,277	0.062	83680	782960	48899	100993	1.207
60-69	4182093	2,32,534	0.056	72912	635635	35343	52094	0.714
70+	1787008	110427	0.062	54215	271075	16751	16751	0.309
Female								
Age	Total population (2001)	In-migrants (2001)	Migration rate	Mortality pattern		Mortality & Migration		Migration expectancy (H/E)
				l_x	${}_nL_x$	Expected number of moves (F*D)	Cumulative number of moves	
A	B	C	D	E	F	G	H	I
0-9	41731154	21,27,543	0.051	100000	963535	49123	514403	5.144
10-19	27134054	15,41,647	0.057	92707	922270	52400	465280	5.019
20-29	23328908	48,11,183	0.206	91747	909605	187590	412880	4.500
30-39	18173288	17,96,056	0.099	90174	892590	88214	225290	2.498
40-49	11380805	6,18,178	0.054	88344	869925	47252	137076	1.552
50-59	7097199	3,15,568	0.044	85641	820220	36470	89824	1.049
60-69	4387274	1,98,585	0.045	78403	710315	32152	53354	0.681
70+	1956422	130317	0.067	63660	318300	21202	21202	0.333