Determinants of Rural-Urban Migration in Konkan Region of Maharashtra[§]

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Abstract

The study has identified the factors responsible for rural-urban migration based on 120 sample respondents each of migrants and non-migrants spread over two districts, viz. Ratnagiri and Sindhudurg of Konkan region of Maharashtra by employing the logit model. The study has highlighted the importance of rural development programs like MGNREGA that are being implemented by the government with a view to provide employment and income to the rural population in the country. It has also shown that for both migrant and non-migrant households,, agriculture was the major source of income, and their consumption expenditure was more than the production expenditure. It has also been observed that migration has a positive impact on income, expenditure and net savings of migrant sample households. The regression analysis has shown that one unit increase in the age of household-head increases the probability of migration of family members by 0.81 per cent. The probability of migration of family member decreases by 0.003 per cent with one unit increase in before-migration income of a household. The odds ratio for family-size has indicated that with one unit increase in family-size, the probability of migration of family members increases by 8.7 per cent. There is a negative relationship between migration of family members and income from agriculture. As off-farm income of a household increases, the probability of migration of its family member decreases. The odds ratio for off-farm income implies that with one unit increase in off-farm income of a household, the probability of migration decreases by 0.018 per cent.

Key words: Migration, Logit, Variable inflation factor, Odds ratio.

JEL classification: J11, J61, C13, R23

Introduction

In India, migration is mostly influenced by social structures and pattern of development. The development policies of the state governments have not been able to check the process of migration. Uneven development is the main cause behind migration (Sarde, 2010). Also the Indian agriculture has become non-remunerative.

Migration in India is predominantly to short distances, with around 60 per cent of the migrants changing their residence within their district of birth and 20 per cent within their state, while the rest move across the state boundaries. As per 2001 Census, the state of Maharashtra is second most urbanized state wherein about 42.4 per cent population lives in urban areas. In the Konkan region, 72 per cent population lives in the urban areas and is mainly concentrated in Mumbai, Mumbai suburbs, Raigad and Thane districts which are industrially well-developed. The Human Development Report of Maharashtra State 2002 indicates that in the Konkan region 39.6 per cent of the total households live below poverty line. The district-wise data for Konkan region reveals that the percentage

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of households below poverty line was maximum (52%) in Thane, followed by Sindhudurg (37%), Ratnagiri (37%) and Raigad (29%). Human Development Report of Maharashtra State 2002 has also revealed that out of ten migrants from other districts of the state to Mumbai, nine migrants are from Konkan, Pune and Nasik divisions. The male-female migrants from other districts to Mumbai revealed that 50 per cent migrants were from the Konkan region. The decisions of rural households to migrate are determined by a combination of push and pull factors. In view of this, the present paper has identified the factors responsible for rural-urban migration in the Konkan region of Maharashtra, and has also studied the impact of rural development programmes like MGNREGA.

Data and Methodology

Rural-urban migration being a traditional phenomenon in the Konkan region, it was selected purposively for the present study. Among the four districts in the Konkan region, maximum migration is from Ratnagiri and Sindhudurg districts. Hence these two districts were selected purposively. From each district four tahsils were randomly selected. From each selected tahsil, three villages and from each village, ten migrant and non-migrant sample respondents each

were selected randomly. The data on various aspects of migration were collected by using well-designed schedules. The data pertained to the year 2003-04.

Logit Analytical Tool

To identify the determinants of rural-urban migration logit model was fitted, which was of the form:

$$Zi = B_0 + B_1 x_{i1} + B_2 x_{i2} + ... + B_n x_{in} + u_i \qquad ...(1)$$

The model was estimated by using SPSS software. The independent variables in the model are: age of household-head (AGE_H); education (EDU_H) of respondent; family size (F_SIZE); net cropped area (NCA); before migration non-farm income (BM_INC_NF); before migration off-farm income (BM_INC_OF), income from agriculture (INC_A), proportion of area under fruit crop to field crop (BM_AFR); proportion of area under foodgrain crops to net cropped area (BM_AFG) ; and relative at destination of migration as a dummy variable.

Result and Discussion

Demography of Sample Households

The composition and size of family of sample households presented in Table 1 revealed that the size

Table 1. Demography of sample households

Particulars	Category of household		Overall
	Migrant	Non-migrant	
Composition of family			
Size of family (No.)	4.44	5.26	4.85
(a) Family composition at native place			
(i) Male	2.30	2.44	2.37
(ii) Female	2.14	2.82	2.48
(iii) Earners	3.02	2.38	2.70
(iv) Non-earners	1.42	2.88	2.15
(b) Composition of migrant members			
(i) Male	1.98	-	1.98
(ii) Female	1.58	-	1.58
(iii) Earners	1.33	-	1.33
(iv) Non-earners	2.23	-	2.23
Age (years)			
(a) Family members at native place	53.18	48.50	43.23
(b) Migrant members	39.51	-	39.51
Education (Score)			
(a) Family members at native place	5.44	6.28	5.86
(b) Migrant members	8.31	-	8.31
Size of holding (ha)	1.37	1.64	1.505

of family was larger (5.26) in non-migrant than migrant households.

It was due to the fact that most of the non-migrant families were joint-families and therefore their family size was large. Among the family members at native place, the average number of earning members was more in case of migrant (3.02) than non-migrant (2.38) households. This could be attributed to the fact that in case of migrant households children usually stay with them. The number of non-earning members at native place was higher in non-migrant (2.88) than migrants (1.42) households.

The composition of migrant members constituted 1.98 males and 1.58 females. The earning members accounted for 37.36 per cent, while non-earners were 62.64 per cent. The higher percentage of non-earning members could be because of migration of non-earning females and children.

The average age of the migrant households ranged between 53.2 and 39.5 years, which included all members staying at native place and migrated. The average age of non-migrant sample households was 48.5 years. This indicated that migrated member included more youths. The average age of non-migrant sample households was less than of family members of migrants at native place. It was because the composition of non-migrant sample households included more number of children as compared to migrant families.

The educational level of migrant and non-migrant households at native place varied between 5.44 to 6.28, with an average of 5.86. The educational level of migrant members was relatively high (8.31). The average size of landholding was bigger in non-migrant households (1.64 ha) than migrant households (1.37 ha), with overall average size being 1.51 ha.

Extent of Migration

The information about migrated family members, presented in Table 2, revealed that more than 44 per cent of the total family members had migrated to urban areas. The composition of migrated members indicated that percentage of migrated children was highest (47.5%), followed by males (45.5%) and females (40.6%).

Table 2. Extent of migration

Particulars	Average No. of migrants
Males	
(a) Average number of male members	3.08
(b) Average number of males migrated	1.40
(c) Percentage of males migrated (%)	45.45
Females	
(a) Average number of female members	2.54
(b) Average number of females migrated	1.03
(c) Percentage of females migrated (%)	40.55
Children	
(a) Average number of children	2.38
(b) Average number of children migrated	1.13
(c) Percentage of children migrated (%)	47.48
Total	
(a) Average size of family	8.00
(b) Average number of members migrated	3.56
(c) Percentage of members migrated (%)	44.50
Average period of migration (years)	14.33

Average Income, Expenditure and Savings of Sample Households

The average income, expenditure and saving pattern of sample households was worked out and is presented in Table 3. It is revealed from Table 3 that the major sources of income were agriculture, wage earning, service & trade and business for both migrant and non-migrant respondents. The income of migrants before migration constituted 65.41 per cent from agriculture, 21.18 per cent from service & trade, 13.41per cent from wage earnings. This indicated that agriculture was the main source of income for migrant sample households (before migration). The total income of migrant respondents (after migration) increased to ₹ 39,730, which was ₹ 27,143 before migration, depicting a change of 46.37 per cent. After migration the contribution of agricultural income to total income of migrant sample households increased to 78.63 per cent, which was mainly due to increase in income from horticultural crops and livestock activities. The per cent change in income from fruit crops and livestock activities was observed to be 53.43 per cent and 23.77 per cent, respectively over the income of respondents (before migration). However, income from crop production after migration declined by 61.1 per cent over that of before migration. This revealed that there

Table 3. Income, expenditure and net saving pattern of the sample households

(Figures in ₹)

Sl. No.	Particulars	Migrants		Non-migrants	Overall
		Before	After		
1.	Income from agriculture				
	(a) Crop production	9354	3639	4095	5696
	(b) Fruit crops	6373	9778	10390	8847
	(c) Livestock	2028	2510	4967	3168
	Total (a + b + c)	17755 (65.41)	31241 (78.63)	35987 (87.16)	28328 (78.57)
2.	Off-farm income (Wages)	3639 (13.41)	1146 (2.88)	156 (0.38)	1647 (4.57)
3.	Non-farm income (Service & business)	5749 (21.18)	4282 (10.78)	5144 (12.46)	5059 (14.03)
4.	Remittances from migrated family members	- (7.70)	3060	- (2.83)	1020
	Total income (1 + 2 + 3 + 4)	27143	39730	41288	36053
6.	Production expenditure				
	(a) Crop production	3497 (15.61)	3207 (13.12)	5237 (15.64)	3980 (14.86)
	(b) Fruit crops	600 (2.68)	1152 (4.71)	11190 (33.41)	4314 (16.11)
	(c) Livestock	381 (1.70)	677 (2.77)	1054 (2.77)	704 (2.63)
	Total (a + b + c)	4478 (19.99)	5036 (20.60)	17481 (52.20)	8998 (33.60)
7.	Expenditure				
	(a) Food commodities	13443 (60.01)	12671 (51.84)	11398 (34.03)	12504 (46.69)
	(b) Non-food items				
	i. Education	218 (0.97)	833 (3.41)	370 (1.10)	474 (1.77)
	ii. Entertainment	4 (0.02)	39 (0.16)	29 (0.09)	24 (0.09)
	iii. Healthcare	228 (1.02)	341 (1.40)	213 (0.64)	261 (0.97)
	iv. Others	4031 (17.99)	5523 (22.60)	3999 (11.94)	4517 (16.87)
	Total (a + b)	17924 (80.01)	19407 (79.40)	16010 (47.81)	17780 (66.40)
	Total expenditure (6 + 7)	22402	24443	33490	26779
8.	Net savings	4741	15286	7797	9275

Note: Figures within the parentheses are percentages to total

was a shift in cropping pattern of sample households after migration. The sample households might have invested the additional income generated through migration in fruit crop production and livestock activities. The contribution of financial assistance from migrated members to total income was estimated to be 7.70 per cent.

In the case of non-migrant sample households, average annul income from all the sources was ₹ 41,288/-, in which ₹ 35987 (87.16%) income was derived from agriculture, followed by 7.78 per cent from service and 4.68 per cent from trade and business. Among different agricultural activities income from horticultural crops was maximum (₹ 10390/-), followed by livestock (₹ 4967/-) and crop production (₹ 4095/-).

The total expenditure of sample households included production expenditure and family expenditure. The family expenditure included items like food, education, entertainment, healthcare and religious functions. The production expenditure of sample households before migration was ₹ 4478 (20 % of total expenditure), which increased to ₹ 5036 (21%) after migration.

The consumption expenditure of sample households was ₹ 17924 (80% of total expenditure) before migration. Among different items of consumption expenditure, the proportionate expenditure on food was maximum (60%), followed by religious functions (18%). The proportionate expenditure on education, entertainment and medical expenses was negligible.

The total consumption expenditure of sample migrant households (after migration) was ₹ 24,443/- which showed an increase of 9.11 per cent over that of before migration. The proportionate expenditure on food items of households (after migration) was about 52 per cent which showed a decline of 5.74 per cent over that of before migration. The proportionate expenditure on education, entertainment, healthcare and religious functions increased to ₹ 833, ₹ 39, ₹ 341 and ₹ 5523 after migration. The foregoing analysis revealed that family expenditure of sample migrant households followed the Engle's law of family expenditure. The net savings of sample migrant households (before and after migration) were ₹ 4741/- and ₹ 15286/-, respectively showing an increase of about 220 per cent over that of before migration.

The expenditure pattern of non-migrant sample households showed a different trend. Out of the total expenditure the non-migrants spent 52.20 per cent as production expenditure and 47.80 per cent as consumption expenditure. Among the different items of consumption expenditure, expenditure was maximum (34%) on food items, followed by religious functions (12%). The proportionate expenditure on education, entertainment and healthcare was negligible. The proportion of high productive expenditure of non-migrants was because agriculture was the major source of their income.

The foregoing analysis has revealed that for both the migrants and non-migrants respondents, agriculture was the main source of income, and their consumption expenditure was more than the production expenditure. It has also been observed that migration has a positive impact on income, expenditure and net savings of migrant sample households.

Determinants of Migration

Logit model was used to identify the determinants of migration. The dependent variable (migration or non-migration) had the values of 1 or 0, depending upon migration or non-migration of family members. Ten explanatory variables (nine continuous and one dummy) were included in the model. The coefficient of contingency revealed that there was no strong association among the explanatory variables. Out of the nine explanatory variables hypothesized to influence migration in the study area, five were retained in the equation when Backward Wald method was employed, for analysis. The multicolinearity was tested by variable inflection factor (VIF) which revealed that there was no strong association among the explanatory variables. The results of logit regression are presented in Table 4.

The goodness of fit of model was 280.066 and the -2 log likelihood ratio was reduced from 665.03 to 149.870. The Nagrlkerke R^2 was observed to be 0.878, which indicates that the number of sample observations was correctly predicted by the model. The coefficients would reflect the impact of the explanatory variables on likelihood of the respondents being migrated. A positive coefficient increases the probability of migration, whereas, negative values decrease the predicted probability of migration. Thus, the negative numbers relate to odds less than 1.0 and probabilities less than 0.50 (Joseph *et al.,* 2009).

Table 4. Parameter estimates of the logit model

Explanatory variable	Estimated coefficients	Standard error	Wald statistics	Odds ratio	Probability
AGE_H	0.0328	0.0118	7.7221	1.0333	0.50818
BM_INC_NF	-0.0001	0.0000	25.5032	0.9999	0.49997
F_SIZE	0.3536	0.0581	37.0585	1.4242	0.58749
INC_A	-0.0003	0.0000	62.6945	0.9997	0.49992
BM_INC_OF	-0.0007	0.0001	32.0532	0.9993	0.49982
Constant	-1.8336	0.6494	7.9722		

-2 log Likelihood   :   149.870   Goodness of fit   :   280.066
 Cox & Snell - R^2 :   0.658   Nagelkerke - R^2 :   0.878

Age — This variable was positively associated with the migration of family member. As the age of household-head increased, the probability of migration of family members increased. The odds ratio for this variable revealed that one unit increase in age of household-head increased the probability of migration of family member by 0.81 per cent.

Income Before Migration — This variable had a negative impact on the probability of migration. With increase in the before-migration income of a household, the probability of migration of family member decreased. The odds ratio for this variable implied that the probability of migration of family member decreased by 0.003 per cent with one unit increase in before-migration income of a household.

Family Size — The coefficient of this variable turned out to be positive, indicating that there is positive association between migration of family members and size of family. As the size of family increased the per capita income of the household decreased and the household faced the problems of livelihood. Therefore, the family members had to migrate in search of a job in urban areas. The odds ratio indicated that with one unit increase in family-size, the probability of migration of family members increased by 8.75 per cent.

Income from Agriculture — Table 4 elucidates that there was a negative relation between migration of family member and income from agriculture. The odds ratio for this variable revealed that as the income of household from agriculture increased by one unit, the probability of migration decreased by 0.008 per cent.

Off-farm Income — It was observed that there was a negative relationship between off -farm income of the household and migration. As off-farm income of a household increased, the probability of migration of family member decreased. The odds ratio for this variable implied that with one unit increase in off-farm income of a household, the probability of migration decreased by 0.018 per cent. It means that if off-farm income of a rural household increases by about ₹ 10,000 per annum, the probability of migration of family members will decrease by 18 per cent. This highlights the importance of rural development programs like MGNREGA that are being implemented by the government with a view to provide employment and income to the rural population in the country.

Conclusions

The study has highlighted the importance of rural development programs like MGNREGA that are being implemented by the government with a view to provide employment and income to the rural population in the country. It has also shown that for both migrant and non-migrant households, agriculture was the main source of income, and their consumption expenditure was more than the production expenditure. It has also been observed that migration has a positive impact on income, expenditure and net savings of migrant sample households.

The regression analysis has shown that one unit increase in the age of household-head increases the probability of migration of family members by 0.81 per cent. The probability of migration of family member decreases by 0.003 per cent with one unit increase in before-migration income of a household. The odds ratio for family size has indicated that with one unit increase in family size, the probability of migration of family

members increases by 8.7 per cent. There is a negative relationship between migration of family members and income from agriculture. As off-farm income of a household increases, the probability of migration of its family member decreases. The odds ratio for off-farm income implies that with one unit increase in off-farm income of a household, the probability of migration decreases by 0.018 per cent.

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