Male Out-Migration In West Bengal

Regional Pattern and Determinants

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Abstract

Those people who live in rural areas more likely face a higher risk of poverty and lower incomes compared with urban areas. That why, a large number of rural people including those from West Bengal are migrating from these areas for their sustenance. In India as well as in West Bengal, most of the people live in rural areas and most of the rural workers only depend on agriculture activities. Majority of the rural people are is agricultural labourers. In terms of outmigration, the most important measure is that of male outmigration as much of female outmigration is due to marriage. Generally most of the males migrate for work. The main reason for outmigration in rural villages for male is shortage of work opportunities. Short distance movement are likely to be marriage related while long-distance movement are probably work related. The paper, using data available in successive census counts unravels the pattern of male out-migrants in the state. This study mainly deals to recognize the spatial variation of male out-migration and determinants.

Keywords: *Male migration, West Bengal, variation of out-migration, determinants of out-migrants.*

Introduction

Migration is the third component of population change, while two other components of population change are of fertility and mortality. As well as fertility and mortality, migration also a dynamic process in demography and the census of India does not give the direct data on population mobility, but provides enough data to study the spatial variation and distribution of inter-regional migration (Sinha, 1986). Migration means the movement of people from one place to another, within the country or geographical region (Pandey, 1993). Migration cannot be considered only as a shifting of people from one place of residence to another, as it is most fundamental to the understanding of continuously changing population scenario (Gosal, 1961). Inter-regional or Inter-district outmigration rate is defined as the proportion of total out-migrants from the given region or district to total population of that region or district during the specific period of time (Nangia and Kumar, 2007). People born in the district but enumerated elsewhere in some other district of the state are known as out-migrants at inter-district level (Census Atlas, 1971). Outmigration is greater in the poorly developed agricultural areas and particularly high among the landless farmers (Keshri and Bhagat 2012; Parganiha et al. 2009; Panda, 2016). An

increase in agricultural productivity, as well as technological change in agriculture, provides a surplus for the transfer of labour to the growing industrial sector (Barnum, 1976). West Bengal has experienced male outmigration from all regions but certain regions are experiencing great intensity in out-migration. It is imperative to look for possible explanation for such variation through an analysis based on regional variation in male out-migration. The study focuses on the inter-district; inter-regional flow of out migrants in West Bengal. Briefly the study is an attempt at identifying spatial patterns, nature, extent, causes and socio-economic determinants of outmigration upon the geographical contexts as outlined.

Statement of the problem

West Bengal has experienced male outmigration in all the areas but certain areas have experienced higher intensity in male outmigration- a fact that needs special attention.The research aims at a detailed investigation on nature, type and factors with a geographical perspective. The study focuses on the inter-district; inter-regional flow of out migrants in the context of physiographic region.

Objectives

Following specific objectives are placed before the study:

i.   To identify inter-regional patterns of male out-migration in West Bengal

ii. To find out spatial correlates of male outmigration in West Bengal

Database and methodology

The study based on secondary sources and data collected from, Census of India (Migration table D). The study is based almost exclusively on secondary sources and data have been collected from different sources like, Census of India, District Census Handbook, Statistical abstracts of Government of West Bengal. The study has based on the migration data taken from Census of India.

Migration rate is calculated for out-migration, in-mgration and net migration, as well as specific subgroups of population by Clark (1986) method. The formulae used for the purpose is as given below:

$$\mathrm{Im} = \frac{I}{P}.K \ , \quad Om = \frac{O}{P}.K \ , \quad Nm = \frac{I-O}{P}.K$$

Where,

Im=In-migration, Om=Out-migration, Nm=Net-migration
O=number of out-migrants, I=number of in-migrants, P=Population,
K= Constant (usually 1000 or 100)

Volume of male outmigration and different socio-economic variables of inter-district or inter-regional outmigration has calculated by Karl Pearson's method.

Inter-regional migration analysis has been done by classifying all the districts of the state into physiographic regions. From physiographic point of view the state is divided into three broad regions i.e. northern Hills and Terai, Western Rarh and the Gangetic plain for analysing rural male outmigration patterns across such regions (De 1990; Sarkar 2003; Sau 2009; NABARD 2015).

The period of study has confined to forty years which is beginning from 1981.

Unfortunately migration data for the 2011 census is yet to be released for West Bengal. The districts have been taken as the basic unit of the study. There are 18 districts in the state of West Bengal in 2001which is accepted as the basis of inter-district analysis for the present purpose though the number of districts has increased thereafter. Kolkata district has been excluded from the analysis as it is fully urbanized and a big metropolitan city.

Results and Discussion

The entire study has been analysed on the basis of physiographic regions. For the purpose of this study a broad region again has been divided into sub-regions and region wise division has been done at district level. Physiographic does not follow any administrative boundary but for the purpose of analysis districts are classified under different regions.

Researchers like De (1990); Sarkar (2003); Sau (2009); NABARD, (2015) divide West Bengal into different micro and meso physiographic regions. Physiographically the state is divided into three broad regions i.e. northern Hills and Terai, western Rarh and the Gangetic pain. Rarh region is divided into East Rarh and West Rarh region (Sarkar, 2004). Similarly Gangetic plain is divided into North Bengal and South Bengal plain.Darjeeling district is included under the hill region and Jalpaiguri and northern part of Koch Bihar districts are under Terai. North Bengal Plain starts from south of Terai region (Sau, 2009). The extent of inter-regional variation in male outmigration rate at district level is analysed across five physiographic regions in West Bengal.

Male outmigration

Rural areas of West Bengal have experienced higher intensity in rural male outmigration. This is why male outmigration demands special attention. Rural areas of West Bengal experienced significant Inter-regional TMOM. The male outmigration pattern shows diverse nature from north to south (Fig 1-3). The main reason for outmigration in rural villages for male is shortage of work opportunities (Rele, 1969). Piotrowski, at el. (2013) argued that short distance movement are likely to be marriage related while long-distance movement are probably work related.

The proportion of rural male outmigration is found to be the highest in Haora (4.49%) in East Rarh Plain region in 1981 and Bankura (3.93% and 4.40% respectively) in West Rarh plateau fringe region in 1991 and 2001 whereas lowest rate of male out migration has been consistently found in West Dinajpur since 1981 from North Bengal plain.

High rate of male outmigration from rural areas is evident in economically and agriculturally depressed areas. Male outmigration is more common for searching job opportunity in other relatively better off regions. All the physiographic regions display significant changes in rate as well as migration pattern over different decades as far as migration of males from rural areas.

Table 1 depicts that high rate of male out-migrants was observed in the entire East Rarh plain, West Rarh plateau fringe region and northern part of South Bengal plain in the year 1981 whereas in 1991, high rate of outmigration has been found in East Rarh Plain and northern part of South Bengal plain. But in 2001, Hills and Terai region has come under high rate of male outmigration compared to previous decades.

Table 1 : Inter-Regional Male Outmigration as Percentage to Total Male Population 1981-2001

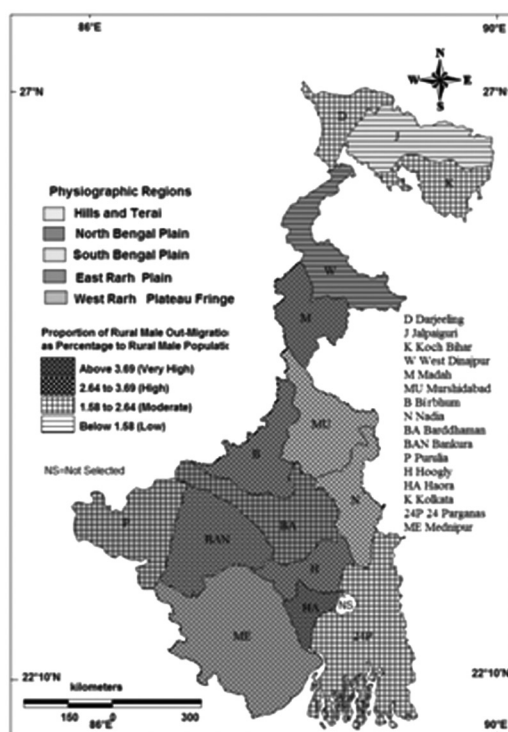| Category | % Range | Year | Physiographic Regions | | | | | Districts | |
			Hills and Terai	North Bengal Plain	South Bengal Plain	East Rarh Plain	West Rarh Plateau Fringe	No	%
Very High	Above 3.69	1981	0	0	0	1	1	2	13.33
	Above 3.04	1991	0	0	1	1	1	3	20.00
	Above 3.72	2001	0	0	1	0	1	2	13.33
High	2.64-3.69	1981	0	1	2	2	1	6	40.00
	2.26-3.04	1991	0	0	1	3	0	4	26.66
	2.89-3.72	2001	2	0	1	2	0	5	33.33
Moderate	1.58-2.64	1981	2	0	1	1	1	5	33.33
	1.49-2.06	1991	2	1	1	0	2	6	40.00
	2.06-2.89	2001	0	1	0	2	2	5	33.33
Low	Below 1.58	1981	1	1	0	0	0	2	13.33
	Below 1.49	1991	1	1	0	0	0	2	13.33
	Below 2.06	2001	1	1	1	0	0	3	20.00

Fig. 1 : West Bengal, Physiographic Regions, Total Rural Male Outmigration, 1981
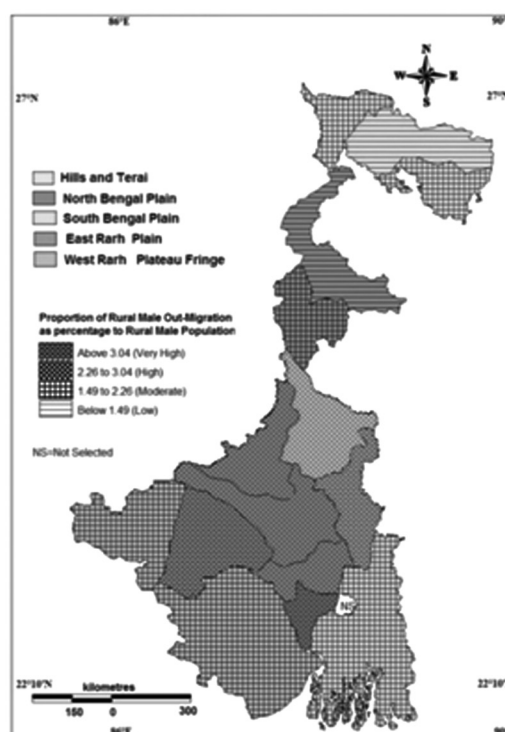

Fig. 2 : West Bengal, Physiographic Regions, Total Rural Male Outmigration, 1991
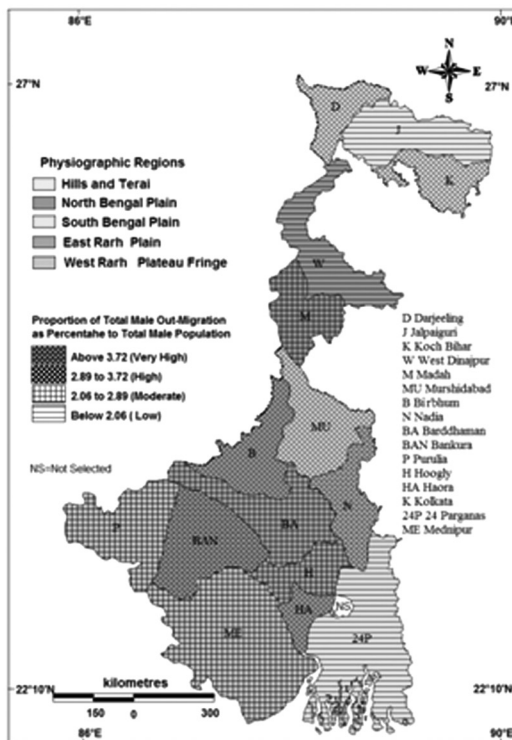
Fig. 3 : West Bengal, Physiographic Regions, Total Male Outmigration, 2001

Bankura, Mednipur and Puruliya districts in West Rarh plateau fringe region recorded moderate to high rate of rural male outmigration since 1981. Birbhum, Haora and Hooghly in East Rarh Plain, and Nadia, Murshidabad in South Bengal Plain regions; Bankura in West Rarh plateau fringe region and Darjeeling and Koch Bihar in Hills and Terai region experienced higher rate of rural male outmigration in different decades in West Bengal.

Darjeeling and Koch Bihar from Hills and Terai region are newly emerging districts experiencing higher rate (2.89-3.72%) of male outmigration in 2001. In 1981, these districts recorded very low rate of male outmigration whereas in 1991,

moderate rate of male outmigration was observed. Significantly, Barddhaman district in East Rarh plain region has experienced very high rate of total outmigration but male outmigration is comparatively less in this region. One third districts in West Bengal experienced moderate rate of male outmigration since 1981. Darjeeling and Koch Behar from Hills and Terai region has witnessed moderate rate of male outmigration in 1981 and 1991 but in 2001 this region too experienced high rate of male outmigration. Mednipur and Purulia from West Rarh plateau fringe region and Barddhaman and Hooghly in East Rarh Plain experienced Moderate rate (2.06-2.89%) of male outmigration in 2001.

Since 1981, Jalpaiguri from Hills and Terai region and West Dinajpur in North Bengal Plain region are experiencing consistently low level of male outmigration. Away from these two districts, 24 Parganas in South Bengal Plain region too is experiencing low level (Below 2.06%) of male out-migration in 2001.

Average male outmigration pattern

Table 2 shows region wise average rural male outmigration rate and the decadal changes. West Rarh plateau fringe region experienced highest average rate of male outmigration from rural areas since 1981. Bankura has experienced highest TRMOM rate among the all districts in West Bengal during the period. This is one of the most backward regions in West Bengal which creates push conditions for the rural males to migrate.

Physiogpahically; Bankura, Purulia and western part of Mednipur districts are part

of the plateau fringe region characterised by less fertile soil, agriculturally depressed area and also industrially backward. That is why a large number of rural male people migrated from Bankura district to nearby agriculturally and economically developed districts like Hoogly, Haora, Barddhaman, North 24 Parganas and South 24 Parganas etc.

Table 2 : Average Rate of Male Outmigration, 1981-2001

Regions (Average)	1981	1991	2001	Change (1981-2001)
Hills and Terai	1.63	1.57	2.80	1.17
North Bengal Plain	1.98	1.47	1.98	0.00
South Bengal Plain	2.71	2.45	3.18	0.47
East Rarh Plain	3.14	2.71	3.19	0.05
West Rarh Plateau Fringe	3.36	2.71	3.23	-0.13
State Average	**2.64**	**2.26**	**2.89**	**0.25**

Source**:** Census of India 1981, 1991 and 2001, West Bengal and Migration Table D: persons born and enumerated in districts of the state and data have been computed.

Bankura and Purulia districts have similar physiographic, agricultural and economic background but comparatively less outmigration has been observed in Purulia district. The adjoining districts like Bankura, West Mednipur are not suitable for agriculture and are less developed. This explains less male out-migration from Purulia compared to Bankura district. High rate of male outmigration has been noticed in East Rarh plain and South Bengal plain region compared to Northern regions in West Bengal. East Rarh plain has experienced relatively higher average rate of rural male outmigration since 1981.

East Rarh plain and South Bengal plain regions have experienced comparatively higher proportion of male outmigration. Lower rate of male migrants is seen in Barddhaman and Hoogly districts but Birbhum and Haora districts experienced comparatively higher proportion of male migrants from East Rarh Plain region. Similar pattern has also been noticed in South Bengal Plain. The southern part of South Bengal plain i.e. Murshidabad and Nadia districts experienced higher proportion of male outmigration compared to 24 Parganas.

These two regions experienced highest inter-regional male out-migration since 1981. East Rarh plain is more agriculturally developed whereas southern part of South Bengal plain is economically more developed in terms of industrial infrastructure. That is why a large number of rural males from East Rarh plain migrated into southern part of South Bengal Plain whereas male migrants from northern part of South Bengal plain migrated into agriculturally developed East Rarh Plain Region.

Low rate of average TMOM rate is found in Hills and Terai in 1981 whereas in North Bengal Plain region, low average TMOM rate is observed in 1991 and 2001. But recently, in 200, Hills and Terai region especially Koch Bihar and Darjeeling districts too are experiencing increasing rate of male out-migrants.

Each district has experienced fluctuations in the rate of male outmigration. It is clear from this figure that the rate of male outmigration is more diversified compared to that of the total and the rural outmigration in West Bengal. Total outmigration as well as migration of the rural population mainly takes place from central part of West Bengal. On the other hand, male migration takes place from districts distributed across diverse regions.

Balance of male migration

Migration balance is to be understood by the sum of the differences between inter-district out-migration and in-migration (Kumar and Sharma, 1980). Migration balance could be positive or negative. Migration balance is negative when the calculated value is below 1 (one) and positive balance is just opposite of the negative balance. Positive balance indicates the drawing capacity of the economic and demographic forces of the district concerned. On the other hand negative balance indicates the draining capacity of the economic, cultural and demographic forces (Sharma and Singh, 1981).

Migration balance is the sum of the differences between inter-districts emigration and immigration (Kumar and Sharma, 1980). The balance of migration is calculated as:

$$Bm = \frac{E}{I}$$

Where, Bm is the balance of migration, E is the Emigration and I is the Immigration

Table 3 shows that, within the physiographic regions, eight districts are display negative male migration balance and nine districts have positive male migration balance. All the districts from west Rarh Plateau Fringe have positive balance. Koch Bihar from Hills and Terai region; Dakshin Dinajpur and Maldah from North Bengal Plain region; Nadia and Murshidabad from South Bengal Plain region and only Birbhum from East Rarh Plain region have positive balance. Region wise, only West Rarh Plateau Fringe region has positive male migration balance. Those districts which are more developed in agriculture, economy and industry, show negative male migration balance.

Table 3 : Region and District wise Balance of Male Outmigration in West Bengal, 2001

Regions	Districts	In-migration*	Outmigration@	Balance#	Balance#
Hills and Terai	Darjeeling	85873	62054	-0.72	-0.84
	Jalpaiguri	182048	93217	-0.51	
	Koch Bihar	62194	122859	+1.98	
North Bengal Plain	U. Dinajpur	107170	58765	-0.55	-0.95
	D. Dinajpur	54220	59325	+1.09	
	Maldah	72237	104107	+1.44	
East Rarh Plain	Birbhum	157612	176995	+1.12	-0.78
	Barddhaman	532388	411044	-0.77	
	Hugli	492590	322404	-0.65	
	Haora	289790	241009	-0.83	
South Bengal Plain	Nadia	256887	328857	+1.28	-0.63
	N.24 Parganas	994430	258129	-0.26	
	S.24 Parganas	302563	232495	-0.77	
	Murshidabad	167578	267474	+1.60	
West Rarh Plateau-Fringe	Bankura	173919	255197	+1.47	+1.47
	Puruliya	74586	105887	+1.42	
	Medinipur	202726	301438	+1.49	

*In-migrants expound immigration into respective district from other districts.

@Emigrants imply emigration from respective district to other districts.

#Balance means balance of migration.

Source: Census of India 2001, West Bengal and Migration Table D: persons born and enumerated in districts of the state and data have been computed by the researcher.

Negative balance is confined to those districts and regions that receive large number of in-migrants from other districts and regions. These regions have potential agricultural, economic and industrial forces for which they dispatch lesser number of emigrants in different districts and regions. Positive balance is confined to regions and districts that receive lesser number of in-migrants from other districts and region and dispatch a large number of emigrants to different districts and regions for deficient nature of economic and demographic forces.

Determinants of outmigration in West Bengal

Volume of male outmigration and different socio-economic variables are interdependent to each other. Different socio-economic variables are important factors for rural development which creates ideal situation to rural people for migration. Tables 4 is depicted the significant relation between the variables. Regression analysis has been done between volumes of migration with different socio-economic variables in the table 4.

Here certain socio-economic variable are taken like Volume of male migrants (X1), Percentage of ST Population (X2), Per Capita Income (X3), Gross Domestic Product (X4), Net Gross Domestic Product (X5), Daily Wage Rate of Male (X6), Area Not Under Cultivation (X7), Area Under Boro Rice Production area to Total Area (X8), Total Fallow Land (X9), Area Not Available for Cultivation (X10), Household Workers (X11)

Table 4 illustrates the correlation matrices between the volume of male outmigration and different socio-economic variables of inter-district or inter-regional outmigration.

Except X2 and X9 variable, all other variables are positively correlated with inter-district volume of male outmigration. Volume of outmigration is negatively correlated with the percentage of scheduled tribe population (X2) and the value of correlation coefficient is ($r= -0.52$) in 2001 which is statistically significant at 0.05 level of significance. It means that, those regions are more concentration of scheduled tribe people are experience less volume of male outmigration. Per capita GDP (X4) and per capita NGDP (X5) are also associated with high degree of positive correlation ($r= .71$ and $r= .70$ respectively at 0.01 significance level).

Table 4 : West Bengal, Correlation Matrix between Male out-migration and Socio-Economic Variables

Dependent Variable	Independent Variable	Value	Relation	Meaning of Relation
Vol. of Male Out-Migrants (X1)	Percentage of ST Population (X2)	-.518*	Negative	More concentration of ST, less migration
	Per Capita Income (X3)	0.44	Positive	More per capita income, more migration
	Gross Domestic Product (X4)	.712**	Positive	High GDP, high outmigration
	Net Gross Domestic Product (X5)	.701**	Positive	High NGDP, high outmigration
	Daily Wage Rate of Male (X6)	-.449	Negative	Lowdaily wage rate of male, high male outmigration
	Area Not Under Cultivation (X7)	.554*	Positive	Less cultivated area, more rural outmigration
	Boro Rice Production area to Total Area (X8)	.524*	Positive	More Boro rice area, more out- migration
	Total Fallow Land (X9)	.273	Positive	More fallow land, more out-migrants
	Area Not Available for Cultivation (X10)	.511*	Positive	Less cultivated area, more rural outmigration
	Household Workers (X11)	.369	Positive	More HH workers, more male out-migrants

Correlation is significant at the 0.05 level   **Correlation is significant at the 0.01 level*

Table 5 : Correlation between Volume of Male Outmigration and Socio-Economic Variables

Variables	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11
X1	1										
X2	-.518*	1									
X3	0.44	-.125	1								
X4	.712**	-.466	.591*	1							
X5	.701**	-.478	.586*	.999**	1						
X6	.449	-.335	.773**	.592*	.590*	1					
X7	.554*	-.524*	.508*	.614**	.617**	.303	1				
X8	.524*	-.590*	.232	.569*	.560*	.293	.616**	1			
X9	-.273	.429	-.164	-.321	-.325	-.396	-.088	-.319	1		
X10	.511*	-.550*	.478	.602*	.610**	.276	.990**	.602*	-.081	1	
X11	.369	-.376	-.071	.05	.063	-.089	.352	.281	.277	0.37	1

* *Correlation is significant at the 0.05 level,* ** *Correlation is significant at the 0.01 level*

Volume of male migrants (X1), Percentage of ST Population (X2), Per Capita Income (X3), Gross Domestic Product (X4), Net Gross Domestic Product (X5), Daily Wage Rate of Male (X6), Area Not Under Cultivation (X7), Area Under Boro Rice Production area to Total Area (X8), Total Fallow Land (X9), Area Not Available for Cultivation (X10), Household Workers (X11)

Source: Database for Planning and Development in West Bengal, 2010
          District Level Household and Facility Survey, West Bengal, 2007-08
          West Bengal Development Report, Planning Commission of India, 2010
          State and District Domestic Production of West Bengal, 2013-2014
          Economic Review, West Bengal, 2011-2012

Table 5 depict that inter-district rural outmigration is positively associated with the area not under cultivation (X7) and area not available for cultivation (X10)with value of correlation coefficient are positive (r=. .55 and r= .51 respectively at 0.05 level of significance). It means that where the areas are not available for cultivation or area are not under cultivation are experienced more male outmigration for absence of agricultural activities. That's means if the cultivated land is increase the volume of rural outmigration is decrease. Other variables are also having positive relation with volume of out-migration.

Conclusion

Different physiographic regions in West Bengal experienced diverse nature of outmigration. West Rarh plateau fringe region stands out prominently as far as outmigration is concerned. Such a heavy outmigration from this region can be easily explained in terms of lack of agricultural land, undulating plateau surface, dry climate, forest cover, less economic and industrial development etc. Southern part of South Bengal Plain too has experienced huge immigration from Bangladesh which has created tremendous pressure on agricultural land leading to outmigration from this

region too. Districts in the central part of South Bengal too experienced high rate of outmigration. Rate of outmigration is higher over the central part of West Bengal and decreases towards the north and the south. The most significant factors for migration have emerged economic. Economic conditions particularly in rural areas play a significant role of outmigration. It means that where the areas are not available for cultivation or area are not under cultivation are experienced more rural outmigration due to absence of agricultural activities. Both of the above mentioned factors create tremendous pressure on those rural areas which are the most chronic areas from where outmigration is taking place. They are going to other region basically joined in tertiary sectors. It is not difficult to imagine that this people go out under distress condition and they only engaged in urban informal sectors.

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