

DETERMINANTS OF MIGRATION IN HIMACHAL PRADESH

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Abstract: This study has been undertaken to assess the determinants of migration. A total sample comprises 200 households from both tribal and non-tribal regions in Himachal Pradesh collected in 2015. The results in tribal region obtained by applying logistic regression on migration status reveal that estimates of sex (male with respect female), higher education with educational level less than matric, standard of living (as against lower one) and Buddhist beside Hindu are statistically significant, and have direct effect on migration. Marital status (married as against unmarried) has adverse effect, that unmarried population migrate more than married one. Results for non-tribal reveals that, holding other variables constant, male population migrates more than female one. Educational level of population is statistically significant at 5 percent and is found to be affecting migration directly. Scheduled caste population migrates less than general caste. Household standard of living index indicates that population of lower level of index migrates relatively more, as the estimate of the parameter is highly significant.

Keywords: Determinants, Logistic regression analysis, Migration, Tribal and non-tribal region.

1. Introduction

Migration brings both opportunities and challenges. Migration has major impacts on both the people and places involved. Migration affects both the area of origin (out-migration) and the place of destination (in-migration). The direction and volume of migration has considerably changed over the years. Migration flows are pronounced from economically backward or stagnation regions to prosperous or dynamic regions. Modern transportation has made it easier, cheaper and faster for people to move in search of job, education and quality of life. However, the internal migration is much more powerful as compared to the international migration (Hussain, Hussan, & Muhammad, 2004: 683-685). The reason for movement of people from one place to another place may not be the same for all. Migration is an important livelihood strategy in India and Indian history is full of migratory movements within the country as well as outside it. In India, there is no migration policy, except that people have a constitutional right to move, live, and work for their livelihood, in any part of country (Government of India, 2009: 50-51). Internal migration may be classified into three migration streams- intra-district, inter-district and inter-state migration. On the basis of rural or urban movement internal migration is classified in to four migration streams- rural to rural, rural to urban, urban to rural and urban to urban.

In India, apart from conflicts and disaster, over the years, development projects have displaced large numbers of people from different parts of country. In India, undesirable influx of rural workforce to urban areas has adversely affected the carrying capacity of urban centres and a large proportion of urban workforce either is openly unemployed or has entered the informal and unorganised sector. Many people are living in slums without adequate access to basic amenities, education, health and sanitation facilities. Therefore identification of causes of migration, and examination of nature and pattern of migration for appropriate policy intervention is required. A population policy would address itself both to the situation arising out of fast rising population in any area as well as out of declining population in any particular area. The future population is to be so planned that the present and future of the existing numbers are not adversely affected. It aims at giving chances to all those already born to live well.

2. Methodology

2.1 Objective

The present study has been undertaken to assess the determinants of migration.

2.2 Hypotheses

On the basis of findings of earlier studies, theoretical frame work and the objective under consideration, following hypotheses have been generated:

1. Migration may be higher among younger and unmarried population.
2. Migration is likely to be male-dominant.

2.3 Sampling design

In order to achieve the objectives of the present study, the primary data has been collected from Himachal Pradesh in 2015. A systematic, multi-stage stratified random sampling design has been adopted to collect data. In sampling procedure region, district, block, panchayat, village, town, ward and household are the different stages of random sampling. For this purpose, two districts i.e. Lahul & Spiti (tribal region) and Una (non-tribal region) out of twelve districts in Himachal Pradesh have been selected following simple random sampling, while arranging them in ascending order on the basis of their respective population. The entire sample for the study has been designed in such a manner that comparison can be made according to region (tribal and non-tribal regions), residence (rural and urban areas in non-tribal region) and migration status (migrant and non-migrant).

Sample selection in tribal region

Lahul & Spiti is tribal region and there is no urban area in this district. In Lahul & Spiti district, there are two development blocks i.e. Lahul and Spiti, and one sub-development block i.e. Udaipur, according to 2011 census. In order to collect data from tribal region, Lahul development block and Udaipur sub-development block (from two development blocks and one sub-development block), two panchayats from each block and sub-block and two villages from each panchayat have been selected following simple random sampling, while arranging blocks & sub-block, panchayats and villages in ascending order on the basis of their respective population. A sample of ten households has been selected from each village, and 80 households have been actually surveyed from eight villages in tribal region.

Sampling selection in non-tribal region

Una is a non-tribal region and data have been collected from both rural and urban areas. For urban areas, two urban areas (i.e. Una and Mehatpur), and from each urban area two wards have been selected following simple random sampling, while arranging urban areas and wards in an ascending order on the basis of their respective population. From four wards, data from total 40 households have been collected, while selecting ten households from each ward.

In order to collect data from rural areas, two blocks (i.e. Una and Bangana) have been selected out of total five blocks, two panchayats from each block, and two villages have been selected from each panchayat following simple random sampling, while arranging blocks, panchayats, and villages in ascending order on the basis of their respective population. From eight villages, data for total 80 households have been collected, while selecting ten households from each village. A total sample comprises 200 households from both tribal and non-tribal regions.

3. Migration status and determinants of migrants

This section has been divided into two sub sections. Section 3A, throws a light on migration rate; whereas section 3B presents an econometric analysis of migration.

3A. Migration status

In this study, movements that resulted in the change of usual place of residence (UPR)¹ of the individuals have been treated as migration, and a household member whose last usual place of residence (UPR) was different from present place at the time of enumeration has been considered as migrant. The other types of movements that do not involve change of usual place of residence, but are short-term (less than six months) or seasonal in nature have not been considered. The changes of usual place of residence of women due to marriage have been excluded from being treated as migration in this study. Characteristics of sampled

¹Usual place of residence (UPR) of a person was defined as a place (village/town) where the person had stayed continuously for a period of six months or more.

migrants belong to the time when they migrated whereas current characteristics of non-migrants have been considered.

Table 3A. Percent distribution of migrants and non-migrants by migration status, according to residence and region

Category of persons		Migration status				All	Number of persons	
		Non-migrants	Out-migrants	In-migrants	Return-migrants			
Tribal	Male	62.5	30.2	4.4	2.9	100.0	315	
	Female	76.7	22.0	1.0	0.3	100.0	287	
	Persons	69.3	26.2	2.8	1.7	100.0	602	
Non-tribal	Rural	Male	79.9	18.6	0.0	1.5	100.0	274
		Female	95.2	4.8	0.0	0.0	100.0	249
		Persons	87.2	12.0	0.0	0.8	100.0	523
	Urban	Male	80.7	5.5	13.8	0.0	100.0	109
		Female	86.4	1.0	12.6	0.0	100.0	103
		Persons	83.5	3.3	13.2	0.0	100.0	212
	Total	Male	80.2	14.9	3.9	1.0	100.0	383
		Female	92.6	3.7	3.7	0.0	100.0	352
		Persons	86.1	9.5	3.8	0.6	100.0	735

Table 3A indicates distribution of migrants (out-migrants, in-migrants and return-migrants) and non-migrants according to residence and region. Any former member of the household who left the household, any time in the past, for stay outside the village/town, has been considered as out-migrant, provided he/she was alive as on the date of study. In this study information about out-migrant member(s) of the household has been collected from each of the selected household. But information about out-migration of entire household from a village/town could not be collected in this study. In present study, a phenomenon in which the migrants return to their earlier usual place of residences (UPR) from where they had migrated in the past, and who are intending to stay in their present place for at least six months, is termed as return-migration. Any migrant who reported present place of enumeration as usual place of residence (UPR) in the past has been considered as return-migrant. Any present member of the household whose last place of residence (any time in the past) was different from present place of enumeration, outside the village/town, excluding return migrants has been considered as in-migrant.

Out-migration rate has been very high in tribal region (26.2 percent) as compared to that in rural (12 percent) and urban areas (3.3 percent) of non-tribal region. In non-tribal region, 13.2 percent are in-migrants in urban areas as compared to no in-migrant in rural areas, whereas in tribal region, only 2.8 percent are in-migrants. Return migration rate is very low in both regions (tribal and non-tribal) and rural-urban areas of non-tribal region.

3B. Logistic regression analysis

Logistic regression, being well suited for analysing dichotomous outcomes, has been increasingly applied in social science research. It has been used to overcome limitation of ordinary least squares (OLS) regression in handling dichotomous outcomes. Logistic regression is applied for studying the relation between a categorical or qualitative outcome variable and one or more predictor variables. The logit is the natural logarithm, (Ln) of odds of outcome variable Y, i.e.

$$\ln \left(\frac{\pi}{1-\pi} \right) = \log (\text{odds}) = \text{logit} = \alpha + \beta x_i$$

Here π = probability ($y = 1 | X = x$)

$$= \frac{e^{\alpha + \beta x_i}}{1 + e^{\alpha + \beta x_i}}$$

Where, π is the probability of the outcome of the event.

Logit = Natural log of odds

$$= \ln \left(\frac{p}{1-p} \right) = \log_e (\text{odds})$$

$$= \text{logit} (p)$$

Log-likelihood is the value of the log likelihood of a logistic regression model.

$$\text{Odds} \frac{p}{1-p} \neq \text{probability } (p) \text{ or likelihood}$$

Odds ratio, a measure of association is given as

$$\frac{p_1}{1-p_1} / \frac{p_0}{1-p_0}$$

Where p_1 = probability of an event, given the membership in Group 1,

p_0 = probability of an event, given the membership in Group 0,

An odds ratio greater than 1 implies an increased likelihood.

3.1 Logistic regression analysis for all migrants of tribal region

Independent (explanatory) variables are:

SEX: 1 for male, 0 for female

EDUCATION 2: 1 for matric, 0 otherwise

EDUCATION 3: 1 for above matric, 0 otherwise

RELIGION: 1 for Buddhist, 0 otherwise

SLI 2: 1 for SLI 26-40 score, 0 otherwise

SLI 3: 1 for SLI 41+ score, 0 otherwise

HLAND 2: 1 for land 1-2 hectare, 0 otherwise

HLAND 3: 1 for land 2+ hectare, 0 otherwise

HHTYPE: 1 for joint type of household, 0 otherwise

Dependent variable:

MGSTATUS: 1 for migration (migrants), 0 otherwise

Table 3.1.1 Logistic regression analysis (Tribal region, Migration)

Dependent variable: Migration status (MGSTATUS)

Covariate	B	p-value	Exp (B)
SEX	0.573	0.019	1.773
EDUCATION2	1.040	0.000	2.828
EDUCATION3	1.074	0.000	2.927
MGSTATUS	-2.394	0.000	0.091
RELIGION	0.527	0.061	1.694
SLI 2	0.559	0.060	1.750
SLI 3	1.105	0.006	3.020
HLAND 2	0.740	0.009	2.096
HLAND 3	0.426	0.349	1.532
HHTYPE	-0.255	0.346	0.775
CONSTANT	-1.916	0.000	0.147

-2 log likelihood	Cox & Snell R ²
447.092	0.286

Estimation terminated at iteration number 5.

Table 3.1.2 Probabilities

Covariates	Probability	Odds ratio
Unmarried Buddhist male with HHTYPE	0.24	1.79
Unmarried Hindu male with HHTYPE	0.15	
Unmarried Buddhist male with HHTYPE EDUCATION 3	0.82	1.68
Unmarried Buddhist male with HHTYPE SLI 3	0.73	

The results (Table 3.1.1) obtained by applying logistic regression on migration status (MGSTATUS) reveal that estimates of sex (male with respect female), higher education with educational level less than matric, standard of living (as against lower one) and Buddhist beside Hindu are statistically significant, and have direct effect on migration. Migration increases with incremental increase in these independent variables. One unit change in male, educational level, religion and standard of living index, keeping other variables unchanged, changes migration by 0.573, 1.040 - 1.074, 0.527 and 0.559 - 1.105, respectively as compared to their respective base categories. Marital status (married as against unmarried) has adverse effect, that unmarried population migrate more than married one and the differential is about 2.39. Migration among joint type of households is less than nuclear households.

Another table 3.1.2 shows that unmarried Buddhist population (0.24 percent) is likely to migrate more than unmarried Hindu population (0.15 percent) with same type of household. This table 6F.1.2 also shows that for unmarried Buddhist males has increased likelihood to migrate than unmarried Hindu males with same type of household (through the probabilities are less than 0.50 for both communities), odds ratio being 1.79. Unmarried Buddhist males are likely to migrate more than unmarried Hindu males with same educational level (above matric), type of household and standard of living index. Odds ratio (1.68) shows that male of Buddhist community has increased likelihood to migrate than male of Hindu. Similar pattern has been seen among out-migrants of tribal region.

3.2 Logistic regression analysis for all migrants of non-tribal region

**Table 3.2.1 Logistic regression analysis (Non-tribal region, Migration)
Migration status (MGSTATUS)**

Dependent variable:

Covariate	B	p-value	Exp (B)
SEX	1.111	0.000	3.037
EDUCATION 2	0.686	0.017	1.985
EDUCATION 3	0.579	0.050	1.784
SC	-1.551	0.000	0.212
OBC	-0.084	0.760	0.920
RESIDENCE	0.143	0.783	1.153
MGSTATUS	-0.497	0.037	0.609
SLI 2	-1.265	0.000	0.282
SLI 3	-0.066	0.817	0.936
HHTYPE	-0.172	0.481	0.842
CONSTANT	-1.893	0.000	0.151

-2 log likelihood	Cox & Snell R ²
479.386	0.11

Estimation terminated at iteration number 6.

Table 3.2.2 Probabilities

Covariates	Probability	Odds ratio
Unmarried Rural male with HHTYPE	0.31	1.16
Unmarried Urban male with HHTYPE	0.28	
Unmarried Rural male with HHTYPE EDUCATION 3	0.35	1.53
Unmarried Rural male with HHTYPE SLI 3	0.26	

Independent (explanatory) variables are:

SEX: 1 for male, 0 for female

EDUCATION 2: 1 for matric, 0 otherwise

EDUCATION 3: 1 for above matric, 0 otherwise

SC: 1 for caste SC, 0 otherwise

OBC: 1 for above OBC, 0 otherwise

RESIDENCE: 1 for urban, 0 for rural

SLI 2: 1 for SLI 26-40 score, 0 otherwise

SLI 3: 1 for SLI 41+ score, 0 otherwise

HHTYPE: 1 for joint type of household, 0 otherwise

Dependent variable:

MGSTATUS: 1 for migration (migrants), 0 otherwise

Table 6F.3.1 (Non-tribal) reveals that, holding other variables constant, male population migrates more than female one. Educational level of population is statistically significant at 5 percent and is found to be affecting migration directly. Scheduled caste population migrates less than general caste. Urban population migrates more than rural, but level of significance shows that there is hardly any rural-urban differential. Household standard of living index indicates that population of lower level of index migrates relatively more, as the estimate of the parameter is highly significant.

Another table 3.2.1 shows that probability of unmarried, rural male population with type of household (joint versus nuclear) has higher probability of migration (0.31 percent) than unmarried urban male population with same type of household (0.28 percent).

4. Conclusion

The results in tribal region obtained by applying logistic regression on migration status (MGSTATUS) reveal that estimates of sex (male with respect female), higher education with educational level less than matric, standard of living (as against lower one) and Buddhist beside Hindu are statistically significant, and have direct effect on migration. Marital status (married as against unmarried) has adverse effect, that unmarried population migrate more than married one and the differential is about 2.39. Migration among joint type of households is less than nuclear households.

Results for non-tribal reveals that, holding other variables constant, male population migrates more than female one. Educational level of population is statistically significant at 5 percent and is found to be affecting migration directly. Scheduled caste population migrates less than general caste. Urban population migrates more than rural, but level of significance shows that there is hardly any rural-urban differential. Household standard of living index indicates that population of lower level of index migrates relatively more, as the estimate of the parameter is highly significant.

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