SOCIO-ECONOMIC DETERMINANTS OF THE WILLINGNESS TO PURSUE AGRICULTURE AMONG LABOR MIGRANT'S FAMILIES OF PARBAT, NEPAL

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ABSTRACT

Involvement of youth entrepreneurs into agriculture is the only measure suggested to cope with the loss of production and productivity that follows the adverse effects of labor migration. Various factors that affect entrepreneurship and youth's willingness to participate in agricultural activities have direct influence on youth involvement in agriculture, however inadequately studied in Nepal. So, a cross section study using convergent parallel mixed method design was conducted in Bihadi rural municipality of Parbat district Nepal to determine whether or not labor migrant's families are willing to pursue agriculture as a means of income livelihood. Simple random sampling among 231 households of Parbat showed population that is willing to pursue agriculture (50.65%) was not significantly different than that from unwilling population. The major socio- economic factors influencing the willingness positively were age, social organization membership, land holding and negatively were prevalence of child in family and expected amount of income required per month to live in village by the labor migrant's family. Consideration of these factors is helpful for successful preparation of local level agriculture plan of Parbat.

Keywords: Willingness, logit, youth, agriculture, factors.

INTRODUCTION

A change of residence of an individual for employment, accompanies a shift in social relations, affecting social and economic development of both origin and destination is labor migration (Piche, 2013). If the labor migration is through international borders, it is called international migration. A migration for period more than a year is a long term migration (FAO, 2018; FAO IFAD IOM WFP, 2018). Above half million international labor migrants per year move from Nepal and their contribution is thirty percent of national GDP. The bigger section of population migrating is from agriculture background causing labor scarcity in agriculture and adversely affecting the total production and productivity in Nepal (FAO, 2018; Bhattarai, 2006; Abramsky *et al*., 2018 Tuladhar, Sapkota, and Adhikari, 2014).

Youth's (age group 16 to 40) entrepreneurship into agriculture is the recommended solution to the problem of loss of labor in agriculture for Nepal (World Bank Group, 2013). However, trend of youth participation in agriculture is low throughout the world, including Nepal. Farming is least chosen option as career due to popular mindset of considering it as a job of poor, illiterate, rusty and dusty people. Apart from this, prevalent risks, inefficiency, costs, labor-intensive nature and no income assurance are cause behind searching alternative options to agriculture by youth. (Barau *et al*., 2016; Agrilinks team, 2016; Sapkota, 2014; Akintayo and Lawal, 2016). Unlike other parents, farming families are not encouraging their children to farming in Nepal, as a result productive investment in agriculture are not prioritized to spend hard earned money of labor migrants (Maharjan *et al.,* 2013; Agrilinks team, 2016; Kattel and Sapkota, 2018, Sapkota 2014).

Inadequate study of the site before planning has halted efficient performance of periodic plans resulting minimum target completion. The national planning commission has proposed to productively use remittance money into the development of different sectors including agriculture through private investment which includes plans of investing the returned labor migrants into agriculture development, and luring pro-migrant youth into agri-entrepreneurship. However, the willingness of labor migrant's families to continue agricultural practice has not been studied adequately, creating a gap between plan and implementation and budget allocation in the real scenarios. Therefore willingness to pursue agriculture and factors affecting the willingness has been examined through this study. The objective of this study was to determine the willingness of labor migrant's households to pursue agriculture in Bihadi, Parbat and analyze the relationship between socioeconomic characteristics of the respondent labor migrant's households and their willingness to pursue career in agriculture.

MATERIALS AND METHODS

Research design and theoretical framework

This research was Phenomological positivist cross section study in its approach (Chilisa and Kawulich, 2012). Willingness to pursue any farm enterprise is primarily related to the payoff by the enterprise along with many relevant factors including the availability of resources and facilities (Kahan, 2013). Thus, assuming that theory explaining migration drivers that could be closer to factors driving willingness to pursue an enterprise is New Economics of Labor migration (NELM), the research approach has been designed to phenomological positivist (de-Haas, 2014; Zee, 2012).

Conceptual framework of the study

Apart from fulfilling individual economic needs, an individual's decision to migrate is affected by opinion of family and wider social entities (Todaro and Maruszko, 1986; Stark ,1991). Comparative advantage, deprivation and relative dissatisfaction are psychological push factors for migration (Abreu, 2012). Inadequate access to market, capital, credit, insurance, unemployment in origin country along with spatial and temporal differences of wage between host country and origin, have an important impact on an individual's decision to migrate as well as to initiate an entrepreneurship (World bank group, 2013). Thus, in this study, NELM based assumptions are made and variable have been selected accordingly, to find out the factors affecting willingness to pursue agriculture and their relationship.

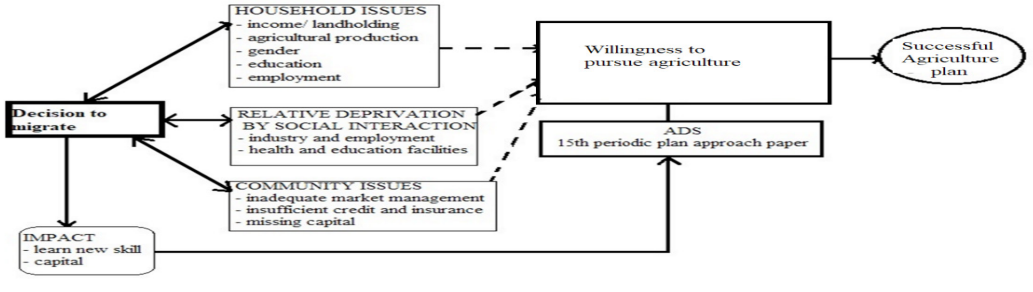

Figure 1 Conceptual framework of the study.

Figure 1. Conceptual framework of the study.

Sampling strategy and research site selection

Major domain of this research is Labor migrant's families of Parbat district. The site selection of Parbat was done purposefully because of century long history of migration and loss of agriculture labor mentioned in literatures like Adhikari (2008; Poudel *et al.,* 2018; Sapkota, 2018). Parbat lies in hilly region of Nepal from 270 28' N to 280 39' N latitude and 830 34' E to 830 59' E longitude (Acharya, and Paudel, 2016). It covers 53656 ha i.e. 0.36 % of total area of Nepal (16.8% cultivated). (Subedi 2016; Adhikari, 2008).

Figure 2. Map of Parbat, showing study site, Nepal

Convergent parallel mixed method design (Demir and Pismek, 2018) through interview schedule using semi- structured question list was done among 231 households applying the formula of finite population sample size calculation (Saunders, Lewis and Thornhill, 2006; Vaus, 2002) considering alpha level as 5 %, t- value 1.96 and margin of error e (i.e. error margin of respondents) upto 5%. Simple random sampling was done to select households and two focus group discussions were conducted among the remittance receivers.

Research instruments and scale

Since the major outcome variable regarding willingness is a binary variable, the statistical tools used to analyze the socio-economic characteristics were mean, standard deviation, range etc. Further explanation led by the relationship stated by above tests were obtained using generalized linear logit model. The empirical formula used in this study for the model used can be constructed as follows based on Hill, Griffith and Lim (2011) and Rajpar *et al.* (2019).

$$\hat{p} = \frac{\exp(b_0 + b_1X_1 + b_2X_2 + ... + b_pX_p)}{1 + \exp(b_0 + b_1X_1 + b_2X_2 + ... + b_pX_p)} \quad \text{..... (i)}$$

$$\ln\left(\frac{\hat{p}}{(1-\hat{p})}\right) = b_0 + b_1X_1 + b_2X_2 + \ldots + b_pX_p \qquad \ldots\ldots\ldots\ldots(ii)$$

Source: Electoral Constituency Delineation Commission (ECDC), 2074

Where equation (i) being the cumulative logistic model

ln refers to the probability of occurrence of the willingness of pursuing agriculture as yes i.e. 1, which expressed in forms of log in form of and general linear equation (ii) for the ease of calculation and formation of an equation with predictability.

Scale reliability and validity

VIF test and Cronbach's alfa test for reliability of the results were conducted and interpreted to validate the results as suggested by Daoud (2017) and Taherdoost (2016) respectively.

Tools and techniques of data analysis

Data thus obtained was manually compiled in MS-Excel and Stata 13 was used to analyse it for further inferences.

Table 1. Operationalization of concept and definations

Variable	Description
Willingness	The decision on whether or not to pursue agriculture as means of income generating activity.
Credit receivers	Whether or not the family has taken any credit pre-migration.
Member in org.	whether or not the farming family has engaged in any kind of social organization
First priority job	What intervention did the pro-migrant youth searched for in Nepal before moving out of the country?
Sex of respondent	Binary in response Male or Female
Relation to the migrant member	relation of respondent to that with migrant family member
Marital status	whether or not the migrant member was married before s/he migrated out of country for the first time
Age	Refers to the number of years after birth
Monthly income of the family	Total amount of money accumulated through various sources per month in household of migrant member in NRs.
Expected income	Amount of money in NRs. Which, if earned per month would stop the migrant member from leaving home to be a labor migrant
Edu. respondent / Edu. migrant (in years)	how many years did the migrant member / respondent have attended school
Landholding	Total land hold by a household in Hectares
Households (Hhs) size	the number of family members sharing a common kitchen in the house in last six months
Ethnicity	social class in which the migrant households belong
Presence of child	Whether or not a child less than age of 5 exists in the family for last 6 months.

Primary respondents of this study is direct receiver of remittance in the family.

RESULTS AND DISCUSSION

Socioeconomic characteristics of labor migrant's households in the Bihadi, Parbat

On survey, it was obtained all 231 households had male migrant members. Except for a few households with multiple number of emigrants, whose daughter- in-laws moved along with their spouse to the destination country, no household had female labor migrant. According to data of CBS (2019), male usually worked more hours (48) on average compared to females (39 hours). This as well as patriarchial societal pattern of hilly region of Nepal (Adhikari, 2008) explains the migration of male members of family primarily (Thieme and Böker, 2010)

Table 2. Socio-economic characteristics of the labor migrant's families, Parbat, 2019.

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Household size	231	5.28	2.04	2	18
Monthly income at present	231	50502.16	11831.38	37000	100000
Expected income to live in village	231	43069.26	7277.99	30000	65000
Males in the family	231	2.89	1.26	1	10
Females in the family	231	2.38	1.35	0	12
Education years of the respondent	231	5.77	5.1	0	16
Education years of migrant	231	10.60	3.35	0	18
Age of respondent	231	45.53	14.46	20	75
Age of migrant	231	32.71	8.43	19	57
Landholding in Hectare	231	0.45	0.20	0.10	1.27

Source: Household survey on Bihadi, Parbat (2019).

Table 2 suggests that average household size of labor migrant's families in Bihadi Parbat was 5.28. They had a monthly income of NRs. 50,502. 16 and their expected amount that is required to live happily in village without labor migration was NRs.43069.26. There were 2.89 male members and 2.38 female members per labor migrant's family in average. Average education of remittance receiver (primary respondent) was 5.77 years and that of migrant member was 10.60 years of schooling. Average age of respondent was 45.53 years and that of migrant was 32.71 years. The average landholding per labor migrant's family in Bihadi was 0.45 Ha (8.84 Ropanis) which belongs to medium land holding by standards of Sharma (2011).

Willingness of labor migrant's households to pursue agriculture in Bihadi, Parbat.

Household based agreement and disagreement responses were asked to receive the result regarding willingness to pursue agriculture and the following results were found. The obtained results were subjected to one-sample t-test for the test of proportions.

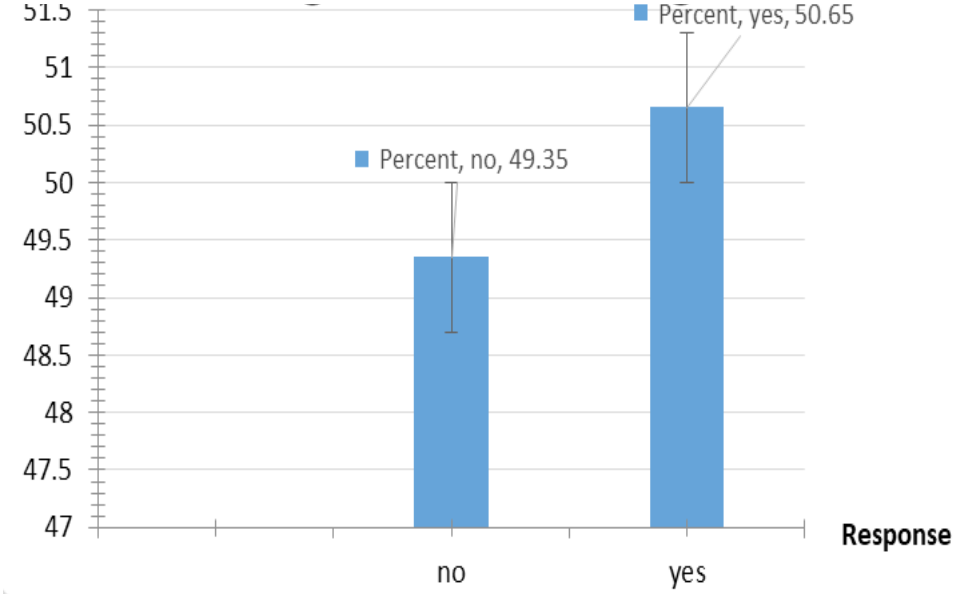

Figure 3. Labor migrant's families responding to willingness to pursue agriculture in Parbat, 2019

Table 3. Number of respondents willing to pursue agriculture in Parbat, 2019.

Variable	No. of Observation	Mean	Standard Error	Lower confidence	Upper Confidence
Willingness	231	.5064935	.0328948	.4420209	.5709662
p = proportion (Willing to pursue agriculture)				**z = 0.1974**	**Ho: p = 0.5**
Ha: p < 0.5		Ha: p = 0.5		Ha: p > 0.5	
Pr(Z < z) = 0.5782		Pr(Z > z) = 0.8435		Pr(Z > z) = 0.4218	

Source: Household survey on Bihadi, Parbat (2019).

Majority of the respondents (117 out of 231) were willing to pursue agriculture in Bihadi, Parbat. The bar graph on figure 3 and one-sample t-test results on table 3, the p-value was obtained more than 0.05, we failed to reject the null hypothesis at an alpha level of 0.05 which illustrates that there is no significant difference in between the population that are willing to pursue agriculture and those who are not. Similar results obtained by Akintayo and Lawal. (2016) in a survey among youth in secondary school.suggested more than half of the population was interested in something else than agriculture for reasons like the perception of agriculture as non-lucrative, high risk, laborious, and a job to pursue in rural areas without facilities.

Relationship of socioeconomic characteristics to willingness to pursue agriculture

Table 4. Multicollinearity among the socio-economic variables

Variable	VIF	1/VIF
Hhs size	4.37	0.23
No of females	3.71	0.27
Sex	2.71	0.37
Age of respondent	2.30	0.43
Monthly income	1.57	0.64
Education of respondent	1.54	0.65
Age of migrant	1.48	0.68
Landholding in Ropanis	1.41	0.71
Education of migrant	1.39	0.72
Presence of Child	1.33	0.75
Expected income to stay in village	1.22	0.82
Credit received	1.22	0.82
Membership of social organization	1.16	0.86
First priority of job among migrants	1.06	0.95
Mean VIF	1.89	

Table 4 indicates the factors affecting migrant's family's decision to pursue agriculture that are being considered for construction of logit model are not in multicollinearity state and are fit for further proceeding.

Influence of the socio- economic characteristics on the labor migrant's families

Binary logistic model explaining relationship between the Willingness to Pursue Agriculture and socio- economic variables under consideration was developed as follows:

No. of observations = 231

AIC = 1.122611

Table 5. Logit model result on factors affecting willingness to pursue agriculture of labor migrant's families of, Parbat, 2019.

Willingness	Coefficient	Standard Error	Z	P>z	95% Conf. Interval	
Respondent Age	.9397582	.2263147	4.15	0.000***	.4961894	1.383327
Hhs size	-.0698835	.272575	-0.26	0.798	-.6041208	.4643538
Presence of child	-.3993563	.1782458	-2.24	0.025**	-.7487117	-.0500009
Landholding	.4171813	.1980449	2.11	0.035**	.0290204	.8053421
Edu. Respondent	-.1407922	.201722	-0.70	0.485	-.5361601	.2545757
Edu. Migrant	-.0099238	.1884444	-0.05	0.958	-.3792681	.3594205
Credit receiver	.0488531	.1788308	0.27	0.785	-.3016488	.3993549
Member in org.	.753965	.1908504	3.95	0.000***	.379905	1.128025
First priority job	-.1018487	.1771728	-0.57	0.565	-.4491011	.2454037

Expected income	-.6708117	.1924412	-3.49	0.000***	-1.047989	-.293634
Monthly income	-.0887787	.2084299	-0.43	0.670	-.4972937	.3197364
Male in family	.163922	.2646531	0.62	0.536	-.3547886	.6826326
Age of migrant	.0267621	.172777	0.15	0.877	-.3118746	.3653987
Constant	.0189483	.1647531	0.12	0.908	-.3039617	.3418584

Note: *Significant at 10% **Significant at 5% *** Significant at 1%,
Average interim covariance: .0993523
Number of items in the scale: 14
Scale reliability coefficient obtained out of Cronbach's alpha test : 0.6215
Source: Household survey on Bihadi, Parbat (2019).

Since the scale reliability has exceeded 0.6, this model is considered fit for variables under study. From table 5, the major factors that are of positive highly significant (at the value of alpha 0.05) influence willingness to pursue agriculture are membership in a social organization, landholding of the farmer, and age of the respondent. A similar response to age, landholding, and membership in an organization have been reported by Nsikak-Abasi and Udoh (2018), and willingness to pay for agricultural services is highly significant and positively correlated as reported by Aydogdu (2017). The factors that have a highly significant negative influence are the prevalence of a child in the family and the expected amount of income per month required to live in the village. The prevalence of child leads to an increase in basic resources requirements like income assurance, health services, and educational facilities agriculture being presumed as dirty and "rural activity" with many uncertainties and low payback causes them demotivated to live in the village and move to nearby urban land.

The cases are similar in Nigeria, where guidance, and counseling in schools about the importance of agriculture, government incentives to increase the income of youth through agriculture by aiming it at poorest of the poor, compulsory agriculture education and awareness-raising programs through private sector media were suggested by Adesoji *et al.* (2019) and Nsikak-Abasi and Udoh (2018). Some ideas include service modeled agriculture: daily wage provision and conversion of traditional agriculture into a service-based job, linking youth farmers through social networks, providing them services, exposure, training and scientific management of farms in such network group and promoting motivation through achievement-based reward system (Kanduri *et al.,* 2018; Queiroz *et al*., 2014; Rajpar *et al.,* 2019 and Elbersen *et al.,* 2014) recommend young farmers willing to pursue should be incentivized through rewards.

Leaving agriculture alone, leads to further problems like land abandonment and this arises from roots of multi-dimensional problems like poverty (Corbelle and Crecente, 2008). So increasing income of farming families through agricultural activities should be the government's priority in hilly areas of rural Nepal (Khatiwada *et al.,* 2017). Rai *et al.,* (2019) suggest that increase in livelihood standards is possible through agro-enterprise as demonstrated in suburbs of Kathmandu valley through vegetable farming. Youth unwilling to pursue agriculture results in land abandonment in long run, as it has done in various corners of world (Queiroz *et al.,* 2014; Prishchepov *et al.,* 2012; Rajpar *et al.,* 2019; and Elbersen *et al.,* 2014). Thus this problem has to be addressed well by taking the factors that

have a direct impact on willingness to pursue agriculture into consideration while preparing agricultural plans in local level.

CONCLUSION

Using the logit model consistent estimates were obtained as a result showing half of population willing to pursue agriculture. The factors like membership in a social organization, landholding of the farmer, age of respondent, prevalence of child in a family and expected amount of income per month required to live in a village were the major socio-economic factors that had a direct effect on the willingness. During planning process, where bottom up approach is being followed, these factors should be taken into consideration before allocation of budget in for agriculture in the region. This study points out to the research gap on particular details of the socio-economic factors and the trend they show. Thorough study of such trends will help on tailored planning and budget allocation for enhanced efficiency on meeting the policy decisions aimed at increasing youth involvement in agriculture .

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