Determinants of off-farm employment in eastern rural Nepal

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ABSTRACT

Stagnant agricultural productivity and low returns in farming have led rural residents in Nepal to look elsewhere for alternative or supplemental income opportunities, primarily though off-farm employment. Off-farm employment provides supplemental income to support household expenditure. This study examined the contribution of off-farm employment to total household income for two ecologically distinct districts of Eastern Nepal and identified factors differentiating households with on-farm, off-farm and, both on-and off-farm labour. Variables that differentiated wage labour, skilled labour and trade employment were determined. Participatory rural appraisal workshops (n=6), key informant interviews (n=9) and household socio-economic surveys (n=150) were used to gather data. The lacks of productive land, increased household sizes and higher educational attainment of household members were all positively associated with off-farm employment. There were fewer employment opportunities in locations away from major market centres and for women and disadvantaged groups. The Brahmin/Chhetri/Newar ethnic group dominated most of the off-farm employment opportunities. The study suggests that policy intervention measures such as the provision of irrigation and skill-based training would improve the well-being of rural women, disadvantaged people sub-groups and those located away from major employment centres. Market linkages are also an important factor in increasing off-farm employment opportunities and thus household income.

Keywords: Asia, Nepal, off-farm employment, PRA, household sustainability, labour market.

INTRODUCTION

Nepal is an agrarian economy: 90% of the population live in rural areas and 81% are engaged in agriculture (CBS, 1997). An average household in Nepal owns less than one hectare of land and approximately half of the holdings are less than 0.5 hectare (Ghimire, 1992). Such a small landholding is grossly inadequate for sustaining an average household of 5.6 members. Further, in the presence of an annual population growth rate of 2.1% (CBS, 1997) and declining farm productivity, farm income alone cannot sustain rural households in Nepal (Mahat, 1987; Thapa & Rosegrant, 1995). Thus, household members are forced to look for opportunities to generate supplemental income from off-farm sources.

Off-farm employment is an important source of off-farm income in most parts of the world (Haggblade & Hazell, 1989; Saith, 1992; ICIMOD, 1992; OECD, 1995) and has steadily gained importance in sustaining rural households (Shand, 1986; Olfert, 1992; Reardon, 1997). It assists by stabilising total household income in the presence of uncertain farm returns. Off-farm cash income is a dominant means by which rural households purchase non-farm goods and is the primary income of the rural poor. Off-farm employment has thus been accepted as a reliable strategy for improving the livelihood of rural households (Eapen, 1994).

The notion of off-farm income in Nepal is not new. Nepalese farmers have worked as porters and carried mountaineers' gear, salt and cloth bundles for hill merchants, and kerosene drums for construction engineers. Such opportunities have provided extra income for resource-poor households. Given that Nepal's agriculture is still mostly a rainfed system with heavy monsoon rains from June to September, off-farm employment tends to be compatible with farming during a good part of the year. Rural residents typically spend income from off-farm employment on non-farm items such as clothes, shoes, salt and other items.

Off-farm employment in Nepal may take all of three forms-- temporary, seasonal and permanent. The proportion of permanent migration from rural areas to urban or semi-urban areas varies widely with geographical location and often tends to be high for the western mountainous and hilly areas. Common off-farm employment opportunities include wage labour, portering, building, blacksmithing or a salaried job in a government or private office.

After the emergence of democracy in Nepal in 1990 the mobility of people increased through the construction of new link roads. Consequently more rural residents are able to seek off-farm employment opportunities. A number of studies have examined labour market dynamics in Nepal, but very few have formally investigated the factors associated with off-farm employment in a rural context. In this paper, we examine the factors associated with households with: (a) only farm labour; (b) only off-farm labour; and (c) both farm and off-farm labour. We further examine factors differentiating three main types of off-farm employment -- skilled labour, waged labour and trading.

CONCEPTUAL FRAMEWORK AND METHODOLOGY

Off-farm employment has been defined in the literature in several ways. In this paper, off-farm employment is defined as all work done outside one's own farm. It includes temporary employment (wage labour, exchange labour), seasonal skilled and semi-skilled jobs (carpentry, brick laying, blacksmith, employment in public and private sectors). It also includes self-employment (retailers, wholesalers, rice mill owners, bus operators, and private entrepreneurs). On-farm employment includes farm work and/or tendering livestock owned by the household. Wage labour implies paid labour on a daily or seasonal basis for work carried out on other farms, portage and casual labour for construction. Skilled labour includes trades like carpentry, tailoring, blacksmithing, electrical repairs and "white-collar" work in both public and private sectors, including the manufacturing, services and primary industries. Individuals engaged in retail and wholesale trades were classified as "traders" in this study.

Conceptual framework

A large body of literature attempts to explain off-farm employment in both developing and developed countries. Farm or landholding size has been found to be negatively related to off-farm employment in a number of countries including Canada (Olfert, 1992), Bangladesh, India and Pakistan (Islam, 1986), Nepal (Amatya, 1982), the US and Japan (Kada, 1980), and India/Kerala (Eapen, 1994), and in Africa (Reardon *et al*., 1992). On the other hand, in Bangladesh Khuda (1986) found that off-farm employment of women increased with farm size. In Thailand, Chalamwong (1986) found that as the number of adult household members increased, heads of households opted not to work off-farm. However, Leinbach and Smith (1994) found this was not the case for Indonesian households. A positive association between off-farm

employment and family size was observed in Thailand (Rief & Cochrane, 1990). The same authors also found households with more irrigated land tended not to have members working off-farm. Off-farm employment increased with declining farm income in the US (Georgia) (Gunter & McNamara, 1990) and Australia (Robinson *et al*., 1982).

A quadratic relationship has been observed between an individual's age and the likelihood of off-farm employment in Australia (Robinson *et al*., 1982), the US (Sumner, 1982; Gunter & McNamara, 1990; Huffman, 1991), Malaysia (Morrison, 1993) and Bangladesh (Khuda, 1986). More educated individuals tend to seek off-farm employment as reported for India/Kerala (Eapen, 1994), the US (Huffman, 1980; Gunter & McNamara, 1990), Thailand (Rief & Cochrane, 1990), Ghana (Vijverberg, 1995) and Nepal (Amatya, 1982). Evidence with respect to the effect of gender varies by country context: females were more likely to enter off-farm work in Thailand (Rief & Cochrane, 1990) while males were more likely to be engaged in off-farm employment in Bangladesh (Khuda, 1986). Proximity to local markets increased the likelihood of off-farm employment in the US (Sumner, 1982), Thailand (Chalamwong, 1986; Rief & Cochrane, 1990) and Canada (Olfert, 1992). Off-farm employment increased during the slack seasons for agriculture in Thailand (Charsombut, 1986), while men and women allocated their labour differently by season in Zaire (Tshibaka, 1992) and the Philippines (Fabella, 1986).

We hypothesised that four broad groups of factors would influence off-farm employment in rural Nepal as indicated by equation (1):

$$Y = f(\mathbf{X_1}, \mathbf{X_2}, \mathbf{X_3}, \mathbf{X_4}), \quad \text{- - - - - - - - - - - - - - - -} \quad (1)$$

where,

Y	=	probability associated with off-farm employment;
$\mathbf{X_1}$	=	a vector of household and demographic characteristics, which includes gender and ethnicity composition of household members, household size and number of dependants;
$\mathbf{X_2}$	=	a vector of resource endowment in the household, including farm size, human capital, assets and physical capital, and livestock possessions;
$\mathbf{X_3}$	=	a vector of farm income derived from the production of food, cash and horticultural crops and livestock;
$\mathbf{X_4}$	=	a vector for the location of farm households (rural/urban, Hill/Terai, proximity to market).

Data

The study was conducted in two ecologically distinct districts, Dhankuta (Hill) and Morang (Terai) in the Eastern part of Nepal. Participatory rural appraisal (PRA) exercises were carried out at the village level to identify the nature of off-farm employment and general trends and factors influencing off-farm employment. Five PRA techniques (social mapping, wealth ranking, matrix ranking, time line and seasonal calendar: Kabutha *et al*., 1993; IDS, 1996; Adams *et al*., 1997) were employed to gather community level information from six rural communities (three in each district). A questionnaire was designed to obtain data on household characteristics, sources of off-farm income, characteristics of members working off-farm and factors influencing decisions to take-up off-farm work. The questionnaire was pre-tested in the Kathmandu Valley and some changes to question wording and content were made

before field implementation. Face-to-face interviews with members from 150 households (75 in each district) were conducted. Two of the 150 questionnaires were incomplete and thus excluded from the analysis. The survey contained information for 233 individuals (91 in the Hills and 142 in the Terai) who were engaged in off-farm employment. Each completed questionnaire was edited for accuracy and relevance, and data were entered into EXCEL prior to analysis using the SAS software package.

Empirical models

Data analysis was initially carried out at the household and then at the individual level. Our focus was to identify the attributes associated with households engaged in farm, off-farm and both farm and off-farm activities, and the factors which differentiated three major types of off-farm employment (wage labour, skilled labour and "trader") in the study area. Prior to the modelling exercise, collinearity diagnostics were performed and only analytically appropriate variables were included in the estimation procedures. Given the binary nature of the dependent variables (and for ease of interpretation) logit regression equations were estimated.

RESULTS

Household characteristics

Household characteristics by agro-ecological zone are summarised in Table 1. Both household size and the number of dependent members per household were marginally greater in the Morang (Terai) than the Dhankuta (Hill) district. Proportionately more household members were absent from homesteads in the Hill district (12%) compared to the Terai (6%). The average farm size for the Hill district was 0.86 ha compared to only 0.47 ha in the Terai. The survey sample indicated that 38% of the Terai households had no cultivable land while all households in the Hill had some cultivable land. Land rental was more common in the Terai than in the Hill district. The effective cultivable area for the Terai households was 36% larger than the area of land owned compared to less than 4% for the Hill households.

On average half the members in most households were working (Table 1). Of these, half were engaged in agriculture, one-fourth were employed in both farm and off-farm activities, and the remainder were involved in off-farm activities. The occupational mix of households varied by agro-ecological zone. For example, in Terai nearly 36% of the working members of the households were employed off-farm and 40% on-farm. In contrast, off-farm employment accounted for only 15% of the working members in the Hill and 60% worked on-farm. Two-thirds of the households had members who worked both on- and off-farm.

Contribution of off-farm employment in total household income

Sources of household income are presented in Table 2. Off-farm income accounted for 36% and 56% of total household income in the Hill and Terai, respectively. For the total sample, wage employment accounted for 37% of off-farm income. Other sources of off-farm income included enterprises/businesses, remittances, land/property rentals and interest. The greater proportion of off-farm income from wage employment and enterprises/businesses in the Terai area reflects its proximity to the marketplace and the greater mobility of household members. In contrast, half of the off-farm income in the Hill households was from remittances indicating the importance of members residing

outside the homestead for this district. Location relative to employment opportunities meant Hill residents had to reside away from home.

Determinants of employment at the household level

Four alternative logit model estimations are presented in Table 3. Model 1 indicates factors associated with households exclusively involved in agricultural production; Model 2 shows factors associated with households exclusively involved in off-farm activities; Model 3 shows factors associated with households with both agricultural and off-farm labour compared with only "agricultural" households; and Model 4 explains factors associated with households with both agricultural and off-farm labour compared to only "off-farm" households. The results suggest that only agricultural households tend to be from the Brahmin/Chhetri/Newar ethnic group, be located in the Hills and have fewer household members. These households also had proportionately more irrigated area and a higher level of borrowing than those with off-farm employment (Model 1).

The households belonging to the Brahmin/Chhetri/Newar ethnic community were nearly four times more likely to be engaged in solely agricultural activities (odds ratio=3.9) than the other ethnic groups. On the other hand, the "off-farm" households were more likely to have a smaller irrigated area, be located in the Terai, and have a lower dependency ratio (fewer younger and older people as a percentage of total household members) (Model 2). The Terai households were 30 times more likely to be only involved in off-farm activities compared to the Hill households (odds ratio=29.8).

Six variables differentiated households with both agricultural and off-farm workers from those with only agricultural workers (Model 3). The latter households tended to: be non-Brahmin/Chhetri/Newar, and located in the Terai, and have more household members, a lower percentage of irrigated areas, and a lower level of borrowing. The households located in the Terai were also three times more likely to be engaged in both off-farm and farm activities compared to those with only agricultural activities. Model 4 suggests households with both on- and off-farm activities were differentiated from those with only agricultural production by two variables - a higher percentage of irrigated area and location in the Hills district. Households located in the Terai were less likely to have both agricultural and off-farm workers compared to the households with only off-farm workers.

Factors associated with off-farm employment by type

The data set provided information on 233 individuals employed in off-farm activities. The most common off-farm activities were wage labour, skilled labour and a trade (Table 4). The average age of the off-farm employees was similar for all three categories (mean 32 years).

Skilled labourers were concentrated in the Terai and were mostly males. Very few Brahmin/Chhetri/Newar individuals had taken up waged work. In general, the spouses of off-farm employees were engaged in an occupation outside of agriculture, particularly amongst wage labourers and traders. Also, households with off-farm employees had more members compared to those who did not. The skilled labourers were more educated than wage labourers and traders. Households with members involved in wage labour and trading tended to have more dependants compared to those with skilled labour.

Factors differentiating types of off-farm employees in Eastern Nepal

The type of off-farm employment varied with the socio-economic characteristics of individuals and their household background. Attempts were made to identify factors that differentiated (a) skilled labourers from wage labourers; (b) skilled labour from traders; and (c) traders from wage labourers using logistic regression models (Table 5).

The skilled labourers compared to wage labourers were more likely to be male, more educated and belong to the Brahmin/Chhetri/Newar community. Their spouses tended to be engaged in agriculture and they were more likely to be located in the Terai and to have a better asset structure as reflected by the use of galvanised/tile roofing on their houses. Factors that differentiated skilled labourers from traders included gender (male), education (more years of schooling), better asset structure (galvanised/tile roofing) and residence in the Hill area, although they tended to spend less on social events. The skilled labourers compared to traders were five times more likely to be male and three times more likely to have better housing (odds ratio = 5.1 and 3.0, respectively). When traders were compared to wage labourers, they tended to be older (quadratic relationship) and to belong to the Brahmin/Chhetri/Newar ethnic group. Their spouses were employed in agriculture, had fewer dependants and tended to be located in the Terai region. Males were more than five times more likely to be a skilled than a waged labourer (odd ratio = 5.6). Similarly, skilled labourers were more than twice as likely to be located in the Terai and to own a better house (odd ratio = 2.5 and 2.3, respectively).

DISCUSSION

The results from this study are consistent with earlier research conducted in Asia, Africa and elsewhere. However, since identical variables were not used in this study as the earlier research caution should be exercised in comparing results. Off-farm employment was found to be well-established in Eastern Nepal and contributed substantially to total household income (36% in the Hill and 56% in the Terai). It thus assisted in food security and in this respect helped to avoid the "vicious circle" of poverty. Proximity to market and employment centres was a critical factor in improving the likelihood of gaining off-farm employment as evidenced by the Hill households having fewer opportunities for non-farm work than those in the Terai. This finding is in agreement with Sumner (1982) for the US, Chalamwong (1986) for Thailand and Olfert (1992) for Canada.

The role of irrigation in the study area was distinct: it contributes to more intensive agricultural production and thus keeps household members employed for more days on farm and reduces their dependency on income from other sources. Our findings thus concur with those of Rief and Cochrane (1990) for Thailand. Households with irrigation tended to have a larger cultivable area of land as well. Farm size tended to be positively correlated with the number of household members and, as could be expected, larger households were more likely to have members involved in both on- and off-farm employment. This observation is similar to that reported by Chalamwong (1986) for Thailand.

The importance of education is well-established in the literature (Huffman, 1980; Amatya, 1982; Eapen, 1994) in providing higher income earning opportunities and this was observed in Eastern Nepal as well. Education and training provides skill-based

employment opportunities and because of this household members generally improve their own well-being and that of other members in the household.

Ethnic and gender discrimination in Nepal is widely prevalent as in other developing country with a low literacy rate. As a result, most good paying jobs tend to go to men (Khuda, 1986). Our results strongly support this hypothesis. The dominance of the relatively 'well-off' ethnic communities of the Brahmins/Chhetries/Newars reflects their influence over both private and public sector off-farm employment activities.

SUMMARY AND CONCLUSION

The objective of the research reported in this paper was to identify the characteristics of rural households involved in farm, off-farm and in both farm and off-farm activities and factors differentiating off-farm employment opportunities in waged and skilled labour, and trading. The analysis was based upon a PRA exercise and a survey of 150 (75 in Terai and 75 in the Hill) households. Two levels of analysis (household and individual) were conducted. A set of nine variables for the household level analysis and 10 variables concerning individuals were used to estimate logit regression models.

The results of the household analysis suggested that ethnicity, household size, the percentage of irrigated land, and agro-ecological location determined the mix of farm and off-farm activities. Households with mainly on-farm employment were more likely to be from the Brahmin/Chhetri/Newar ethnic groups, have fewer household members and be located further from markets in the Hills district compared to those with more off-farm revenue. A higher percentage of irrigated land was positively associated with on-farm employment and increased income from land.

The individual level analysis suggested that education, gender, ethnicity, and the agro-ecological location of the household influenced the type of employment taken-up. Skilled labourers were more educated than either traders or waged labourers. Males dominated skilled labour whereas females dominated trading. Ethnically, the Brahmin/Chhetri/Newar were more likely to be engaged in trading than in labouring. Wage labourers were more likely to come from the Hills than the Terai, whereas the reverse was true for traders. The house roof of skilled labours was more likely to be galvanised or tiled than those involved in trading or waged labour. The relationships between off-farm employment and ethnicity and geo-ecological location of households are not widely reported and this study highlights new information for rural Nepal.

Findings from this study provide useful insights for formulating rural development strategies. Investment in irrigation infrastructure tends to keep the labour force on farm while rainfed conditions drive household members off-farm in search of extra income in order to sustain households expenditure. Irrigation also promotes off-farm employment by increasing the spending power of households dominated by on-farm work. The government can also assist poverty alleviation through education policies that will enhance the skill base of vulnerable groups (women and other disadvantaged groups). Resources need to be targeted and judiciously managed with respect to these groups. Location and culture specific population control measures also would ensure increased per capita food availability and better access to household resources for its members by limiting household size to a level that income earning opportunities can sustain.

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Table 1. Characteristics of rural households in Dhankuta and Morang districts (Eastern Nepal 1998). Figures in parentheses are standard deviations.

Characteristics	Hill (Dhankuta)	Terai (Morang)	All
Gender of respondent (% female)	42	8	26
	(49)	(27)	(44)
Ethnicity of respondent	20	41	30
(% Brahmin/Chhetri/Newar)	(40)	(49)	(46)
Age of the respondent (years)	43	42	42.6
	(16)	(16)	(16)
Average number of members per	5.88	5.95	5.91
household	(3.17)	(2.63)	(2.91)
	0.69	0.35	0.52
Average number of household members absent from homestead	(1.33)	(0.02)	(1.19)
Average number of dependants	2.23	2.28	2.25
	(1.88)	(1.50)	(1.70)
Average landholding size (ha)	0.86	0.47	0.66
	(0.78)	(0.47)	(0.66)
Distribution of landholding (% households)			
▪ 0 ha	6	20	13
▪ >0 - 0.5 ha	30	60	45
▪ >0.5 - 1.0 ha	30	6	18
▪ >1.0 ha	34	14	24
Average cultivable area per household (ha)	0.90	0.64	0.77
	(0.73)	(0.99)	(0.87)
Distribution of cultivable area (% households)			
▪ 0 ha	0	38	19
▪ >0 - 0.5 ha	36	23	29
▪ >0.5 - 1.0 ha	26	12	19
▪ >1.0 ha	38	27	33
Average number of working members per	3.04	3.27	3.15
household (total)	(1.74)	(1.56)	(1.65)
▪ engaged in agriculture	1.83	1.31	1.57
	(1.57)	(1.60)	(1.60)
▪ employed in both farm and off-farm activities	0.76	0.79	0.77
	(0.93)	(1.07)	(1.00)
▪ involved in off-farm activities	0.45	1.17	0.81
	(0.78)	(1.30)	(1.13)
Amount of outstanding loan (Rs)	4,626	4,907	4,763
	(8,096)	(7,988)	(8,016)
Amount spent on social events (Rs)	4,713	3,879	4,301
	(6,218)	(4,605)	(5,780)
Irrigated area (%)	51	55	53
	(43)	(49)	(46)
Households (%) having			
▪ only farm labour	27	17	22
▪ only off-farm labour	1	23	12
▪ both farm and off-farm labour	72	60	66

Table 2. Sources of household income in the Dhankuta (Hill) and Morang (Terai) districts. Figures in parentheses are standard deviations.

Source of household income	Hill (Dhankuta)	Terai (Morang)	All
Total income (Rs)	25853	42296	33963
	(22368)	(30845)	(28034)
Total off-farm income	9345	23827	16488
	(17885)	(24162)	(22355)
▪ Off-farm income as a % of total income	36	56	49
Sources of off-farm income			
Wage/ employment	2729	9518	6078
	(5354)	(15227)	(11815)
▪ % of off-farm income	29	40	37
Business / Enterprise	1261	10620	5877
	(5215)	(19489)	(14892)
▪ % of off-farm income	14	45	36
Remittances	4191	3388	3795
	(15224)	(15488)	(15308)
▪ % of off-farm income	45	14	23
Income from rent/ bond/ interest/	1163	301	738
pension	(5272)	(1020)	(3833)
▪ % of off-farm income	12	1	4

Table 3. Factors associated with type of employment at the household level in Eastern Nepal. (Logistic regression parameter estimates).

Variable	Model 1 Households with agricultural labour only vs. other households	Model 2 Households with off-farm labour only vs. other households	Model 3 Households with both agricultural and off-farm labour vs. agricultural households	Model 4 Households with both agricultural and off-farm labour vs. off-farm households
Intercept	-1.5758	-2.9671**[1]	1.7279	2.4410**
Respondent age (years)	-0.0039	0.0050	-0.0075	-0.0207
Ethnicity (Brahmin/Chhetri/ Newar =1, Others = 0)	1.3316***	-0.0060	-1.4072***	-0.0559
Members per household	-0.2888***	0.0368	0.2967***	0.1128
Dependent ratio[2]	1.1707	-2.8752*	-1.4813[+]	1.1120
Percentage irrigated land	0.0190***	-0.0256***	-0.0144**	0.0221***
Agro-ecological position of the household (Terai = 1, Hill = 0)	-1.2156**	3.3947***	1.1365**	-2.4101***
Amount owed to financial institutions (’00 Rs)	0.0063**	-0.0020	-0.0061**	0.0001
Income from livestock ('00 Rs)	0.0038	-0.0145	-0.0030	0.0152
Amount spent on social events ('00 Rs)	-0.0049	0.0076	0.0040	-0.0052
Chi square (d.f.)	39.345 (9)	41.985 (9)	33.056 (9)	31.060 (9)
% correct prediction	76.9	84.6	72.8	80.4
Number of observations	143	143	125	112

[1] + P < 0.15 *P < 0.1 **P < 0.05 ***P < 0.01.

[2] Dependent ratio is defined as a proportion of total number of households who are under 15 and over 64 years of age.

Table 4. Characteristics of individual off-farm employees in Eastern Nepal (1998). Figures in parentheses are standard deviations.

Variable	Overall (n=233)	Skilled labour (n=81)	Trade (n=62)	Wage labour (n=90)
Age (years)	32.12	33.00	32.67	30.96
	(11.91)	(11.74)	(10.96)	(12.70)
Gender	0.62	0.87	0.48	0.48
(male = 1, female = 0)	(0.48)	(0.33)	(0.50)	(0.50)
Years of schooling	3.58	5.39	3.01	2.34
	(4.24)	(4.81)	(3.76)	(3.41)
Ethnicity (Brahmin/Chhetri/Newar =1,	0.20	0.28	0.29	0.07
others = 0)	(0.40)	(0.45)	(0.45)	(0.26)
Spouse's occupation	0.39	0.50	0.35	0.31
(agriculture = 1, others = 0)	(0.48)	(0.50)	(0.48)	(0.46)
Number of members in the households	6.84	7.08	6.35	6.48
	(3.18)	(3.56)	(2.75)	(3.10)
Dependent ratio[1]	0.34	0.30	0.36	0.37
	(0.21)	(0.21)	(0.20)	(0.20)
House roofing material	0.29	0.39	0.33	0.17
(galvanised, tile = 1, others = 0)	(0.45)	(0.49)	(0.47)	(0.38)
Ago-ecological location of the	0.60	0.54	0.90	0.46
households (Terai = 1, Hill = 0)	(0.48)	(0.50)	(0.29)	(0.50)
Amount spent on social events (Rs)	4,454	4,678	5,101	3,807
	(5,283)	(5,428)	(5,960)	(4,293)

[1] Dependent ratio is defined as a proportion of total number of households who are under 15 and over 64 years of age.

Table 5. Factors differentiating types of off-farm employment among individuals (1998).

Variables	Skilled labourer vs. wage labourer	Skilled labourer vs. trader	Trader vs. wage labourer
Intercept	-4.1438**[1]	1.8017	-7.5655***
Age (years)	0.0863	-0.1343	0.2994***
Age squared	-0.0008	0.0021[+]	-0.0041***
Gender (male = 1, female = 0)	1.7301***	1.6311***	-0.3236
Education (years)	0.1182**	0.1037*	0.0119
Ethnicity (Brahmin/Chhetri/Newar =1, Others = 0)	0.8959[+]	-0.8184[+]	2.5384***
Spouse occupation (Agriculture = 1, others = 0)	0.8630*	-0.0802	1.8867***
Members per household	-0.0250	0.0769	-0.0926
Dependent ratio	-1.3569	-0.4049	-2.0326[+]
House roof (galvanised, tile = 1, others =0)	0.9268**	1.0887**	-0.2899
Agro-ecological position of the household (Terai = 1, Hill = 0)	0.8335*	-1.8885***	3.9177***
Amount spent on social events ('00 Rs)	-0.0018	-0.0071**	0.0052
Chi square (d.f.)	63.550 (11)	51.634 (11)	70.360 (11)
% correct prediction	69.6	72.0	76.3
Number of observations	171	143	152

[1] [+] P < 0.15 *P < 0.1 **P < 0.05 ***P < 0.01.

[2] Dependent ratio is defined as a proportion of total number of households who are under 15 and over 64 years of age.