# Determinants of Farmers' Participation in Off-Farm Employment in South District, Yangon Region

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## Abstract

*The alternative or supplemental income opportunities primarily through off-farm employment are important in the most rural area. This paper explores the determinants of agricultural households' participation in off-farm employment. The study used a primary data collected from 395 randomly selected households using face to face interviews. To discover this issue, the logit model is applied to identify factors that determine the participation in off-farm employment. In this approach, the determinants of participation in off-farm employment are categorized namely individual characteristics, household characteristics and the characteristic of agricultural activities. The results of this analysis show that the important determinant that influences the farmer's decision to participate in off-farm employment is the individual characteristics and characteristics of agricultural activities. The household characteristics are not significant. This study uncovers that these characteristic of the area wherein the farmer live are important determinant of the farmers' decision to participate in off-farm task. In this study area, although there is the improvement of infrastructure and opportunity to participate in off-farm employment, the socio demographics factors affect to the rural employment. The policy implications from the finding of this observation is that skill based training and social support system should provide the well being of rural labour and households. Therefore, if the agricultural families are to be recommended to participate in off-farm jobs, a balanced development in the rural areas needs to be pursued.*

*Keywords: determinants, participation, off-farm, employment, individual, household, agriculture, characteristics*

## I. INTRODUCTION

In most rural area, agricultural activities usually represent the main source of employment. Therefore, the most rural households are farmers where their main source of income is from agricultural activities. However, this observation would probably be the case for a less developed and stagnant rural economy. In countries where the rural areas are experiencing a rapid development and transformation, such as the improvement in infrastructure and transportation, the development of rural industries and the relocation of the industrial estates to the rural areas. The development policy in the rural areas might have directly or indirectly open up opportunities for farmers to participate in off-farm employment, and hence the potential to increase their household income from off-farm sources. In fact, off-farm income could eventually constitute an important and increasing share of total agricultural household income, and the dependence of agricultural households on agricultural activities as their main source of income might be declining. Thus, off-farm employment could become an important option to farmers and agricultural households to increase their household income sources, and hence reducing rural poverty.

The capability of expanding and participating into off-farm exercises among the agrarian family units, in any case, brings up the issue on the determinants to take an interest in the off-farm business. Specifically, what are the characteristics of the farmers who are most likely to participate in off-farm employment? What are the critical factors that influence farmers in their decision to participate in off-farm employment? The importance of examining these questions cannot be over emphasized since off-farm employment has been recognized to have the potential in raising agricultural household income, and therefore reducing rural poverty (FAO, 1998). Besides, off-farm employment (income) is also important for agricultural household to lessen their income vulnerability particularly during poor harvest, and thus helping them to reduce their income risks (Lanjouw and Lanjouw, 2001; Lanjouw and Feder, 2001).

In addition, examining this question appears to be important especially in a situation where the prospect to increase income from agricultural sources is limited. Such circumstance can occur when improvement in agricultural technology is restricted because of little size of land holding. Therefore, the possibility to increment farming, and subsequently farm income would be restricted. In this situation, the options available would be for farmer to participate in off-farm employment. Therefore, examining and understanding of the determinants (variables) that influence the probability of agricultural households to participate in off-farm employment

is imperative for policy makers in designing appropriate development strategy to raise agricultural household income, and hence reduce rural poverty. Here, this paper examines the case of agricultural households in South Distinct of Yangon.

This paper is organized as follows. Section II reviews the determinants of farmer's decision to participate in the off-farm employment. Section III discusses the background of study area, section IV describes the method of the study, section V discusses the findings and section VI provides the conclusion of the study.

## II. DETERMINANTS OF FARMERS' PARTICIPATION IN OFF-FARM EMPLOYMENT

Off-farm employment has been defined in the literature in several ways. In this paper, the definition of off-farm activities as the participation of individuals in remunerative work is away from a home plot of land (FAO, 1988). Also mean that off-farm employment is defined as all work done outside one's own farm. Thus, any work carried out by the agricultural household other than working on their home agricultural land would be considered as off-farm activities.

According to regional differences, the influence factors to engage in off-farm activities are also different. However, many studies suggest that two factors initiate participation in off-farm activities as push and pull factors. The push factors include shortfalls of agricultural production resulting from temporary failures due to unexpected drought or long term factors like

shortage of farm land, absence of crop insurance and failures in input and credit markets (Reardon, et al., 1998; Barrett et al., 2001; Kilic et al.,2009). On the other hand, the pull factors are incentives that attract households when off-farm activities offer higher return than the farm activities and the less risky nature of investment in the off-farm sector (Kilic et al., 2009; Barrett, et al., 2001b). Especially, smallholder productions are generally characterized by low access to improved technologies, financial services, modern inputs, agricultural markets and irrigations services. This is attributed to variability of incomes from the farming sector and thus households are forced to participate in off-farm activities to overcome these obstacles (Rahman, 2007). One components of rural off-farm activities in which the poor can participate since it does not require any complementary physical capital is wage employment (Mduma and Wobst, 2005).

Following Huffman (1980), Benjamin (1992), and Howard and Swidinsky (2000), it is postulated that factors that may influence a farmer to participate in off-farm employment are as follows: (i) individual or personal characteristics; (ii) the household (or family) characteristics; (iii) the characteristics of the agricultural activity itself; and (iv) the local area characteristics. The first three characteristics are variables that are related to the off-farm labour supply, while fourth characteristic are variables that are related to the off-farm demand for labour. This study identifies the determinants of participation in off-farm employment based on the first three characteristics, off-farm supply. Thus, following Huffman (1980), Benjamin (1992), and Howard and Swidinsky (2000), the determinants that may influence likelihood of farmer 'i' to participate in off-farm employment could be written as follows:

$$E_i = f(I_i, H_i, A_i) .... ......... (1)$$

where, E = off-farm employment,

I = individual characteristics,

H = household characteristics and

A = characteristics of agricultural activities.

Each of the characteristics is explained below.

A. Individual Characteristics (I)

The individual or individual characteristics are those qualities as age, gender and human capital (Huffman 1980). With respect to age, younger farmers are required to be increasingly participating than older farmer, and in this manner they are bound to have a higher tendency towards off-farm contrasted with more established farmer. Another one is additionally anticipated that the likelihood should expand into off-farm business is lower for female than male. Benjamin and Guyomard (1994) found that females have fewer tendencies to broaden into off-farm employment on the off-farm. Besides, human capital, for example abilities and information, claimed by the individual farmer may likewise impact their probability to take part in off-farm (Benjamin dan Guyomard (1994). Since off-farm, particularly in the conventional area, typically requires higher skill and information, it is normal that a farmer with a more level of human capital has a higher likelihood to take part in off-farm work.

B. Household characteristics (H)

The family unit (or family) attributes are those qualities, for example, the family size and the quantity of utilized part in the family unit. Bigger family unit size may turn into a push factor for the head of agrarian family to search for off-farm work as a way to expand their family income. In this manner, a farmer with a bigger family size is required to have a higher likelihood to take part in off-farm work than a farmer with a littler family size. Another factor would be the quantity of dependent in the family. The weight for a farmer with a bigger number of dependent to search for extra pay to meet their costs of living is higher than a farmer with fewer dependent. In this way, it is sensible to expect that a farmer with a bigger number of dependent will have a higher likelihood to take part in off-farm work than those with fewer dependent.

Another factor that is identified with family unit qualities is the measurement of the settlement got by the family unit. A family unit that gets higher settlement, for the most part from the working youngsters that are never again living with them, is relied upon to have lower likelihood to participate in off-farm work than those family that get lower settlement. This is reasonable since the higher the settlement that the family unit got, the lower the weight for the farmer (head of family unit) to search for extra pay for the family, and thus, the lower the likelihood for the farmer to search for off-farm work.

Another household characteristic is the amount of remittance received by the household. Some household receive higher remittance that the working children migrant to urban and then they are expected to remittance to family. The farmers have lower probability to participate in off-farm employment than the family that receives lower remittance. This is sensible since the higher the remittance that the household received, the lower the pressure for the farmer (head of household) to look for additional income for the family, and hence, the lower the probability for the farmer to look for off-farm job.

C. Characteristics of the agricultural activities (A)

Agricultural characteristics are those attributes with regards to the size of agricultural land and the type or category of agricultural activity. A farmer who owns and works on a small plot of agricultural land is expected to have a higher probability to diversify its income sources by securing off-farm employment for additional income (Benjamin dan Guyomard1994; Leinbach dan Smith 1994; Lim-Applegate, et al.2002; Corsi dan Findeis 2000; Lanjouw dan Lanjouw 2001). On the contrary, a farmer who own and work on a larger size of agricultural land is expected to have less pressure to diversify its income sources and therefore has a lower probability to look for off-farm employment.

Another related factor is the nature (or category) of agricultural activity undertaken by the farmer. Certain in agricultural activities needs full attention of the farmer and hence requires the farmer to allocate most of the time on the activity. However, there are some agricultural activities that require the farmer to allocate less working

hours on the activity. Thus, it is expected that a farmer that involve in off-farm employment than if the farmer involve in some other types of agricultural activities.

Besides, another characteristic which might be incorporated under agricultural characteristics is the commercial crop and paddy farming. A farmer who is cultivating doubled crop paddy is expected to have a less probability to diversify its income sources by securing off-farm employment for additional income. The reason being, income from agricultural sources is already sufficient for him to support his family. On the other hand, a farmer who commercial crops are more likely to participate in off farm jobs that require the farmer to allocate less working hour on the agriculture activity.

### III. BACKGROUND OF STUDY AREA

There are eleven townships in south district and total population is 339205 according to Myanmar Population and Housing Census 2014. This study area is located in the South of Yangon Region and Yangon River is in its West and Bago River is in its North. Conventional household's condition is classified by sex of the head as male and female headed households. The male headed households are more than female headed households and the largest mean of household size is Thanlyin Township. In this paper, the possibility of participation in off-farm employment for farmer households headed of four township (Thanlyin, Kyauktan, Thongwa, Kanyan) are analyzed.

Table 1.Conditions of Conventional Households

| | Conventional households | | | Mean household size |
|---|---|---|---|---|
| | Number | Male-headed | Female-headed | |
| Thanlyin | 61,597 | 47,125 | 14,472 | 4.1 |
| Kyauktan | 32,976 | 26,299 | 6,677 | 3.9 |
| Thongwa | 40,087 | 31,932 | 8,155 | 3.9 |
| Khayan | 39,314 | 31,430 | 7,884 | 4 |
| Total | 173,974 | 136,786 | 37,188 | |

Source; Myanmar Population and Housing Census 2014

The household members of study area are mostly confronted as agriculture households with the problem of unemployment and underemployment. Most population living in rural areas have to mainly rely on the farming as the primary means for livelihood. Their occupations are farmers, factory workers, vendors, manuals and small retailer shops. The level of education is low and this is not different among population by per capita income level. According to the previous study, the occupation composition of sample households is mainly focused on cultivators and their income is being earned from cultivation below MMK thousands 100 income level. Households own the farm ranging about two to fifty acres and some of farmers own small farm size and landless family in the study area.

There is the high transaction cost to deliver the products and goods because of the weakness of transportation infrastructure in some area. Moreover, the high costs of production can reduce the regional main business, the cultivation households. There are preventing the development of the agricultural production. On the other hand, the emergence of industrial sector development which is connected with the economic

development of the nation, there is the obvious transfer of labour from the agricultural sector to the industrial sector. They have opportunity to transfer because Thanlyin township is a major port city of Myanmar, located across Bago River from the city of Yangon, Thilawa port. Moreover, it is connected to the country's fledgling highway networks. Thanlyin Bridge carries a Highway road, which links Yangon with the Thilawa port and Thanlyin Industrial Zone. The Bridge 2, which will link Thanlyin to Highway 2, the Yangon- Mandalay highway. The climate of Thanlyin Township is wet and humid climate. There are significantly agricultural and industrial activities in this area.

Figure1 The study area of South Distinct Yangon



In this study area, there is having the opportunity to participate in off-farm employment due to the industrial zone. There is the reallocation of labour from agricultural to non agricultural activities because the rural worker worked the variability, risk and uncertainty associated with their farm income. Therefore, this study investigates the determinants of off-farm employment as a strategy for the reduction of poverty in the South Distinct of Yangon.

## IV. DATA AND METHOD

### A. The Data and Sample

In this study, multi-stage sampling procedure is employed to select sample households. In the first stage, the South district of Yangon Region where out of downtown area is selected. At the second stage, out of eleven township in south district four townships are selected namely Thanlyin, Kyauktan, Thongwa and Khayan are selected because of there are located near the Thilawa port and Thanlyin Industrial Zone. The rural households in the study area have opportunity to participate in off-farm activities. The selected four villages where Zee Phyu Pin village, Kayan Township is (15) miles far from Khayan, YwarThitKalay village is situated at 11 miles far from Kyauktan Township,West village is situated in western part of Thongwa and Tha Nat Pin Village is one of the obvious villages among (28) villages in Thanlyin Township. These villages were purposively selected as the researcher is interested in the context of low land agro-ecology to assess the determinants of livelihood strategies. At the third stage, total sample respondents households were selected by using simple random sampling technique, and proportion to household. The

sample size was determined based on Taro Yamane (1967) formula.

The data used in this study is mainly primary data which is gathered through a survey carried out among agricultural households in South Distinct, Yangon and also secondary data from Myanmar Population and Housing Census. A total of 395 agricultural households participated in this survey through a face to face interview was carried out with the respondents. Table 2 shows the number of respondents by townships.

Table 2 Respondents by Townships

| Township | Estimated Total Households | Number of respondents |
|---|---|---|
| Thanlyin | 61,597 | 140 |
| Kyauktan | 32,976 | 72 |
| Thongwa | 40,087 | 93 |
| Khayan | 39,314 | 90 |
| Total | 173,974 | 395 |

Source: survey result, 2020

B. The Logit Model

For the identify the influence factor of participation in off-farm employment, the effect of the various characteristics – individual, household and characteristics of agricultural on the probability for participating in off-farm employment, we apply the econometric approach that relies on logit model.

Thus, to estimate the decision of the farmer (head of agricultural household) to participate in off-farm employment, it uses a binary choice model based on maximum likelihood method. Dummy dependence variable of 0 and 1 is used with the value of 1 for the farmer (head of agricultural household) participated in off-farm employment while the value of 0 for those who did not participate. Given the value of the independent variables, the estimated value for the dependence variable could be interpreted as the probability to participate in off-farm employment, (Greene 2000; Long dan Freese 2006; Maddala 1983; Wooldridge 2000).

The logit model used in this study is specified as follows:

Latent variable specification:

$$Y_i^* = \beta X_i + u_i \quad ........................ (2)$$

where: $Y_i = 1$ (participate in off-farm employment) if $Y_i^* > 0$

$Y_i = 0$ (did not participate in off farm employment) if $Y_i^* < 0$

$u_i$ = error term

$\beta$ = estimated parameter.

$X_i$ = vector of independent variables

The error term, $u_i$, is assumed to be logistically distributed. Thus, the probability of individual i to participate in off-farm employment or not, i.e. $Pr(Y_i=1)$, depends on the vector of individual (I), household (H) and agricultural (A) as specified in equation (1). It is written as follows:

$$Pr(Y_i=1)=\beta_0+\beta_1 I+\beta_2 H+\beta_3 A+ u_i ............(3)$$

Where; $\beta_1, \beta_2, \beta_3$ are the estimated parameters, $u_i$ is the error term, and I, H and A are the independent variables. The variables used in the estimation are explained and summarized in following.

**Table 3 Description of variables and expected sign**

| Variables | Definition | Expected Sign |
|---|---|---|
| **Dependent Variable** | | |
| Off-farm Employment | Participation in off-farm employment(Binary) Yes=1, No=0 | |
| **Independent Variables** | | |
| **Individual Characteristics(I)** | | |
| Age | (Continuous) Age of the Head of households | - |
| Gender | (Dummy) Male=1, Female=2 | + |
| Education | (Dummy) High=1, Low=2 | + |
| **Households Characteristics (H)** | | |
| Household Size | (Continuous) Household size | + |
| Dependent | (Continuous) No of Dependent | + |
| Remittance | (Continuous) Income from remittance | - |
| **Characteristics of Agricultural Activity(A)** | | |
| Land Size | (Continuous) Land size | - |
| Agricultural Type I | (Dummy) Paddy, Yes =1, No=2 | - |
| Agricultural Type II | (Dummy) Commercial crop, Yes=1, No=2 | + |

Equation (3) will be estimated and used to examine the probability of the respondents to participate in off-farm employment or otherwise. Here that the sign of the estimated parameter is already sufficient to conclude whether the independent variable has a positive or negative impact on the dependent variable (Wooldridge, 2002). In addition, the magnitude of the impact found out by looking at the odds ratio.

## V. THE FINDINGS

In the study area, farmers have been engaged in different types of off-farm employment opportunities. The descriptive statistics result indicated that the majorities (60 %) of rural households were not engaged in off-farm activities, whereas about 40% of the households were engaged in any kind of off-farm employment opportunities so as to improve their income and livelihood.

Table 4 Rural households' participation status in off-farm

| Households Status | Frequency (N) | % of Population |
|---|---|---|
| Participants | 156 | 40 |
| Non-participants | 239 | 60 |
| Total | 395 | 100 |

Source: survey result. 2020

As a result, only 395 respondents (questionnaires) are used and analysed. Table 5 reports the results of the estimated logit model. The estimated parameter and the odds percentage change are reported together with the log likelihood value, Mc Fadden's R-squared, as well as the percent correctly predicted. The estimated logit model show that the value of McFadden's R-squared is 0.628. The percent correctly predicted is 93.4%, which indicates that the estimated logit model is generally good. In generally, the results show that the category individual characteristics and the characteristics of agricultural activity are significant to explain the decision of the farmer (head of agricultural household) to participate in off-farm employment. Household characteristics, on the contrary, are found insignificant. The results for each category are discussed below.

**Table 5 Estimated Logit Model**

| Dependent Variable | | | |
|---|---|---|---|
| Off-farm Employment | Participation in off farm employment (Binary) (Yes=1,No=0) | | |
| **Independent Variable** | Estimated Coefficient | | |
| | Parameter | Standard Error | Odds Ratio |
| **Constant** | 6.368 | 1.275 | 583.148 |
| **Individual Characteristics(I)** | | | |
| Age | -0.043*** | 0.017 | 0.958 |
| Gender | -2.753*** | 0.786 | 0.064 |
| Education | 1.122*** | 0.459 | 3.070 |
| **Households Characteristics (H)** | | | |
| Household Size | -0.041 | 0.204 | 0.959 |
| Dependent | 0.333 | 0.298 | 1.396 |
| Remittance | 0.003 | 0.012 | 1.003 |
| **Characteristics of Agricultural Activity(A)** | | | |
| Land Size | -0.215*** | 0.041 | 0.806 |
| Agricultural Activity Type I | -3.384*** | 0.876 | 0.034 |
| Agricultural Activity Type II | -4.719*** | 0.885 | 0.009 |

Number of obs = 395

Prob > chi$^2$ = 0.0000

Percent correctly predicted = 93.4%

McFadden's R$^2$ = 0.628

Significance level: ***p<0.01; **p<0.05; *p<0.1

Source: survey data analyzed result, 2020

A. Individual characteristics (I)

The results show that age, gender and education level are found statistically significant. The results show that age has a negative relationship with the probability to participate in off-farm employment. This implies that the older the respondent (farmer), the lower the probability for the respondent to participate in off-farm employment. The odds ratio for age is 0.96, which implies that a one unit (year) increase in the age of the respondent will result in the odds of the respondent to participate in off-farm employment to decline by a factor of 0.96. It should be worth mentioning here that these results are quite similar to a study by Howard and Swidinsky (2000) in Canada and also by Matshe and Young (2004) in Zimbabwe.

As for the gender variable, it is found significant in determining the decision of the farmer to participate in off-farm employment. Besides, it is also found to have a negative sign, which implies that the probability for male respondent (farmer) to participate in off-farm employment is less likely than female. The odds ratio for gender is 0.06, which implies that a male respondent participate in off-farm employment less likely than 0.06 of female head of household. This result should be positive sign according to the references sign. However, many literatures showed that different regions have different influence factors. Evidence with respect to the effect of gender varies by contrary context, female were more likely to enter off-farm work in Thailand ( Rief & Cochrance, 1990 ).

Educational level of household heads: as expected, it determined households' participation in off-farm employment opportunities positively and was found statistically significant level. From the model result, ceterus paribus, the odds ratio in favor of participation in off-farm employment increases by 3.1 as the household head are literate. This is due to the fact that literate farmers can easily obtain information regarding the importance of engaging in off-farm activities to

improve their livelihood, as well as they can participate in wage employment that requires knowledge and skills.

B. Household characteristics (H)

All of the variables under household characteristics – household size and dependent are not found significant in the decision of the respondent (farmer) to participate in off-farm employment. Nonetheless, this is probably due to the larger household size has the dependency ratio also at large that cannot effort to participate wage employment. The household remittance variable is significant and the odd ratio changes are 1.003. This is understandable since some farmer with a higher income has a higher probability to self-employment in informal rural labour market. The results from this study are consistent with earlier research conducted in Asia, Africa and elsewhere. It also should be worth explored that these results are quite similar to the study in a case of Estern rural Nepal ( Rief & P Kayasther, G P Rauniyar ). This finding is consistent with the prevailing literature on smaller agricultural holdings which emphasizes the combination of family, community and regional factors in determining well-being (Fuller and Bollam, 1992). In particular, the important of pluriactivity by members of families associated with agricultural holdings has been shown to be relevant in Canda where in addition to the process of exit from the agricultural sector, a partial adjustment of agricultural labour through participation in off-farm labour has become a pervasive strategy of census farm operators and their families (Plfert and Staboer, 1994).

C. Characteristics of agricultural activity (A)

The result of this study shows that the size of the agriculture land is significant to explain the probability of the respondent (farmer) to participate in off-farm employment. This result has the negative sign mean that as the size of the agriculture land increases; the probability for the respondent (farmer) to participate in off-farm employment is decreases as expected. The odds ratio change indicated that a one unit increase in the agriculture land size would decrease the probability of the respondent (farmer) to participate in off-farm employment by a factor 0.81.

With regards to the type (or category) of agricultural activities, paddy planting (Type I) activities and Commercial crop (Type II) of agricultural activities are significant and have a negative signs. The results suggest that, respondents (farmer) who involve in paddy planting are less likely to participate in off-farm employment because of they emphasize their time of working in these activities. On the other hand, commercial crops are also less likely to participate the probability to participate into off-farm employment. It is worth mentioning the odds ratio change indicated that a one unit increase in the paddy per acre would decrease the probability of the respondents (farmer) to participate in off-farm employment by a factor 0.035 and 0.009 for commercial crop per acre.

## VI. CONCLUSION

Most households are found in the rural areas where majority of them involved in agricultural activities. Thus, increasing their income and enhancing their socioeconomic status are important. Therefore, it has been argued in the literature that diversification into off-farm employment appears to be one of a viable options in uplifting the socioeconomic status of the rural-agricultural community. If the agricultural household could increase their income through an off-farm job, and hence, improve their household income, the problem of poverty could probably be reduced. Thus, the requirement to increase participation of farmers in off-farm employment is an important question to solve this problem. In this study, it has been considered this issue and investigates the important determinants in farmers' decision to participate in off-farm employment. The possibility of participation in off-farm employment for farmer households headed of four townships namely Thanlyin, Kyauktan, Thongwa and Khanyan township are analyzed.

This study is not the solution that the main determinants that influence the farmers' decision to participate in off-farm employment are age, gender, household size, dependency ratio, remittance, land size, types of agricultural activities. Variables that are found to have a negative relationship with the decision to participate in off-farm employment are age, gender, household size and agricultural type. On the other hand, level of education, remittance and

dependent are found to have a positive relationship with the decision to participate in off-farm employment. The study shows that gender, family size and cultivation of commercial crops are not consistent with the reference sign of parameter. However, there is similar case of previous literatures; these conditions show that the different regions have different influence factors to the famer's decisions to participate to off-farm employment.

Although there are many opportunity to participate the farmer to off-farm employment in study area such as the development of infrastructure, near the industrial zone and so on, the finding shows that it can participate to off-farm employment only 40 of population. The conditions of socio demographic characteristics are weakness and the different pattern of living arrangements describes the relationship of the individual with the head of household. Nowadays, the modern approach to poverty alleviation is becoming to enhance the participation in off-farm employment to rural labour. This study suggests that policy intervene measures is not enough the development of infrastructure but also need to skill based training for rural labour, rural labour market linkages and social support system should be provided. If the rural-agricultural households are to be encouraged to look for off-farm jobs, one of the policy challenges is to pursue a balanced development in the rural areas. A balanced development in terms of agricultural and industrial sector in the rural areas would increase

the likelihood of the consequently increase their income and uplift their standard of living.

The above findings need further investigation that there are similar to those of other studies and also need to study on the local area characteristics, demand side of labour market to participate in off-farm employment.

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