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Education and employment in rural non-farm sector: A case study of Dhubri district in Assam

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Abstract
A merit good, provision of Education results in Substantial benefit spillover on the society. Education positively affects the attitude of the human resource. Their consumption pattern and preferences, innovativeness, attitude towards family size and an assortment of collective attitudes which have importance from economic point of view. Most social scientist would probably agree with the view that it is the man power resource of a country, not its material resources that ultimately determined the nature and rapidity of economic and social development of a country.
Non-farm activities plays significant role in decreasing the widespread rural poverty through employment generation and income and creation of sufficient demand for goods and services rural market. The role becomes more significant when it provides diverse employment opportunities to the people in rural areas and in the course transforms the rural economy in compliance with the growth of the national economy.
The paper mainly examines the relationship between educational attainment of people in rural areas and rural non-farm sector employment in the sample villages of Dhubri District of Assam. Besides an attempt is also made to find out the prevailing educational status of rural people in the sample villages. The paper concludes that there is significant positive relationship between education and rural commuting.

Keywords: education, non-farm sector, employment structure index, education index, adjusted mean years of schooling

1. Introduction
As a merit good, provision of Education results in Substantial benefit spillover on the society. Education positively affects the attitude of the human resource. Their consumption pattern and preferences, innovativeness, attitude towards family size and an assortment of collective attitudes which have importance from economic point of view. Most social scientist would probably agree with the view that it is the man power resource of a country, not its material resources that ultimately determined the nature and rapidity of economic and social development of a country.
Non-farm activities plays significant role in decreasing the widespread rural poverty through employment generation and income and creation of sufficient demand for goods and services rural market. The role becomes more significant when it provides diverse employment opportunities to the people in rural areas and in the course transforms the rural economy in compliance with the growth of the national economy.
Abduali and Delegado (1999) [3] found that the probability of participation in nonfarm work increases with age up to 33 for men and 30 for women and is, thereafter, inversely related to age. They also found that a higher level of education is positively co-related with a higher probability of participation for both husbands and wives in rural non-farm economy. However, a higher level of educational attainment for a wife lessens the probability of the husband participating in rural non-farm economy. Lanjouw (2001) [4] suggests that the educational credentials may be used to ration access to scarce regular nonfarm employment opportunities. He also found that a general increase in education levels may ratchet up the educational requirement or result in shift to other selection criteria. Islam (1997) [5] in his study found that primary and secondary level of education promotes the growth of rural non-farm sector. Literacy enhances the productivity of the work force and makes it easier to master skills provided through on-the-job training. Secondary education stimulates entrepreneurial capacity. In developing countries an entrepreneur with an elementary education can expect to earn an income 41 percent higher than one with no education at all.

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2. Objectives

The main Objectives of the paper are as under:

- To study the educational status of the selected villages.
- To construct Education Index and Employment Structure Index.
- To study the impact of education on employment in rural non-farm sector.

3. Hypothesis

The paper wants to test the following null hypothesis:
"Employment in Non-farm Sector of Rural Areas is unaffected by the educational attainment of the rural people".

4. Methodology

The present study covers the Dhubri District of Assam. The study covers all types of households, ethnic groups and communities on the random sampling basis. The data required for the study have been collected from 15 sample villages viz., Atgharitari, Bhangaduli, Borobalarchar, Boromera, Choto Pokalagi, Digholtari, Kaimarichar, Khalisamari, Lohajani, Mora Gadhadhar, Paborchara, Patanerkuti, Pubkonuri, Sernagar and Suparikuti of the selected district through field investigation. In each of the villages 15 households were selected randomly for collecting necessary primary statistics.
Thus the sample size becomes 15×15=225. The data collection was done in 2014. The data analysis and interpretation part of this paper has been done with the help of SPSS software package. Hypothesis is tested on the basis of the estimated regression line the. The following model is constructed to estimate the relationship between education in rural areas and non-farm sector employment.

$$ESI = \alpha + \beta EI$$

Where,
ESI= Employment Structure Index
EI=Education Index
The general formula to transform a raw variable, say X, into a unit-free index between 0 and 1 , which allows different indices to be added together have been used in the study.

x index=

$$\frac{x - \min(x)}{\max(x) - \min(x)}$$

Where, min(x) and max(x) are the lowest and highest values the variable x can attain, respectively.

5. Educational Attainment of Household Heads in Sample Villages

Parental educational level is an important predictor of children's educational and behavioral outcomes. In fact, research suggests that educational attainment and skill knowledge of the household heads eventually to a large extent determines the achievements of their other family members.
The Table -1 shows the educational attainment of the head of the households surveyed in the sample villages of Dhubri District.

Table 1: Educational Attainment of Household Heads in the Sample Villages

S. No.	Village	Level of Education Completed			Completed Years of Schooling	Mean Years of Schooling
		Primary	Secondary	Tertiary		
01	Atgharitari	5	3	0	58	4.47
02	Bhangaduli	6	1	0	45	3.73
03	Borobalarchar	5	3	0	58	4.13
04	Boromera	4	2	2	72	5.07
05	Choto Pokalagi	6	2	1	69	4.87
06	Digholtari	5	0	2	53	3.80
07	Kaimarichar	8	0	0	41	3.07
08	Khalisamari	3	1	2	57	3.80
09	Lohajani	7	1	2	72	5.20
10	Mora Gadhadhar	2	0	2	41	3.07
11	Paborchara	8	1	2	76	5.40
12	Patanerkuti	5	0	1	38	2.80
13	Pubkonuri	3	1	2	55	3.93
14	Sernagar	6	1	0	45	3.40
15	Suparikuti	6	1	1	54	3.67
Total		79	17	17	834	4.02

Source: Field Survey

It is revealed from the Table-1 that no household head completing higher education was found in Atgharitari, Bhangaduli, Borobalarchar, Kaimarichar and Sernagar Village. Majority of the respondents of the villages were found to have completed basically primary level of education.
The concept of Mean Years of Schooling (MYS) is relevant in this paper which was used by the Human Development Report Office of the United Nations Development Programme (UNDP) as one of the education indicators in the computation of the Human Development Index (UNDP, 2010) [6]. The MYS indicates the average number of years of schooling completed of a country's population; exclusive of years spent repeating individual grades. In addition to the completed years of education, incomplete education may also be considered for exact assessment which is calculated on the basis of actual years of completed education without having any relation to level of education completed. In the present study, the researchers has used 'Adjusted Mean Years of Schooling' in order to be more specific and to get appropriate idea about the educational attainment of the household heads and to construct a more reliable education index (EI).
The total years of schooling completed is found to be highest in the Paborchara village and lowest in the Patanerkuti Village. The adjusted mean years of schooling is found highest in the Paborchara Village and lowest in the Patanerkuti Village. Thus, in the present study Lohajani village is found to be most forward village and Mora Gadhadhar village is found to be the most backward village in respect of educational attainment of the rural people.

6. Non-farm Employment in the Sample Villages:

The rural non-farm sector, unlike farm sector includes all non-

agricultural activities i.e., processing, repair, construction, mining and quarrying, household and non-household manufacturing, trade and commerce, transport and other services in villages and semi urban areas done by different enterprises. The rural non-farm sector thus covers different activities while steady growth in the rural non-farm sector to a large extent depends on a variety of factors. Rural non-farm sector will experience development- and distress- related rural diversification which depend on the kind of force, positive or negative, that these factors provides to the rural economy.

The Table-2 reveal the primary statistics related to farm and non-farm workers in the sample villages of Dhubri district.

Table 2: Farm and Non-Farm Workers in the Sample Villages

S. No.	Agomoni Sub District					
	Village	**Total Worker**	**Farm Worker**	**Non-farm Worker**	**% of Farm Worker**	**% of Nonfarm Worker**
01	Atgharitari	33	22	11	66.7	33.3
02	Bhangaduli	29	24	5	82.8	17.2
03	Borobalarchar	32	22	10	68.8	31.3
04	Boromera	41	27	14	65.9	34.1
05	Choto Pokalagi	35	23	12	65.7	34.3
06	Digholtari	27	20	7	74.1	25.9
07	Kaimarichar	31	25	6	80.6	19.4
08	Khalisamari	39	34	5	87.2	12.8
09	Lohajani	36	23	13	63.9	36.1
10	Mora Gadhadhar	37	33	4	89.2	10.8
11	Paborchara	29	15	14	51.7	48.3
12	Patanerkuti	34	27	7	79.4	20.6
13	Pubkonuri	38	27	11	71.1	28.9
14	Sernagar	28	15	13	53.6	46.4
15	Suparikuti	46	39	7	84.8	15.2
Total		**515**	**376**	**139**	**72.4**	**27.6**

Source: Field Survey

It is observed that in the 30 sample villages of the Dhubri district, Mora Gadhadhar is the village where the percentage of nonfarm worker is lowest in comparison to the other remaining 14 sample villages. On the other hand, Paborchara is the village where the Percentage of nonfarm worker is highest in comparison to the other sample villages. The percentage of nonfarm worker in the Mora Gadhadhar village is only 10.8 whereas roughly half of the workers in the Paborchara villages work in nonfarm sector.

Table 3: Calculated Education and Commuting Indices of the Sample Villages

S. No.	Villages	EI	ESI
01	Atgharitari	0.4533	0.3333
02	Bhangaduli	0.3067	0.1724
03	Borobalarchar	0.3867	0.3125
04	Boromera	0.5733	0.3415
05	Choto Pokalagi	0.5333	0.3429
06	Digholtari	0.3200	0.2593
07	Kaimarichar	0.1733	0.1935
08	Khalisamari	0.3200	0.1282
09	Lohajani	0.6000	0.3611
10	Mora Gadhadhar	0.1733	0.1081
11	Paborchara	0.6400	0.4828
12	Patanerkuti	0.1200	0.2059
13	Pubkonuri	0.3467	0.2895
14	Sernagar	0.2400	0.4643
15	Suparikuti	0.2933	0.1522

Source: Calculated on the Basis of table- 1and Table -2

The education and employment indices of the sample villages have been constructed on the basis of the field survey data. It is revealed that the education index is highest in the Paborchara village and lowest in the Patanerkuti village. The employment structure index is highest in the Paborchara village and lowest in the Mora Gadhadhar village.

Box-1

Dependent Variable	Independent Variable	R	R^2	F	α	β	t
CI	EI	0.649	0.421	9.440*	0.459	0.649	3.073*

Note: * *at 1% level of significance*

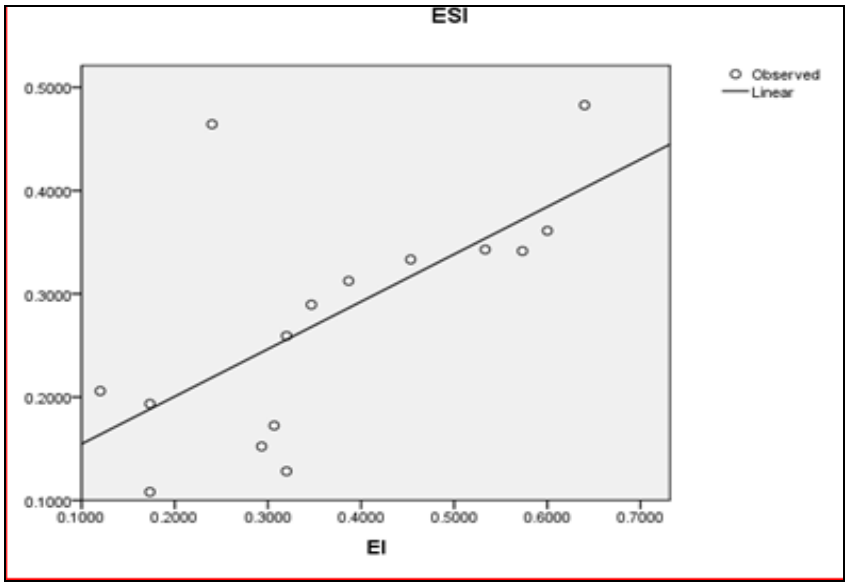

Fig 1: Scatter Plots Showing Correlation between Education Index and Employment Structure Index

The Box- I reveals the following results.

- The person's Coefficients of Correlation between ESI and EI is found 0.649. Therefore, it can be asserted that there is a positive relationship between education and ruran non-farm employment in the sample villages. This is evident from the following scatter diagram which shows strong positive correlation between education and non-farm employment.
- The coefficient determination is estimated at 0.421which implies that 42 percent of the variation in employment in non-farm sector can be accounted for by variation in educational attainment.
- The *t* value is estimated at 3.073 which is significant at 1 percent implying that the predictor makes a considerable impact on the employment structure of sample villages.
- The *F* values is estimated at 9.440 which is significant at p=0.001 which implies that there is less than 0.1 percent probability that such a large F –value will appear by chance alone indicating that the regression model overall predicts the change in the structure of rural employment efficiently. Thus it asserts that the regression model overall predicts the change in the nature of rural employment efficiently.

Hence, we reject the null hypothesis that employment in rural non-farm sector is unaffected by the level of educational attainment of rural people in rural areas.

7. Conclusion

Thus it can be concluded that education is one of the chief determinant affecting the employment structure in the rural areas. Provision of better education to the rural people can be an effective instrument to change the traditional rural sector and bring about balanced growth of farm and non-farm sector in the economy.

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