

Rural Non-Farm Employment in Paschim Medinipur District of West Bengal : A Micro Level Study

Samir Show

Research Scholar, Department of Economics, Vidyasagar University.

Received: May 24, 2018

Accepted: July 12, 2018

ABSTRACT

The share of rural non-farm workers to total estimated workers of sample households is higher than that of agricultural workers in major sample villages. The share of tertiary employment to total estimated rural non-farm workers is higher than that of secondary employment. The percentage share of rural non-farm workers is relatively high in large size households. The general caste and other backward caste workers dominate non-farm activities. Landless and marginal land holding households are participation in rural non-farm activities to a greater extent to earn their livelihood. There are 46.12 percent sample households to total sample household having non-farm activities with annual per capita non-farm income less than Rs 50000. Among these households the income of 29.44 percent household lies between Rs 50000 to 75000, In village level we analyze the factors of household participation in non-farm sector like caste of the workers, level of worker's education, Size of household, Per capita land, nearby industrial or Commercial centre and hereditarily.

Keywords: Rural non-farm workers, per capita land, Hereditarily, Land holdings, Caste

1. Introduction

“Rural non-farm employment includes activities that are outside primary agriculture, forestry, animal husbandry and fisheries, whether carried out on one’s own farm or as labour on others farm. The main criterion for identifying non-farm activity is: does the activity add-value to the product, irrespective of the fact that the product has been generated as on-farm activity. For example, if cleaning of grains before they are sold fetches a different price than the grain that has not been cleaned, the activity „cleaning of grains“ will be a non-farm activity” (Dasgupta & Marter, 2003, p. 2). RNFE includes only non-agricultural activities however, livestock, fisheries and forestry deserve to be included in the broader definition. Non-Farm activities can be classified into three categories: “(i) Manual labour based activities; (ii) Human capital based occupations; (iii) Physical and human capital-intensive activities. Manual labour based activities include self-employed subsistence- oriented cottage industries, wage employment in rural business enterprises, transport operation, and construction labour. Human capital based occupations include salaried service in public and private organizations, teachers and imams, village doctors, and various types of personal services. Physical and human capital-intensive activities include commercial type rural industries, including agro-processing, shop-keeping, peddling, petty trading, medium and large scale trading, and contractor services” (Hossain, 2004, p. 4053). The RNFS encompasses all non-agricultural activities: mining and quarrying, household manufacturing, processing, repair, construction, trade and commerce, transport and other services in villages and rural towns undertaken by enterprises varying in size from household own-account enterprises to factories (Jha, 2006). All economic activities in which the rural workforce is employed, other than agriculture and allied like animal husbandry, fishing, forestry and plantations are included in RNFAs (Unni, 1991; Abraham, 2011).

In Paschim Medinipur district the share of rural non-farm workers to total estimated workers of sample households is higher than that of agricultural workers in major sample villages. The share of tertiary employment to total estimated rural non-farm workers is higher than that of secondary employment. The percentage share of rural non-farm workers is relatively high in large size households. The general caste and other backward caste workers dominate non-farm activities

2. Objectives of the study

- i) To examine and analyse the level and pattern of rural non-farm employment at the micro level in Paschim Medinipur district of West Bengal.
- ii) To analyse the factors that explain the variation in rural non-farm employment at the micro level.
- iii) To examine the Probit Estimates of household participation in non-farm sector.

3. Database and Methodology

This study is based on primary data. Paschim Medinipur district in West Bengal is purposely chosen for the present study for the field survey. All the blocks of Paschim Medinipur districts are not equally important. Four blocks from the district (two relatively developed blocks and two relatively underdeveloped blocks) are randomly selected. Sabang and Pingla are relatively developed blocks. On the other hand, Garbeta-II and Chandrakona-I are less developed blocks.

Within a block all the villages are not equally important in respect of socio-economic characteristic. In view of this, four villages are randomly drawn from the village list of each block. Accordingly we have 16 selected villages. In each village 11-12 household were randomly selected. Therefore a total of 180 household were selected from a population of 786. The data of the present study were collected by questionnaires survey, interviewing, and directly observation during the field survey of the study area in the session 2016-1

Probit Model:

For specific purpose probit model is used to estimate the regression parameters. The steps involved in the estimation of the probit model are as follows:

a) From the grouped data, estimate the probability that an event will occur, i.e. P_i . This P_i is estimated by n_i/N_i , where n_i is observed frequency and N_i is total frequency.

b) Given estimated P_i , obtain normal equivalent deviate (n.e.d) ($=I_i$) from the standard normal cumulative distribution function (CDF).

That is, $I_i = F^{-1}(P_i) = \beta_1 + \beta_2 X_i$

c) Use the estimated I_i obtained as the dependent variable in the regression, i.e.

$I_i = \beta_1 + \beta_2 X_i + U_i$

d) R^2 as a measure of goodness of fit is not particularly well-suited for the dichotomous dependent variable models, one suggested alternative as the χ^2 test. Apply the χ^2 test to regression and comment on the resulting goodness of fit.

4. Results and Discussion

The share of rural non-farm workers of sample household is higher than that of agriculture workers in 8 villages out of 16 villages. Among these 6 villages (Kubirchak, Palasi, Malpar, Kalikakundu, Gopinathpur and Palgere) belong to two relatively developed blocks, namely Sabang and Pingla, Another 8 villages namely Eriamara, Keshia, Noari, Goadanga, Indra, Bara, Hajra and Andhare belong to two less developed blocks namely, Garbeta-II and Chandrakona-I. On the whole, 45.39 percent workers of sample household are engaged in non-farm sector. The share of non-farm workers to total estimated workers is highest in Malpar village (56.06 percent) of Sabang block followed by Palgere (54.29%), Kalikakundu (53.33) and Gopinathpur (51.32) of Pingla block, Kubirchak (52.78%) and Palasi (51.61%) of Sabang block. More than 50 percent of workers are engaged as rural non-farm workers in Sabang and Pingla blocks. The possible reasons for the high share of non-farm workers in those villages are Mat or Madur industry, migrated and trade. Side by side less than 40 percent of workers are engaged as rural non-farm workers in Garbeta-II and Chandrakona blocks. The share of non-farm self employment to total estimated workers is highest in Haripura village (30 percent) of Sabang block followed by Malpar (27.27%), Kalikakundu (21.33), Bhushlya (20.78) and lowest in Noari (7.69%) village. Percentage share of non-farm wage labour is highest in Kubirchak (36.11) of Sabang block followed by Gopinathpur (35.53), Palasi (35.48), Palgere (34.29) and lowest in Haripura (7.14 percent) village (Table 1)(Figure 1)

Table 1 Percentage Share of Workers by Activity Status in Sample Villages

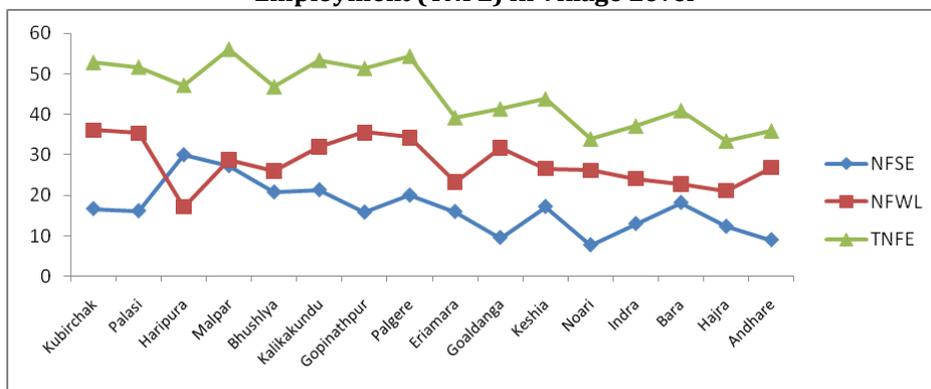
Blocks	Villages	Non-Farm Employment/Workers			Agricultural Workers
		NFSE	NFWL	Total	
Sabang	Kubirchak	16.67	36.11	52.78	47.22
	Palasi	16.13	35.48	51.61	48.39
	Haripura	30.00	17.14	47.14	52.86
	Malpar	27.27	28.79	56.06	43.94
	All	22.59	29.25	51.86	48.14
Pingla	Bhushlya	20.78	25.97	46.75	53.25
	Kalikakundu	21.33	32.00	53.33	46.67
	Gopinathpur	15.79	35.53	51.32	48.68

Garbeta-II	Palgere	20.00	34.29	54.29	45.71
	All	19.46	31.88	51.34	48.65
	Eriamara	15.94	23.19	39.13	60.87
	Goaldanga	9.52	31.75	41.27	58.73
	Keshia	17.19	26.56	43.75	56.25
	Noari	7.69	26.15	33.85	66.15
Chandrakona-I	All	12.64	26.82	39.46	60.54
	Indra	12.96	24.07	37.04	62.96
	Bara	18.18	22.73	40.91	59.09
	Hajra	12.28	21.05	33.33	66.67
	Andhare	8.96	26.87	35.82	64.18
Total	All	12.61	23.87	36.48	63.51
Total		17.13	28.26	45.39	54.61

Source: Field Level Survey

NFSE = Non-Farm Sel- Employment, NFWL = Non-Farm Wage Labour

Figure1 Non-Farm Self-Employment (NFSE), Non-Farm Wage Labour (NFWL) and Total Non-Farm Employment (TNFE) in Village Level



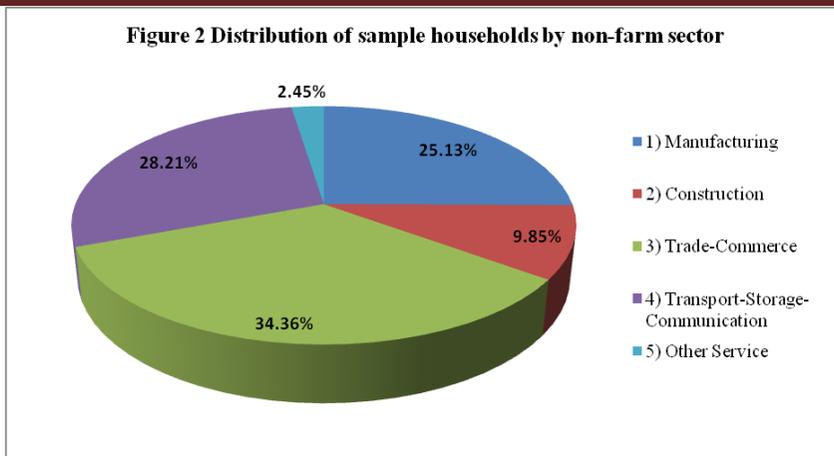
Sector wise rural non-farm employment

The share of tertiary employment to total estimated rural non-farm workers is higher than that of secondary employment for all blocks. The share of secondary workers to total estimated workers is lower in two less development blocks, namely Garbeta-II and Chandrakona-I than that in two developed blocks like Sabang and Pingla. The share of manufacturing is 36.21percent in Sabang and 31.25 percent in Pingla. This share is low in Garbeta-II and Chandrakona-I blocks. The share of construction is relatively low in Sabang and Pingla blocks. The share of Trade-Commerce is highest in Chandrakona-I (37.20 percent) followed by Garbeta-II (36.75), Pingla (33.75percent) and Sabang (30.90 percent). The share of Transport-Storage- Communication is also relatively high in Garbeta-II and Chandrakona-I blocks (Table 2)(Figure 2)

Table 2 Percentage Share of Rural non-farm Workers of Sample Households by Sector of Non-farm Employment in Sample blocks

Sector	Sabang	Pingla	Garbeta-II	Chandrakona-I	Total
1) Manufacturing	36.21	31.25	16.10	18.85	25.13
a) Household Manufacturing	27.45	11.50	3.60	5.60	11.52
b) Non- Household Manufacturing	8.76	19.75	12.50	13.25	13.61
2) Construction	6.43	5.68	13.54	14.60	9.85
Secondary(1-2)	42.64	36.93	29.64	33.45	34.98
3) Trade-Commerce	30.90	33.75	36.75	37.20	34.36
4) Transport-Storage- Communication	22.29	27.56	30.53	28.35	28.21
5) Other Service	4.17	1.76	3.06	1.00	2.45
Tertiary (3-5)	57.36	63.07	70.36	66.55	65.02
Total	100	100	100	100	100

Source: Field Level Survey



Rural non-farm Workers in relation to Household Size

Distribution of rural non-farm workers by size groups of sample households for four sample blocks is shown in Table 3. In the sample blocks most of non-farm workers belong to the size group of household 6 to 7. On the whole 32.11 percent of total non-farm workers belong to the household size of 6 to 7, 30.15 percent belong to the household size 8 to 9, 38.74 percent to other size classes. The share of rural non-farm workers of sample households belonging to the household size group 2 to 3 is relatively low. This share is highest in Sabang block and lowest in Garbeta-II block. The share of non-farm workers in the size group 4 to 5 is highest in Garbeta-II block (21.6%) followed by Sabang (19.6 %), Chandrakona-I (18.7%) and Pingla (14.7%). The share of non-farm workers in the size group 6 to 7 is highest in Sabang block (36.5%) followed by Pingla (31.5%), Chandrakona-I (30.4%) and Garbeta-II (26.5%). The share of non-farm workers in the size group 8 to 9 is highest in Pingla block (38.6%) followed by , Chandrakona-I (31.5%), Garbeta-II (27.8%) and Sabang (24.6%). The share of non-farm workers in the size group 10 and above is highest in Garbeta-II block (20.2%) followed by , Chandrakona-I (12.9%), Sabang (11.8%) and Pingla (9.9%) (Table 3).

Table 3 Distribution of Rural Non-Farm Worker by Size Group of Household in Sample Blocks

Blocks	2 to 3	4 to 5	6 to 7	8 to 9	10 and above	Total
Sabang	7.5	19.6	36.5	24.6	11.8	100
Pingla	5.3	14.7	31.5	38.6	9.9	100
Garbeta-II	3.9	21.6	26.5	27.8	20.2	100
Chandrakona-I	6.5	18.7	30.4	31.5	12.9	100
Mean	5.92	18.24	32.11	30.15	13.58	100

Source: Field Level Survey

Land distribution and rural non-farm employment

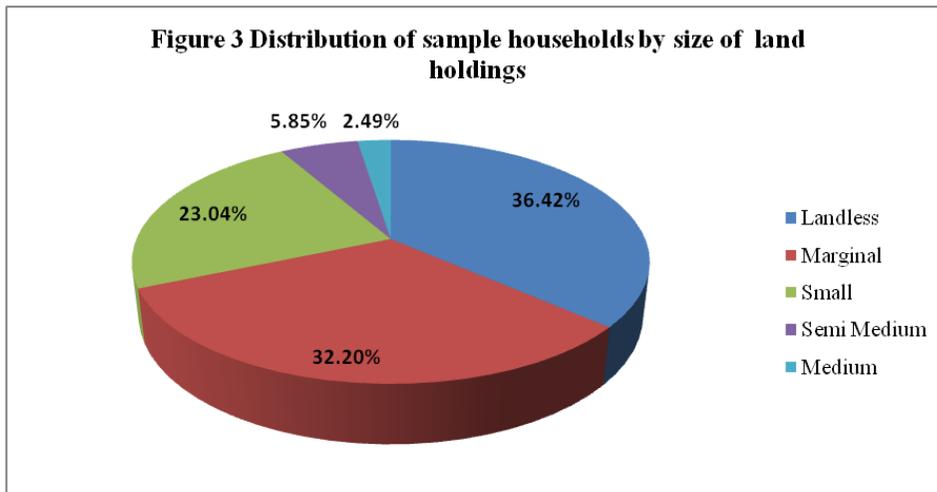
Distribution of rural non-farm workers of sample household by size class of operational holding is presented in Table 4. Among 180 sample rural household of four blocks of Paschim Medinipur district, the share of landless household is highest (36.42 percent) followed by marginal land holding households (32.20 percent), Small land holding households(23.04 percent), Semi-Medium land holding households (5.85 percent) and Medium land holding households (2.49 percent). The share of landless household is highest (40.42 percent) in Garbeta-II block followed by Chandrakona-I (37.24 percent), Sabang (33.25 percent) and lowest in Pingla block (30.75 percent). The share of marginal households is highest (35.62 percent) in Chandrakona-I block followed by Pingla (32.62 percent),Garbeta-II (31.50 percent) and Sabang (30.80 percent) block. The share of small land holding households is highest (24.30 percent) in Sabang followed by Garbeta-II (23.80 percent), Pingla (22.48 percent) and Chandrakona-I (21.75 percent). The share of semi-medium land holding households is highest (24.30 percent) in Pingla (10.24 percent) followed by Sabang (7.15 percent), Chardakona-I (3.50 percent) and Garbeta-II (3.12 percent). The share of medium land holding households is relatively low.

Table 4 Distribution of Sample RNFW by Size of Land Holding of Household in Sample Blocks

Size of Land Holding	Sabang	Pingla	Garbeta-II	Chandrakona-I	Total
Landless	33.25	30.75	40.42	37.24	36.42
Marginal	30.80	32.62	31.50	35.62	32.20
Small	24.30	22.48	23.80	21.75	23.04

Semi Medium	7.15	10.24	3.12	3.50	5.85
Medium	4.50	3.94	1.16	1.89	2.49
Large	0.00	0.00	0.00	0.00	00
Total	100	100	100	100	100

Source: Field Level Survey



Income from rural non-farm employment

The distribution of sample household having rural non-farm activities by the level of annual per capita income from non-farm activities is shown in Table 5. There are 46.12 percent sample households to total sample household having non-farm activities with annual per capita non-farm income less than Rs 50000. Among these households the income of 29.44 percent household lies between Rs 50000 to 75000, and 11.67 percent lies between Rs 75001 to Rs 100000. There are also 8.89 percent sample households having rural non-farm activities who earn between Rs 100001 to Rs 125001. 3.89 percent sample households having rural non-farm activities who earn between Rs 125001 and above.

Table 5 Distribution of Sample Household of Blocks by the Level of per-capita Non-Farm Income

Annual Per-capita non-farm Income	Sabang		Pingla		Garbeta-ll		Chandrakona-l		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
1 - 10000	2	4.44	3	6.67	6	13.33	5	11.11	16	8.89
10001 - 30000	3	6.67	2	4.44	6	13.33	8	17.78	19	10.56
30000 - 50000	8	17.78	9	20.00	15	33.33	16	35.56	48	26.67
50001 - 75000	20	44.44	18	40.00	9	20.00	6	13.33	53	29.44
75001-100000	6	13.33	4	8.89	6	13.33	5	11.11	21	11.67
100001-125000	4	8.89	7	15.56	2	4.44	3	6.67	16	8.89
125001 and Above	2	4.44	2	4.44	1	2.22	2	4.44	7	3.89
Total	45	100	45	100	45	100	45	100	180	100

Source: Field Level Survey

Poverty ratio in relation of rural non-farm employment

Percentage share of poor household and non-poor households to total sample household by farm and non-farm activity in sample districts is shown in Table 6. Overall the share of non-farm-based poor households is much lower (17.25 percent) than that of farm-based poor household (29.12). The share of non-farm based poor households is higher in backward blocks than that of relatively developed blocks, the share is 20.75 percent in Chandrakona-l, 19.50 percent in Garbeta-l, 17.65 percent in Pingla and 14.75 percent in Sabang. The share of farm-based poor household to total sample farm-based households is highest in Chandrakona-l (34.50 percent) followed by Garbeta-ll (31.75 percent), Sabang (26.50 percent) and Pingla (24.65 percent). For remunerative non-farm activity in developed blocks, a larger number of non-farm based household earn income to cross the poverty line. In less developed blocks the non-farm activity is low productive in most of the sample villages.

Table 6 Percentage Share of Poor and Non-poor Households in Sample Blocks

Blocks	Poor household		Non-Poor Household		All Household	
	Farm Based	Non-Farm Based	Farm Based	Non-Farm Based	Farm Based	Non-Farm Based
Sabang	26.50	14.75	73.50	85.25	100	100
Pingla	24.65	17.65	75.35	82.35	100	100
Garbeta-II	31.75	19.50	68.25	80.50	100	100
Chandrakona-I	34.50	20.75	65.50	79.25	100	100
Total	29.12	17.25	70.88	82.75	100	100

Source: Field Level Survey

Theoretical framework: The empirical analysis of household’s participation in rural non-farm sector is made on the basis of the theoretical background. A probit model was developed to examine the relationship between socio-economic characteristics and the level of participation of household in non-farm sector. The demographic variables included in the empirical model are given in Table 7. The dependent variable is whether or not the household participates in non-farm activities in Paschim Medinipur.

The household demographic variables are caste of the workers (X₁), level of worker’s education (X₂), Size of household (X₃), Per capita land (X₄), nearby industrial or Commercial centre (X₅), hereditarily (X₆)

$$HPNF = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + U$$

Hereditarily may influence an individual’s level of participation in non-farm sector. Hereditarily is a dummy variable. It takes on the value of 1 if non-farm employment is hereditarily based and 0 if not.

In village level we analyze the factors of household participation in non-farm sector (HPNF) like caste of the workers (X₁), level of worker’s education (X₂), Size of household (X₃), Per capita land (X₄), nearby industrial or Commercial centre (X₅) and hereditarily (X₆)

The Empirical Results : Probit Estimates

The empirical results relating to the household participation in the non-farm sector (HPNF) (Dummy variable) are presented in Table 7. The household or workers level of education (LED) is positively and significantly associated in non-farm sector. It is highly significant (1 % level) for non-farm employment. In Probit model there exists a negative relationship between per capita land (PCL) and household participation in non-farm sector. This negative relationship is not statistically significant. Participation of the household in the non-farm sector is positively and significantly influenced by caste factor (CAST). The household belonging to the upper caste (general &OBC) participate in non-farm activities. Heredity (HR) also positively and significantly influences household participation in non-farm sector, especially in non-farm self-employment. On the other hand usually non-farm wage employment is not related to heredity. Participation of household in non-farm sector is significantly influenced by nearby industrial or commercial centre (NI).

Table 7 Probit Estimates of Household Participation in Non-Farm Sector (HPNF)

Variable	Coefficient	t-value/z-value	p> z	
Intercept	- 10.648	-5.10***	0.000	<u>Pearson Goodness of fit</u>
SHH	1.194	4.58***	0.000	Chi-square = 184.03
PCL	-0.000	-0.00	0.998	No. of observation =180
LED	0.259	3.37***	0.001	P= 0.000
HR	1.407	3.07***	0.002	R ² = 0.77
NI	1.561	3.32***	0.001	
CAST	0.777	1.87**	0.062	

SHH = Size of household LED = Education level of workers, PCL = Per capita land,

HR = hereditarily (If Yes =1, No = 0), NI = Nearby industrial or Commercial centre (If Yes =1, No= 0)

*** and ** Indicates coefficient significant at 1% and 5% level

5. Conclusion

The share of rural non-farm workers to total estimated workers of sample households is higher than that of agricultural workers in major sample villages. The share of tertiary employment to total estimated rural non-farm workers is higher than that of secondary employment. The percentage share of rural non-farm workers is relatively high in large size households. The general caste and other backward caste workers dominate non-farm activities. Landless and marginal land holding households are participation in rural non-farm activities to a greater extent to earn their livelihood. There are 46.12 percent sample households to total sample household having non-farm activities with annual per capita non-farm income less than Rs

50000. Among these households the income of 29.44 percent household lies between Rs 50000 to 75000, In village level we analyze the factors of household participation in non-farm sector like caste of the workers, level of worker's education, Size of household, Per capita land, nearby industrial or Commercial centre and hereditarily. In Probit model there exists a negative relationship between per capita land and household participation in non-farm sector. This negative relationship is not statistically significant. Participation of the household in the non-farm sector is positively and significantly influenced by caste factor. The household belonging to the upper caste (general & OBC) participate in non-farm activities. Heredity also positively and significantly influences household participation in non-farm sector, especially in non-farm self-employment.

References

1. Acharya, S. and A. Mitra (2000). "The Potential of Rural Industries and Trade to Provide Decent Work Conditions: A Data Reconnaissance in India", SAAT Working Papers, International Labour Organization, New Delhi.
2. Ahluwalia, M. S. (1978). "Rural Poverty and Agricultural Performances in India" Journal of Development Studies, Vol. 14, No. 3, April.
3. Basant, R., B. L. Kumar and R. Parthasarathy (1998). (edited). Non-Agricultural Employment in Rural India: The Case of Gujarat, Rawat Publications, Jaipur, India.
4. Bhalla, G.S. and G. Singh (1997). "Recent Developments in Indian Agriculture-A State level Analysis" Economic and Political Weekly, Vol. 32, No. 13 (March 29).
5. Bhattacharya, B. B., N.R. Bhanumurthy and S. Sakthivel (2004). "Economic Reforms and Structural Changes in Employment: A Comparative Analysis of Gender- Specific Employment Behaviour in Organised and Informal Sector in India", an unpublished report, Institute of Economic Growth, Delhi.
6. Das, Pinaki (2004), 'Rural Poverty and Non-Farm Employment in India' vidyasagar university journal of Economics, Vol.9.No.1
7. Islam Nurul (1997). The Non-farm Sector and Rural Development: Review of Issues and Evidences, FAED paper no. 22, IFPRI, Washington DC.
8. Jha, B. (2005). Rural Non-farm Employment in India, A coordinated and consolidated unpublished report, submitted to Ministry of Agriculture, GOI, New Delhi.
9. Mishra, B. K. (2003). "Rural Non-farm Employment in Uttar Pradesh", Unpublished reports submitted by Agro-Economic Research Centre (AERC), Allahabad to the Ministry of Agriculture, GOI, New Delhi.
10. Sidhu, R. S. and Sukhpal Singh (2004). "Agricultural Wages and Employment in Punjab," Economic and Political Weekly, Vol.39, (September 11): 4132-4135.
11. Srivastava, A. (2004). "Rural Non-farm Employment in Madhya Pradesh", Unpublished reports submitted by Agro-Economic Research Centre (AERC), Jabalpur to the Ministry of Agriculture, GOI, New Delhi.
12. Srivastava, Ravi (1997). "Poverty Reduction in India: Economic Growth, Human Development and Antipoverty Programme", a background paper for the World Bank.
13. Vyas, V. S. and G. Mathai (1978) "Farm and Non-Farm Employment in Rural Areas: A Perspective for Planning" Economic and Political Weekly, Vol.13, No. 6 and 7, (February annual number): 333-347.