

Rural Non-Farm Sector in Odisha: Trends and Determinants

Kamal Singh

Assistant Professor, *Department of Economics, Central University of Himachal Pradesh (CUHP), Dharamshala, H.P. India*

Abstract

Rural economy is undergoing a structural change in India. . The rural sector is losing its sheen and is plagued with multiple problems like declining productivity, high land man ratio, fragmented and small landholdings, etc. On the other side, RNFS has assumed an important role in solving problems pertaining to the rural sector along with generating employment and reducing rural poverty. Within the rural economy of the country Rural Non-Farm Sector (RNFS) over the past few decades has occupied centre stage. This paper tries to examine the trends and the major determinants of RNFS in Odisha. The paper highlights that over a period of time the significance of RNFS is increasing in rural sector of Odisha. Further factors like general education, technical education, social security benefits, location of work, the caste of the worker have a positive effect, while the area of land owned and sex effects negatively the rural worker's participation in RNFS.

Keywords: *Employment, Farm sector, Non-Farm Sector, Rural Economy, Rural Poverty*

Introduction

The rural economy of India is witnessing the process of rural diversification. The agriculture sector/farm sector is registering declining share both in the national output and employment. On the other hand, Rural Non-Farm Sector (RNFS) has emerged a significant sector and its share and contribution is increasing at an increasing rate. Large number of factors have contributed to this diversification in rural areas. Farm sector for long is plagued with a number of problems like the ever-mounting pressure of unemployment, low productivity, rural indebtedness, farmers' suicides, underemployment and continuous addition in the rural labour workforce which indicate that agriculture sector no longer holds the key for additional employment and rural growth. Under these circumstances, the rural non-farm sector has emerged as a solution to the various problems faced by the rural sector (Visaria and Basant, 1994¹; Chadha, 2002²; Lanjouw and Murgai, 2008³). This process of rural diversification is not the same in all the states of India. Some Indian states have witnessed a higher degree of diversification while it is low and Odisha is also one of the states which is also undergoing such change. Odisha is one of the backward states in India in terms of economic development. It is primarily agrarian based economy with large emphasis on agriculture sector both for State GDP and employment. In Economic literature there are

few studies on Odisha which have examined the trend, nature and determinants of RNFS. So the present paper is written with the objective to examine the trends and major determinants of RNFS in the state. The paper is organised into six major sections. Section 1 explores the definition of RNFS ; section 2 gives the methodology and data used in the paper, section 3 highlights the trends in rural non-farm sector, section 4 presented the distribution of workers in various subsector of RNFS; major determinants of RNFS are given in section 5; some conclusions are made in section 6.

RNFE Activities: Definition and Concept

Rural Non-Farm sector exhibits an extremely heterogeneous and complex system which consists of different activities. In economic literature, different sets of definitions have been proposed. RNFA includes all other activities except for agriculture and allied activities (Unni, 1991⁴; Lanjouw&Lanjouw 2001⁵; Ranjan, 2009⁶; Abraham, 2011⁷).

Methodology and Data

To examine the major factors which influence the choice of rural workers to participate in the RNFS, multinomial logit model was applied. When the dependent variable is binary in nature the simple regression will not yield valid results. To overcome this problem logit and probit models can be used which are a special case of the General Linear Model (Gujarati, 2004⁸). The functional form of the logistic regression equation is given below:

$$L_i = \ln \left(\frac{P_i}{1 - P_i} \right) = \alpha_0 + \alpha_1 x_1 + \alpha_2 x_2 + \alpha_3 x_3 + \dots + \beta_k x_k$$

P_i and $1 - P_i$ refers to the probability, α_1, \dots, β_k are the regression coefficients. The interpretation of the logit coefficient is little different from that of the OLS model. A positive coefficient means that the probability of worker is more to be in the non-farm sector. National sample survey organisation (NSSO) is one of the major sources for obtaining data on employment. For this purpose, NSSO conducts a survey called the Employment and Unemployment Survey (EUS) every five years. NSSO has till date conducted eight such surveys and the latest one being 68th round. For our paper, we have used the latest round of survey for the study i.e. 68 round (2011-12)⁹. Further, the analysis is based on unit-level data.

Trends in Rural Non-Farm Sector Over Various Rounds

Following the all India level trends, rural economy of Odisha too has witnessed the process of rural diversification. It is pertinent to see that in the rural sector over a period of time have undergone a major change.

On one hand the share of farm sector is witnessing decline but the share of non-farm sector is increasing as shown in table number 1.

Table 1: Share of rural employment in farm and non-farm sector in Odisha (%)

Sector/Year	1993-94	2004-05	2011-12
Farm	81.0	69.5	62.3
Non-Farm	19.0	30.5	37.7

Source: Author calculation

Table 1 presents the sectoral share of different sectors in rural employment. The contribution of the farm sector in 1993-94 was as high as nearly 80 percentage points but declined by 12 percentage points in 2004-05 and reached 69 percentage points and further in 2011-12 it is 62 percentage points. So, in the time span of nearly 20 years, the contribution of the farm sector has declined by 20 percentage points. Further, during 1993-94 to 2004-05 the share of the non-farm sector has increased from 19 to 31 percentage points and in 2011-12 it increased to 38 percentage points. This table clearly shows that post-2000, the non-farm sector has emerged at the centre stage of the rural landscape and its share has nearly doubled during 1993-94 to 2011-12.

Major Subsectors within RNFS

Table 2 reveals the relative importance of various subsectors within the non-farm sector. It is important to observe the relative share of various subsectors within the non-farm sector have changed during 1993-94 to 2011-12. During this period the share of construction, electricity, gas & water, transport, finance and service sector have shown increasing trend. Out of these sectors, construction has witnessed around three-fold increase followed by service sectors. In 1993-94, the leading sectors were manufacturing, trade and community services which constituted around 60-70 percent share in males, females and rural person employment. During 2004-05, new sectors construction emerged as one of the important sector. However during same period the share of manufacturing sector and community services declined. In 2011-12, the share of electricity, gas and water sector, followed by construction sector has exhibited an increasing trend.

Table 2: Distribution of workers in the different subsector of RNFS in Odisha (%)

Subsectors	1993-94			2004-05			2011-12		
	M	F	P	M	F	P	M	F	P
Mining and Quarrying	5.3	6.5	5.7	2.4	2.6	2.5	1.0	2.3	1.3
Manufacturing	27.1	50.6	33.7	25.4	61.6	36.1	18.5	47.3	25.5
Electricity, Gas & Water	0.7	0.0	0.5	0.7	0.0	0.5	10.6	12.6	11.1
Construction	9.9	6.2	8.8	20.0	13.2	18.0	26.1	12.9	22.9
Wholesale & retail Trade, Restaurants & Hotels	24.7	19.4	23.2	24.1	9.8	19.9	21.3	7.4	18.0

Transport, Storage and communication	5.2	0.0	3.7	9.3	0.5	6.7	8.0	1.9	6.5
Financing, Insurance, Real estate and Business services	0.4	0.0	0.3	3.0	1.8	2.6	3.6	1.4	3.1
Community, Social & Personal Services	26.7	17.3	24.1	15.1	10.5	13.8	10.8	14.4	11.7

Source: Author Calculation

Determinants of RNFS

The literature on nonfarm employment has highlighted a diverse range of factors which influences the participation of rural workers in the rural non-farm sector. Factors like yield of crops, area under cultivation, area of land owned, land cultivated, urbanisation, road length, education, gender, age, caste, number of bank branches, density of population, agricultural productivity, etc have emerged as the important determinants (Kumar,2009¹⁰).

Table 3: Logit Regression results: Determinants of RNFE 2011-12

Variables	Odisha	Marginal Effect (dy/dx)
Age of the household (years)	0.067*** (0.017)	0.012
age square	-0.001*** (0.000)	-0.000
Caste_dummy1(1= ST, 0 = Otherwise)	-0.233*** (0.082)	-0.042
Caste_dummy2(1= SC, 0= Otherwise)	0.145* (0.087)	0.027
Sex_dummy2 (1= female, 0= male)	-0.957*** (0.079)	-0.174
Education_dummy2 (1 =up to primary, 0 = illiterate)	0.188** (0.089)	0.034
Education_dummy3 (1 =middle,0 = illiterate)	0.152 (0.098)	0.028
Education_dummy4 (1 = secondary& above, 0 = illiterate)	0.675*** (0.120)	0.123
Education_dummy5 (1 =graduates & above, 0 = illiterate)	1.194*** (0.177)	0.218

IX International Conference on Multidisciplinary Research (IEI, Chandigarh) Institution of Engineers, India , Chandigarh



21st December 2019

www.conferenceworld.in

ISBN : 978-81-943584-6-6

Technical Education_dummy1(1= Yes, 0 = No)	0.962 (0.624)	0.175
Landowned_dummy2(1= marginal, 0 = otherwise)	-0.470** (0.198)	-0.086
Landowned_dummy3(1= small, 0 = otherwise)	-1.742*** (0.216)	-0.317
Landowned_dummy4(1= medium, 0 = otherwise)	-2.100*** (0.231)	-0.383
Landowned_dummy5(1= large, 0 = otherwise)	-0.273 (0.876)	-0.050
household size	-0.025* (0.015)	-0.005
Maritalstatus_dummy2 (1 = married, 0 = otherwise)	-0.035 (0.125)	-0.006
Marital status_dummy3(1 = widowed, 0 = otherwise)	0.415** (0.208)	0.076
Marital status_dummy4(1 = divorced, 0 = otherwise)	0.882 (0.662)	0.161
Religion_dummy1(1 = Hindu, 0= otherwise)	-12.06391 (574.342)	-2.198
Religion_dummy2 (1= Muslim, 0= otherwise)	-11.198 (574.342)	-2.040
Religion_dummy3 (1 = Christian, 0 = otherwise)	-11.542 (574.342)	-2.103
Socialsecuritybenefit_dummy1(1= Yes, 0 = no)	2.737*** (0.465)	0.499
Location of work_dummy1(1= rural, 0 = otherwise)	1.445*** (0.068)	0.263
Location of workdummy2(1= urban, 0 = otherwise)	2.867*** (0.606)	0.522
Constant	11.420 (574.342)	
Log likelihood	-2905.4067	
Number of observations	5389	
LR chi2(24)	1651.02	
Pseudo R ²	0.221	

Figures in parenthesis are standard errors

***, **and * represents significance at 1%, 5% and 10 % level

Table 3 gives the results which are thrown by logit regression, perusal to the table highlights that in Odisha age of the worker, caste dummy², general education, marital status, social security benefits and location of work has a significant and positive effect on the worker being in RNFE. Whereas age square, caste dummy¹, sex, land owned and the size of the household has a negative and significant effect. The marginal effect shows that as the age of the worker increases by one year, the probability of access to RNFE increases by 1 percent. However, in the matter of caste of the worker mixed results are witnessed. If the worker belongs to ST category, he is 4 percent less likely to get access to RNFE however worker belonging to SC category he is 2 percent more likely to find employment in the non-farm sector. So, in Odisha worker belonging to ST category are at disadvantage side vis-à-vis SC and Other category workers. It is seen that the rural employment diversification among SC category workers indicates distress induced shift towards the non-farm sector. A clear gender divide is visible as females have less chance compared to males in finding jobs in RNFS. However, workers with a larger amount of land owned prefer to work in farm activities. Further increase in general education level, availability of any kind of social benefit and if the location of the workplace is fixed in these cases workers are more likely to work in RNFS than farm sector.

Conclusion

The paper highlights that the rural economy of Odisha is witnessing rural diversification. In rural areas, the share of farm sector is declining and that of the non-farm sector is witnessing a substantial increase. Within the non-farm sector, the share of subsectors like construction, electricity, gas & water, transport, storage & communication along with service sectors has increased. The growth of these sectors is not the same for males a female. For males, it is mainly the construction sector which providing employment whereas for female it is the manufacturing sector. The study highlights that the age of the worker, caste, general education, marital status, social security benefits and location of work are the major determinants of the rural non-farm sector.

References

- [1] Visaria, P., & Basant, R. Non-Agricultural Employment in India: Trends and Prospects. New Delhi, India, Sage Publications, 1994
- [2] Chadha, G.K , Rural Non-Farm Employment in India: What does Recent Experience Teach Us?. *The Indian Journal of Labour Economics*, 45(4), 2002,
- [3] Lanjouw, P. & Murgai, R. , Poverty Decline, Agricultural Wages and Non-Farm Employment in Rural India: 1983-2004. Washington DC: The World Bank Policy Research Working Paper 4858, 2008.
- [4] Gujarati, D, Basic Econometrics (4th Edition). New Delhi, India, The McGraw-Hill Companies, 2004.

IX International Conference on Multidisciplinary Research (IEI, Chandigarh) Institution of Engineers, India , Chandigarh



21st December 2019

www.conferenceworld.in

ISBN : 978-81-943584-6-6

- [5] Unni, J, Regional Variations in Rural Non-Agricultural Employment: An Exploratory Analysis. *Economic and Political Weekly*, 26(3), 1991, 109-122.
- [6] Lanjouw, J.O., & Lanjouw, P, The Rural Non-Farm Sector: Issues and Evidence from Developing Countries. *Agricultural Economics*, 26, 2001, 1–23
- [7] Ranjan, S, Growth of Rural Non-Farm Employment in Uttar Pradesh: Reflections from Recent Data, *Economic and Political Weekly*, 44(4), 2009, 63-70.
- [8] Abraham, V, Agrarian distress and rural non-farm sector employment in India. MPRA Paper No. 35275, 1991, posted 08. December 2011/08:45. <http://mpra.ub.uni-muenchen.de/35275/>.
- [9] National Sample Survey Organisation (NSSO) (2014): Employment and Unemployment Situation in India, 2011-12, NSS 68th Round (July 2011 to June 2012), NSS report number 554.
- [10] Kumar, A, Rural employment diversification in eastern India: Trends and determinants. *Agricultural Economics Research Review*, 22 (1), 2009, 47-60.