



DETERMINANTS OF RURAL NON-FARM EMPLOYMENT IN WEST GODAVARI DISTRICT OF ANDHRA PRADESH

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ABSTRACT



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The present paper is an attempt to find out the factors behind the growth of rural non-farm employment and to analyse the determinants of rural non-farm employment in the sample villages of West Godavari District of Andhra Pradesh. A sample of 845 respondents were administered a structured schedule, and the data was collected, quantified, analyzed and interpreted. It is observed from the literature that agricultural development, infrastructure, urbanization, literacy, commercialization of agriculture, public investment, irrigation etc. are the prominent factors behind the growth of rural non-farm employment. The regression result for the total sample reveals the fact that the explanatory variables like level of education of the non-farm workers and size of household are highly significant with positive impact on on-farm employment while age of the respondents is highly significant with negative impact on rural non-farm employment.

Introduction

Poverty, unemployment and underemployment are the prominent problems faced by the rural economy in most of the less developed countries in the world. It is a well-known fact that agriculture or farm sector has always been considered as the core of economic growth of these economies. It occupies a pivotal place in the national economy of these countries both in terms of its contribution to GDP and employment generation and it represents a major source of foreign exchange, supplies the bulk of basic food and provides subsistence and income to the large rural population. But this sector is now unable to provide additional opportunities

of gainful employment in the wake of increasing population. In most developing countries like India, the rural labour force is growing rapidly, but employment opportunities are not keeping pace with it. At this juncture the development of various non-farm activities offers great potential for creating additional rural job opportunities and hence for stimulating the further growth of rural economies. The significance of the Rural Non-Farm Sector can hardly be denied when seen in relation with the increasing saturation in growth of agricultural employment and the growing rural-urban divide in a globalizing India. The sector helps in creating "insight

jobs” associated with higher wages, which can also create opportunities especially for women and can act as the vehicle for reduction of gender gaps in the rural India.(M. Jatav and S, Sen, 2013).

Definition of Rural Non-Farm Activities:

The Census of India categorizes all rural workers into nine ‘industrial’ categories. Farm workers are those who engages mainly only for 183 days in a year in categories I to III. (I) being cultivators, (II) agricultural labour and (III) is agricultural allied activities i.e. livestock rearing, forestry, fishing, plantation, orchards and allied activities. Non-farming activities consists of: (IV) mining and quarrying; (V) manufacturing, processing, servicing and repairs in household (HH) industry and other than household industry; (VI) construction; (VII) trade and commerce; (VIII) transport, storage and communication and (IX) other services.

For our study, we shall define a RNF worker as: ‘engaged in non-farm activities’, any worker within a household who has, as a primary occupation one or several of the activities covered by the Census of India 1991 occupational categories (IV-IX). In other words, all those who work in a primary occupation in any field of economic activity, other than cultivation or agricultural labour who, in turn, are deemed as ‘non-farm workers’.

Structural changes in Rural Non-Farm Employment in India

The Indian economy, from the point of view of the locus of the working population, is predominantly rural, and during the past few decades we notice considerable dynamism within the rural production and employment structures. One of the significant changes in

the rural production structure is the growing share of the non-farm sector, which increased from 37% in 1980-81 to 67% in 2011-12 (Table 1), and thus shows that in terms of value of production, rural is no longer merely agricultural.

Table 1. Sector-wise Composition of Rural NDP (%) in India

Industry	1980-81	1993-94	2004-05	2011-12
I. Agriculture	64.36	48.91	34.45	32.88
II. Non-agriculture	35.64	51.09	65.55	67.12
Manufacturing	9.16	13.74	14.12	13.28
Construction	4.05	4.19	9.32	11.92
Trade, hotels and restaurants	6.68	10.34	12.74	14.24
Transport, storage and communication	1.32	4.74	7.31	6.76

Source: NSS Rounds of 38th, 50th, 61st and 68th, Papola et al. (2013)

It is evident from the Table 2 that agriculture and allied activities accounts the highest share of rural employment all throughout the periods. The share of employment in agricultural sector has been declining but still it occupies the majority share. Between 1980-81 and 2011-12 the share of agriculture in rural employment declined from 81% to 64 % and the pace of decline in the last quinquennium was much faster. The share of non-farm sector increased from 19 % to 36% during the same period. The asymmetry noticed between the shifts in production structure and the employment structure in the overall Indian economic development persists in rural India as well. Within the rural employment structure, however, there has been considerable shift in favor of non-farm employment.

Table2.Sector-wise Composition of Rural Employment (%) in India

Industry	1980-81	1993-94	2004-05	2011-12
I. Agriculture	81	78.00	73.00	64.00
II. Non-agriculture	19.00	22.00	27.00	36.00
Manufacturing	37.00	32.00	29.00	22.00
Construction	9.00	11.00	18.00	29.00
Trade, hotels and restaurants	19.00	20.00	23.00	20.00
Transport, storage and communication	9.00	7.00	9.00	9.00
Community and social services	26	25	17	15

Note : Figures rounded to nearest integer, Source: NSS Rounds of 38th, 50th, 61st and 68th, Papola et al. (2013).

Among non-farm sectors, manufacturing sector accounts the highest share in the overall employment in 1980-81 followed by Community, social and personal services. However in 2011-12, construction sector occupies the majority share of employment. Trade, hotels and restaurants sector and manufacturing sector contributes the majority share among the non-farm sectors to the GDP of India.

Context of the study:

Agriculture continues to be the single most important livelihood of the masses in India and it constitutes the backbone of rural India which inhabitants around 70% of total Indian population. But in recent times the share of agriculture in national income has been on the decline. During the post independent period, the share of primary sector in the national income varied from the maximum of 57.20% in 1951 to the minimum of 15.11% in 2011. On the other hand the shares of manufacturing sector and tertiary sectors increased from 8.90% to 31.21% and from 28.00% to 53.77% respectively during the same period. In Andhra Pradesh also the share of agricultural sector in GSDP is decreasing while that of secondary and tertiary sectors is increasing. The share of primary

sector has come down from 63.49% to 34.00% during the period 1960-61 and 2014-15. But in the case of manufacturing and service sectors, it was showing an increasing trend from 11.50% to 22.00% and 25.00% to 44.00% respectively.

A significant fact is that the share of agricultural sector in employment generation is also decreasing over the years. During the post independent period, the share of primary sector in employment generation varied between 74.00% to 48.80% during 1972-73 to 2011-12. The share of manufacturing sector in employment increased from 11.2% to 23.45% and that of service sector increased from 14.65% to 27.75% during the same period. The declining share of agriculture in GNP and employment generation has aggravated the unemployment and under employment situation in India. This underscores the need for alternative avenues for employment generation in rural areas. At this juncture, non-farm sector in terms of increasing shares of manufacturing and service sectors both in national income and employment generation plays a prominent role in rural Indian economy.

The present study is an attempt to find out the causes and determinants of non-farm employment growth in the rural areas. It also attempts to find out the impact of non-farm employment on the household income and living standards.

Methodology

Data Base

For the present study, the researcher concentrated only on Rural Non-Farm Employment. The data for the research study were collected from both primary and secondary sources as per the details given below.

Secondary data sources: Census data is used for estimating trends in aggregate and sub-sector RNFE at state and district level. The most important secondary data sources are the Census of Andhra Pradesh published by the Census of India (1991, 2001 and 2011), Series-2. NSSO data is also used to some extent. Other data sources are from the Directorate of Economics Statistics, Government of A.P, Hyderabad, from the Centre for Economic and Social Studies (CESS), Hand Book of Statistics, Chief Planning Officer, West Godavari District, Records and Registers maintained by the DRDA and village panchayats.

Primary data source: After identifying the key sectors of the rural non-farm economy and the relative position of the West Godavari district in terms of share of rural non-farm employment in the rural area, a primary survey has been conducted to find out the household level determinants of participation in rural non-farm employment. The researcher has adopted multiple random sampling techniques.

West Godavari district consists of four revenue divisions namely Eluru, Narsapuram, Kovvur and Jangareddy Gudem. The researcher purposively selected one mandal from each revenue division where there is more number of non-farm employment. Thus four mandals namely Akividu from Narsapuram division, Pedapadu from Eluru division, Koyyalagudem from Jangareddy Gudem division and Attili from Kovvur division were selected for the study. After selecting the mandals, two villages from each mandal were randomly selected for the field survey. Thus eight villages namely Ajjamuru and Chinakapavaram from Akividumandal, Kothuru and Koniki villages from Pedapadumandal, Kommara and Gummampudi from Attilimandal and Vedentapuram and Chopparamannagudem from Koyyalagudemmandal were selected for

the survey. 30 per cent of the rural non-farm workers from each village are selected as sample. Total sample respondents from the 8 villages are 845. The data were collected by personally interviewing the selected respondents from the villages with the help of a structured schedule. The schedule was prepared after consultation and discussion with experts. It contains all the objectives and dimensions of the study. The field study has covered both male and female respondents without any discrimination of age, sex, caste and religion.

Profile of the respondents:

The sample respondents include casual labour (54.67%), permanent labour (8.40%) and self-employed (36.92%). Among the sample respondents, about 32.66% were land owners while 67.34% are landless. The sample covers both genders with 75.38% men and 24.62% women. They belong to different age groups: 20-30(32.67%), 30-40(44.85%), 40-50(14.67%), 50-60(5.91%) and above 60(1.90%). 91% of the respondents are educated but their level of education varies: Illiterates(9.00%), Primary(20.47%), Upper Primary(27.46%), Secondary(24.61%), Inter(12.31%), Degree and above(5.44%) and technical education(0.71%).

Objectives of the study

1. to find out the factors behind the growth of non-farm employment; and
2. to analyse the determinants of non-farm employment in the study area.

Hypothesis Statement

H₀: Education does not play a positive role to determine the non-farm employment.

H₁: Education plays a positive role to determine the non-farm employment.

Research Tools:The present study used Multiple regression analysis to find out the determinants of non-farm employment in the study area.

Determinants of Rural Non-Farm Employment-Theoretical frame work

A number of essential and congenial socio-economic conditions are must for the advancement of rural non-farm sector (RNFS). In other words, the development of social and physical infrastructure is a pre-requisite for the development of this sector. The available literature advocates a number of factors and processes which have a bearing on the development of this sector.

Mellor's proposed agriculture first (AF) strategy is expected to contribute to RNFE through a strategic shift in favour of agricultural development based on small and medium sized farmers. Thus agricultural biased pattern of development would create strong mass demand linkages to RNFE. The growth of production in agriculture leads to increasing demand for the supply of seeds, fertilizers, pesticides and repair services which are produced or supplied by non-farm activities.

The degree of commercialization of the rural economy would seem to be a major factor affecting the scale, and location of and technology used in rural non-farm activity. Sankarnarayan (1980) argues that it is the degree of commercializing of agriculture that determines the level of non-farm activity in rural areas.

Most of the studies on rural non-farm employment find a significant relationship between the development of infrastructure and the proportion of non-farm workers in the rural areas at cross-section level. Shukla (1992) has pointed out that infrastructural facilities like roads, electricity, posts and telegraphs have significant positive influence

on the level and density of rural non-farm employment.

Urbanization is one of the major pull factors which influence the rural non-farm sector. Unni (1990) argues that the proximity to or existence of, a large urban population in the regions may facilitate the growth of non-farm employment in rural areas.

Level of literacy can be expected to positively associated with RNFE. Chada (1993) argues that levels of education can also play a significant role in raising the capability of entrepreneurs to see local opportunities, to promote workers' skills and to forge better rural-urban or agriculture non-agriculture relations. He finds positive links of education to overall rural non-farm employment.

Ho (1985) states that a strong inverse relationship exists between farm size per household and non-farm activity. As farm size declines, farm households become more involved in non-farm activities in terms of both income earned and employment time associated to, non-farm activities.

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Public investment in rural areas is also considered to be one of the main sources of rural non-farm employment. Public expenditure on rural infrastructure like agricultural marketing, roads and bridges and irrigation facilities generally stimulate rural non-farm employment (Shukla, 1992).

Irrigation is also considered to be an important factor which leads to an increase in the labour requirement in the non-farm sector.

The increase in irrigation leads to production in agriculture and increases demand for the supply of seeds, fertilizers, pesticides and sprays and repair services which are produced or supplied by non-farm activities.

Determinants of RNFE in the study area-Regression analysis

To analyse the determinants of RNFE among the sample respondents and to attribute a weight to these determinants, we have used multiple regression analysis. In this model the dependent variable i.e. RNFE is expressed in terms of monthly income of the respondents involved in non-farm activities. Due attention has been paid in collecting the data regarding the monthly incomes of the non-farm workers in the study area.

A list of explanatory variables used in the regression model along with some description notes is given in the table 3.

Table 3. Description of Explanatory variables

Variable	Variable notation	Description of the variable
Y	Dependent variable (Non-Farm Employment)	Monthly income of the respondents involved in non-farm employment
X ₁	Gender	Male-1, Female-2
X ₂	Age	Non-farm workers age in years
X ₃	Level of Education	Level of educational attainment in terms of years of schooling
X ₄	Household Size	Number of family members in the household
X ₅	Size of land holding	Number of acres operated by the household
X ₆	Migration	Migration of family members to urban centres. If the household has a migrated family member it takes the value-1, otherwise it is-0.

Gender(X₁): Gender is an important factor determining participation pattern in Rural Non-Farm Employment. Women are less likely than men to become involved in RNFE. Generally women are expected to have lower participation in non-farm sector than men (Coppart,2001).

Age (X₂): We expect that the age of the worker is inversely related to non-farm income. Aged people generally engage in low earning non-farm activities as they are unskilled and untrained labour. But younger generations with better levels of education have more skills and technological knowledge generally they are expected to have engaged in high earning non-farm activities when compared to older people. Therefore we expect a negative relationship between age of the worker and non-farm income. Hence, the sign of the coefficient of age is expected to be negative.

Level of Education (X₃): Education is a potentially important determinant of RNFE. Education improves an individual's prospect for non-farm jobs as well as increases his ability to allocate time to work efficiently among income producing activities. Less educated households rely on low paying and low productive non-farm pursuits (Lanjouw and Shariff, 2004). So we expect a positive relationship between level of schooling and non-farm income.

Household Size (X₄): The expected relationship between the household size and rural non-farm income and employment is positive. When household size is large, it is more likely to participate in RNF activities (Simmons and Supri, 1995).

Size of Land holding(X₅): The size of agricultural land holding operated by the household measured in acres can tell us about the economic status of the household member. As agricultural land becomes scarce,

households must find out alternative earnings in non-farm sector. For this reason, landless households mostly depend on non-farm earnings (Anderson and Leiserson, op.cit). However, the effect of landholding on participation and earning from RNF activity is complex. A household with a large land holding may be more committed to agriculture, thus, exhibiting a negative relationship of landholding with non-farm income. We expect the regression to provide information as to whether large holdings tend to raise the propensity to work in RNFS and thereby non-farm income.

Migration (X₆): migration of the family members to urban centres does have an impact on RNFE. Agricultural poverty in rural areas stimulates household members to migrate to urban centres for better employment opportunities. They generally engage in high earning activities in urban areas and send some part of their income to the family members in the rural areas. These incomes enable the rural households to start up some sort of rural non-farm activity and thereby increasing non-farm earnings.

The multiple regression model to be estimated for identifying the determinants of RNFE can be specified as follows.

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + \mu$$

Where **a** is the intercept and **b₁, b₂, b₃, b₄, b₅, b₆** are the regression coefficients to be estimated and **μ** is the error term.

Primary data is collected from eight villages, viz., Ajjamuru, Chinakapavaram, Kotturu, Koniki, Gunnampudi, Kommara, Vedentapuram and Chopparamannagudem on 845 randomly selected non-farm workers using a structured questionnaire.

The Multiple Linear Regression Model as specified above is estimated for the entire sample and the results are given in Table 1.

Table.4. Regression Results for total sample

Variable	Coefficients	Standard Error	t-ratio	p-value
Intercept	9640.71	584.34	16.49	0.000***
X ₁	196.95	140.56	1.40	0.161
X ₂	-129.64	8.54	-15.17	0.000***
X ₃	259.40	23.84	10.88	0.000***
X ₄	837.62	69.53	12.04	0.000***
X ₅	-78.93	32.64	-2.42	0.015**
X ₆	176.96	129.70	1.36	0.172
No of observations				845
R-Squared				0.737
Adjusted R-squared				0.735
F value				391.40
Significance F(p-value(F))				0.000***

** indicates significance at 5% level,

*** indicates significance at 1% level.

Regression results for the total sample are given in table 1. The table shows that the value of R-square is around 0.74 which indicates that about 74% of the variations in the income of the non-farm workers is explained by the independent variables considered in the study.

The overall significance of the regression model is validated by the value of F statistic. The table shows the value of F as 391.404 at 1% level of significance. Hence, we deduce that the regression model is a good fit. The co-efficient of gender is positively related with non-farm income, but it is not statistically significant. It indicates that if a household's participation in RNFE increases by a male member, it may increase monthly household income by around Rs.197. Age of the respondent is negatively related with non-farm income i.e. if the age of the respondent increases by 1 year, it may decrease monthly household income by around Rs.129. Co-efficient of respondent's age is statistically significant at 1% level. According to Rehman, 2011 individuals with higher levels of schooling had a higher probability of participating in economic activities. Probable reason for positive relation might be that with higher education people become more conscious about getting higher income, being

more skilled and use their expertise in their particular occupation. In the study area, the researcher found positive relationship between years of schooling and monthly household income of the non-farm workers. The coefficient of education is statistically significant at 1% level and it reveals that if education of the non-farm worker increased by 1 year, it may increase monthly household income by around Rs.259. Household size is positively related with RNF income i.e. if household size increased by 1 member, it may increase monthly household income by around Rs.837. Co-efficient of household size is statistically significant at 1% level. The co-efficient of land holding is negatively related with non-farm income and yet it is statistically significant at 5% level. Ibekwe et al., 2010 also supported this result. Probably this is because when a person has more land may feel reluctant to involve in other economic activities and generally it is well known that land holding may less contribute in their household income generation. The co-efficient of migration is positively related with non-farm income of the households, but it is not statistically significant. The positive coefficient of migration indicates that households with migrated family members earn around Rs.177 more per month than the households without migrated family members. From this discussion, it can be concluded that some variables are significant, but others are not. For non-farm respondents age of the respondents, years of schooling, household size and size of land ownership has significant impact on non-farm income of the respondents.

It is evident from the regression results for the total sample, that level of education is the most significant factor having positive impact on non-farm income of the respondents. The co-efficient of education is statistically significant at 1% level and it reveals that if education of the non-farm

worker increased by 1 year, it may increase monthly household income by around Rs.259. **Thus the study got evidence in favor of alternative hypothesis (H₁: Education plays a positive role to determine the non-farm employment) and it is accepted.**

Findings and suggestions

Infrastructure, urbanization, literacy, commercialization of agriculture, public investment, irrigation etc. are the prominent factors contributing for the growth of rural non-farm employment. Under these circumstances it is suggested that the government intervention is urgently required to sustain the growth of rural non-farm employment which in turn can reduce the severity of poverty and unemployment in rural areas. Government should initiate skill oriented training programmes to enhance employability in rural non-farm sector. It should encourage the entrepreneurs to start up MSMEs in rural areas which are capable of providing large scale employment opportunities to the rural youth. The government should take adequate policy measures for the development of the farm sector in the rural areas because development of the farm activities will accelerate the development of the non-farm based activities.

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