Wage Determination and Differential among the Agricultural Labourers in India: An Approach Based Village Study

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ABSTRACT

This study examined the wage distribution and differentials among the agricultural labourers in different crops both in Andhra Pradesh and Tamil Nadu. Primary data was collected using structured questionnaire administered to a stratified proportionate random sample of 400 farmers consist of 50 farmers from each crop in both States. The data collected was analysed by operation wise wage distribution and wage differentials among the gender and using multiple regression analysis for estimation/predicting the mean values of dependent variable on the basis of known explanatory variables. The value of coefficients of all the crops reveals that the demand factors play a much more important role than its supply factors. man-land ratio, cropping intensity and proportion of non-farm workers to total work force found to be expected signs and statistically significant in Andhra Pradesh, whereas, employment opportunities from outside agriculture and cropping intensity engender wages in Tamil Nadu. The study was also found that the wage differences between male and female labourers is at higher level in wet crops than dry crops and this is not only from operation to operation but also from season to season. The study recommended that confirmatory action plan to be needed to trounce gender discrimination through promoting self-employment and expanding employment opportunities outside agriculture.

Introduction

Improvement of the people dependent on agriculture is well known in India. Despite launching various developmental plans, rural society hardly witnessed any qualitative change in its socio-economic structure. Hence, the age old miseries of the poor agricultural labour are still worsen. Persistence of wage differential in agricultural sector particularly, male-female wage differential is a great cause of concern and has become a serious issue for ensuring equity between the two sexes. Externally the models of Becker (1957), Arrow (1972) and Alexis (1973), it is argued that females are being discriminated in the labour market. Seasonal wage differentials is also prevailing in the study area where a number of studies have brought out the theoretical inadequacy in the conventional models of demand and supply with their preoccupation with wage determination. The fluctuations in wages across time and space , existence of long term unemployment and underemployment , downward rigidity of money wages, labour market segmentation characteristics in terms of caste and gender, presence of institutional factors, all these have posed formidable challenges to supply and demand oriented theoretical models. Some others have recognized the macro processes of change as manifested in the dynamics of rural capitalism and have sought to trace micro processes in terms of labour household behaviour in given socio-structural contexts (Kannan, 1990). The objective of the paper is to argue that in terms of socio-economic change, it is necessary to understand the interplay of macro and micro processes which could explain the variations in the functioning of rural labour market. Keeping this view, the paper is designed in five sections. Section I highlights wage distribution in two States namely Andhra Pradesh and Tamil Nadu gender wise and crop wise.

Section II examines the wage rate changes operation wise and season wise. Section III is devoted to the exploration as how wage differentiation emerged in these two States. Section IV investigates the wage determination in two States through the formation of a model for analysis of data. And the final section contents concluding remarks.

In recent years, social scientists and policy makers have shown growing concern about the problem of low wages and wage differentials among the gender of landless agricultural labourers. The wage differentials mean the differences in the wages of workers belonging to different categories, different sectors and even between genders. The difference between the highest and the lower paid job is also known as wage-differentials. Personal wage differential is nothing but the gender wage differential. The difference in relative wage level of workers who are in the same establishment and in the same occupation, but differ in age, sex, race, colour and other personal characteristics can be called as personal wage differentials. It is mostly based on sex. Higher wages are considered to be generally paid to men as they are physically stronger and supposed to be more efficient than women, and women are paid lower wages because of their supposedly inferior physical strength. The other occupations wage differential means differences in the relative wage levels of the range of different occupational groups in the same establishment. Basically, occupational wage differentials are the results of specific advantages and disadvantages associated with each occupation.

The studies concerning with the formation of wages in agriculture may be broadly classified as those which tried to explain the wage differences across regions through the demand supply forces, and those which give only a marginal role to these

forces on the one hand and those which altogether questions the efficacy of the demand supply framework as an analytical tool on the other. Most of the empirical studies on this problem have analyzed the role of demand-supply in the wage formation. They considered the demand inducing variables like land under irrigation, cropping intensity, cropping pattern, agricultural output and productivity and the supply variables like agricultural labour force, surplus labour, alternative employment opportunities etc. Rosenzweig (1984) analyzed only supply side and find highly responsive wages to labour supplied. Deepaklal (1976), Pandey (1976) Pranab Bardhan (1979), Kalpana Bardhan (1970, 1973&1977) and Papola and Mishra (1980) have analyzed both demand and supply variables and James, Gough (1971) and Herdt & Baker have analyzed only demand side variables. Rosenzweig (1984) finds that the empirical results based on both district level and household data are generally consistent with the demand–supply framework. The results indicate a high degree of responsiveness of rural wages to aggregate changes in the quantities of labour supplied to agriculture and wage supply relationships consistent with neo-classical approach.

Ryan and Wallace (1987) use a Mincer wage function to determine the relative importance of demand and human capital variables on the formation of wages in six SAT villages from 1975-78 with the help of panel data and the study indicates that educational experience and nutritional well being seems to be important considerations that explain male wage variations while individual human capital attributes are not as important as demand variable in the case of female wage variations. Whereas, Papola and Mishra(1980) say that the wages are primarily determined by the supply variables like high labour surplus and availability of non-agricultural employment opportunities. That is why, they explain, significant yield and productivity improvements are not accompanied by similar improvement in wage rates. It is observed that interstate wage variation have been narrowing during the period of 1956-57 and 1964-65 (Krishnaji, 1971) but during 1971-72 the disparities have widened (Bardhan, 1973) possibly due to the introduction of HYV and other green revolutionary changes in some states where growth in product has resulted in wage increases. But during 1970-71 and 1984-85 disparities have come down (Acharya, 1989; Jose 1988). Almost all the scholars have found wage differentials between male and female labourers in agriculture.

Atchi Reddy (1983) in Andhra Pradesh found that the existence of wage variation between the male and female not only from operation to operation but also from period to period for the same operation. Similarly, the study of Kalpana Bardhan (1983) has found that the wage rate for farm labour tends to be lower if the labourer is either female or from a scheduled caste/tribe and lowest if both. Majority of the studies seem to have a source in that all these analyzed the data sets from secondary sources like NSSO, census data etc. Even the studies using primary data like Ryan and Wallace (1986) could not cover many aspects like inter crop and role of non-farm sector on wage rates and various farm operations ect. In the view of the above background, the present study made an attempt to analyse the wage distribution and its differentials among the gender and across the crops from the States of Andhra Pradesh and Tamil Nadu.

Methodology

Keeping in view the magnitude of the problem and its importance in the developmental strategies of a country like India, it will be significance to study the problem at village level

following an intensive approach, in order to get a clear perspective of wage distribution and its determination in agricultural wages. Keeping these points in mind, Southern States of Andhra Pradesh (AP) and Tamil Nadu (TN) are selected for the study purpose. Multi-stage stratified proportionate random sampling technique has been applied in the selection of representative Districts, Mandals/Talukas, Villages and Households and a pre-tested comprehensive schedule was designed specially for the purpose and canvassed in the study area. The total sample size has been 400 (50 households from each village) and four crops namely, Paddy, Sugarcane, Groundnut and Cashew Nut on the basis of subsistence[1] and commercial[2] crop setting both in wet and dry crop were selected for this study

Multiple regression model

The regression analysis is largely concerned with estimating/predicting the mean values of the dependent variable on the basis of the known or fixed values of the explanatory variables. The model may be extended by assuming that the dependent variable Y is a linear function of a series of independent variables and an error term.

The multiple regression model may be specified as

$$Y_t = \sum_{i=0}^{k} \beta_i \, X_{it} + \mu_t$$

where Y_t is the dependent variable, the X's are the independent variables, and μ_t is the error term. β_i is the constant term, or intercept of the equation

Wage Distribution

Labour is the basic requirement of all economic activities. The growth of an economy and level of advancement of its human resources are interlinked. Higher the degree of human skills and ability to top resources with human endeavour, higher will be the development of the country. The breakdown of historical stagnancy of agricultural wages since mid seventies in India is variously attributed to the growing importance of nonfarm opportunities. Agricultural growth in the earlier stagnant areas on account of spread of technology and the mobility of labour from backward areas to high growth areas and urban areas (Hanumantha Rao, C.H., 1989). The improvement in the living conditions and the increasing bargaining power of labour households is the plausible consequences. Agricultural labour market can be divided broadly into family labour and hired labour[3]. Large proportion of the agricultural working population has the status of the so-called self-employed workers. The family labour is a homogenous character. Consideration of tradition, caste, custom, social and economic status may not inhibit the family members

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[1] The Region where the dominant crop cultivated, where bulk of the produce is used by the producing household for their own family subsistence and where only a small fraction of the agricultural produce is marketed is referred to as the subsistence crop setting.

[2] The region where the dominant crop, which are extensively marketed, of course, a small part of their produce is utilized by the producing household for family consumption but an overwhelmingly large proportion of the produce is marketed is referred, commercial crop setting.

[3] The workers who work on their own family farms called as family labour and the labours, who work in other farms is called hired labour. See Bardhan and Rudra 1980.

from participating in work on their own farm. The hired labour is a term that covers a wide variety of labour contracts with different terms and conditions. This hired labour can be further divided into irregular and regular labourers. The casual labour from the irregular labour market which is widespread in labour contract and it can be defined as a labour for daily rate, where payment is made every day for fixed number of hours. In the contract labour, usually the farmer gives work, on a piece rate basis. On the contrary, the regular labourer is called as attached labour or farm-servant, and can be defined as "one who has a usual casual contract duration of one year, although there are occasional cases of more than one year or slightly less than one year contract" (Bardhan, 1980).

Agricultural wage rates in India systematically below the marginal product of labour, and the gap between the wage rate and productivity tends to widen wherever labour productivity goes up. Moreover, the cross section the marginal product of labour is unrelated to the prevailing wage rate, although inter crop and inter- regional differentials in the average product of labour account for considerable part of the contrasts in wage rates. The operational as well as farm size wage payments for different crops in Andhra Pradesh is shown in table.1 It indicates that the agricultural labourers receives better wages in wet crops than dry crop both in commercial and subsistence in nature. As regards rural wages, the survey shows that the market wage for male labourers in paddy crop prevailing at an average of Rs. 95.67 and it was Rs. 67.21 for females. On the other hand, the other wet crop of sugarcane, the wage rate is significantly higher than those for their labour counterparts in paddy crop. The prevailing wage for male and female agricultural labourers, it was Rs. 102.03 and Rs.73.64 respectively for male and female labourers during the survey period of 2008-09.

In dry crops, on the other hand, the wage rate for male and female the wage labourers was Rs.97.08 and Rs. 69.70 for cashew nut crop and it was Rs. 72.74 and Rs. 54.41 in groundnut crop for both male and female labourers respectively. The reason attributed to the low wage rate for dry crop is soaring labour supply and uncertainty of cropping pattern in selected villages. The wage gaps between subsistence and commercial crops both in wet and dry regions, the data shows that the male labourers in paddy village are receiving about 30 per cent higher than ground nut village and it is similar to the sugarcane village which is 5.09 per cent higher than their counterparts in cashew nut crop village. Similarly, for female labourers in paddy crop, the labourers receives about 14 per cent higher wage than the labourers in ground nut village and the wage gap is slightly lower at 5.65 per cent between sugarcane and cashew nut crop among the female labours.

The same way, in the state of Tamil Nadu, the wage distribution for agricultural labourers among the different crops is shown in table .2. The survey data indicates that the market wages for both male and female agricultural labourers in paddy crop and male labours in sugarcane and female labours in cashew nut crop received lower wage rate than their counterpart labourers in Andhra Pradesh. There was an existence of piece rate and daily wage rate in all the crop villages and the medium of wage payment was cash alone in all farm activities except paddy threshing in Tamil Nadu where the kind payment is in practice. The prevailing average wage rate for male labourers in paddy and groundnut villages was Rs.94.28 and Rs.82.66 while for female agricultural labourers; it was 66.43 and 61.76 respectively. In sugarcane and cashew nut villages, on the other hand the average wage rate for male and female agricultural labourers was Rs.100.40, 102.77 and Rs.76.48 and 59.37

respectively. The crop operation like sowing/transplanting and harvesting are the main activities in all the crops in general and sugarcane (cane cutting for factory) and ground nut in particular, were done on a piece rate basis and the medium of payment was only cash. The casual as well as piece rate workers were often accompanied by meals in afternoon in all the crop villages but the poor backward communities are not taking food from the land owners..

Operation/Season Wise Wage Rate Changes

It was observed in the surveyed results that wage rate is not fixed for all farm operation in all selected crop villages. The prevailing wage rates are flexible in both upward and downward direction and it tends to move up and down depending upon the extent of agricultural activities and availability of non-farm employment opportunities within the concern villages. The tables 1 and 2 indicates that the data on wage rates were mostly the same across agricultural operation in particular crop except in ploughing in pre-cultivation activity, weeding and harvesting threshing operations in intercultural farm activities in all the selected villages both in Andhra Pradesh and Tamil Nadu. In all the crop villages whether wet or dry crops, the wages rise during transplanting/sowing of paddy/sugarcane or groundnut and in some cases of even transplanting cashew nut plants during monsoon time. From the survey data it was found that the wage differentials among the farm activities were significantly high in dry crops villages and it was about 49.8 per cent for male in cashew nut crop and about 68.47 per cent in ground nut crop for female labourers. On the other hand, the crop villages in Tamil Nadu, prevailing wage gap across the farm activities is to some extent lower than their counterpart agricultural labourers in Andhra Pradesh. It was about 21 per cent in paddy crop for both male and female labourers and it was 17.27 and 14.63 per cent for male labourers in dry crop villages and 37.5 and 25.3 per cents for female labourers in sugarcane, groundnut villages respectively in Tamil Nadu.

Most of the agricultural operations require time bound labour to prevent losses, which, in turn increases the bargaining power of agricultural labourers. During the peak season in wet regions, the wage rates rises from Rs. 50 to Rs.75 for men and from Rs. 30 to Rs. 50 for women, if they are working on the daily wage rate or piece rate on particular task like transplantation of paddy and sugarcane, harvesting, cane cutting etc.

In dry crop region on the other hand, during the peak seasons like sowing and harvesting (ground nut pulling) or pensing the garden, the wage rate rises from the existing Rs. 30 to Rs. 50 for men and from Rs. 25 to Rs. 40 for women and which occurs only during peak season and it will fall back to the prevailing market wage rate after the season is over.

The study also found that during the lean season like weeding activity in paddy, groundnut and sugarcane pruning and removing the dry leafs in cashew nut cropping, the male and female agricultural labourers agree to work for Rs. 10 to 15 less than the prevailing wage rate. They felt that this was better than sitting at home as a idle labour and enjoying forced leisure and that if they do not agree to work, someone else would do it. However, the low wage rate is associated with few farm activities and not for other shorter working hours.

Thus while there is a standard wage rate for agricultural labourers in all the selected villages, it varies across the agricultural seasons and other conditions like availability of non-farm employment opportunities like road and other works under Mahatma Gandhi National Rural Employment Guarantee Act (MGNERGA).

Wage differentiation

When we talk about agricultural labour, woman labour has a special significance. Women are a vital agent in the economy, even as studies points towards *'statistical purdah'* (World Bank, 1991) or *'economic invisibility'* (Radhadevi, 1981) manifest in selective under- documentation of their endeavours, in a society with strong traits of patriarchal norms. In Indian population 48.46 per cent are women and the number is 586.46 million (census 2011) and about 70 per cent of the women live in rural areas, 65.46 per cent of the female population is illiterate. Women today play a pivotal role in agriculture as female agricultural labour, as farmers, co-farmers, family labour etc. Among rural woman workers, about 80 per cent are employed in agriculture as labourers and cultivators but yet they remained as "invisible workers". Women can be progressive in the true sense when there is no hindrance in their path to maximum contribution to development. But hindrance is many in the form of sex discrimination. The scales of equality are out of balance. Women are weighed down with responsibility, while men have high power. In order to examine gender dimensions within and wage earnings in agricultural labour activities in India, the context of gendered participation of female labour supplies in it's entirely needs to the accounted for. The dimensions affecting pre-entry conditions that influence capabilities, human capital traits and labour supply characteristics; aspects of in-market discriminations and gender biases against women in terms of hiring, promotion, segregation, gender relations and remunerations. The factors influencing women's work time distribution among paid and unpaid activities, own and hired labour and other extended activities of household maintenance, care giving, socially derived, traditional roles and sexual division of labour that influences the different agents of the labour markets have to be explored to understand the nature of gender based wage differentials in rural sector.

From the tables 1&2, the data was observed that the female labourers got lower daily wages as compared to their male counterparts. Wage differentials were also observed among the operations between male and female agricultural labourers. During the busy/peak season, like showing, transplantation and harvesting operations when the cost of bargaining is high, market wage rates tend to escalate. It was also observed that the wage differences between male and female is at higher level in wet subsistence and dry commercial crop than dry subsistence and wet commercial in both the selected regions.

The essential differences in wage distribution in these categories of labourers for the reason that the female labourers usually do not supply the same labour commodity and segmentation of tasks performed by male labourers was consider inferior because of their physical strength is lower than male counterparts. The study further observed that the wage difference between male and female varied not only from operation to operation but also from season to season. As already discussed above, during the lean/slack season, the labourers have agreed to work at Rs. 10 to Rs.15 lower than the market wage rate, depending upon their bargaining strength[4], as there was no fixed specified wage rate during the lean season.

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[4] Most of the labourers in selected crop villages are belongs to scheduled caste community and their poor economic and social conditions with strong pressure to earn avoiding starvation makes them to accept a rate lower than prevailing market wage rate during the lean season.

Wage determinants

Despite the vast and growing body of literature on the operation of labour markets in the rural societies of less developed countries (LDCs), our understanding of the key processes of wage determination in these orbits of labour exchange remains fragmentary. As discussed earlier, a large number of empirical evidence for rural labour markets in India showed wages to be responsive to the varying conditions of demand for and supply of labour. Presumably on the strength of such evidence, research on rural labour markets witnessed, in contrast to the development literature of the 1970s and 80s, a renewed interest in supply demand models, which restored to wages their Walrasian role of ensuring market clearance. For India, this is indicated by a number of studies including K. Bardhan (1973,), Pandey (1973), Rosenzweig (1984), Vyas (1979), Papola and Misra (1980), Ryan (1982), Bardhan (1984a, b), Ryan and Wallace (1987). Mishra (1970) tried to explain inter–district variation in agricultural wage rates in Gujarat for 1961 with the help of demand and supply variables. The study was found that the coefficient was significant but unexpected negative relationships between demand for labour and the wage rate. On the other hand, the coefficient for the supply variable showed the expected negative sign bit it was not significant. Therefore, the study concluded that the wage rate determination was independent of the market conditions. Several other studies have been confined to mainly movement of agricultural wages without attempting to explain the same in terms of demand or supply variables. The present study, as has already been mentioned that, there are different wage rates in the selected crop villages and to find the factors that determine the wages in selected crop villages we have used the technique of multiple regression analysis on crop wise and gender wise in the study area.

Model

$$Y = \alpha + \beta_1 paltw + \beta_2 pnaltw + \beta_3 mlr + \beta_4 coi + \beta_5 pli + d_0 caste + d_1 naeo + e$$

Where

Y	= wage rate of agricultural labour
PALTW	= Proportion of agricultural labour to total workers
PNALTW	= proportion of non agricultural labours to total workers
MLR	= man land ration
COI	= intensity of cropping
PLI	= proportion of land under irrigation to total land holdings
CASTE	= Caste dummy
1	= if labour belongs to SC/ST community
0	= otherwise
NEAO	= Availability of employment opportunities other than agriculture-dummy
1	= yes
0	= no

Independent Variables and its Explanations

Proportion of Agricultural labourers to total workforce in the household (PALTW): this is a supply variable. It is hypothesized that an increase in the proportion of agricultural labourers would tend to depress agricultural wage rate. Thus expected relation with dependant variable is negative sign.

Proportion of Non Agricultural Workers to Total Workforce in the household (PNALTW): this is also a supply variable and it is hypothesized that an increase in the proportion of non-agricultural labourers would tend to increase wage rate. Thus, expected sign is positive with dependant variable.

Table. 1. Operations and Gender wise Wage Distribution in Andhra Pradesh (Rs.)

Labour Operations	Paddy		Sugarcane		Ground Nut		Cashew Nut	
	Male	Female	Male	Female	Male	Female	Male	Female
Pre cultivation	101.68	69.19	106.19	62.70	75.30	55.20	101.30	69.70
Preparation Of Soil	98.51	66.50	99.21	62.90	77.50	53.60	106.70	68.90
Nursery preparation	95.21	--	93.41	70.51	70.80	54.10	94.70	67.50
Transplanting & Breadcasting	93.91	72.49	106.71	72.60	71.60	57.51	101.70	70.50
Fertilizers	97.10	62.23	93.70	--	70.50	50.90	96.50	60.90
Disease Control	87.51	57.50	99.20	--	--	--	99.80	80.60
Weeding Activity	--	66.20	103.29	60.90	--	50.40	71.20	--
Intercultural Activity	95.90	72.19	111.10	102.60	71.40	58.20	99.80	68.80
Post harvest. Activity	95.52	72.40	105.51	83.30	72.10	55.40	102.40	70.70
Average	95.67	67.21	102.03	73.64	72.74	54.41	97.08	69.70

Source: Field Survey 2008-09

Table 2. Operations and Gender wise Wage Distribution in Tamil Nadu (Rs.)

	Paddy		Sugarcane		Ground Nut		Cashew Nut	
Labour Operations	Male	Female	Male	Female	Male	Female	Male	Female
Pre cultivation	99.20	65.50	102.20	74.30	89.60	66.50	101.40	67.20
Preparation of Soil	92.90	64.70	98.80	--	85.40	64.70	103.60	69.30
Nursery preparation	92.70	--	99.60	72.80	84.60	64.60	95.70	64.20
Transplanting &Breadcasting	96.50	68.90	102.50	80.50	81.50	66.90	105.70	65.70
Fertilizers	95.60	--	95.30	--	80.80	57.70	99.60	66.60
Disease Control	95.30	--	99.40	--	--	--	109.60	70.70
Weeding Activity	--	59.60	98.60	66.40	--	53.40	104.50	--
Intercultural Activity	82.30	72.70	105.40	91.30	76.40	63.80	99.60	65.90
Post harvest. Activity	99.70	67.20	101.80	73.60	80.30	56.50	105.20	64.70
Average	94.28	66.43	100.40	76.48	82.66	61.76	102.77	59.37

Source: Field Survey 2008-09

Table 3. Regression Results on Wage Determinants in Agricultural Labourers in Andhra Pradesh

	Paddy		Sugarcane		Groundnut		Cashew Nut	
Variables	Male	Female	Male	Female	Male	Female	Male	Female
Constant	98.68	67.48	117.86	98.51	72.51	54.90	106.30	68.26
PALTW	0.064	0.006	-.0.026	0.027	0.003	-0.003	0.043	-0.009
	(1.58)	(0.77)	(0.90)	(1.21)	(0.71)	(0.67)	(2.05)**	(0.81)
PNALTW	--	--	-0.048	0.021	--	--	--	--
			(1.43)	(0.84)				
MLR	0.498	-0.045	0.145	0.232	0.001	0.001	-0.001	-0.001
	(2.16)**	(0.90)	(1.12)	(2.34)**	(0.91)	(1.04)	(0.31)	(0.33)
CI	-0.0016	0.008	--	--	0.003	0.004	-0.002	-0.004
	(0.82)	(1.89)***			(1.69)	(2.16)**	(0.56)	(2.07)**
PLI	-0.0055	-0.005	0.305	0.008	-0.0005	0.002	-0.015	0.015
	(0.17)	(0.76)	(2.47)**	(0.85)	(0.17)	(0.50)	(1.36)	(2.35)**
CASTE	--	-0.039	-0.117	-0.386	-0.299	0.079	0.308	-0.225
		(2.20)**	(0.19)	(0.81	(2.19)**	(0.57)	(0.55)	(0.69)
NEAO	--	0.200	0.055	0.867	0.347	0.096	-0.640	0.549
		(0.94	(0.13)	(2.60)**	(2.52)**	(0.69)	(1.27)	(1.89)***
F	1.70	1.56	1.50	1.92	2.58	1.21	1.68	2.53
R^2	0.131	0.178	0.173	0.211	0.264	0.145	0.190	0.261
N	50		50		50		50	

Note: Data in Parenthesis indicates 't' values,
,* indicates 5 per cent and 10 percent level of significance

Table 4. Regression Results on Wage Determinants in Agricultural Labourers in Tamil Nadu

	Paddy		Sugarcane		Groundnut		Cashew Nut	
Variables	Male	Female	Male	Female	Male	Female	Male	Female
Constant	99.04	62.98	101.74	65.08	84.59	65.05	102.11	66.85
PALTW	0.067	0.009	-0.016	0.008	-0.001	0.007	0.016	-0.056
	(0.81)	(0.92)	(2.16)**	(0.46)	(0.18)	(0.59)	(0.96)	(1.88)***
MLR	-0.152	-0.081	0.035	-0.119	-0.002	-0.001	-0.003	-0.001
	(1.69)	(0.96)	(1.30)	(0.66)	(1.54)	(0.47)	(1.19)	(0.34)
CI	0.004	0.017	0.003	-0.004	0.007	-0.008	0.001	-0.001
	(0.43)	(1.97)***	(1.12)	(0.49)	(1.79)***	(1.48)	(0.13)	(0.26)
PLI	0.011	-0.001	-0.002	0.003	-0.004	0.013	-0.004	-0.015
	(0.76)	(0.05)	(0.44)	(0.30)	(0.76)	(1.97)***	(0.30)	(1.49)
CASTE	-0.513	0.402	-0.126	0.380	-0.181	0.140	0.862	-0.263
	(1.46)	(1.24)	(0.77)	(0.88)	(0.68)	(0.40)	(1.37)	(0.62)
NEAO	0.938	0.192	0.060	0.675	0.650	-0.498	0.957	0.093
	(2.78)**	(0.64)	(0.46)	(1.97)***	(2.54)**	(1.48)	(1.94)***	(2.80)**
F	1.65	1.26	1.34	1.06	2.19	2.45	1.61	2.01
R^2	0.216	0.149	0.183	0.150	0.234	0.254	0.183	0.218
N	50		50		50		50	

Note: Data in Parenthesis indicates 't' values, **, *** indicates 5 per cent and 10 percent level of significance

Man-Land Ratio (MLR): it is measured by the number of persons per acre of cultivated land per each crop. This is also taken as a supply variable which indicates the pressure of population on cultivated land, would tend to depress the agricultural wages. Thus expect inverse relationship with dependant variable.

Intensity of Cropping (COI): it is measured in terms of proportion of gross area sown to net area sown. This variable is considered as demand variable. Increase in cropping intensity will create substantial demand for labour which led to increase wage rates. Thus a positive relationship is postulated between cropping intensity with dependant variable.

Proportion of gross irrigated area in gross cropped area (PLI): this is also considered as a demand variable. The availability of irrigation facilities to the farmers is an important variable determining the level of cropping intensity, employment, production and productivity on his farm. Hence a positive sign is expected for its coefficient.

Dummy variable of Caste (CASTE): this is considered as a supply variable. If labour household belongs to Scheduled caste/tribe (whether landed or landless) the demand for hire labour will be less which tends to depress the agricultural wage rate. Thus we expect negative sign for coefficient.

Dummy variable on Availability of Employment opportunities outside agriculture (NEAO): This is considered as a demand variable. If the availability of non-agricultural employment opportunities will be added in particular study village, the demand for agriculture labour will be high. Thus expected sign is positive with dependant variable.

In the regression results, some of the coefficients are not giving significant sign when we considered all variables together in majority of crop villages both in Andhra Pradesh and Tamil Nadu. After dropping some of the indicators the coefficients are giving expected signs in all villages in Andhra Pradesh and results reveals that the coefficient of man-land ratio is associating with positive sign and it was found to be significant at 5 per cent level for male agricultural labourers whereas, for female labourers, it was found that cropping intensity and caste status are statistically significant at 5 per cent and 10 per cent levels. The results indicate that when population pressures increases, the labour bargaining power increase led to wage rate raises. Similarly, for female wages, when net sown area increases, demand for labour increase led to wages raises. It is interesting to note that the coefficient of caste status for female

labour indicating negative sign and statistically significant at 5 per cent level and the results reveals that when the agricultural labourer (whether landed or landless) households belongs to schedule caste and tribe, the wage rate will be less with their poor economic and social status and high indebtedness from their landlords limits their bargaining power. Similarly, in sugar cane village, except intensity of cropping all the coefficient have the expected sign and the proportion of irrigated land under total cultivated land for male labourer, man-land ratio and availability of employment opportunities other than agricultural works found to be positive and statistical significant at 5 per cent level.

On the other hand, the dry crop villages except the proportion of non-agricultural workers to total work force found expected signs both in groundnut and cashew nut crop villages. The caste coefficient shows negatively and an employment opportunity outside the agriculture is at positively associated with dependant variable and indicating statistical significant at 5 per cent level. It shows one per cent increase in the employment opportunities the wage rate increases 0.37 per cent increases in agricultural wages for male labourers in groundnut crop. Whereas, for female labourers, intensity of cropping shows positive sign significant at 5 per cent level indicating that increase in the area under cultivation at one percent, 0.04 per cent increase in female agricultural wage rates. Similarly, in cashew nut crop, except the proportion of non agriculture labourer to total work force remaining all the coefficients have expected signs and proportion of agricultural labour for male, proportion of land under irrigation and employment opportunities outside agriculture for female workers shows positive and significant at 5 and 10 per cent level whereas, cropping intensity shows negative regression coefficient indicate that one percent decline the former and increase in the latter causes 0.04 per cent increase in agricultural wages for female labourer. It is clear from the above results that in wet crop villages, where, more pressure on land, high cropping intensity, land under irrigation are the main indicators to determine the agricultural wages whereas, in dry crop villages, availability of employment opportunities, intensity of cropping, caste status are the major coefficient factors determining the agricultural wages in Andhra Pradesh.

The regression results of selected crop villages in Tamil Nadu are presented in table 4. After dropping proportion non-agricultural labour force to total working labour, all the

coefficients have expected signs in all the crops. It was observed in Paddy crop village, employment opportunities from outside agriculture and intensity of cropping for female labourers have positive signs and statistical significant at 5 and 10 per cent levels. The selected village for paddy crop is adjacent to Taluk headquarters (Thiruvarur) and many of male labourers are connecting non-agricultural works makes more pressure on agriculture labourer thereby led to more wages for agricultural labourer. Whereas, most of the agricultural activities are engaging female labourers in this village, increase in the intensity of cropping makes more demand for female labourers led to increasing the wage rates.

On the other hand, the sugarcane crop labour proportion on agricultural activities for male labourers have negative sign whereas, availability of employment opportunities other than agriculture have positive sign for female labourer having significant regression coefficient at 5 per cent level shows that declining the labour dependence on agriculture and availability of labour opportunities from non-farm sector increase wage rates for agricultural activities. However, the dry crop villages of both ground nut and cashew nut the employment opportunities outside agriculture have positive sign and statistical significant at 5 per cent level for both the male and female labourer. It reveals that the more opportunities from non- farm sector makes more pressure on agricultural labour demand leading to increase in agricultural wages. Similarly, intensity of crop and area under irrigation in groundnut crop has positive sign and significant at 5 per cent level. It was observed from the analysis, the results reveals that one per cent increase employment opportunities outside agriculture whether through MGNREGA or other opportunities, the wage rate increases at 0.65 per cent for male labourers in ground nut and about 0.95 and 0.09 per cent increase in agricultural wages in cashew nut crop for male and female labourers respectively.

Conclusion

Labour is the basic requirement of all economic activities and the growth of an economy and level of advancement of its human resources are interlinked. Higher the degree of human skills and ability to top resources with human endeavour, higher will be the development of the country. Despite the vast and growing body of literature on the operation of labour markets and wage distribution in the rural sectors, our understanding of the key processes of wage determination in these orbits of labour exchange remains fragmentary. In a large and diverse country like India, there are bound to be regional variations in the nature of interaction between demand and supply variables in the determination of agricultural wages. The study was observed that the wage differences between male and female is at higher level in wet crops than dry crops in both the States. The study was also observed that the wage difference between male and female varied not only from operation to operation but also from season to season. The value of coefficients of multiple regressions for all the crop villages reveals that the demand factors play a much more important role than its supply factors. The evidences suggesting that gender discrimination will not disappear with broader development implies that there may be indeed scope for government intervention to try and reduce the gender discrimination in rural labour markets through promoting self-employment and expanding employment opportunities outside agriculture.

To sum up, it can be stated that lower wages are paid to females than the males for the same work when both are identical in all respects. Such wage discrimination behaviour on the part of the employers' in India is justified because the labour market in India is far from perfectly competitive. The persistent of male-female wages differential in India may not necessarily be the symptom of sex discrimination but it could be the result of labour market imperfection coupled with differing wage elasticity's of labour supply for males and females.

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