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Dampening of Female Workforce Participation with Reference to Agricultural Sector of India

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ABSTRACT

Employment is fundamental for poverty reduction and for upliftment of women's status. It is potentially empowering if it provides women an opportunity to enhance their capabilities and improve their well-being. Agriculture being at the periphery of the 2030 agenda for sustainable development, is of fundamental importance in a developing country like India. Therefore, to understand the women's work status in Indian rural areas and to examine the trends and nature of women employment, the paper focusses on the relationship between women, their employment status and earning patterns in India particularly in agricultural sector during the period 2011-2016. The data is retrieved from National Sample Survey Organization, Agricultural census and Indian labor surveys. The analysis reveals education and wage rates as the main factors that lead to an active participation of females in the workforce of the country.

Keywords: Women labor force participation, empowerment, agriculture, earnings, work status

1. INTRODUCTION

Employment creation is a key determinant of economic growth. In a developing economy, growth in employment followed by enhanced productivity is the most effective mechanism to promote participation of suppressed and marginalized class in the process of economic growth. The high level of economic growth along with sound employment opportunities will help raise the standard of living and workforce participation of marginalized sections of society particularly, women, which will further reduce inequalities. Thus fruitful employment generation is the foundation to equity and reduced poverty.

As projected India will be the youngest nation by 2020, rapid employment creation is pivotal to reap the benefits of demographic dividend. Women will account for a relevant proportion of working age population and therefore participation of women is of utmost importance to realize full benefits of demographic dividend (*National Sample Survey Organization (NSSO) Survey, 2015-2016*).

Thus the central idea of the paper is to explore the association between female work force participation rates with various indicators of growth and development.

In India, employment is generated by three main sector, viz., primary, secondary and tertiary. According to the most recent survey by NSSO, **Fifth Annual Employment and Unemployment survey, 2015-2016**, majority of the population is employed by the primary sector followed by tertiary and secondary sector. Agricultural sector of India employs 47.2 percent of population under it (UNDP). Thus, the importance of Agriculture is paramount in the context of Indian economy. 59 percent of rural households depend upon agriculture as their principal means of livelihood. The share of agriculture and allied sectors was 15.35 percent of Gross Value Added during 2015-2016 (Estimates of Central Statistics Office, (CSO)).

Agriculture is at the periphery of the 2030 agenda for sustainable development, hence the importance of agriculture cannot be neglected in a developing country like India. The total number of women workers in India is 149.7 million comprising of 121.7 million in rural and 28.0 million in urban areas. Out of the 149.7 million female workers, 35.8 million females are working as cultivators and another 61.5 are agricultural laborers, remaining percent are either involved in household industries or are classified as other workers (Indian Labor Survey, 2013-2014). Large scale surveys show that while rural women's employment has grown over the decades, women are still largely self-employed or employed as casual labor in agriculture. Hence, agricultural activities are socially embedded in gender structures. A declining trend of total labor in agricultural sector has been seen over the years. This can be attributed to industrialization and privatization, which has led to a shift from traditional economy to industrialized large scale economy.

Mostly, economic growth goes along with empowerment of women. But data available with the International Labor Organization (ILO) drafts a contrary picture in case of India. (Mehra & Gammage, 1999) demonstrated that the pattern of employment creation and income generation diverge. The pattern was depicted from trends and countertrends in agriculture and non-agricultural sector. The growth of Indian economy was traced at 7% during the period 2004-2011, which is a healthy growth rate. But along with such a moderate growth there was decline in female labor force participation from 35% to 25% (ILO, 2014). This situation could be well explained from the reform process which has led to various structural shifts in the Indian economy. (World bank, 2009) analyzed urbanization and quitting of subsistence agricultural sectors are two main factors that have contributed to withdrawal of women from labor force of India. Being global went wrong for Indian agricultural sector as the migration of workforce from rural sector to urban sector in search of better job opportunities led to the decline in female workforce participation in agricultural sector; where the transformation further deteriorated the situation of women in urban as well as in rural sectors. The data from the most recent survey of NSSO shows that there has been a decline in the workforce participation rate of rural women by 4.7% from 2013 to 2015 and by 3.1% of urban women from 2013 to 2015.

Data and trends in workforce and labor force participation rates of females in Rural and Urban areas: The main data set used in this paper's analysis is from India's National Sample Survey Organisation's (NSSO) four Employment- Unemployment Survey reports, covering the years 2011-2012, 2012-2013, 2013-2014 and 2015-2016. The detailed data gathering and presentation is from all five surveys. The empirical estimation for workforce participation of females in rural and agricultural sector has also been conducted on all the five surveys, including the most recent survey 2015-2016. The Employment – Unemployment surveys of the NSSO are a source of primary data collection and cover a span of a year with sample size covering more than 1,00,000 households. The most recent survey 2015-2016, has a total sample of 1,56,563 households with 88,783 households belonging to rural sector and 67,780 in urban sector.

The paper has adopted UPSS approach for analysing female labour force and work force participation rates with explanatory variables; viz., GDP per capita (Rs.), Revenue expenditure on rural development, Average daily wage rates in agricultural and non-agricultural sector of rural India and Education attainment levels.

“Usual Principal and Subsidiary Status (UPSS) Approach: The approach is used for measuring labour force parameters and imbibes usual principal and subsidiary status approach. This approach is a blended one which takes into consideration both the major time criterion and shorter time period (30 days or more in any economic activity). Thus a person who has worked even for 30 days or more in any economic activity during the reference period of last twelve months is considered as employed under this approach. In this approach, the reference period is same as taken in the usual principal status approach (UPS). This approach is also called the usual status approach. (National Sample Survey Organisation, 5th Employment Unemployment Survey, 2015-2016)”

The trends in female labour force participation and work force participation are shown as follows:

Table 9.1

NSSO Rounds	<i>Labour force participation rates (in %)</i>			
	<i>Rural</i>		<i>Urban</i>	
	Male	Female	Male	Female
1999-2000	84.5	36.4	78.2	18
2004-05	85.9	49.4	79.2	24.4
2009-10	82.5	37.8	76.2	19.4
2011-12	83.5	37.8	81	22.3
2012-13	78.7	29.9	73.2	17.8
2013-14	76.4	36.4	74	19.7
2015-16	78	31.7	69.1	16.6

*Author's calculations from NSSO Survey (1999-2016)

Table 9.1 shows percentage labour force participation rate of rural male and females and urban male and females. Labour force participation rate is defined as the number of persons in the labour force per 1000 persons (NSSO). It can be seen that female labour force participation rate has fallen in both rural as well as urban sector. In rural sector female LFPR is almost half of the LFPR of males but in urban sector the participation rate of female is even less than half of the male participation rate. In the rural sector, the participation revived by 6.5 percent in 2013-2014 as compared to 2012-13 but in 2015-16 the rate has again fallen by 4.7 percent. Past studies show this declining trend because of income and education effect (Rangarajan et.al 2011).

Table 9.2

NSSO Rounds	Work force participation rate (in %)			
	Rural		Urban	
	Male	Female	Male	Female
2011-12	82	37.2	78.4	21
2012-13	76.1	28.7	70.4	15.7
2013-14	74.3	35.1	71.4	17.5
2015-16	75.7	30.2	67.1	14.8

*Author's calculations from NSSO Survey (1999-2016)

Table 9.2 captures the percentage workforce participation rate, defined as number of persons employed per 1000 persons (NSSO). The four annual survey shows a falling trend in both the males and females work force rate in rural as well as urban sector. The drastic fall in the work force participation rate of females can occur because of (i) exploitation of women at work (ii) distance to the place of work (iii) unskilled female labour (iv) low levels of education. In spite of launching various labour reforms in the year 2015 such as Payment of Bonus Act 2015, work force participation shows a negative change. The declining rate further exaggerate the problem of women empowerment, essential for a growing economy like India.

Labour market remain segregated along the gender lines. Large scale survey shows women are majorly self-employed or work as casual labour, because women account for most unpaid work and when employed in paid work also they are majorly represented in informal sector. Table 3 and Table 4 gives the distribution of average monthly earnings of self-employed and casual workers. Around 70% of female population is employed in rural sector therefore, the analysis concentrates on rural sector. The self-employed graph shows that percent of self-employed females having earnings of up to 5000Rs. is much more than the self-employed males. The graph dips at the slab of 5001 to 7500 and then falls continuously and touches the X-axis becoming horizontal along with male line. The trend reveals as the income levels advances workforce participation of females fall.

At lower levels of monthly earnings a high workforce participation rate exhibits the necessity to work as there is absence of social protection programs. With higher monthly earnings and increasing standard of living, women can withdraw from the workforce in favour of childcare and household work. (Duflo; 2012) at advanced income levels, the participation rate of females rebounds. This is well rooted in the evidence with U-shaped association of female participation rate with per capita income.

Table 9.3

	<i>LFPR of Self employed by Average monthly earnings (in %)</i>			
	<i>Rural</i>		<i>Urban</i>	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
Up to 5000	44.9	72.8	15.6	46.9
5001 to 7500	29.4	17.5	20.7	20.7
7501 to 10000	16.7	7.2	23.8	17.2
10001 to 20001	7.6	2.1	26	10.8
20001-50000	1.2	0.3	12.3	3.7
50001 to 100000	0.1	0	1.4	0.3
above 100000	0	0.1	0.2	0.4

*Author's calculations from NSSO Survey (1999-2016)

Table 9.4

	<i>LFPR of casual workers by average monthly earnings (in %)</i>			
	<i>Rural</i>		<i>Urban</i>	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
Up to 5000	62.3	84.3	36.4	69.4
5001 to 7500	24.9	11.7	32.8	19.8
7501 to 10000	10	2.9	22.5	8.6
10001 to 20001	2.6	1	7.5	1.8
20001-50000	1	0	0.8	0.4
50001 to 100000	0	1	0	-
above 100000	0	-	0	1

*Author's calculations from NSSO Survey (1999-2016)

The labour situation in agricultural sector is impacted by several factors such as wages, land holding size, population growth, and other institutional factors. With agricultural sector alone employing, labour force of 46.1 %, and contributing a significant proportion to GDP, the sector has been of fundamental nature in the hierarchy of India. Nor does it supplies a vast amount of man power to the industrial sector but is also the lifeline of 80% of population of India. Unorganised agricultural labour constitutes unpaid workers forming a relatively disadvantaged section of the society as well as workforce. Women and children form a major part of this disadvantaged segment and are deprived of the benefits of collective bargaining and protection of labour (Ministry of Labour and Employment, 2015). Thus emphasis is laid on females

employed in the agricultural sector. Table 5 reflects the percentage distribution of workers in agricultural and non-agricultural sector, and it is evident from the figures below that because of lower wages, decline in productivity and lower land holding size by females there has been dampening of workforce participation rate of females in agricultural sector. Such a shift is seen in favour of non-agricultural sector because the timid rate of growth in agricultural sector has pushed the families to another edge of poverty who were already living under subsistence conditions.

Table 9.5

	<i>Workers in Agricultural and Non-agricultural sector (in %)</i>			
	<i>Agricultural sector</i>		<i>Non-agricultural sector</i>	
	<i>Rural</i>		<i>Rural</i>	
	Male	Female	Male	Female
2011-12	59.4	74.9	40.6	25
2012-13	60.9	71.4	39.1	28.6
2013-14	57.2	71.6	42.8	28.4
2015-16	54.3	71.6	45.7	28.4

*Author's calculations from NSSO Survey (1999-2016)

Major reforms in labour market along with Minimum Wages Act 1948 have helped the revival of wages for both male and female which is evident from the following table. The Average daily wage rates in Rural India have risen for both males and females for a minimum of 70-80%. Yet, the increase in average daily wage of females in agricultural sector is 8percent less than that of females in non-agricultural sector in rural India. The main causes being unskilled labour in agricultural sector therefore lesser wages, lesser degree of education attainment among females, reduced share of domestic duties by the other family members. The wage structure gives a grim picture of agricultural sector in rural India which constitutes of major workforce, reforms must therefore, be initiated to revive the sector particularly in rural area for a higher economic growth.

Table 9.6

	<i>Wage rates in rural India (Rs.)</i>			
	<i>Agricultural sector</i>		<i>Non-Agricultural sector</i>	
	Male	Female	Male	Female
2011-12	149.03	116.99	174.02	103.26
2012-13	164.48	127.59	201.83	117.59
2013-14	191.48	151.3	220.37	130.07
2014-15	239.43	193.92	287.67	188.38

*Author's calculations from NSSO Survey (1999-2016)

2. DATA ANALYSIS AND DISCUSSIONS

A multiple regression model has been fitted to analyse the effects of independent variables viz., Gross domestic product per capita (Rs.), Mean years of schooling, Wage rates of female agricultural labourers, Wage rates of female non-agricultural labourers and Revenue expenditure on rural development on the work force participation rate of females in rural India.

The table below shows the results of multiple regression analysis:

Table 9.7

<i>Independent variables</i>	<i>Dependent Variables</i>			
	<i>WPR_TOTAL</i>	<i>WPR_AG</i>	<i>WPR_SE</i>	<i>WPR_CA</i>
GDP	0.89* (0.20)	0.35* (0.41)	0.94* (0.002)	0.41* (0.34)
REV_EXP	0.99* (0.18)	0.57* (0.18)	0.90* (0.008)	0.42* (0.33)
WAGES_AG	0.59* (0.16)	0.38* (0.37)	0.88* (0.01)	0.36* (0.39)
WAGES_NAG	0.54* (0.23)	0.39* (0.36)	0.96* (0.001)	0.44* (0.31)
MEAN_Y_SCH	0.95* (0.001)	0.43* (0.31)	0.64* (0.12)	0.25* (0.56)

*p at 5% level of significance

() R² value

The p-values of the explanatory variables is not less than 5% in all the above cases, therefore, the changes in our explanatory variables does not relate to changes in dependent variables and is insignificant. Therefore, it leads us to a different arena of exploring other important variables such as land holding size and more which the study has not considered due to data limitations. However, the R² signify interesting relationships.

- 1. WPR_TOTAL (Workforce participation rate of females) :** Around 23% of the changes in WPR of females is brought out by wages in non-agricultural sector, while the other explanatory variables contribute to less than 20% of changes. (Das et al., 2015) examined that wages hold a significant association with female labour force participation. This implies that lower wages in non-agricultural sector as compared to agricultural sector plays a dominant role in raising the workforce participation rate of females.

2. **WPR_AG (Workforce participation rate of females in agricultural sector):** 41% of the changes in WPR of females in agricultural sector are attributed by the India's GDP per capita, followed with 37% and 36% changes brought about by wages in agricultural and non-agricultural sector respectively. (Booz & Co., 2012) if female employment rates match up with male employment rates then the GDP of India would increase by 27 percent. The analysis also reveals that GDP exert a substantial amount of influence on workforce participation of females and a moderate growth can also reduce the gender gap by a favourable amount. Therefore, it can be rightfully said that wages tend to play a bigger role in tapping the work force participation rate of females in agricultural sector or non-agricultural sector.
3. **WPR_SE (Workforce participation rate of self-employed females):** large scale surveys shows that females majorly have been self-employed or worked as casual labourers. Self-employed is largely attributed to women's autonomy and therefore, the presence greater number of females as self-employed workers must require greater "public support" (Srivastava,2010) and access to education. Which can be understood from the data stating 12% of changes in WPR of self-employed females is brought out by education attainment levels tapped by proxy variable mean years of schooling. The other explanatory variables, are causing negligible changes.
4. **WPR_CA(Workforce participation rate of casual female workers):** Around 56% of the changes in WPR of casual female workers is brought about by education attainment. Followed by 39% and 31% changes brought about wage rates prevailing in agricultural and non-agricultural sector. Self-employed and casual female workers account for most of the unpaid work or get paid work on daily basis, therefore, are more need of education and vocational training to fetch up favourable paid work.

Hence, it is evident that socioeconomic factors play a major role in determining the participation of females in the workforce. The factors such as education and wage rates speeds up the process of economic growth brought about by active participation of females in the workforce of the country. Various other factors one of them being share of land holdings by females in proportion to total land holdings can be explored to analyse more accurately the participation of females in the workforce, which the paper hasn't captured due to unavailability of data for the sample years.

3. CONCLUSION

The nation has undergone various structural changes coupled with displacement of labour, one such structural shift is seen in female work force participation rate. The country has acknowledged rapid economic growth, accompanied with high level of modernization and urbanisation. During the same time span of the reform process there has been a substantial decline in the labour force participation rates of women in the economic activities. Agricultural sector which is the lifeline of millions of people has recorded less than half of the growth rates of female WPR as compared to male WPR.

The study reveals that wage rates and GDP growth rate does not show a high variation in the regression equation of workforce participation rate of female workers. (Kapos et al., 2014) increased household income and higher education attainment may also result in dampening of female labour force participation rate. Mean

years of schooling shows a favourable amount of variation only in workforce participation rate of casual workers as they constitute major unpaid workers or are those female workers who substitute their male counterparts farm work as male counterparts migrate to non-farm sector. as a result to achieve employment in paid farm works, education and skills are needed. India has undergone vast amount of structural changes in last two decades. With a moderate economic growth and fertility rate, and rapid growth in education sector, female workforce participation has been declining. (Klasen & Pieters, 2013) with an increase in male income and education attainment levels, female participation rates have fallen drastically. The study reveals that the association between increasing female education and female workforce participation in agricultural sector is much more complicated. This is driven by the preferences of educated women for non-agricultural sector such as in white collar jobs.

(Chowdhury, 2011) depicted a grim picture of restricted generation of jobs following withdrawal of women from the workforce by analysing employment situation based on 66th round of NSSO. No significant association between the level of economic growth and women's participation in workforce exists in India. Some of the cross country researches have revealed a U shaped relationship between women's employment and economic development. The dampening in female work force participation rate is due to presence of several mix of factors, while education and income effect being at the topmost focus area.

The study reveals that if these current trends persists in education attainment levels and wages, the female workforce participation is likely to increase in the coming years. Therefore, the sustainability of India's robust growth is in grim picture until and unless it integrates educated females in the workforce. The scope of female participation rate is also depended on the attitudes of their families relating to their work. Hence, suitable policy action is needed to promote female employment in agricultural sector, which integrates women preferences as well.

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