Women's Employment in India: Insights from PLFS Results

Neha Shah

India's women labor force participation rate (LFPR) has sharply declined to 23.3 %. As per PLFS the trend is particularly sharp in rural areas. Women are moving away from self- employment towards salaried employment, though self-employment continues to be the highest employment provider. Women LFPR at all levels of education has declined; the 'U-Shape' hypothesis holds true as women with middle level of education are moving out from the labor force faster. Interstate analysis suggests that there are wide differences in LFPR among the states. High growth states might be generating more economic opportunities for literate female workers whereas among the low growth states, women might be compelled to participate in labor force.

Neha Shah is Associate Professor, L J Institute of Management Studies, Ahmedabad: Email – nehakabir00@gmail.com

Introduction

Women's employment is an important indicator of level and nature of economic development. It is also an important indicator to measure status of women in the society. Employment not only improves the level of income but also has control over the income. Consequently, living standard and well-being of women improves.Improved well-being of women has significant positive externalities on the entire society in terms of improved health and education attainment, and population control. Gender equality in labor participation rates is also estimated to have a strong positive impact on GDP growth (WEF, 2017; IMF, 2013; Goldman, 2013)

Women's participation in a country's labor force should increase with improvement in human capital indicators.

Global experience suggests that women's participation in a country's labor force should increase with improvement in human capital indicators,

viz. education level, health and economic growth. Better education and health improve productive capacity, raise earning potentials, creating a greater incentive to join the labor force. However, India's growth story is showing a different trend. Women's labor force participation rate is declining for more than last one decade. The Periodic Labor Force Survey for the year 2017-18 indicates that the LFPR of women in the last two rounds of data collection has sharply declined and stands at 23.3 % only. That means about three out of every four women above the age of 15 in India is neither working nor seeking job, which is a historic low level. India's female LFPR is one of the lowest, just above that of nine other countries in the world. Rising gender gap in economic activities is noted by the World Economic Forum's Gender Gap Index. India ranked a low 149th out of 153 countries in terms of economic participation and opportunities, with the index value of 0.354 (WEF, 2020). This is poorer from the 0.385 in 2018. This trend is contradicting the global experience, as India is the only country where the economic gender gap is larger than the political gender gap among 153 countries studied by the World Economic Forum

Emerging Issues

Decline in women's labor force participation rate is widely discussed among academia as well as policy makers since 2011-12, after the 68th round of NSS data showed this trend. Sharma and Saha (2015) analyzed 68th round Employment-Unemployment data of NSSO. They observed that rural women are moving away from the labor force much faster than their urban counterpart. They observe interstate disparities with respect to female WPR for rural and urban females.

Kapso et. al. (2014) argued that India has been adhering to the U-shaped hypothesis that relates national income with FLPR, such that a rise in national income inadvertently leads to a drop in FLPR until it reaches the minimum and then rises again.The study observes the negative impact of increased attendance in education on female labor force participation. They observed that the trend accelerated starting in 2005 and persisted through 2012. They have identified three important reasons responsible for the decline. One is the improved economic condition measured in terms of increased education and higher level of household consumption that explains 18 percent of the total decline. The other two reasons are general lack of employment opportunities for women accounting for 42 percent and changes in measurement methodology between various rounds of survey accounting for 40 percent of the total decline observed in female participation in the labor force between 2005 and 2010.

Das & Desai (2003). argued that there is a strong negative income effect of higher family income as well as strong social effect, as higher caste families encourage female seclusion. So, with a little improvement in the income level of the family, many women seem to prefer to opt out of the labor market. Chatterjee et al. (2018) works out income effect and sub-

stitution effect using the India Human Development Surveys (IHDS). Their results confirm a strong negative effect of other family income on women's labor force participation, they again find a U-shaped relationship between women's education and her labor force participation, even after taking into account other family income. The reason for the 'U' shape curve lies in the demand side of the labor market as their analysis shows a sharp rise in women's participation in the salaried jobs with rise in the level of education. So, they argue that if most available jobs were salaried, Indian women would show the usual positive relationship of higher rates of employment with more education. However, such jobs are limited and are accessible mainly with higher levels of education. So, we experience less participation of women with intermediate levels of education.

Prevailing social norms and patriarchy hinder the participation of women in the economy despite high levels of education.

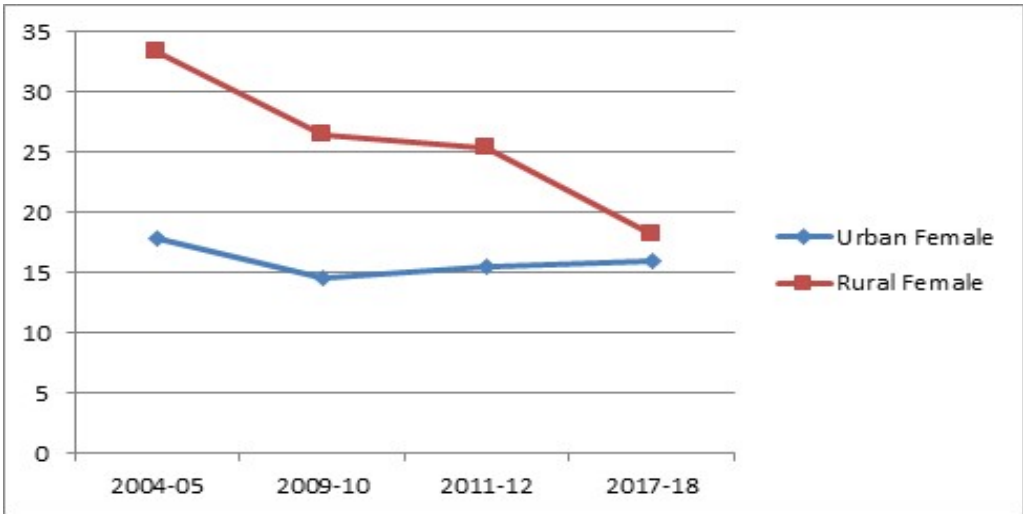
In order to solve the mystery of decline in women's participation, Ghai (2018) proposes that prevailing social norms and patriarchy hinder the participation of women in the economy despite high levels of education. A bivariate correlation analysis shows that states with high level of patriarchy index are also the states with high proportion of women out of the labor force with graduate degrees and above.

All the above- mentioned analysis are till 2011-12 as the studies in the area are based on 68thround of NSSO survey. There have been lots of changes in the trends of employment in the last five years due to change in the political leadership in the country as well as volatile global economic factors. So, it is interesting to analyze the trend after 2011-12 till 2017-18, and make short term and long term analysis. In this paper, we examine the trends of women's labor force participation rate and work out the prevailing gender gap on the basis of various rounds of NSSO and Periodic Labor Force Survey (PLFS: 2017-18). In the subsequent sections we make an analysis of the types of work, female workforce participation rate in relation to their education level and trends in state level variations with respect to varying level of SGDP. The present analysis is based on Usual (Principal and Subsidiary) Status that means if a person has engaged in any economic activity for a period of 30 days or more during the preceding 365 days the person is considered as employed under this approach.

Urban vs. Rural Trends in Female LFPR

Labor force participation of rural women has always remained much higher than that of urban women. Traditionally rural women have been participating in on-farm and off-farm activities. In 2004-05 almost two times more women in the rural area (33.3 percent) were part of the labor force compared to their urban counterparts (17.8 percent). However, the LFPR for rural women has sharply declined in the last decade from 33.3 percent in 2004-05 to

Fig. 1 Female LFPR (In Percent)



Source: Annual PLFS Report 2017-18, NSO

25.3 percent in 2011-12 and further to 18.2 percent in 2017-18. This is a sharp fall of 7.1 percentage points in five years' time span. The analysis of PLFS data shows that the decline in the female LFPR is a rural phenomenon. Urban female LFPR has always been much lower than their rural counterparts. It has remained more or less stagnant. The difference between the rural and urban female LFPR has become negligible with decline in the rural areas and marginal rise in the urban areas.

Gender Gap in Worker Population Ratio

Worker Population Ratio (WPR) is the percentage of persons employed among the persons in the population. WPRs for females were considerably lower than WPRs for males in both rural and urban areas. The WPR of women were 17.5 percent and 14.2 percent for the rural and the urban areas respectively.

Table 1 WPR (percent) in Usual Status (ps + ss)

NSS ROUNDS	RURAL			URBAN		
	MALE	FEMALE	Gender Gap- Rural	MALE	FEMALE	Gender Gap – Urban
61st (2004-05)	54.6	32.7	21.9	54.9	16.6	38.3
66th (2009-10)	54.7	26.1	28.6	54.3	13.8	40.5
68th (2011-12)	54.3	24.8	29.5	54.6	14.7	39.9
PLFS (2017-18)	51.7	17.5	34.2	53	14.2	38.8

Source: Annual PLFS report 2017-18, NSO

The rural WPRs for both males and females are declining from 1999-2000 onwards, which might be a sign of decrease in employment opportunities in rural economy. However, women WPR experienced a very sharp fall compared to their male counterparts. Consequently, the gender gap has sharply increased to 34.2 percent in 2017-18 from 29.5 percent in 2011-12. The WPR in the urban areas also experienced a moderate decline for both males and females. The gender gap, as a result has started declining gradually.

Self- employment is the main source of employment for rural women whereas regular/ salaried employment is for urban women.

Type of Work

Table 2 provides information about the types of employment for rural and urban women from 61st round of NSSO survey (2004-05) to the latest PLFS (2017-18). The table shows that self-employment is the main source of employment for rural women whereas regular/ salaried employment is for urban women. There is a continuous rise in the share of regular/salaried employment for both rural as well as urban women. The trend is in tune with the previous studies showing a preference for salaried employment by female workers. The CAGR for the regular salaried employment between the last two rounds of the survey is 11.05 percent for the rural area and 3.33 percent for the urban area. The rise for the rural women is very sharp in comparison to urban women. Regular/ salaried employment is perceived to have better working conditions, regular and higher income. Therefore, this trend can be considered as a positive development in favor of women workers, though its share in total employment is very small. It is a matter of further inquiry as to which sectors provide regular employment to women, especially in the rural area.

Table 2 TYPE OF WORK – Female (in percent)

	RURAL			URBAN		
	Self employed	Regular wage/ Salaried Employee	Casual Labor	Self employed	Regular wage/ Salaried Employee	Casual Labor
61st (2004-05)	63.7	3.7	32.6	47.7	35.6	16.7
66th (2009-10)	55.7	4.4	39.9	41.1	39.3	19.6
68th (2011-12)	59.3	5.6	35.1	42.8	42.8	14.3
PLFS (2017-18)	57.7	10.5	31.8	34.7	52.1	13.1
CAGR (2011-12 to 2017-18)	-0.45	11.05	-1.63	-3.44	3.33	-1.45
CAGR (2004-05 to 2017-18)	-0.76	8.35	-0.19	-2.42	2.97	-1.85

Source: Annual PLFS report 2017-18, NSO

Self-employment continues to be the highest employment provider. 57.7 percent of rural female workers and 34.7 percent of the urban female workers are self-employed. However, its share is steadily declining in the last decade. The long run CAGR of self -employment for the period 2004-05 to 2017-18 was -0.76 percent for rural areas and -2.42 percent for the urban areas. This is a curious trend at a time when the government is promoting entrepreneurship.

Share of casual labor was on rise till 2009-10, except for the 61st round, and has started declining in both rural as well as urban areas. It has declined from 35.1 percent in the 68th round to 31.8 percent in the PLFS for the rural areas. The corresponding share for the urban areas has declined from 14.3 percent to 13.1 percent. It is a matter of further investigation whether the declining share of casual worker is responsible for fall in the female LFPR or not.

Sectoral Trends in Female Employment

Table 3 shows sectoral trends in women's employment. Agriculture continues to employ over 73 percent of women in labor force, although it's share is decreasing. The CAGR of employment in agriculture for the period 2004-05 to 2017-18 was -1 percent, and -0.4 percent for the period 2011-12 to 2017-18. That implies the pace of decline in the growth of agriculture employment has reduced in the recent years.At the same time decline in the growth rate of manufacturing employment in the short run (2011-12 to 2017-18) is much sharper (CAGR of -3.13) compared to the medium term (CAGR of -0.28) trend. Against that the short run growth rate in the service sector employment is almost half (CAGR 3.44) compared to the medium term growth rate (CAGR 6.56), although the services continues to be the only sector with positive growth in employment. This is in tune with rise in wage/salaried employment discussed above. The shift from the agriculture to the service sector in employment has slowed down

This trend hints at shrinking gainful employment opportunities for women in service sector.

Table 3 Sectoral Employment Trends (in Percent)

	RURUAL			URBAN		
Broad Industry Division	Agriculture	Manufacturing	Service	Agriculture	Manufacturing	Service
61st (2004-04)	83.6	8.4	8.1	18.3	28.2	53.5
66th (2009-10)	79.7	7.5	12.8	14.2	27.9	57.9
68th (2011-12)	75.2	9.8	15.1	11.2	28.7	60.1
PLFS (2017-18)	73.4	8.1	18.5	9.3	25.2	65.4
CAGR (2004-05 to 2017-18)	-1.00	-0.28	6.56	-5.07	-0.86	1.56
CAGR (2011-12 to 2017-18)	-0.40	-3.13	3.44	-3.05	-2.14	1.42

Source: Annual PLFS Report 2017-18, NSO

as the growth of employment opportunities in the service sector has slowed. This trend hints at shrinking gainful employment opportunities for women in service sector.

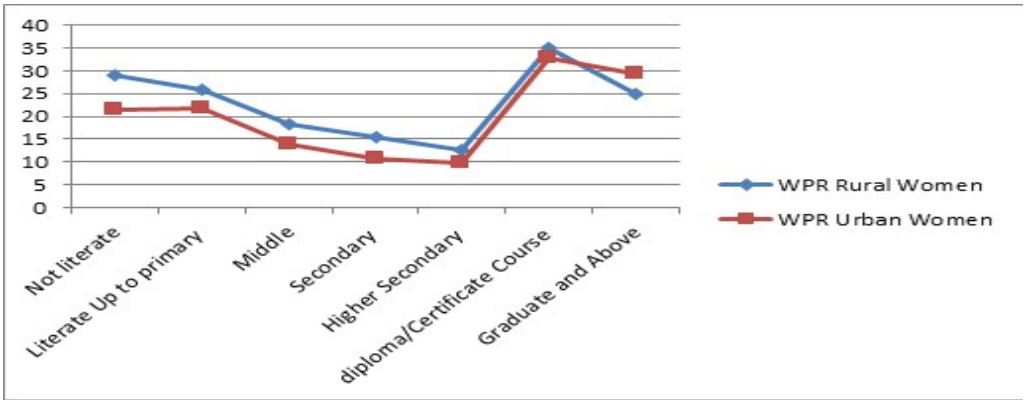
Urban employment trend has a little different scenario.Service is the main employment provider in the urban areas with 65.4 percent share in the total employment followed by manufacturing. The service sector has a positive growth rate in employment generation whereas that of manufacturing has a negative growth. The decline in manufacturing has intensified in the later years (from CAGR of -0.86 to -2.14), against that there is a fall in the growth rate of employment in the service sector (from CAGR of 1.56 to 1.42). That means declines in employment in agriculture and manufacturing has not been compensated by the service sector. Besides, the service sector includes both private and public sector. There are regular and protected employments as well as casual employment – without protection of any labor laws. There are high paying skilled jobs as well as low paying unskilled jobs. So, it is a matter of further investigation that women are getting what type of jobs.

Education & Employment

A strong correlation between female labor force participation and women's education is observed in literature. The Indian trend is not matching with the theoretical proposition that labor force participation should rise with the level of education. The 'U – Shape' hypothesis proposed by different studies, continues to hold true. The participation rate of women either with very low education or with professional education is high. Women at the middle level of skill sets are rapidly going away from the labor market. At this level, women have to choose either low paying jobs with longer working hours or to stay back home.

Women have to choose either low paying jobs with longer working hours or to stay back home.

Fig. 2 Education and Female WPR (in percent)



Source: Calculated from Annual PLFS Report 2017-18, NSO

Table 4 Gender Gap in WPR (in percent) in Different Levels of Education

(RURAL)							
NSSO ROUND	Not literate	Literate Up to primary	Middle	Secondary	Higher Secondary	diploma/Certificate Course	Graduate and Above
66th Round (2009-10)	53.2	59.5	54.1	51.6	47.4	41.4	51.3
68th Round (2011-12)	57.7	63.1	58	49.6	46	39.5	51.7
PLFS (2017-18)	49.7	59.1	55	45.4	41.9	24.8	46.2
(URBAN)							
NSSO ROUND	Not literate	Literate Up to primary	Middle	Secondary	Higher Secondary	diploma/Certificate Course	Graduate and Above
66th Round (2009-10)	61.7	66.7	62.6	58.2	48.9	35.4	54.1
68th Round (2011-12)	63.2	65.5	63.4	55.3	47.7	35.5	52.2
PLFS (2017-18)	54.6	58.5	60	51.5	41.6	37	45.1

Source: Calculated from Annual PLFS report 2017-18, NSO

The gender gap at each level of education has reduced in comparison to the 68th round data. The pattern is observed that the gender gap for rural as well as urban population for all the rounds of NSSO increases with the earlier levels of education and then subsequently narrows down with higher levels of education. This matches with the 'U' shape theory. Population with diploma and certificate holders has the least gender gap. This could be due to higher income effect for skill- based education.The gap rises sharply for people with graduate degree and above, as the degree in general education cannot ensure high paying employment and hence the substitution effect seems more powerful. PLFS shows a little change in the pattern for urban women. The gender gap for the first time has increased among the urban population with middle level of education. The income effect seems to be extending for this population group.

State Level Analysis

There are wide variations among states in terms of LFPR of women. Our analysis is for twenty major states so as to avoid discrepancies due to extreme values observed in case of smaller states and union territories. Out of the twenty major states, at one end in Bihar the female LFPR is as low as 4.4 percent, which is the lowest in the country. At the other end, in Himachal Pradesh it is 53.8 percent, highest in the country. The co-efficient of variation in female LFPR is as high as 48.57% that has increased from 40.39% in 2011-12.

Table 5 Co-efficient of Variation of 20 Major States

Female LFPR 11-12	Female LFPR 2017-18
40.39	48.57

Source: Calculated from PLFS

In order to understand the state level variations, correlation between the state GDP and female LFPR as well as literacy rate and female LFPR were calculated. Table 6 shows values of coefficient of correlation calculated for different groups of states – top five states with the highest GSDP, bottom five states with the lowest GSDP and all major twenty states. The coefficient of correlation for all the three groups is significantly different. For twenty major states, the relationship between state SGDP and female LFPR is very weak, almost zero. When we pick up the top five states with highest level of SGDP for 2016-17 (Maharashtra, Tamil Nadu, Gujarat, U.P, and Karnataka), the relationship is moderately positive (coefficient of correlation = 0.387).The relationship has weakened compared to the last NSSO round in 2011-12 (coefficient of correlation = 0.450). When we pick up the five states with the lowest SGDP (Assam, Jharkhand, Uttarakhand, Himachal Pradesh and J&K) the relationship grows very strong and negative (coefficient of correlation = -0.861), which has grown stronger in comparison to 2011-12 (coefficient of correlation = - 0.774). This indicates that the states with lower SGDP experience higher LFPR of women. It can be said that women are compelled to earn in the poorer states. But the rising SGDP does not have a clearer impact on women's preference to work.

The states with lower SGDP experience higher LFPR of women.

Table 6 Correlation Coefficient SGDP (2016-17) at constant price at factor cost

	SGDP to Female LFPR		Female Literacy Rate to Female LFPR	
	2011-12	2017-18	2011-12	2017-18
Top 5 States with highest SGDP	0.450	0.387	0.921	0.877
Bottom 5 States with lowest SGDP	-0.774	-0.861	0.686	0.540
All States	0.005	0.031	0.337	0.230

Source: Calculated on the basis of data from PLFS and CSO

The states with highest SGDP show very strong positive correlation (coefficient of correlation =0.877) between female literacy rate and female LFPR. In the states with the lowest SGDP, the relationship between female literacy rate and LFPR is moderate. However, the relationship is very weak while calculated for all the states. It is also noticeable that the relationship has weakened in all categories in comparison to 2011-12. Since the relationship between education attainments and the female LFPR has always raised curiosity, we run a regression between literacy rate and the LFPR for all the three categories of states,

Table 7 Regression Analysis (Female LFPR and Female Literacy Rate)

	R Square	Co-efficient Value	P Value
Top 5 States (Highest SGDP)	0.768281	0.970573	0.051113
Bottom 5 States (Lowest SGDP)	0.291848	0.783363	0.347259
All States	0.052896	0.234514	0.329317

Source: Calculated from PLFS data

More employment opportunities are developing for women with literacy in states with higher economic growth.

The regression analysis in the Table 7 shows that the relationship between female literacy rate and female LFPR is statistically significant only for the states with highest GSDP, for which P value is 0.051. For the remaining two categories of the states the relation is not statistically significant. 77 percent of female LFPR in the top five states can be explained by female literacy rate and every one percent rise in female literacy is causing 0.97 percent rise in female LFPR. It can be said that more employment opportunities are developing for women with literacy in states with higher economic growth. High growth economies also might be generating externalities which are influencing social and cultural norms and facilitating more economic participation by women. The trend is not clear for low growth states. This phenomenon is a matter for further investigation.

Conclusion

The analysis based on PLFS data shows that the withdrawal of female LFPR has continued as observed in last two decades. The trend is particularly sharp in rural areas. There is a marginal rise in female LFPR in urban areas. However, in rural as well as urban areas, withdrawal from the labor force is very sharp among women with middle level of education. The trend is in tune with the higher substitution effect argument well discussed in literature. This trend calls for further investigation in understanding the reasons that are keeping women out of the labor market in order to frame appropriate policy.

The interstate analysis suggests that there are wide differences in the LFPR among different states. The states with high incomes have strong and positive relationship between female literacy rate and LFPR. The states with low income, on the other end have strong and negative relationship between SGDP and female LFPR. So, it can be said that the high growth states might be generating more economic opportunities for female workers whereas among the low growth states, women might be compelled to participate in labor force. Prima facie observations call for policy measures that not only encourage women's employment but also develop adequate network of care economy so as to ease dual burden for women.

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