ARTICLES

WHAT EXPLAINS THE DECLINE IN FWFPR IN RURAL AREAS IN INDIA?

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ABSTRACT

Female Workforce Participation Rate (FWFPR) declined in rural areas from 2004-05 onwards and it was lower than that of Male Workforce Participation Rate (MWFPR), both in rural and urban areas, in the case of India. We argue in this paper that for rural transformation (inter alia) the female labour force participation does matter. This motivated us to explore the answers for three main questions: Firstly, why FWFPR is important? Secondly, what are the trends in FWFPR in the case of India? And thirdly, what explains the decline in FWFPR in rural areas in the case of India? Using cross section data for 25 States and 7 Union Territories of India and through multiple linear regression technique, the study finds evidence that rural male workforce participation rate, rural non-farm sector share in employment, gender wage gap in rural areas and rural sex ratio are the four important variables which impact rural female workforce participation rate significantly.

Keywords: Female Workforce Participation Rate, Male Workforce Participation Rate, India

1. Introduction

Considerable attention is being paid by labour economists, development economists and policy makers to the female labour force participation at national and global levels. Studies reveal that one of the important pathways to empower women economically is through labour market participation (Joshi, 2018a and 2017). It is well recognized now that participation of women in the labour market

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can empower them economically and can also have several spillover effects (World Bank, 2012). An extensive body of research on women's empowerment suggests that the development of women's full labour market potential can result into significant macroeconomic gains. Aguirre and others (2012) were of the view that if female labour force participation rate is increased to the country specific male levels, then countries like USA, Egypt, United Arab Emirates and Japan could experience an increase in GDP by 5 per cent, 34 per cent, 12 per cent and 9 per cent respectively (Also see Joshi, 2018a, b).

The workforce participation rate (WFPR) as per UPSS (Usual Principal and Subsidiary Status) is defined as the number of persons/person days employed per 1,000 persons/person days. WFPR has been highly fluctuating from 1977-78 (32nd round) to 2011-12 (68th round). It has been observed that the WFPR for all usually employed persons in rural and urban areas taken separately or together has registered a decline from 2004-05 onwards. FWPR in rural areas registered an increase from 318 in 1972-73 to 340 in 1983 (per 1000) but kept declining thereafter till 1999-2000. It again rose to 327 in 2004-05 but declined to 248 in 2011-12. Another interesting point is that FWPR in urban areas was lower than FWPR in rural areas from 1972-73 onwards. Besides, FWFPR was lower than MWFPR, both in rural and urban areas (Joshi, 2018a). Sharma (2014) points out that female employment accounts for one-third of the total employment. It has been observed that female employment growth rate has been less than male employment growth rate during the past three decades. There has been a sharp decline in the growth of employment during the period 2005-12. There is a gender dimension to the pattern of employment growth which has emerged during the period 2005-12. There was an absolute decline in employment for rural females. A slowdown in employment growth was observed in the case of males too in both rural and urban areas during the same period. Among the South Asian neighbours, India has the lowest WFPR for women with the exception of Pakistan. The decline in FWFPR has been attributed to marginalization of women in the labour market and also to lack of availability of suitable jobs, by some experts. Other experts have attributed this to either rising enrolment of women in schools or colleges (Das and Desai, 2003) or to 'withdrawal effect' because of income effect (Panda, 1999, Rustagi, 2013). Undeniably, if we are looking out for transformation in rural areas, inter alia, the female labour force participation will matter. This motivated us to explore the answers for the following three important questions:

i) Firstly, Why FWFPR is important?
ii) Secondly, what are the trends in FWFPR in the case of India?
iii) Thirdly, what explains the decline in FWFPR in rural areas in particular?

To answer the above-referred questions the paper has been divided into four sections. After the introduction in Section 1, Section 2 tries to explain briefly why FWFPR is important. Section 3 shows the broad trends in FWFPR in India.

Section 4 with the help of an empirical exercise tries to explain the plausible factors that account for the decline in FWFPR. Section 5 concludes the paper and draws some policy suggestions.

2. Importance of FWFPR

We argue in this paper that active participation of women in labour market (high skilled jobs) enables them to become economic actors who gain the ability to invest in their own health and education, as well as, that of their children. They also get an opportunity to participate in decision making process relating to determination of family size, education of children and overall welfare of the household and also about the career they want to pursue. Their participation in the labour market, and capacity and control over money/resources not only can change their self-perception but also help building their self-esteem and self-confidence, which can further strengthen them to take independent decisions in social, political and economic spheres. This can help altering the patriarchal gender contract and empower them economically.[1]

It has been pointed out by Kabeer et al. (2009) that women who are having relatively regular and secure work assignments, who operate in reasonable working conditions outside the home, stand to gain in indicators that matter to women and the society. Further, Kabeer (2012) also emphasizes that there are spill-over effects of participation in the market. She says "These largely positive macro-level findings are supported by a wealth of micro-level evidence to suggest that not only does women's access to employment and education opportunities reduce the likelihood of household poverty but also resources in women's hands has a range of positive outcomes for human capital and capabilities within the household (see, for instance, overview of this evidence in Quisumbing, 2003; World Bank, 2012; Kabeer, 2003 and Dwyer and Bruce, 1988). Such findings suggest a strong instrumental rationale for ensuring women's participation in the process of growth: it will contribute to the inclusiveness of growth, not merely because women constitute 50 per cent of the world's population, but also because women's access to economic resources improves distributional dynamics within the household."

An extensive body of research on women's empowerment suggests that the macroeconomic gains from the development of women's full labour market potential can be huge and significant for the economies, because the gender gaps have led to up to 27 per cent of GDP per capita losses in labour market in certain regions. Aguirre and others (2012) suggest that if female labour force participation rate is increased to the country specific male levels, this could increase GDP of USA by 5 per cent, Egypt by 34 per cent, United Arab Emirates by 12 per cent and Japan by 9 per cent. The subsequent observation by

1 See Joshi (2018a) also.

International Labour Organisation data show that, of about 865 million women who have the potential to contribute more to their nations' economies, 812 million live in developing nations (Aguirre et al., 2012). Similar sentiments and arguments have been echoed in an International Center for Research on Women (ICRW) publication which says "economically empowering women is essential both to realize women's rights and to achieve broader development goals such as economic growth, poverty reduction, health, education and welfare" (Golla et al., 2011). According to its authors, "a woman is economically empowered when she has both the ability to succeed and advance economically and the power to make and act on economic decisions".

The labour market participation of women can empower them economically. Such concerns are noticeable in a paper by Swedish International Development Agency (SIDA) on women's economic empowerment which defined it as "the process which increases women's real power over economic decisions that influence their lives and priorities in society. Women's economic empowerment can be achieved through equal access to and control over critical economic resources and opportunities, and the elimination of structural gender inequalities in the labour market including a better sharing of unpaid care work" (Tornqvist & Schmitz, 2009).

If the female participation rate increases in various developing countries, this can help them in the following ways (Woytek et al., 2013).

i. According to Cuberes and Teignier (2012), certain regions suffer a GDP per capita loss up to 27 per cent due to gender inequality. There is a potential to raise GDP in Japan by 9 per cent, US by 5 per cent, Egypt by 34 per cent and UAE by 12 per cent merely by raising female labour force participation rate up to the country's level of male participation (Aguirre et al., 2012).

ii. It has been pointed out that, in Japan if female participation rate were to reach the average for G7 countries, annual potential growth rate can rise by one-fourth percentage point. Higher female participation can further lead to a permanent rise in per capita GDP by 4 per cent (as compared to baseline) which can help in building more skilled workforce, due to women's higher education levels (IMF, 2012; Stienberg and Nakane, 2012).

iii. There is a substantial literature that shows that women are more inclined than men to spend a large part of household income in education of children. Since women are the primary care givers in almost all societies, the education of current generation will have positive effects on the education and health of their next generation. The result will be yet stronger if they have a strong say in family decision making. Better educated, healthier women of second generation will help in bringing down fertility rate, raising productivity and thereby raising household income (World Bank, 2004). To add to this argument, ILO says that paid or unpaid work for women can be the single

most vital poverty reducing factor in developing economies (Heinz, 2006). Accordingly, higher FLFP, better opportunities for women to earn and control income, and earn a higher income could lead to higher expenditure on school enrolment of children, including girls. This could create a virtuous cycle, when educated women become role models (Aguirre et al., 2012; Miller, 2008). It has been argued that lack of opportunities for women in developing countries hinders economic growth, while economic growth leads to improvements in their disadvantaged conditions (Stotsky, 2006a and 2006b).

iv. One of the major reasons for productivity differentials among companies owned by men and women is differences in access to productive inputs (Blackden et al., 2013). Therefore, by ensuring equal access to productive inputs higher output gains can be achieved and productivity gaps can be plugged (World Bank, 2012).

v. There are studies (Dezso and Ross, 2011; McKinsey, 2008; Catalyst, 2004) which highlight that the presence of women on boards and in senior managements of companies can have a positive impact on the company's performance (though such evidence is controversial).

The review of literature brings out that FWFPR matters[2] and there can be several potential benefits a country can reap if women participate in the labour market. Given this background, it will be highly appropriate if we try to look at the broad trends in FWFPR in the case of India from 2004-05 onwards.

3. Trends in FWFPR in India

Workforce Participation Rate or Work Population Ratio (WPR)

Table 1 provides a glimpse of the Workforce Participation Rate obtained from the three quinquennial surveys conducted by the National Sample Survey Organisation (NSSO). The table clearly brings out that if we compare WFPR for males in 2004-05 and 2009-10, it declined marginally from 547 per thousand to 546 per thousand and further declined to 544 in 2011-12. But in urban areas, MWPR increased from 543 in 2009-10 to 546 in 2011-12, though it registered a decline during the period 2004-05 to 2009-10 from 549 per thousand to 543 per thousand. Another interesting point is that FWPR in urban areas was lower than FWPR in rural areas from 2004-05 onwards. Besides, FWFPR was lower than that of MWFPR, both in rural and urban areas. FWPR in rural areas kept on declining from 2004-05 to 2011-12 from 287 per thousand to 219 per thousand. Rural FWFPR registered a continuous decline from 327 per thousand in 2004-05 to 261 per thousand in 2004-05 to 248 per thousand in 2011-12. The same trend was noticed in the case of urban FWFPR too. WPR for all usually employed

2 Section II and III drawn from Joshi (2018a)

persons in rural and urban areas taken separately or together has registered a decline from 2004-05 onwards.[3]

Table 1: Workforce Participation Rate as per UPSS

Round (Year)	Rural			Urban			All		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
68th (2011-12)	543	248	399	546	147	355	544	219	386
66th (2009-10)	547	261	408	543	138	350	546	228	392
61th (2004-05)	546	327	439	549	166	365	547	287	420

Source: NSSO various reports

The decline in FWFPR in the recent years has been a cause of concern. Previous literature points out that the inadequacy of the concepts and definitions used in measuring female employment offers a partial statistical explanation and the rising enrolment of women for education, the income effect of households and lack of opportunity may provide more valid and realistic explanations for declining FLFPRs (Klasen and Pieters, 2012; Hirway, 2012; Rustagi, 2013). However, the increase in female LFPR (and WFPR shown later) during the first half of the decade of 2000 might be attributed to agricultural distress which led to decline in incomes of the households and might have pushed women into the labour force. Sen and Sen as cited in Singh and Singh (1992) pointed out that "in a country like India where a significant portion of the population is below poverty line, it is expected that large proportion of rural women participate in the labour force due to economic pressure."

Empirical studies highlight that the workforce participation rate (WFPR) for all usually employed persons in rural and urban areas (taken separately or together) in the case of India has registered a decline from 2004-05 onwards. Not only female workforce participation rate (FWPR) declined in rural areas from 2004-05 onwards but it was lower than that of MWFPR also, both in rural and urban areas. We argue in this paper that if we look out for transformation in rural areas, inter alia, the female labour force participation will matter as female employment accounts for one-third of the total employment. This motivated us to explore an answer for the third question posed in this paper i.e. what explains the decline in FWFPR in rural areas (i.e. RFWFPR) in India. The following section will make an attempt to answer this question.

4. What explains the decline in FWFPR in Rural Areas in India?

It will be highly appropriate if an attempt is made to identify the factors which influence RWFPR in the case of India. The research hitherto has been country specific. But studies dedicated to determine the factors which influence RWFPR

3 See Joshi (2018b)

by using state and UT level data in the case of India are non-existent and have received inadequate attention from the researchers. That is why, the present section is important. An attempt will be made in this section to fill up this research gap. Sub-section 4.1 explains the methodology, data sources, model specification and a brief note on the explanatory variables/regressors that are anticipated to influence RFWFPR in India. Sub-section 4.2 presents the empirical results and discusses them in the light of the previous findings.

4.1. Methodology and Data Source

The main purpose of this paper is to focus on the relationship between the RFWFPR and certain other variables which on a priori grounds can be expected to influence RFWFPR. This has been done using state level cross section data for 25 States and 7 UTs of India for which data for the year 2011 was available from various sources like NSS (National Sample Survey) reports and Government of India (GOI) publications. Based on the previous review of literature, our analysis examines how rural male workforce participation rate (RMWFPR), non-farm employment (NFE) can be important determinants of rural female workforce participation in India, controlling for the variables like gender wage gap (GWG), female literacy rate (FLR), rural sex ratio (RSR), urbanization (URB), percentage of scheduled castes population (POP_{SC}), and incidence of crimes (IOC) as important determinants of female labour force participation. Multiple Linear Regression analysis of Ordinary Least Square (OLS) was used to analyze and estimate the parameters.

The model has been specified in the form expressed below:

RFWFPR = f (RMWFPR, RNFSE, RGWG, URB, FLR, RSR, POP_{SC}, IOC)

Where:

RFWFPR = Rural Female Work Force Participation Rate

RMWFPR = Rural Male Work Force Participation Rate

RNFSE = Rural Non-Farm Sector Share in Employment

RGWG = Gender Wage Gap in Rural areas

URB = Urbanization Rate

FLR = Female Literacy Rate

RSR = Rural Sex Ratio

POP_{SC} = Percentage of Scheduled Castes Population

IOC = Incidence of Crimes

The model in its stochastic form is presented as follows:

$RFWFPR = b_0+b_1RMWFPR+b_2NFSE+b_3RGWG+b_4URB+b_5FLR+b_6RSR+b_7 POPSC+b_8 IOC+\mu$

Where:

RFWFPR= Rural Female Work Force Participation Rate

b0 = Intercept

b1 = Partial slope coefficient of Rural Male Work Force Participation Rate

b2 = Partial slope coefficient of Rural Non-Farm Sector Share in employment

b3 = Partial slope coefficient of Gender Wage Gap in Rural areas

b4= Partial slope coefficient of Urbanization Rate

b5= Partial slope coefficient of Female Literacy Rate

b6= Partial slope coefficient of Rural Sex-Ratio

b7= Partial slope coefficient of Percentage of Scheduled Castes population

b8= Partial slope coefficient of Incidence of Crimes

μ = the stochastic error term which denotes other explanatory variables not specified in the model

A Note on Dependent Variable and Independent Variables

- **Rural Female Work Force Participation Rate (RFWFPR)** is the centre of our analysis and is a dependent variable. We collected data from NSSO reports and various other reports of Government of India. FWPR in rural areas increased from 318 in 1972-73 to 340 in 1983 (per 1000) but kept declining thereafter till 1999-2000. It again rose to 327 in 2004-05 but declined to 248 in 2011-12. We have included the following eight explanatory variables in the model.
- **Rural Male Work Force Participation Rate (RMWFPR):** We believe that more males in the labour market in rural areas will negatively affect female labour force participation rate (FLFP). Research on FLFP and economic development (Panda, 1999; Rustagi, 2013) postulates that there could be 'withdrawal effect from labour market' on women because of rising household incomes. Therefore, higher participation of males in the labour market will lead to dropping out of women from the labour market. The expected sign of the coefficient is negative.
- **Rural Non-Farm Sector Share in Employment (RNFSE):** The higher share of RNFSE in employment will ensure more opportunities of work

for women in the labour market. We expect the sign of the coefficient to be positive. RNFS encompasses all non-agricultural activities.

- **Gender Wage Gap in Rural areas (RGWG):** It is also important to look at the nature of women's employment in rural areas. In general, they are engaged in low productivity agricultural activities and are paid less. We have included a variable on Rural Gender wage gap (i.e. ratio of female to male wages). This gives some information about the wage discrimination on the basis of sex which is negatively correlated with FLPR. The positive income effect due to male income can reduce supply of female labour as has been observed by Neffi et al. (2012) in Indian context. "Large wage differentials with men can reduce female labour force participation by increasing the relative value of women's home goods production compared to market work" (Sorsa Piritta et al., 2015).

- **Urbanization Rate (URB):** In respect of the variable, urbanization (URB), we take the hypothesis that as urbanization rate increases, rural female WFPR declines when they migrate to urban areas. This hypothesis is consistent with Kemal and Naci's work (2009) where they observed that women who are largely unpaid family workers in rural labour markets drop out of the labour force due to migration to urban areas in Turkey.

- **Female Literacy Rate (FLR):** The variable, education, has been included in various studies (Verick, 2014; Chaudhary and Verick, 2014). Studies bring out that educational attainments play an important role in an individual's decision to participate in the labour market (Tansel, 2001). It has been observed in various studies (Sundaram and Venneman, 2008; Tansel, 2001; Ejaj, 2007; Psacharopoulos, 1989) that there is a positive relationship between literacy level of females and labour force i.e. greater educational attainment leads to higher participation in the labour force and also increased productivity. Das and Desai (2003), however, in their work show that education has a negative effect on labour force participation. By using 2004 to 2010 NSS data, Neff et al. (2012) examine the decline in female labour force participation in rural India and find similar results. They find that enrolment of the working age (15-24 years) people in school/ college led to decline in labour force participation in both rural and urban areas which constitutes only 29 per cent of the total labour force because most in this age group are in school/university. The expected sign of the variable is uncertain in view of the above empirical results.

- **Rural Sex-Ratio (RSR)** is the proxy used for health status. Sex ratio can affect workforce participation. ***Sex ratio*** implies the number of females per 1000 males. Sex ratio is low in most of the states except Kerala where females outnumber males. The sex ratio not only reveals the health status of women but also is a proxy variable for how society values its women.

Sex ratio has increased from 933 to 940 between 2001 and 2011. It was as high as 1,078 females per thousand males in Kerala to as low as 690 in Chandigarh as per 2011 Census. As the total population of females is higher than that of males, female labour force participation rate can be expected to be higher. The coefficient of RSR should be positive.

- **Percentage of Scheduled Caste Population (POP_{SC}):** We have introduced a variable on caste as a proxy for capturing cultural values, as was done by Das and Desai (2003). The expected sign of the coefficient will be negative implying that lower castes women are less likely to be employed. It has been highlighted in certain studies (Sharma, 2014) that the disadvantaged social groups have to face inequalities and disparities in accessing employment. They are mainly concentrated in low paying and low productivity jobs. It was recognized by the National Commission for Enterprises in the Unorganized Sector (NCEUS) in 2007 that women workers in general constitute a marginalized category within the class of workers. Rural women workers occupy a lower position as compared to urban women workers while the lower-most category of workers is that of scheduled castes (SCs) and scheduled tribes (STs).

- **Incidence of Crimes (IOC):** We include the incidence of crimes committed against women like rape, kidnapping and abduction, dowry deaths, cruelty by husband etc. as a proxy for security and safety concerns facing working women in general. The data are available from the reports of the National Crime Records Bureau, Ministry of Home Affairs, Government of India, New Delhi (various years). We believe that such incidents of crimes against women will discourage them from entering the labour market because of safety concerns. Higher the incidents of crimes, lower will be the participation rate of women in the labour market. The expected sign of the coefficient is positive. It is important to mention that the Number of Rape Cases Reported (RISK) has been used as a proxy for security risks and safety concerns facing working women by Singh and Ozanne in their study (2017). This study takes the number of rape cases reported during the period 1980-2013 as important determinants of female labour force participation in India.

4.2 Empirical Results and Discussion

The test procedure is OLS. Multiple regressions have been used to test the relationship between the dependent variable (RFWFPR) and other explanatory variables discussed above. The sample comprises of 25 states and 7 UTs. Multiple data sources are used.

We tried different alternative versions of the specified model. We are presenting the results obtained in the form of following four equations in Table 2.

Table 2: Multiple Regression Results for RFWFPR

Eqs.	Intercept	RMWFPR	RNFSE	RGWG	URB	FLR	RSR	POPSC	IOC	R2	Adj R2
Eq.1	-57.031		-0.222	27.837	-0.089		0.048			0.504	0.431
	(0.421)		(0.039)**	(0.005)*	(0.370)		(0.080)*				
Eq.2	-29.378		-0.236	27.973	-0.103	0.102	0.048			0.511	0.417
	(0.343)		(0.036)*	(0.005)*	(0.319)	(0.563)	(0.091)***				
Eq.3	-25.632		-0.231	26.56	-0.108	0.737	0.048	-0.017	-0.001	0.514	0.372
	(0.473)		(0.049)*	(0.022)*	(0.32)	(0.716)	(0.110)	(0.944)	(0.754)		
Eq.4	-57.031	0.962	-0.215	16.615	-0.146	-0.051	0.046	-0.194	-0.001	0.604	0.466
	(0.119)	0.032**	(0.048)**	(0.14)	(0.157)	(0.793)	(0.099)***	(0.415)	(0.624)		

Note: Figures in parentheses are p values of the coefficients. Total number of observations is 32.
***10% level of significance; *1% level of significance; **5% level of significance

The above hypotheses were tested and different permutations and combinations of variables were tried. We are presenting the results in the form of four regression equations.

In the first equation given in Table 2, we regressed RFWFPR on the four explanatory variables viz. RNFSE, RGWG, URB and RSR specified in the model given in Section II. The value of R^2 turned out to be 50 per cent implying, on the whole, 50 per cent of the movement in dependent variable was explained by the independent variables. Partial regression coefficients of the three variables viz. RNFSE, RGWG and RSR were statistically significant. While RGWG and RSR are statistically significant at 1% significance level, RNFSE is statistically significant at 5% significance level. The positive sign of the regression coefficient of RSR is in keeping with our hypothesis and it implies that there is a positive relationship between health and rural female workforce participation rate. But the regression coefficients on RNFSE and RGWG bear incorrect (positive) signs. The coefficient of fourth variable i.e. URB bears correct sign but is insignificant.

The negative sign of RFSE implies that the increase in employment opportunities in this sector will lead to decline in RFWFPR. This may be due to the following reasons:

a. that family income of household might increase due to male participation in non-farm jobs and their female counterparts may drop out; or

b. The agriculture might become less attractive economic activity for women and they might withdraw from low paying and low productivity agricultural jobs; or

c. It may be because of the reason that due to lack of education, skill development and training required for handling non-farm jobs, women tend to drop out from the labour market.

In order to prevent decline in RFWFPR, there is a need to spend on education, training and skill development of women so that they can be employed in the RNF sector. It has been pointed out in Chand et al. (2017), "Some evidences indicate non-availability of non-farm employment opportunities rather than lack of willingness for outside work as the reason for de-feminization of rural workforce. There is evidence that female labour force participation rate further declined after 2011-12. It is necessary to formulate attractive avenues for the female workers to bring them out of domestic boundaries and engage them in productive activities."

The positive sign of the regression coefficient of RGWG may be due to the reason that even when gender wage gap is there in rural areas, women continue to work in their given occupations as they might not be having the necessary skills, and education and skills to shift to better paid work options, if available, and also because of historically gendered family responsibilities. RGWG is noticed when we are controlling for education in this equation but in rest of the equations when FLR has been introduced, GWG is still persisting. This also indicates that even when we steer women to certain educational levels the outright discrimination in labour market may not end and can hurt women.

The coefficient of URB bears correct negative sign indicating that rural female WFPR will decline as more women will migrate to urban areas from rural areas in search of better jobs. The results are in keeping with labour Surplus Model of Lewis (1954) and Probabilistic Model of Todaro (1969).

In equation 2, the variable FLR has been added to equation 1. The value of R^2 improved by 1 percentage point – to 51 per cent. The coefficient bears correct positive sign but is insignificant. In the remaining two equations also, it can be noticed that FLR is insignificant in equation 3 too but it is having a positive relationship with RFWFPR implying that if women are imparted education, their participation in labour market can improve. The coefficients of two variables RNFSE and RGWG are significant at 1 per cent level and that of RSR at 10 per cent level of probability.

In equation 3, two more variables were added to equation 2. These are POP_{SC} and IOC. The coefficients of both variables are insignificant. But they bear correct expected signs. The negative sign of the coefficients of POP_{SC} supports the results of a study of Sharma (2014). Higher incidence of crimes will constrain women from entering and continuing in labour market. Our result supports Singh and Ozanne's hypothesis (2017). There is marginal improvement in value of R^2 because of these two variables.

In the last equation, we introduced RMWFPR. In other words, in this equation RFWFPR has been regressed on all eight explanatory variables of the model specified in Section II. The value of R^2 improved to 60 per cent and the coefficient of this variable is highly significant at 1 per cent level of probability. The signs of regression coefficient on RMWFPR have a positive sign which is not in keeping with our expectation. The positive sign of RMWFPR may be due to the reason that women have to take up work just to support households and supplement family income. Although women work for longer hours but they were available for additional work preferably for home based work as it offers them the flexibility to combine income earning activities with household responsibilities as per the National Commission for Enterprises in the Unorganized Sector (NCEUS) report (2007). NCEUS report very clearly says that higher WFPR does not mean a higher level of welfare. However, it points towards the economic compulsion which drives women to engage in whatever work comes by in order to make a living.

In this equation there are other two variables which are found to be significant. They are RNFSE at 5 per cent and RSR at 10 per cent levels of probability and both continue to bear positive signs. But what is interesting is that the sign of the coefficient of the variable FLR is negative which is in keeping with the results of the studies done by Das and Desai (2003) and Neff et al. (2012). It implies that as females get engaged in educational activities, they withdraw from work.

5. Conclusions and Policy Implications

The study highlights (by reviewing literature) the desirability of higher female workforce participation rate for an economy as it can help in experiencing and tapping several potential macro-economic benefits by raising GDP growth, by reducing productivity gaps and also by ensuring diversity in workplaces. Though Indian economy has been growing reasonably well, yet the overall FWFPR and Rural FWFPR has registered a decline from 2004-05onwards. This motivated us to explore the reasons for the decline in RWFPR by making use of cross section data of 25 states and 7 UTs for the year 2011 and by using OLS technique. Our results suggest that MWFPR, RNFSE, RGWG, RSR are the four variables (in various equations given above) which impact RFWFPR significantly. Study also reveals that though higher urbanization rate can lead to decline in RFWFPR yet the coefficient on URB turns out to be insignificant. So far as the coefficient of RNFSE is concerned, it bears negative sign and is highly significant (varying from 1% to 5% levels of probability in different equations). The negative sign of RNFSE implies that the increase in employment opportunities in this sector will lead to decline in RFWFPR which may be due to the reason that women in rural areas do not have adequate and required skills to take up jobs in the non-farm sector. In order to prevent decline in RFWFPR, there is a need to

spend on education, training and skill development of women so that they can be employed in the RNF sector. The negative relationship between FLR and RFWFPR in one of the equations (in equation 4) clearly points out that efforts will be required to create productive employment opportunities in the non-farm sectors for those educated females who will join the labour force after acquiring education in the near future.

Our study also shows that the increase in FWFPR takes place with more male participation in labour market. Therefore, there arises a need to provide an enabling and supportive environment in the form of educational and health facilities, formal childcare facilities etc. to women. There is a need to improve the quality of work done by women in rural areas. It becomes even more essential because there are studies which point out that a large percentage of women in India are engaged in various part time economic activities along with the domestic care duties so that interventions can be made by the government to provide them a decent living (Kalpagam, 2001). The positive relationship between RSR and RFWFPR points towards the need to increase public expenditure on female healthcare and more gender sensitive interventions by the government. The positive relation between gender wage gap and RFWFPR not only highlights the need for imparting education and building skills of rural women through training so that they can take up better work opportunities in rural NFS. But it attracts our attention to the quality of jobs taken up by rural women which are generally lower status jobs, having lower wages with poor working conditions, less autonomy with respect to work and less control over decision making process in the households which can have negative repercussions on their physical and mental health. Therefore, there is a need to address this gender inequity which can have a long term effect on the wellbeing of working women.

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