Factors Affecting Female Labor Force Participation in North East India

Dr. Pardeep Kaur

Assistant Professor, School of Social Sciences, Guru Nanak Dev University, Amritsar (Punjab)

Abstract

For the proper implementation of employment and human resource development policies the study of labor market participation is essential. In this paper, an attempt has been made to examine the trends and patterns of female workforce participation among the Northeast states of India. This paper also examined the various factors that affect the woman work participation rate and for this purpose, OLS regression technique is employed. The findings indicate that female work participation rate in Northeast region is higher than national average but it is low compared to male work participation rate for all the periods. It has been found that except *Assam, all the other states of Northeast India have experienced increasing trend in female work participation rate and this rate is above the national level.*

Key Words: Female labour force, Northeast India, Factors, OLS regression.

Introduction: Present stage is a stage of human development in which the privileges, tasks, and opportunities of Individuals are not determined by the fact of being born as male or female rather this a stage in which both men and women realize their full potential and become followers in every sphere of their lives. In this dynamic world, the employment patterns of men and women have attracted attention of many labour statisticians and policy makers. In any economy, female work participation rate is one of the important indicators of female status in the economy. Female participation in the economic activity is important from their personal advancement and their status in the society (Marx, M.K, 1987). The female work force participation rate is defined as the percentage of female engaged in the total working population of a state or country. A country's economic development crucially depends upon the participation rates of its woman, as they constitute around 50 percent of its human resources. (NIPCCD, 2010).Women's employment is crucial for raising their living standard and well-being. However, economic well-being and economic welfare of woman may not improve if they are engaged in low-paying distress driven work (Srivastva and Srivastva, 2009). According to 2001 census of India, female workforce participation rate was 25.6 percent, which has been slightly declined to 25.5 percent in 2011. Even though female work force participation rate in India has been improved over the years but still it lacks behind compared to developed counties of the world. The low and declining

female labour force participation rate in India despite strong growth over the past decade is puzzling and stands out among emerging markets. At the same time, greater labour force participation of women can be a source of inclusive growth (Sarsa, et al. 2015).

This is the story related to all India level but as far as Northeast India region is concerned it is backward in spite of its natural resources such as forest products, coal and oil.

In terms of per capita income, the Northeast region of India has been considered as a backward region. In spite of low per capita income the position of women in Northeast India is higher in comparison with the position of women in all India average.

There are number of studies emphasis the female employment scenario at the national level but there are few studies, which evaluate the female work participation in the Northeast India. Keeping all these points in mind the paper proceeds with the objective of studying trends of female participation in eight states of North East India and studying the factors which are responsible for interstate variation in female's labor force participation among the North East sates of India.

About the study area: The Northeast India comprises eight states namely Arunchal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Tibet and China in the North East, Bangladesh in the South, Myanmar in the South East and Bhutan in the West bound this region. This region has a population of 40 million (2011 census) and comprising 3.1 percent of India's total population. This region is multiethnic, characterized by heterogeneous cultural background, and very different from mainstream homogenous culture. Due to the lack of development of transport and communication facilities, this region is inaccessible and intensifies its geographical isolation. During the last, few decades insurgency has become the part of the life of the people of this region. The insurgency has affected the normal lives of the people of this region. Women are the worst victims of it. Conflict offers women to enter public and political areas and become organized in the non-governmental sector. Due to these reasons women in the region has been more vulnerable. Among the researchers and economists, the economic analysis of female labour force participation attracted considerable attention since the pioneering works of Mineer (1962) and Cain (1966) .No doubt in all the spheres of life the females are now entered into high positions the majority of women are still working in the unorganized sector. Against this background the present study has been endeavor to

1) Examine the pattern of female labor force among the Northeast states of India.
2) Study the factors affecting female labor force participation in North East India.

It has well studied in the literature that there are number of factors which affected the female labour force participation rate (FLPR). Therefore, in the present study an attempt has been made to indentify the socio-economic and demographic factors, which influence the women work participation rate. The present study has been organized into following sections.

Introduction is presented in **Section I.** In **Section II** review of existing literature on female workforce is discussed. **Section III** presented the database and methodology. **Section IV** provides the nature and pattern of employment in Northeast and various states of India. **Section V** discusses the findings of regression analysis and in the last section some concluding remarks and suggestions has been presented.

Review of Literature: Economic literature reveals that Indian economy has experienced almost two decades of new economic policy regime and it has set in motion a transitory force within the economic system of the country. There are very few studies that examine the nature and pattern of women work in Northeast India.

Ahmad (2009) in his study explained the factors for the inter-state variations in women's labour force participation in India by using NSSO 61st round (2004-05) data. The authors applied two separate regression models for rural and urban areas. The findings suggest that personal variables education and wages are significant determinants of urban women's labour force participation but not for rural women's labour force participation. Sex ratio, Muslim population; SC and ST population and unemployment rate are the significant factors which affect the female labor force participation rate.

Aslam and others (2008) found a similar strong association between higher education and female labor force participation for Pakistan.

B.S Panghal and Mange Ram (1985) conducted a study to examine the nature and extent of employment pattern of woman labor on farms in different agro climatic zones of Haryana state. The study revealed that as the size of the farm increased, the participation of women labor also increased.

Dev (2004) examined the female work participation rate and child labour rate in India. He indentified the determinants of both female work participation and child labour and found that larger the size of the family the lower is the ability of a woman to participate in economic activity. By applying logistic regression analysis he also pointed out that females belonging to the medium and high standard of living categories are less likely to participate in economic activities.

Faridi et al., (2011) used the data of Bahawalpur district of Punjab, (Pakistan) and found that women's self-employment is positively related with age and experience. Analysis of various education level shows that women who have low-level education highly tends towards self-employment than women who have high level of education. Maglad (1998) used demographic survey of Sudan for the period of 1990-91and found that education is positively and significantly related with female decision to enter for work in market. Moreover, female labor force participation is positively related with own wage and negatively related with spouse's wage, assets, and having small children.

Gualti, Leela (1975) in her study examined that inter-state differences in female participation rates are not possible to explain in terms of disparities in per capita income, the cropping pattern, variations in level of literacy.

Mammen and Paxsun (2000) made an attempt to study how women's work status changes with economic development and concluded that women's education level turned to be important determinant of women labour market activities. This study highlighted that women's wellbeing improves on average with development in mortality rates and education level.

Naqvi and Shahnaz (2002) have analyzed the effects of various demographic, socio-economic, and human capital related factors on women participation in economic activities. They applied probit and multinomial logit model to estimate the parameters. The findings indicate that marital status, primary education, number of children and female head of households are inversely related with women's participation in economic activities.

Ramotra (1989) examined the spatial variation in female participation in India in general and in Marathwada region of Maharashtra in particular. The findings indicate that per capita income and female participation rate are negatively correlated. The female work participation rate is highly correlated to poverty and landlessness in rural India.

Sahoo and Mohanty (1978) made an attempt to study the inter -district variation in female participation in Orissa on the basis of data from 1971 census. They worked out the correlation coefficient of female participation rate with various variables such as male population, percentage of Scheduled caste / Tribes, education. They found positive but insignificant correlation with sex ratio. The study also concluded that there is positive relationship between low level of SC and ST population and FLPR. The findings of the study suggest that not only single variable is enough to explain sex ratio and concluded that in those districts where population of SC and ST was less, female participation rate (FPR) was also high. The findings of the study suggest that no single variable satisfactory explains the differences.

 Shaheen, Safana (2011) investigated the patterns of female labor force participation in case of Pakistan. The study utilized Multiple Indicator Cluster Survey 2007-08 data of Punjab. The variables used in the analysis are female labour force participation, age, age square, marital status, area, female monthly income, family monthly income, family size, household head education, different classes of female education and employment status. Results of Logit model depicts that household head education, primary, middle, matric & mudrassa education level is negatively related with the decision of female labor force participation while, decision towards participation is strong if female belonged to urban area, if she is married, if she has higher education, and if she has large family size.

Data base and Methodology: The present study is based on secondary data. In case of India there are two sources of data on workforce population are namely census and the National Sample Survey Organization. For the purpose of present study Census of India data is used. The coefficient of variation has been used to compute the extent of inter-state variations in FWPR. In order to study the influence of economic, demographic and socio

culture variables on FWPR, Multivariate regression analysis technique has been used on three specific periods (census years) viz. 1991, 2001 and 2011.

Women and Work in North East India: Since the post-independence period Northeastern region of India is one of the most ethnically diverse region of India and women of North east India enjoying greater freedom with respect to their mobility compared with their counterparts. In north east India there was absence of certain practices such as dowry, obligatory wearing of burqas. This region is also characterized by a dominant subsistence agrarian economy and this region has also lack of infrastructure facilities and a poor industrial growth.

Table-1: Work Participation Rate in India and North East India Region

State / Country	1991			2001			2011		
	MFPR	*FWPR*	*Gender gap*	*MFPR*	*FWPR*	*Gender gap*	*MFPR*	*FWPR*	*Gender gap*
India	*51.6*	*22.3*	*29.3*	*49.48*	*25.7*	*23.78*	*53.26*	*25.5*	*27.76*
Northeas	*50.33*	*32.47*	*17.86*	*51.24*	*34.57*	*16.67*	*52.88*	*34.16*	*18.72*

Note: *Census of India, Various Issues*

Table-1 provides the comparative estimates of MWPR and FWPR for India and Northeast region of India. From table it is clear that FWPR in Northeast region is higher than national average but it is low compared to MWPR for all the periods. It has also been observed that in 2011 FWPR has been declined for both India as well as for Northeast India but showed improvement in MWPR at the national level and for all the north east Indian states. The gender gap between work participation rates indicates that in case of Northeast India gap is less compared to all India average. The gap was found to be 29.3 percent for all India in 1991 while for Northeast India it was 17.86 percent. In census 2011, the gender gap has been increased but still it is less compared to all India average.

In Table-2 FWPR and MWPR for all the states of Northeast India has been shown. From the table it has been clear that except Assam, all the other states of Northeast India have experienced increasing trend in FWPR and this rate is above the national level. In Tripura and Sikkim, FWPR is lower than the all India level. From the table it is seen that FWPR in Arunchal Pradesh has been continuously declined. This may be contributed due to the fact that in Arunchal Pradesh women are not joining the workplace and remain busy with their domestic responsibilities which are resulted in declining of female ratio in workplace. From the table has been evident that FWPR in Nagaland during the period 2011 turned out to be 44.7, which is highest amongst all the Northeast Indian states. In case of Manipur, it is found that it has continuously maintained the same level of FWPR. In 1991, the co-efficient of varation among all Northeast Indian states have turned out to be 29.83 percent, which has declined to 26.62 percent in 2001 and further declined to 22.55 percent in 2011. The declining rate of co-efficient of variation indicates that the disparity among the states has been declined over the different census years.

Table-2: Female and Male Work Participation Rate in North East Indian States

State	FWPR			MWPR		
	1991	2001	2011	1991	2001	2011
Assam	21.6	20.7	22.5	54.21	50.69	49.06
Arunchal Pradesh	37.5	36.5	35.4	49.93	49.93	53.59
Manipur	39.0	39.0	38.6	49.09	47.76	51.58
Meghalaya	34.9	35.1	32.7	45.36	48.91	47.17
Mizoram	43.5	47.5	36.2	54.37	57.45	52.35
Nagaland	38.0	38.1	44.7	48.61	46.82	53.42
Tripura	14.9	21.1	23.6	53.6	57.58	60.16
Sikkim	30.4	38.6	39.6	47.48	50.81	55.77
C.V	29.83	26.62	22.55	6.69	8.01	7.53

Note: *Census of India, Various Issues*

In Meghalya the women in large number are engaged in the urban based economic activities like trade and commerce and other events.

Traditionally the women in Manipur hold a higher position with men also have higher participation rate in household industry and trade and commerce. FWPR vary significantly in Northeast India from one state to another. One of the major factor accounted for higher women work participation in Arunchal Pradesh. The plain states like Assam and Tripura with predominately non-tribal population.

From the above analysis, it is clear that there are variations in FWPR among the Northeast states, which may be attributed due to certain factors, discussed in the next section.

Determinants of female work Participation: The present section examines the determinants of inter-state variations in the female participation rate in Northeast India region. It is not an easy task to identify the determinants because there are number of variables, which can be considered as possible determinant of FLFP rate. The women's decision to participate in non-domestic works depends on not only the economic factors and socio culture factors and these factors vary from place to place. For this purpose, following regression model has been applied.

$$FLEP = \alpha + \beta_i + X_i \text{ 's} + \mu + D_1 + D_2$$

Where FLFP is the dependent variable and X's are the independent variables, explaining variations in the female labor force participation rate. α shows the intercept and β_i examines the estimated coefficient of the respective regression. μ is the disturbance term with zero mean and constant variance. D_1 and D_2 are the two dummy variables (D1=1 for 1991 otherwise 0 and D_2= 1 for 2001 otherwise = 0) are included in the model to see if there has been a change in the structure of relationships in these periods.

Estimated results of regression analysis are presented in Table-3. In the present study, FWPR has been used as a proxy variable to study the impact of level of education on the

women's decision to participate in the labour market. From the findings, it is clear that there is positive relationship between female literacy rate and female labour force participation rate. It is because of the reason that education has been treated as investment in human capital and recipient has to work in order to recover cost of education. The estimated sign of coefficient is not significant. In practice, the structural and institutional arrangements have acted as serious impediments in women's education and relationship between female work participation and level of education is not significant and straightforward. It means that higher level of female literacy rate do not necessarily lead to higher female labour force participation. Another important variable, which is introduced to capture inter-state variations in FLFP rate in North East region, is MWP. The sign of the coefficient is positive and found to be highly significant at 1 % level of significance. It indicates that higher workforce participation of males is more likely to bring about high level of female workforce.

Table-3: Results of OLS Regression model

Variables	Co-efficient	t-ratio	P-value
Constant	**128.914**	**1.842**	**0.0926***
MWPR	**0.7056**	**2.464**	**0.0315****
D1	**3.7729**	**1.010**	**0.834**
D2	**3.32914**	**0.5689**	**0.580**
SER	**-0.146696**	**-2.108**	**0.058**
FLR	**0.047642**	**0.2149**	**0.8338**
Adjusted R-squared	**0.93324**		
F-statistics	**27.82**		

Note: ** Signifies at 5% level of significance ***Signifies at 1% level of significance.

SER is another important variable used to determine the impact of sex ratio on FLPR. It has been have been introduced in regression analysis to capture interstate variations in female labour force participation. From the findings, it is clear that sex ratio affects women's labour force participation positively. The results indicate that the state which have higher sex ratio have more women available to join labour force market which resulted in higher labour force participation rate.

Conclusion: The findings of the study indicate that due to the existence of tribal dominant states in Northeast India, its average FLPR exceed the national average and large number of female workers are involved in the agriculture sector. The study revealed that in Northeast India interstate variations has been observed for labour force participation for both males and females. In some states, FWPR rate has increased which has positive impact on the ideological, political and social spheres. The findings of the study suggest that in few states of Northeast region especially in Assam Government should generate education based job opportunities. Wage discrimination on the basis of sex should be removed because it discourages women to participate in labour market.

References:

1) Ackah C, Ahiadeke C, Fenny AP. 2009. 'Determinants of Female Labour Force' Poverty Research Group, Economic and Social Research Council.

2) Ahmad, Izhar Tariq Masood and Mohd. 2009. 'An Econometric Analysis of Inter-State Varations in Women's Labour Force Participation in India'MPRA Paper No. 19376. Online avaliable at http://mpra.ub.uni-muencher.de/19376/

3) Aslam, M. 2009. 'Education Gender Gaps in Pakistan: is the Labour Market to Blame?' Economic Development and Culture Change, 57 (4): 747-784.

4) Cain, G. G. 1966 'Labour Force Participation of Married Women, Chicago: University of Chicago Press.

5) Dev, Mahendra, 2004 'Female Work Participation and Child Labour' NFHS 14-02-2004, 39, (07), February 14-February 20.

6) Gulati Leela 1975. 'Female Work Participation, A Study of Inter-state Differences', Economic and Political Weekly, 10 (1&2), :35-42.

7) Mammen Kristen and Christina Paxson, 2000. 'Women's Work and Economic Development', Journal of Economic Perspectives, 11 (4):141-164.

8) Mineer ,1966. Labour Force Participation and Unemployment: A review of Recent Evidence ,in R.A. Gorden and M.S Gorden (ed.) Prosperity and Unemployment, New York: John Wiely and Sons Inc. : 25-30.

9) Mehta, S. 1967. 'India's Rural Female Working Force and its Occupations Structure: A Geographical Analysis' The India Geographer, 12:49-68.

10) Naqvi Zaleen F, Lubna S, 2002. 'How do Women decide to Work in Pakistan? The Pakistan Development Review', 41 (4): 495-513.

11) Ramotra, K.C. 1989. 'Female work participation: A geographical perspective with special reference to Marathwada, The Indian Geographical Journal, 64, (1): 80-87.

12) Saheen S, Maqbool HS Masoon. 2011. 'Female Labour Force Participation in Pakistan: A Case of Punjab' Journal of Social Development Science, 2 : 104-110.

13) Sahoo B, Mohanty BK. 1978. 'Female Participation in Work in Orissa-An Inter-district Comarasion' The Indian Journal of Labour Economics,20, (4) : 329-335.

14) Sarsa, Piritta, Jan Mares 2015. 'Determinants of the Low Female Labour Force Participation in India'   Economic Department Working Papers No. 1207 online available at www.oced.org.last accessed on 26.3 2016.

15) Sharma, Anande and Sanjoy Saha. 2015. 'Female Employment Trends in India-A Disaggregated Analysis' The NEHU Journal, 13 (2):17-30.

16) Srivastava N. and Srivastava R. (2009)' Women, Work and Employment Outcomes in Rural India' Discussion draft presented at FAO-IFAD Workshop on Gaps, trends and Current Dimensions in Agricultural and Rural Employment.