

An Investigation Into The Changing Trend Of Female Workforce Participation In North Eastern States Of India : A Comparative Study

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Abstract

Participation of women in the workforce is one of the crucial components of women empowerment. Compared to those who do not engage in work, economically active women can enjoy more freedom in terms of, say, decision-making in important aspects ranging from the household to society at large. Empowering women through work participation, however, calls for an enabling environment that allows women to have access to education and improved health facilities raising in turn the number of qualified women and thereby the probability of getting jobs. In this paper an attempt has been done to explore the interlinkage between education and workforce participation of women in North Eastern Region. The preliminary findings of the regression model indicate a positive relationship between education and female workforce participation. Moreover, we have studied the impact of per capita income (PCI), urbanization and sex ratio on female workforce participation in North East India. The findings of the regression imply an insignificant negative relationship between sex ratio and workforce participation in North Eastern States. In contrast to this PCI and urbanization positively affect female workforce participation in North Eastern States.

Keywords: female workforce participation, sex ratio, education, per capita income, urbanization, North East India

Introduction

Women empowerment is very crucial for economic development of a country. But empowerment cannot be injected from outside, rather it has to be acquired by the women through their active participation in the development process. While participation of women in economic activities empower them by increasing opportunity to participate in decision making and in many other aspects in their day to day life, at the same time greater labour force participation of women can be a source of inclusive growth (Sarsa, et al. 2015). Therefore, femlae workforce participation occupies a crucial place in an economy. India is a country with large number of population, out of which 51.54% are males and 48.46% are females (Census, 2011). According to the world bank, over the past two decades India has made remarkable progress in terms of women empowerment accompanied by economic growth. It has become 5th largest econmy in the world. In this situation female workforce

participation is indeed very crucial for the nation, where as female population constitute nearly half of the total population. According to the world bank report the female labour force participatin rate in India was 19% in 2020 which was even lower than in Bnagladesh (35%) and Srilanka (31%).

North East India, which comprises of eight states i.e. Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and tripura., is an integral part of India which is rich in beauty and known for its ethnicity and rich cultures. But in terms of per capita income it is one of backward region of India. This region occupies 3.78% of India's total population. Female population occupies 48.96% of total population in the region with about 31% of female working population as per the report of 2011 census which is better than national average. In North East India, most of the female population are engaged in the agriculture and allied sector such as weaving industry. However, there is still much to be done in terms of diversification of activities in which women can have active participation as much as they do in the agricultural and allied sectors. In other words, women empowerment through work participation has still a long way to go and there are several factors that can affect the work participation rate and hence women empowerment. To improve the status of women epowerment, one of the prominent factors that has to be improved is educattion. Other important factors contributing to female labour force participation are per capita income, sex ratio and urbanization. Increase in per capita income indicates better standerd of living which implies the ability to devote more resources to areas like health care and education. However, increase in education is a milstone of empowering women because it equips them with more skills and knowledge, thus enabling them to participate in labour force. The Guttentag-second theory related societal lavel sex ratios (men to women) to women's status and roles. This theory implies that high sex ratios, which indicate a undersupply of women, will be positively associated with the proportion of women who marry and the fertility rate and negatively associated with women's average age at marriage, rates of divorce and illegitimecy, female rates of literacy, labour force participation and suicide (Scott& Katherine). Therefore, in this paper sex ratio is considered as a factor which have impact on female workforce participation.

Against this background the paper makes an comparative analysis on the changing trend of female workforce participation, female literacy rate and sex ratio in between the national level and North Eastern parts of India. Moreover, an attempt has been made to study the impact of female litercay rate and sex ratio on feamle workforce participation in India.

Concept of women empowerment

Women empowerment can be defined in various ways. Most of the authors defines women empowerment as the ability to take control of their own life and gaining self confidence. Women empowerment refers to the autonomy of women with regard to the relative access to household resources and control over decision making power.(Young, 1993). One of the

prominent conceptual framework of women empowerment developed by Chen and Mahmud mentioned four dimensions. Out of them cognitive dimension refers to the changes in the level of knowledge, skill and awarness of the wider environment.

In addition to this women empowerment also includes economic empowerment, social empowerment and political empowerment of women. Women's access to economic opportunity reduce the gender disparity in terms income and thereby improve the decision making status of women. It also improve te ability to determine their own choice. According to Ban Ki -moon, UN Secretary- General 'The empowerment of the world's women is a global imparative, yet despite important progess in promoting gender equality, there remains an urgent need to address structural barriers to women's economic empowerment and full inclusion in economic activity. If the world is to achieve the sustainable development goals, we need a quantum leap in Women's economic empowerment."

In this study we adopted the concept of cognitive dimension and addressing the changing pattern of women inclusion in economic activity.

Theoretical background and Review of literature

Theoretically, there are four waves of feminist movement. The first wave occurred in the late 19th and early 20th century movement for women's right to vote. The second wave began in the 1960s and continued into 90s, moved for equal legal and social rights. The third wave began in the mid 1990s, refers to a continuation and reaction to second -wave. The fourth wave seeks gender equality by focusing on gender norms and marginalization of women in society.(Rampton, 2008)

In the 1960s, Gray Becker developed the theoretical argument for the relationship between greater education in women and a decline in children per women. This theory immplies that as women increase their participation in the labor market their opportunity cost for having a child rises so they seek to have fewer children. The theory is corroborated by the evidence of reduced fertility rates and increased participation of women in the labour force throughout the 20th century across different countries. Besides, there is a change experienced by the society in terms of job pattern as industrialisation has increased in developing countries. Therefore, most of the workers shifted away from manual agriculture sector to manufacturing sector and service sector as they have created plenty of employment avenues. In relation to this, the importance of education increased and the comparative advantage that men continued to hold in the labour market for decades began to erode. In this way, female workforce participation began rising. This change is supported by 'Unified Growth Theory' developed by Galor and Weil (1993).

Education is the most powerful factor of women empowerment (olakulfi,2006). Most of the available empirical studies shows that there is a positive relationship between

education and empowerment. It is noted that higher level of education provides better employment opportunities and enhances income (yavas et al., 1994; opela, 1996).

Oliveria(2000) also stressed that education has an important impact on access to other resources such as extra domestic work and greater income. In addition to this Chaudry(1995) said educated women demonstrated a better ability to keep control of their husband's expenditures and to maintain their own economic independence to improve household management and be able to save money and generally contribute more to the family income pool.

There are a number of studies that accounts for the relationship between urbanization and women empowerment. Previous study shows that economic development accompanied by urbanization and industrialization affects both men and women positively (Inkeles and smith 1974; Lerner 1985; Lipset 1959). A few studies focused the role of urbanization on female labour fource participation (Elmas 2004; Goldin 1995; Pampel and Tanka 1986; Tansel 2002). It is evident that as a result of urbanization women receive better education, are able to determine the number of children they have , and can invest in themselves and their children (Ashraf, Karlan, and Yin 2009, 333; Chant 2013, 13-15; Eswaran 2002, 434). Women in cities usually have better access to a variety of civil society organization (Goldman and Little 2015, 773; Lind 1997, 1205-7; Janssens 2009, 974).

There is an extensive literature on various determinants of female workforce participation all over the world. A large number of empirical studies based on the historical experiences of developed countries and other multiple country studies document the much discussed U-shaped relationship between female labour force participation and economic development (Choudhary & Verick, 2014). A study done by Bhalla and Kaur found postive relationship between female education and female workforce participation. However, another study related to India shows that although there is a positive relationship between likelihood of joining labour force and type of education obtained, yet this relationship is also impacted by the caste and location a woman belongs to (Malhotra, 2017).

Naqvi and Shahnaz (2002) have analyzed the effects of various demographic, socioeconomic, 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

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 labor market activities. This study highlighted that women's wellbeing improves on average with development in mortality rates and education level.

Another study done on North Eastern states of India to analyze the impact of various socio-economic and demographic factors on female workforce participation found that there exists a positive relationship between female literacy rate and female workforce participation (Kaur, 2016). In contrast to this a study conducted in Pakistan by using Multiple Indicator Cluster Survey 2007-08 data of Punjab indicates that household head education, primary, middle, matric & madrassa 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.

A study on workforce participation in North East India found that due to change in socio-economic and political-legal changes the role of female in workplace has been expanding. Expanding participation of women enhance their productivity and earning potentials which in turn raises the living standard of women and contribute to better economic performance. It also found that in North Eastern States of India female literacy rate has increased and it has a positive impact on the ideological, political and social spheres (Pegu, 2015).

Another study on a regional analysis of female workforce participation across Indian states investigated the relationship between female workforce participation and per capita income and found that a negative relationship exists between these two variables (Nayak& Natarajan).

Research gap

From the previous section of this paper it is clear that although there is a number of studies that have been undertaken in different parts of the world regarding the status of female workforce participation and determinants of it; yet very limited number of studies have addressed the issue in North Eastern States. In this paper an attempt is done to study the performance of female workforce participation and the impact of various factors such as female literacy rate, sex ratio, per capita income and urbanization on female workforce participation in North Eastern states.

Objectives

- To analyze the changing trend of female workforce participation in North Eastern Region (NER)
- To study the status of women in terms of female literacy rate and sex ratio
- To investigate the impact of education, sex ratio, per capita income and urbanization on women empowerment.

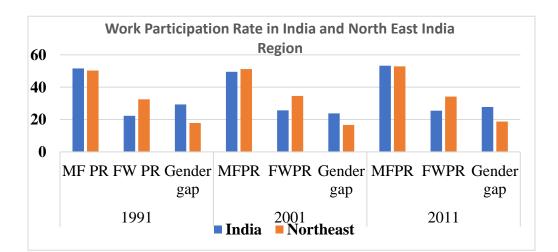
Data and Methodology

This paper is completely based on secondary data collected from various census issues of India for the period of 1981-*2020. To analyzes the changing trend of female workforce participation among the North Eastern States we have calculated the compound annual growth rate (CAGR) from decade to decade. After that to investigate the impact of education, sex ratio, per capita income and urbanization on female workforce participation we have run panel regression. In this study we considered female workforce participation rate as a proxy of women empowerment, female literacy rate is considered as a proxy education and urban population is considered as a proxy of urbanization.

<u>Changing trend of female Workforce participation in India and North Eastern Region</u> <u>: A comparative analysis.</u>

India has taken various steps to improve the status of women and introduced various schemes to epowering women. The socio-political and economic changes experienced by indian economy in recent decades have brought a significant change in the status of women in NER (2). If we examine the female work force participation in NER it has been experienced that all the NER have experienced a higher rate of female workforce participation compared to the national average(Diagram 1). Since ,from1991 the female workforce participation rate has been icreasing in NER states yet the male workforce participation has outweight the female workforce participation, we found that the gap is wider in national average as compared to the NER(Diagram 1).

<u>Diagram 1</u>



Source : Author's calculation

<u>Comparative analysis of female Workforce participation among the North Eastern</u> <u>States</u>

As we have found that North Eastern States have experienced better female workforce participation as compared to the national average. In this section we have made an attempt to explore the comparative status of female workforce participations among the eight states of North East India. In 1981 female workforce participation is highest in Arunachal Pradesh followed by Nagaland and Manipur. But in 1991 Mizoram has occupied the first position followed by Manipur and Nagaland. Accordingly, in 2001 Mizoram secured the first position while Manipur and Sikkim have secured second and third position respectively. From the table 1 it is clear that from 1981 to 2019-20 the female workforce participation is declined in North Eastern States except Sikkim and Meghalaya. We also calculate the compound annual growth rate of female workforce participation among North Eastern States. The table 2 shows that from 1981-91 except Mizoram and Tripura all other North Eastern States have experienced negative growth rate of female workforce participation. In contrast to this from 1991-2001Tripura has experienced the highest CAGR of female workforce participation followed by Sikkim and Mizoram. Similarly, from 2001-2011 Nagaland has recorded the highest CAGR of female workforce participation followed by Tripura and Assam. However, from 2011-2020 Sikkim has experienced highest CAGR followed by Meghalaya; while the other states have experienced negative CAGR of female workforce participation. The table 2 indicates that from 1981-2020 the over all CAGR is highest in the state of Tripura followed by Sikkim. The remaining states have experienced negative growth rate of female workforce participation. This implies that although the status of female is comparatively better in North Eastern States as compared to the national average, yet the growth of participation of female in workforce is not appreciative.

Female Workforce Participation Rate in NER								
	Assam	Arunchal I	Manipur	Meghalay	Mizoram	Nagaland	Tripura	Sikkim
1981		45.7	39.5	37.5	37.7	43.2	12.8	37.6
1991	21.6	37.5	39	34.9	43.5	38	14.9	30.4
2001	20.7	36.5	39	35.1	47.5	38.1	21.1	38.6
2011	22.5	35.4	38.6	32.7	36.2	44.7	23.6	39.6
2019-20*	14.2	20.8	26.8	44.1	34.9	31.1	23.5	58.5

Table 1 Female workforce participation rate in No	rth Eastern states

Source: Various census issues of India

* Source: Periodic labor force survey July 2019 June 2020, Ministry of statistics and program implementation

Table 2 Compound annual growth rate of female workforce participation rate (FWPR)	
<u>in NER</u>	

COMPOUND ANNUAL GROWTH RATE OF FWPR								
	Assam	Arunchal	Manipur	Meghalaya	Mizoram	Nagaland	Tripura	Sikkim
1981-1991	NA	-0.0196	-0.0013	-0.0072	0.01441	-0.0127	0.01531	-0.021
1991-2001	-0.0042	-0.0027	0	0.00057	0.00884	0.00026	0.0354	0.02417
2001-2011	0.00837	-0.0031	-0.001	-0.0071	-0.0268	0.0161	0.01126	0.00256
2011-*2020	-0.0499	-0.0574	-0.0397	0.03379	-0.0041	-0.0395	-0.0005	0.04431
1981-2020	NA	-0.0757	-0.0381	0.01634	-0.0077	-0.0323	0.06264	0.04519

Source: Author's calculation.

Comparative analysis of literacy rate in North Eastern States and India

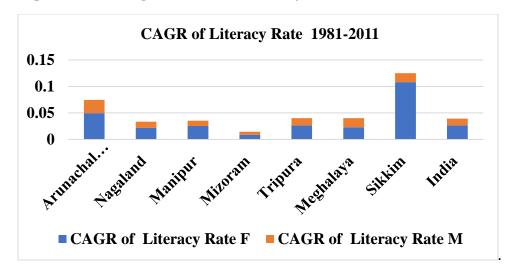
In this paper female literacy rate has been recorded as a proxy of female education. The table 3 depicts the status of literacy rate for both male and female. It indicates that all of the North Eastern states have recoded an increasing trend in literacy rate for both sex; male and female. In the meantime, in every decade some the North Eastern States has recorded a literacy rate which is greater than as compared to national aggregate. Therefore, it is clear that the trends of literacy rate have shown an impressive picture of North Eastern states. Parallelly we have calculated the CAGR of literacy rate and we found that (diagram 2) the female literacy growth rate of two states of NER have outweigh the female literacy growth rate Arunachal Pradesh has experienced highest male literacy growth which is also more than national average.

<u>Table 3</u>

Sex wise Litercy Rate In North Easten States of India									
		Male				Female			
States	1981	1991	2001	2011	1981	1991	2001	2011	
Sikkim	53	65.7	76.04	87.29	27.4	46.7	60.4	76.43	
Arunachal Pradesh	35.1	51.5	63.83	73.69	14	29.7	43.53	59.57	
Nagaland	58.5	67.6	71.16	83.29	40.3	54.8	61.46	76.69	
Manipur	64.1	71.6	79.54	86.49	34.6	47.6	60.1	73.17	
Mizoram	79.4	85.6	90.72	93.72	68.6	78.6	86.75	89.4	
Tripura	61.5	70.6	81.02	92.18	38	49.7	64.91	83.15	
Meghalaya	46.6	53.1	65.43	77.17	37.2	49.9	59.61	73.78	
Assam		61.9	71.28	78.81		43	54.61	67.27	
India	56.4	64.1	75.26	82.14	29.8	39.3	53.67	65.46	

Source: Census of India, Various issue

Diagram 2 Compound annual growth rate of literacy rate in North eastern states



Source: Authors calculation

Note: the data of literacy rate for 1981 is not available for Assam

Comparative analysis of Sex Ratio in North Eastern States and India

In this section we have made an attempt to done a comparative analysis on sex ratio in North Eastern states and India. The table 4 depicts that from decade to decade the sex ratio of North Eastern States has increased. In 1981 Meghalaya has recorded highest sex ratio among the north eastern states; which is also more than national average. In is clear from the table 4 that in every decade the performance of some North Eastern States is in better condition as compared to national average.

Moreover, the diagram 3 indicates the CAGR of sex ratio. From the diagram 2 it is clear that all North Eastern States have recorded a positive CAGR which is more than national average. It implies that the status of women is comparatively better in North Eastern states

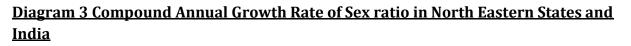
as compared to national average. However, Nagaland has recorded highest CAGR of sex ratio among the North Eastern States followed by Nagaland, Arunachal Pradesh and Mizoram.

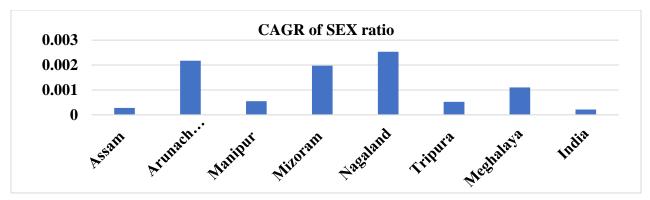
If we compare the growth rate of female literacy rate (FLR), female workforce participation rate (FWPR) and sex ratio among North Eastern States we found that every north eastern state has experienced positive growth rate in female literacy rate followed by sex ratio. In contrast to this only Tripura and Nagaland have recorded a positive growth rate in female workforce participation. From the diagram 4 it is clear that the growth in education and growth in female literacy is not in same direction in four states of North East i.e. Arunachal Pradesh, Manipur, Meghalaya and Mizoram. But growth in sex ratio and growth in female workforce participation move in the same direction. Therefore, in the following part of this paper we have investigate the impact of education and sex ratio on female workforce participation in North Eastern states.

SEX ratio In NER And India								
Year	1981	1991	2001	2011				
Assam	946	923	935	954				
Arunachal	862	859	893	920				
Manipur	971	958	974	987				
Mizoram	919	921	935	975				
Nagaland	863	886	900	931				
Tripura	946	945	948	961				
Meghalay	954	955	972	986				
India	934	927	933	940				

Table 4 Sex ratio in North eastern States and India

Source: Census of India, Various issues

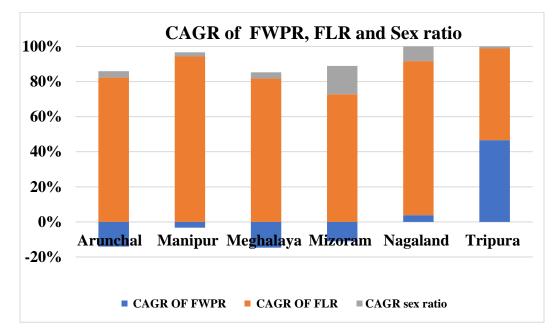




Source: Authors Calculation

Note: Data of Sikkim is not available





Source: Authors calculation

Impact of education, urbanization, per capita income and sex ratio on women empowerment

To investigate the impact of education and sex ratio on female workforce participation rate in North Eastern states of India we have done a panel regression. From the empirical analysis we found that education, urbanization and per capita income significantly influence the female workforce participation in north eastern states of India. In this analysis BP test indicates that random effect 1 model is suitable for the study. The table 5 depicts that education, per capita income (PCI) and urbanization(urban) exerts significantly positive impact on female workforce participation rate. In contrast to this the sex ratio has negative impact on female work force participation which is insignificant. It may imply that increase in sex ratio may lead to oversupply of women or may increase the average marriage age of women which may indirectly increase the likelihood of engagement of female in economic activities. The finding the study validates the general perception regarding the relationship between education, urbanization and women empowerment and also corroborate the findings of olakulfi,Inkeles and smith, Lerner and Lipset .

The positive impact of education on female workforce participation implies that increase in education lead to human capital formation by increasing skillful person, which in turn increases the probability of joining in the workforce.

Urbanization may raise the Female workforce participation rate (FWPR). Firstly, increased urbanization may change the societal attitude towards involvement of women in

work. Secondly, increased urbanization creates more employment avenues, thereby raising the demand for labor. Increased labor demand pushes up the wage rate that might encourage more women participation in the labor force.

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Pooled OLS	FE	RE	FE1	RE1
Edu	0.0390*	0.0986	0.0568	0.0555	0.0404*
	(0.0201)	(0.0772)	(0.0699)	(0.0367)	(0.0207)
Sex	-0.0106	-0.149**	-0.128***	0.00769	-0.00975
	(0.00776)	(0.0562)	(0.0448)	(0.0291)	(0.00919)
Urban	0.105**	0.275*	0.340**	0.0553	0.0995**
	(0.0387)	(0.141)	(0.133)	(0.0643)	(0.0416)
Pci	25.65***			26.89***	25.77***
	(0.997)			(2.821)	(1.140)
Constant	-45.44***	160.4***	142.3***	-64.77*	-46.51***
	(8.860)	(48.72)	(38.93)	(31.46)	(10.33)
Observations	31	31	31	31	31
R-squared	0.979	0.327	51	0.884	51
Number of Id	0.777	0.527 8	8	0.004 8	8
Number of Iu		0	0	0	0

Table 5 Results of panel regression

Conclusion

In this study we made a comparative analysis of status of women in North Eastern States. In addition to this we also investigate the impact of various factors i.e., education, urbanization, per capita income and sex ratio on women empowerment. The result of the study shows that the status of female workforce participation is in better position as compared to the national average. It shows that two North Eastern States, namely Tripura and Sikkim have recorded highest CAGR of workforce participation during the considering time period. So, we can say that the status of women empowerment is better in North Eastern States as compared to the national average. This paper is a modest attempt to analyze the various macro-economic factors that might affect female workforce participation in the North East states. Here we found that Education, PCI and Urbanization exert significantly positive impact on women empowerment. In contrast to this sex ratio has negative impact on women empowerment which is not significant.

The policy should be designed in such a way that the benefits of increased urbanization permeate to the rural areas, thereby enlarging the labor market for rural

women. However, each North Eastern state is characterized by the existence of socio-cultural diversities. Such diversities might also affect women empowerment. An investigation of such diversities will reveal further insights concerning the participation of women in workforce and consequent empowerment of them.

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