



INTER-REGIONAL GENDER INEQUALITY IN FEMALE LABOR FORCE PARTICIPATION AND AVERAGE WAGE RATE ACROSS INDIA

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ABSTRACT :

This study takes into account gender inequality as one of the important indicators of growth and examines the inter – regional inequality in female labor force participation as well as average wage rate. This paper also examines gender inequality in terms of involvement of females in workforce. It also tries to study explainable variables affecting existing female labor force participation in India. Inter-regional and inter gender disparity between male and female wage rate are striking as per the available data. This disparity can also be seen in rural and urban sector both across the various states and Union Territories. The study uses secondary data published by NSSO and analyses the data using charts, tables and SPSS software. Author explains that variables like female literacy rate across states, male Labor force participation rate, Rural Female average wage rate, Urban female average wage rate and percentage of women in total population are the major determinants of the present state of female labor force participation in India across the states. A keen study of states and union territories show that most of UT's and eastern states show a progressive picture of average female wage rate as well as labor force participation.

KEYWORDS : *female labour force participation, gender inequality, wage rate.*

INTRODUCTION :

India is increasingly being depicted as one of the fastest growing economies of the world. Gross Domestic Product of India has been growing at an average rate of 7.3 % from 2007 onwards. India has become the third largest economy of the world in terms of Purchasing Power Parity with GDP of \$2263.6 in 2016 (Bank, 2017). Since it was agreed upon by the experts of the subject that per capita income / Gross Domestic Product can't be treated as only indicators of growth, Human Development Index was calculated in 1990. After Human Development Index, now Gender Development Index (GDI) is calculated by United Nations Development Programme (UNDP) since 1995. It has been argued by United Nations Development Programme itself that gender equality is a very important indicator of development and a country need not be wealthy to treat men & women equally (UNDP, Human Development Report, 1994). The GDI measures gender gaps in human development achievements by accounting for disparities between two genders in three basic dimensions of human development—health, knowledge and living standards using the same component indicators as in the HDI. Value of GDI in India had remained 0.841 with global rank at 127 in UNDP report of 2017. This is not a very encouraging rank as far as one of the fastest growing economies of the world is concerned, but it is definitely motivating looking at the past figures. India still faces gender disparities which differ all across India in different states. The Gender Inequality Index (GII) has a value of 0.524 in 2017. As per the UNDP report, there is a huge gap between gross national income per capita of males (\$9729) and females at (\$2722) in India (UNDP, Human Development Indices and Indicators : 2018 Statistical Update, 2018).

OBJECTIVES & METHODOLOGY:

This paper examines gender inequality in terms of involvement in labor force and average wage rate earned across the different states of India. Specifically, it examines whether gender inequality and female labor force participation across the Indian states differs significantly and whether it is higher in more literate and high income states and analyses the trend. As per UNDP Statistical Update, the labor participation rate has a wide disparity in India with 27.2% women and 78.2 % men forming the workforce (UNDP, Human Development Indices and Indicators : 2018 Statistical Update, 2018). This paper uses secondary data available through National Sample Survey Organization to analyse the trends of gender inequality across different states of the country. The specific objectives of the study are:

1. Trend of female & male labor force participation across the various states in rural & urban sector.
2. To see whether there exists any significant relationship between average rural & urban female wage rate.
3. Analyse the factors responsible for variation in female labor force participation rate across states.

A. Inter-Regional Labor force participation (Male / Female) across India

India is a vast state with diversity in all aspects of life. This diversity is applaudable in cultural and social sector but it turns out to be negative if it is reflected in development indicators. As per the all India data for year 2012, the total labor force participation rate in India is 39.5 %, out of which male participation is 55.6 % and female participation rate is 22.5%. (NSSO, 2016). Participation of women in Labor force had been studied by past economists through various dimensions, like shifting of female Labor force to household Labor sector (Naidu, 2016), declining female Labor participation & rising enrollments for education (Rangarajan, Seema, & Kaul, 2011), female Labor force participation has been quite stagnant over a period of time, (Bhalla & Kaur , 2016) etc. The inequality is not only present between the gender, but there is a huge inequality existing across the different states of India.

Table 1: Labor force participation rate(%) for persons aged 15 years and above

States / UT's	Rural female lab force participation (%)	Rural male lab force participation (%)	Urban female lab force participation(%)	Urban male lab force participation(%)	Female (%) Labor force participation	Male(%) Labor force participation
A & N Islands	39	86.7	29.9	82	36.2	85.2
Andhra Pradesh	59	82.4	22.2	67.9	48.8	78.5
Arunachal Pradesh	58.5	77.4	20.1	63.6	53.2	75.5
Assam	27.5	75.3	22.1	75.6	26.7	75.3
Bihar	19.6	78.6	8.3	73.6	18.5	78.1
Chandigarh	6.9	76.3	8.3	62.8	8.2	63.2
Chhattisgarh	62.6	83.1	22.2	72.1	54.8	80.9
Dadra & Nagar Haveli	21.6	74.9	12	66.5	17.4	71
Daman & Diu	16.4	74.7	15.3	83.2	15.5	81.2
Delhi	21.8	76	12.3	66.7	12.6	67
Goa	24.6	80.8	25.3	71.3	25	75
Gujarat	25.4	79.1	10.3	71.5	20	76.4
Haryana	22.9	71.7	12.6	68.2	19.7	70.6
Himachal Pradesh	18.2	72.9	16.9	69.4	18	72.5
Jammu & Kashmir	10.1	65.7	12.2	65.2	10.6	65.6

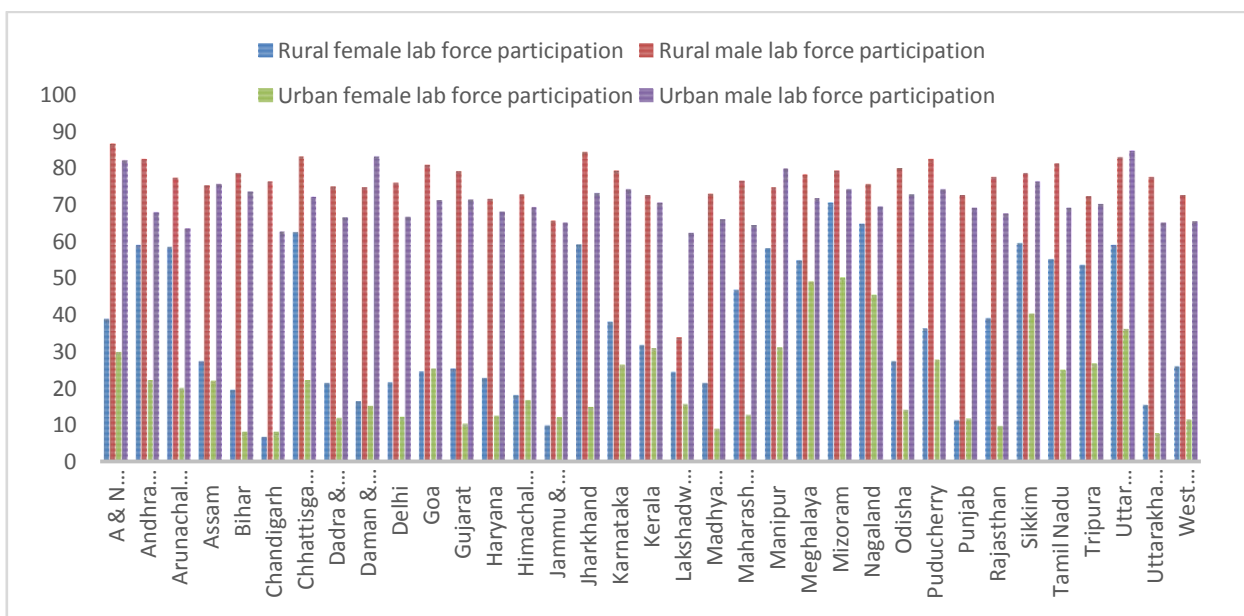
Jharkhand	59.2	84.4	14.9	73.2	49	82
Karnataka	38.1	79.3	26.5	74.3	33.9	77.5
Kerala	31.9	72.6	30.9	70.5	31.4	71.7
Lakshadweep	24.5	34	15.8	62.3	16.9	58.3
Madhya Pradesh	21.5	73	9	66.1	18.3	71.2
Maharashtra	46.9	76.5	12.9	64.4	33.4	71.5
Manipur	58.2	74.7	31.1	79.8	47.7	76.5
Meghalaya	54.8	78.2	49.1	71.8	53.6	77
Mizoram	70.6	79.3	50.2	74.2	60.4	77
Nagaland	64.8	75.7	45.5	69.6	59.6	74.1
Odisha	27.4	80	14.2	72.9	25.4	78.9
Puducherry	36.4	82.4	27.9	74.3	31.3	77.3
Punjab	11.5	72.6	11.8	69.2	11.6	71.5
Rajasthan	39.2	77.6	9.9	67.6	32.8	75.4
Sikkim	59.5	78.6	40.3	76.4	55.6	78.1
Tamil Nadu	55.2	81.2	25	69.1	41.5	75.8
Telangana	53.7	72.3	26.7	70.2	44.5	71.5
Tripura	59.1	82.9	36.2	84.7	54.4	83.3
Uttar Pradesh	15.6	77.5	7.8	65.1	14	75
Uttarakhand	26	72.6	11.6	65.5	22.5	70.7
West Bengal	24.4	83.7	16.2	75.2	22	81.3
India					27.4	75.5

Source: 5th Annual Employment -Unemployment Survey, Labor Bureau, Ministry of Labor& Employment(2015-16)

Table 1 and figure 1 shows that the female labor participation rate is still very low as compared to male labor participation rate but there is huge inequality across the states in it. Himachal Pradesh (52.6%)not only has the highest labor participation rate followed by Sikkim (52.5%), both the states have highest female labor participation as well at 49.8 % and 45.4%. In other words, the total labor participation is high in those states where the female participation rate is high. Mizoram leads with highest percentage of women labor force participation rate (60.4%), followed by Nagaland (59.6%) and Sikkim at 55.6%. This also shows that eastern states have been performing better in terms of female involvement in labor force. The lowest female labor force participation has been observed in Chandigarh at 8.2%, followed by Jammu & Kashmir at 10.6 and Punjab taking the third spot at 11.6 % women participating in labor force. Socially speaking this trend is in consonance with the fact that eastern states follow matriarchal system of society while the Northern India is characterized by men dominant society. Andaman & Nicobar Islands leads male labor force participation with 85.2% involvement, followed by Tripura at 83.3% and Jharkhand at third place with 82% men participating in labor force.

When we analyse the data of top 10 highly populated states, Andhra Pradesh has highest female labor force participation at 48.8%, followed by Tamil Nadu at 41.5%. The chart above also shows rural – urban division of male – female participation in labor force.

Figure 1: Inter – Regional Labor force participation rate (Male / Female)(Rural / Urban)



Source: Derived from Table 1

The figure 1 clearly indicates very low women participation in laborforce. The figure 1 also shows that there is relatively lesser gap between female rural and urban labour force participation rate and Male rural & urban labour force participation rate. Although the disparity between rural male & female labour force participation and urban male & female labour force participation is very high. Besides inter regional disparity is relatively low as compared to inter gender disparities.

B. Inter - regional wage rate (male / female) across various states of India

Table 2 :AverageMale / Female Wage Rate in Rural & Urban Sectors across states.

States/UTs	*Rural Female Average wage	*Rural male Average wage	*Urban Female Average wage	*Urban male Average wage	*Average female wage	Difference between average female wage rate(urban - rural)#	Difference between average male wage rate(urban - rural)#	Difference between male - female wage rate (Rural)#	Difference between male - female wage rate (Urban)#
A & N Islands	435.15	530.37	773.96	654.08	604.56	338.81	123.71	95.22	-119.88
Andhra Pradesh	225.01	251.28	244.30	427.82	234.66	19.29	176.54	26.27	183.52
Arunachal Pradesh	474.94	672.73	629.15	705.38	552.05	154.21	32.65	197.79	76.23
Assam	179.71	343.97	561.63	615.23	370.67	381.92	271.26	164.26	53.60
Bihar	188.42	450.49	369.02	417.10	278.72	180.60	-33.39	262.07	48.08
Chandigarh	282.78	462.73	654.22	568.13	468.50	371.44	105.40	179.95	-86.09
Chhattisgarh	162.55	266.76	252.07	351.60	207.31	89.52	84.84	104.21	99.53
Dadra & Nagar Haveli	155.15	188.04	390.06	324.00	272.61	234.91	135.96	32.89	-66.06

Daman & Diu	267.64	282.04	423.02	459.66	345.33	155.38	177.62	14.40	36.64
Delhi	386.91	529.74	683.98	569.56	535.45	297.07	39.82	142.83	-114.42
Goa	255.97	372.41	435.98	459.04	345.98	180.01	86.63	116.44	23.06
Gujarat	173.13	268.69	271.86	326.34	222.50	98.73	57.65	95.56	54.48
Haryana	357.38	396.44	635.59	810.93	496.49	278.21	414.49	39.06	175.34
Himachal Pradesh	250.69	434.72	306.55	426.03	278.62	55.86	-8.69	184.03	119.48
Jammu & Kashmir	222.37	453.56	484.71	497.61	353.54	262.34	44.05	231.19	12.90
Jharkhand	294.26	515.47	380.00	576.69	337.13	85.74	61.22	221.21	196.69
Karnataka	151.85	237.53	391.97	518.58	271.91	240.12	281.05	85.68	126.61
Kerala	240.45	368.44	412.47	519.84	326.46	172.02	151.40	127.99	107.37
Lakshadweep	290.41	730.80	591.57	690.68	440.99	301.16	-40.12	440.39	99.11
Madhya Pradesh	108.56	270.94	320.58	459.66	214.57	212.02	188.72	162.38	139.08
Maharashtra	306.76	369.14	370.30	516.55	338.53	63.54	147.41	62.38	146.25
Manipur	522.57	591.97	646.92	666.55	584.75	124.35	74.58	69.40	19.63
Meghalaya	358.51	446.29	444.08	527.21	401.30	85.57	80.92	87.78	83.13
Mizoram	602.98	662.86	610.51	850.29	606.75	7.53	187.43	59.88	239.78
Nagaland	490.26	544.70	417.63	596.60	453.95	-72.63	51.90	54.44	178.97
Odisha	223.23	245.30	286.42	457.66	254.83	63.19	212.36	22.07	171.24
Puducherry	126.19	316.53	224.19	409.82	175.19	98.00	93.29	190.34	185.63
Punjab	157.61	302.79	399.38	352.58	278.50	241.77	49.79	145.18	-46.80
Rajasthan	177.86	328.61	412.89	417.14	295.38	235.03	88.53	150.75	4.25
Sikkim	547.98	573.97	418.87	541.06	483.43	-129.11	-32.91	25.99	122.19
Tamil Nadu	199.44	292.55	297.63	420.76	248.54	98.19	128.21	93.11	123.13
Tripura	218.73	319.64	301.52	409.66	260.13	82.79	90.02	100.91	108.14
Uttar Pradesh	171.27	296.51	378.00	496.53	274.64	206.73	200.02	125.24	118.53
Uttarakhand	392.71	457.89	445.76	447.54	419.24	53.05	-10.35	65.18	1.78
West Bengal	119.76	297.35	323.56	454.61	221.66	203.80	157.26	177.59	131.05
All India	201.56	322.28	366.15	469.87					

Source: * National Sample Survey Office, 68th Round, July 2011 - June 2012.

Calculated by author on the basis of given data

Table 2 shows the wage differentials for male and female laborer in rural and urban areas. It also explains the wide differentials of wage rate across different states for male & female laborer. There is wide differential in average rural female wage rate to be as high as INR602.98 in Mizoram and as low as INR108.56 in Madhya Pradesh followed by INR119.76 in West Bengal. In case of average urban female wage rate, it is high among majority of eastern states or Union territories with Andaman & Nicobar Islands leading with a wage rate of INR.773.96, followed by INR 683 in Delhi. When we see the rural male average wage rate, it is highest in Union territory of Lakshadweep at INR730.80, followed by INR672.73 in Arunachal Pradesh. Urban male wage rate is highest in the state of Mizoram at INR.850.29, while Haryana taking the second spot at INR 810.93. Lowest urban average wage being in the UT of Dadra & Nagar Haveli at 324, closely followed by Gujarat at INR326.34. It is pertinent to note here that the difference between All India Rural & Urban female wage rate has been INR.164.59, i.e. urban average female wage is 81.65% higher than average rural female wage rate. In the same manner, average urban male wage rate is INR 147.59 higher than average rural male wage rate. 22 states of India have higher average rural female wage rate than all

India female wage rate, while 26 states has higher average urban female wage rate than national average. This clearly shows a vast diversity across states as the national average does not symbolize the mean and there is a lot of variation.

In order to see the relationship between rural female wage rate and rural male wage rate, Karl Pearson correlation coefficient was calculated using SPSS software. The results are as follows:

Correlations

		Rural Female Average wage	Rural male Average wage
Rural Female Average wage	Pearson Correlation	1	.805**
	Sig. (2-tailed)		.000
	N	36	36
Rural male Average wage	Pearson Correlation	.805**	1
	Sig. (2-tailed)	.000	
	N	36	36

** . Correlation is significant at the 0.01 level (2-tailed).

The results show positive correlation of high degree meaning that the states where rural female wage rate is low, urban female wage rate is also low and vice versa.

While the results of correlation between rural female and urban female wage rate are as follows:

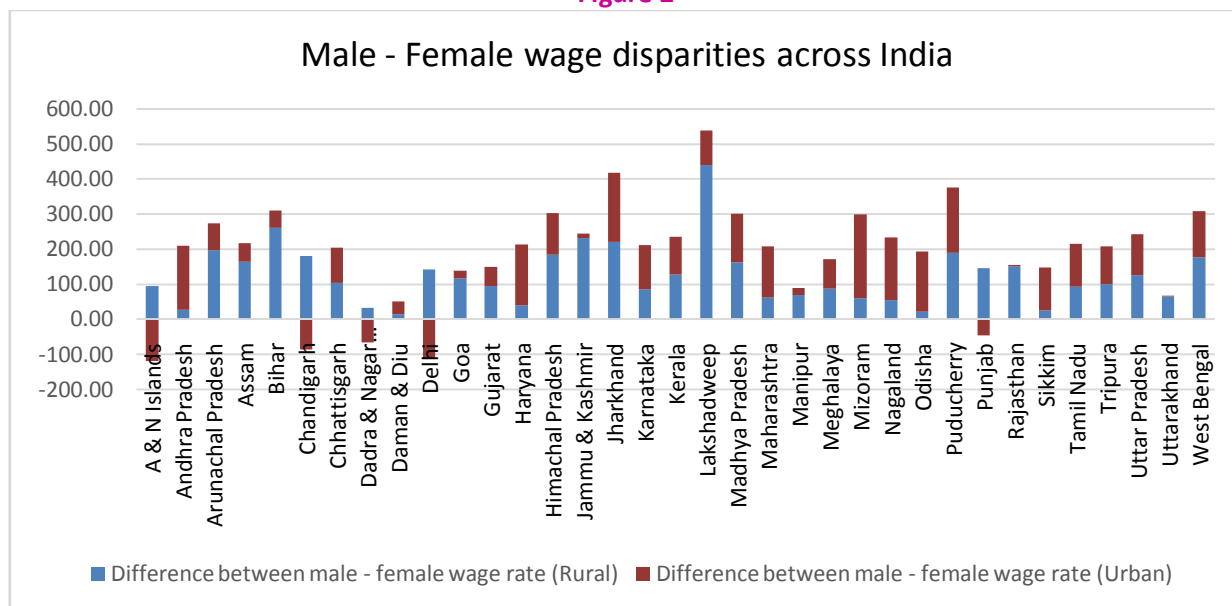
Correlations

		Rural Female Average wage	Urban Female Average wage
Rural Female Average wage	Pearson Correlation	1	.631**
	Sig. (2-tailed)		.000
	N	36	36
Urban Female Average wage	Pearson Correlation	.631**	1
	Sig. (2-tailed)	.000	
	N	36	36

** . Correlation is significant at the 0.01 level (2-tailed).

This shows moderate correlation, which means that not all states have rural & urban wage rates for females moving in same direction.

Figure 2



The figure 2 shows rural and urban differentials between wage rates of male and females. Five states project, a negative wage differential in urban sector between male and female. This means that UTs of Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Delhi and Punjab has higher urban female wage rate as compared to male wage rate.

C. Factors affecting female Labor force participation rate

An important element of this paper is to analyse the various determinants of female Labor force participation rate. Studies undertaken before economic reforms have shown an erratic relationship between labor force participation and output, specifically women labor force participation (Esteve-Volart, 2004). As per the census 2011, female literacy in India has been 64.6%, while male literacy rate stood at 80.9%. One of the perspectives of female labour force participation may be its active involvement in economic activities. As per the data collected by NSSO, self-employed and unpaid family workers, regular wage and salaried employees and casual workers are included in it. In India, a large number of socio economic factors are responsible for low women participation in Labor force. A few of them being, low female literacy rate, percentage of male Labor participation, age at marriage, per capita income of states, percentage of women in population, female wage rate in rural and urban areas, etc. This paper studies the various determinants of female Labor force participation. The study is based on secondary data collected from NSSO publications regarding wage rate, Labor force participation, Census 2011 data about percentage of women in total population, per capita income of states and Literacy rates across states from office of Registrar General etc. Data was analysed with SPSS software for multiple linear regression for the factors determining / explaining existing female Labor participation rate. Out of the above variable, female literacy rate of 2011 across states, male Labor force participation rate, Rural Female average wage rate, Urban female average wage rate and percentage of women in total population have been found to explain approximately 80% of the factors for existing Labor participation rate. The tabular results are given below:

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.835 ^a	.698	.644	9.8105	2.004

a. Predictors: (Constant), Urban Female Average wage, % share of women in population, Male(%) Labor force participation, Female Literacy, Rural Female Average wage

b. Dependent Variable: Female (%) Labor force participation

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-179.565	49.928		-3.596	.001
	Male(%) Labor force participation	1.210	.346	.414	3.497	.002
	Female Literacy	-.180	.177	-.120	-1.017	.318
	% share of women in population	2.555	.754	.368	3.388	.002
	Rural Female Average wage	.077	.018	.627	4.224	.000
	Urban Female Average wage	-.025	.017	-.214	-1.419	.167

a. Dependent Variable: Female (%) Labor force participation

The results show that five independent variables explain the reasons for female labour force participation rate in India. High value Standard deviation suggests high disparity present in female labour participation rate as well. Nevertheless, residual factors may explain more features about the existing low female labour participation rate.

CONCLUSION:

The paper studies a general trend of Inter regional and inter gender disparity in labour force participation as well as average wage rate. It may be concluded that not only there is a huge disparity in labour force participation between male & female, it is very much diverse across states. Female literacy, average female rural & urban wage rate also has a wide gap. Besides the study show there is significant positive correlation between rural male & rural female average wage rate across the states. A keen study of states and union territories show that most of UT's and eastern states show a progressive picture of average female wage rate as well as labour force participation. The central and western states of India with higher population have relatively lower average wage rate for both male & female in rural as well as urban areas. The reasons for female labour force participation may be explained through female literacy, average female wage rate in rural & urban areas, share of women in total population and male labour force participation. A detailed study of the above factors may help in improving the female labour force participation rate in India. It would also provide an insight for further investigation into the positivity or negativity of female labour

force participation and analyse the factors in depth. One of the perspectives of female labour force participation may be its active involvement in economic activities. As per the data collected by NSSO, self-employed and unpaid family workers, regular wage and salaried employees and casual workers are included in it. Therefore, further studies regarding relationship between average female wage rate in rural and urban areas may be undertaken. Detailed analysis of causal factors for high female wage rate in some of the eastern states may be undertaken.

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