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An Econometric Analysis of Inter-State Variations in Women's Labour Force Participation in India

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Abstract

The study attempts to investigate the factors responsible for the inter-state variations in women's labour force participation in India by using the NSSO 61st round (2004-05) data. Two separate regression models for rural and urban women between women's labor force participation as dependent variable and its various possible determinants have been estimated to identify the factors determining the rural and urban women's labour force participation by using cross sectional data of all states and union territories of India. Our findings suggest that Personal variables education and wages are significant determinants of urban women's labour force participation but not of rural women's labour force participation. Other important determinants of women's labour force participation are sex ratio, Muslim population, SC and ST population and Unemployment rate.

Introduction

Since the pioneering work of Mincer (1962) the economic analysis of women's labour force participation attracted considerable attention. Large amount of theoretical and empirical work has undergone in past to understand the factors determining the women's labour force participation. Women's labour force participation is desirable for equity and efficiency considerations. The equity aspect implies that labour market participation of women will improve their relative economic position. It will also increase overall economic efficiency and improve development potentials of the country (Aysıt, T. 2002). In case of India women's labour force participation is low in comparison to developed countries and significant amount of interstate variation is observed. There is also rural-urban divide in terms of women's labor force participation. Various rounds of National Sample Survey organization (NSSO) data suggest that rural women's labour force participation is quit high in compare to their urban counterparts. High participation of rural women in labour force suggests that that they are mostly involved in non salaried jobs, casual jobs. Prevalence of such regional and geographical variations is in contrast with above mentioned considerations of equity and efficiency.

Although large numbers of econometric studies have been conducted to understand the behaviour of female labour force participation in other countries (Becker, G. 1965, Cain, G. G. 1966, King, A. G. 1978, Mincer, J. 1962, Tansel, A. 1996 etc.), there are only few econometric studies of female labour supply in India (Bardhan, P. K. 1979, Dasgupta, P. 2005, Kingdon, G. G. 1999 etc.). NSSO data highlights the extent of interstate variation in women's labour force participation but the factors underlying such differences are yet to be explored. Identification of such factors will help policy makers to design and implement policies to remove these interstate variations in the women's labour force participation.

Hence to fill the gap in empirical works on this particular issue the objective of the current study is to investigate the factors responsible for the interstate variation in women's labour force participation in India. Separate models for rural and urban women's labour force participation and their possible determinants have been estimated on the belief that the factors determining the women's labour force participation in rural and urban India may be different.

The study has been divided in six sections. Section 2 highlights some features of women labour force participation in India at national as well as state level. Section 3 describes the model used in the study; variables included and expected sign of the coefficients of the included regressors. Section 4 discusses the data source and the estimation methodology adopted for the estimation of the model. Empirical results are provided in section 5. Brief conclusions and policy implications are given in Section 6.

2. Women's Labour Force Participation in India; Trends and pattern

Analysis of trends of women's labour force participation of some of the developed countries shows that women's labour force participation increases rapidly over the period. During 1980s and 1990s, labour force growth was substantially higher for women than for men for every region of the world except Africa (Lim, L.L. 2002). Various round of National Sample Survey Organization (NSSO) data shows that the women's participation in labour force decreases during nineties both for rural and urban areas. NSSO 61^{st} round (2004-05) data shows increased participation of the women in the labour force.

Various rounds of NSSO data suggest that rural women's labour force participation is high while urban women's labour force participation is low. Table.1. shows that rural women's labour force participation according to usual status (ps+ss) was 33% during 1993-94 which decreases to 30.2% during 1999-00 and again increases to 33.3% during 2004-05. Urban women's labour force participation according to usual status (ps+ss) was 16.5% which decreases to 14.7% during 2004-05 then increases to 17.8% during 2004-05. Data also suggest that Women's labour force participation deteriorated during the nineties both for the rural and urban women. High participation of rural women and low participation of urban women in the labour force suggest that women are mostly involved in informal works in India.

Table.1 also shows the female male ratio in labour force participation during various NSS rounds. Comparison of 50^{th} round (1993-94) and61^{st} round (2004-05) suggest the participation of women as percentage of men increases both for rural and urban areas according to all statuses. Labour force participation of men decreases during 1993-94 to 2004-05 while the participation of women increases over the period.

Table.1.Labour force participation rate (LFPR) according to usual, current weekly and current daily statuses during 1993-94, 1999-2000 and 2004-2005

Status	Number of Persons						Female Male ratio[1] 1993-94	Female Male ratio 1999-00	Female Male ratio 2004-05
	Male			Female					
	1993-94	1999-00	2004-05	1993-94	1999-00	2004-05			
Rural									
usual (ps)	549	533	546	237	235	249	0.43	0.44	0.45
usual (ps+ss)	561	540	555	330	302	333	0.58	0.56	0.60
cws	547	531	545	276	263	287	0.50	0.49	0.52
cds	534	515	531	232	220	237	0.43	0.42	0.45
Urban									
usual (ps)	538	539	566	132	126	148	0.24	0.23	0.26
usual (ps+ss)	543	542	570	165	147	178	0.30	0.27	0.31
cws	538	539	566	152	138	168	0.28	0.26	0.29
cds	532	528	561	132	123	150	0.25	0.23	0.27

Source: NSSO

Large amount of variation in the women's labour force participation at the state level have been observed. Table.7 and table.8 shows the women's labour force participation for rural and urban women respectively. Both tables give the women's labour force participation figures at state level for two NSSO rounds (50^{th} and 61^{st} round). Coefficient of variation for rural women's labour force participation (which is 0.3967 and 0.4282 respectively for 50^{th} and 61^{st} round) for two rounds suggest that interstate variation increases during 61^{st} round. For urban women coefficient of variation for two periods (which is 0.3082 and 0.3030 respectively for 50^{th} and 61^{st} round) does not indicate increased variability over the period. Coefficient of variation also suggests more variation in rural women's labour force participation than their urban counterparts.

1. *Female Male ratio =* $\dfrac{\text{Number of females in labour force per 1000 females}}{\text{Number of Males in labour force per 1000 Males}}$

3. The Model, Variables Included and Empirical Specification

The initial formulation of any econometric model depends upon economic theory, our own knowledge of the underlying relationship among variables, previous similar studies etc. The following regression model has been used in the study to estimate the women's labour supply function with cross sectional data of all the states and union territories of India both for the rural and urban area.

$$WLFP_i = \alpha + \beta_i X_i\text{'s} + U$$

Where Women labour force participation ($WLFP_i$) is the dependent variable and X's are the regressors explaining the women's labour force participation. α represents intercept and β_i gives the estimated coefficient of the respective regressors. U is zero men and constant variance disturbance term.

The dependent variable in the study is Women's labour force participation (WLFP). Though theoretically there are number of variables which can be included in the study as a possible determinant of WLFP but we have included only some of the important variables. Explanatory variables included in the study are number of female headed households (FHH), Average Household size (AHS), Population 0-4 age (CHP), Three education splines Females Literate and upto Primary(PRIM), Females Literate and upto Middle (MID), Females Literate Secondary & above (SEC), Muslim Population (MUSP), Wages (WGS), Sex Ratio (SEXR), Unemployment Rate (UR) , ST and SC population (STSCP). All the variables are defined in table.2.

All the variables included in the study have two data sets one for rural area and other for urban area. Two separate regressions for the rural and urban women's labour force participation are estimated separately by using above mentioned variables but with different data set.

Large volume of literature has been devoted to understand the determinants of the woman's labour force participation. Studies differ in term of their geographical coverage, statistical methods adopted for estimating the relationship between women's labour force participation and its determinants and the type of data used for the purpose. Selection of the determinants of the women's labour force participation also differs according to the purpose of the study, statistical methods and the type of data used for the study. Selection of explanatory variables in this particular study has been made on the basis of literature surveyed

Table.2. Definition of Variables included in the Study

Variables	Definition
WLFP	Number of women's in the labour force per 1000 women's according to usual status for women's of age 15 and above for each state and union territories.
FHH	Number of female headed households per 1000 households for each state and union territories.
AHS	Average number of persons per household for each state and union territories.
CHP	Number of persons of age group 0-4 years per 1000 persons for each state and union territories.
PRIM	Number of females literate and upto primary per 1000 female.
MID	Number of females literate and upto primary per 1000 females.
SEC	Number of females literate and upto secondary and above per 1000 females.
MUSP	Number of Muslims per 1000 persons for each state and union territories.
WGS	For Urban women it is defined as average wage/ salary earnings per day received by regular wage/ salaried worker (female) of age 15-59 years for each state and union territories measured in Rs 0.00 and for rural women defined as Average daily wages for casual workers (female) of age 15-59 years engaged in works other than public works for each state and union territories measured in Rs 0.00
SEXR	Number of females per 1000 Persons for each state and union territories.
UR	Unemployment rates according to usual status (ps+ss) (or usual status adjusted)) for each state and union territories.
STSCP	Number of scheduled tribes and scheduled cast persons per 1000 persons for each state and union territories.

First three variables FHH, AHS and CHP represent household characteristics. The variable FHH is likely to affect WLFP positively as in this type of households women play significant role for their family and also have autonomy in their decision making. Head of the household is the person, who provides most of the needs of the household and is familiar with all the activities of the household. In the absence of any male head of household, female heads the household. The expected sign of coefficient of variable AHS is difficult to understand. It is found in past studies that contribution of a woman is positively related with the household size. “Income dilution effect” suggests that larger family size compels a woman to contribute more in the household Income. In large households if working age male persons are more then women’s participation will be low and if females are more then women’s participation will be high. The variable CHP is likely to affect WLFP negatively. 0-4 age group population i.e. child population will affect women’s labour force participation negatively due to the involvement of women in the childcare.

Education is the most important personal variable influencing women’s labour force participation. Education has a positive effect on the decision to participate in the labour market for two reasons. First, education is an investment in human capital and recipient has to work in order to recover cost of education. Second, education is considered as a consumption activity and recipient induced to work because of higher earning potential since the opportunity cost of not working is higher. However in practice the effect of education on the

Women’s labour force participation is not so straightforward. Higher levels of education for women do not directly translate into higher labour force participation. Female wages is second important personal variable included in the model. The effect of female wages on women’s labour force participation depends on the substitution and income effects. The substitution effect will be positive since higher female wages means more participation. The income effect will be negative since as income increases desire for leisure increases. Income effect is expected to be smaller hence the net effect of female wages on women’s labour force participation will be positive (Mincer, 1962). As the rural labour market in India comprise mainly agricultural work, self employment and casual work these two personal variables namely education and wages are expected to determine urban women’s labour force participation significantly but their effect on rural women’s labour force participation will be little.

The variable Unemployment rate is included to describe the labor market conditions. The effect of unemployment rate on female women’s labour force participation will depend on the relative strengths of “discourage worker effect” and “added worker effect”. Discouraged worker hypothesis implies when unemployment rate is high then there is less chance that workers will succeed in gaining employment and they give up job search. Lack of job search losses them the status of being unemployed and they drop out of the labour force. Hence “discourage worker effect” affects women’s labour force participation negatively. “Added worker hypothesis” implies when men lose their jobs with a rise in unemployment rate wives might enter the labour force in order to compensate for the loss in the family income. Hence “added worker hypothesis” suggest a positive effect of the unemployment rate on women’s labour force participation.

Caste and religion are expected to have to have significant association with women’s labour force participation in India. We have included Muslim population and scheduled cast and scheduled tribe’s population in the model to capture the effects of these factors. Muslim population is likely to have negative effect on both rural and urban women’s labour force participation due to various religious impediments in joining labour force and also due to ignorance by the government to increase their participation. SC and ST population is expected to have positive association with both urban and rural women’s labour force participation. NSSO data 61st (2004-05) round suggest that at all India level participation of SC and ST women’s in the labour force which are respectively 338 and 466 for rural and 210 and 254 for urban areas is much higher than the overall figure (249 for urban and 148 for rural areas). Data also suggest that the participation of Muslim women (185 for rural and 128 for urban areas) is much less than the overall women’s participation in labour force. One reason for increased participation of SC and ST population in the labour force is the reservation benefits available for the groups.

Sex ratio is another variable included in the model to capture the interstate variations in women’s labour force participation in India. Sex ratio affects women’s labour force participation positively in two ways. First, the states with higher sex ratio have more women available to join labour force and hence high participation. Second, higher sex ratio shows the positive attitude of that particular state toward women and hence higher participation.

4. The Data and Estimation Methodology

Data regarding all the variables included in the study has been taken from the various reports of the NSSO 61st round survey (2004-05) for each state and union territory of India. Total number of observation in the study is 35. Data of the variable Muslim population (MUSP) is taken from the NSSO Report No. 521 titled “Employment and Unemployment Situation among Religious Groups in India 2004-05” and of the variable Scheduled cast and scheduled tribes population (STSC) is taken from NSSO Report No. 516 titled "Employment and Unemployment Situation among Social Groups in India 2004-05". All other variables are taken from the NSSO Report No.515 titled "Employment and Unemployment Situation in India 2004-05"

These reports are based on the seventh quinquennial survey on employment and unemployment conducted in the 61st round of NSSO during July, 2004 to June, 2005. The survey was spread over 7,999 villages and 4,602 urban blocks covering 1, 24,680 households (79,306 in rural areas and 45,374 in urban areas) and enumerating 6, 02,833 persons (3, 98,025 in rural areas and 2, 04,808 in urban areas).descriptive statistics of variables included in the study are reported in table.3.

Table.3.Descriptive Statistics

	Descriptive Statistics (Rural)					Descriptive Statistics (Urban)				
Variables	**N**	**Min**	**Max**	**Mean**	**Std. Dev.**	**N**	**Min**	**Max**	**Mean**	**Std. Dev.**
WLFP	35	84	766	480.74	197.89	35	108	419	259.43	78.14
FHH	35	4	339	119.31	69.41	35	17	288	123.06	58.04
AHS	35	3.4	5.6	4.623	.5897	35	3.0	5.5	4.311	.5497
CHP	35	70	150	102.43	19.25	35	34	134	83.14	17.21
PRIM	35	239	585	341.43	86.11	35	240	425	301.11	43.34
MID	35	42	257	114.77	55.64	35	79	285	149.20	47.41
SEC	35	23	246	100.20	60.44	35	114	491	283.57	75.21
MUSP	35	1	958	109.09	194.39	35	1	955	139.94	185.73
WGS	35	28.16	150	52.03	23.11	35	69.03	319.3	179.46	58.49
SEXR	35	640	1173	939.17	103.95	35	756	1252	934.03	93.14
UR	35	3	133	28.80	33.18	35	12	280	63.29	58.67
STSCP	35	1.00	975	409.80	252.87	35	13	988	263.20	229.67

Due to the presence of heteroskedasticity application of OLS for the estimation of the Women's labor force model yields inefficient estimators and hence estimated variances and covariances of the regression coefficients are biased and inconsistent and tests of hypotheses are invalid. To overcome the problem we have applied Heteroskedasticity-corrected estimates method for estimating the above specified model. This method is applicable when heteroskedasticity is present in the form of an unknown function of the regressors which can be approximated by a quadratic relationship. In this it offers the possibility of consistent standard errors and more efficient parameter estimates as compared with OLS. The procedure involves

(a) Estimation of the model with OLS (b) an auxiliary regression to generate an estimate of the error variance, and then finally (c) weighted least squares, using as weight the reciprocal of the estimated variance.

In the auxiliary regression we have regress the log of the squared residuals from the first OLS on the original regressors and their squares. The log transformation is performed to ensure that the estimated variances are non-negative. Call the fitted values from this regression u*. The weight series for the final WLS is then formed as 1/exp (u*).

Formulation of satisfactory model is crucial to draw any meaningful conclusion from the model. In words of F. Hendry

"We generally drive across bridges without worrying about the soundness of their construction because we are reasonably sure that someone rigorously checked their engineering principle and practice. Economists must do likewise with models or else attach the warning 'not responsible if attempted use leads to collapse'.

General to simple approach of model formulation suggested by Hendry (1985) has been applied for model formulation. Since there is no unique way of formulating a model, we have formulated various alternative models and then put them through a number of diagnostic tests. For choosing best model among various alternative models we have used various model selection criterions like adjusted R-squared, Akaike, Schwarz and Hannan-Quinn.

5. Empirical Results and Discussion

Table 10 presents the estimation results for rural women's labor force participation. All models are estimated by Heteroskedasticity-corrected Estimation method described above to get ride of Heteroskedasticity. F-statistics reported in the table for all the three models suggest good fit. Adjusted R-squared for all models is also high which shows that explanatory variables included in models are able to explain a high proportion of the variation in rural women's labour force participation.

Among the household characteristic variables only coefficient of CHP is significant. Negative coefficient of the variable CHP as expected earlier suggest that states with high population of 0-4 age group have lower women's labour participation (rural). Other household characteristic variables namely FHH and AHS have no significant impact on the

Table.5.Heteroskedasticity-corrected Estimation Results
Dependent variable: Rural WLFP

Variables	Model- I	Model-II	Model-III
Const	-243.316	-380.425** *(0.03367)*	-437.853*** *(0.00806)*
FHH			
AHS	-19.056 *(0.46113)*		
CHP	-1.89792** *(0.03632)*	-1.23677* *(0.09854)*	
PRIM	-0.547779*** *(0.00849)*	-0.453318*** *(0.00820)*	-0.609983** *(0.01259)*
MID	-0.242255 *(0.46291)*	0.0527434 *(0.86358)*	0.0691054 *(0.84652)*
SEC			
WGS			
UR	-3.33631*** *(<0.00001)*	-3.39357*** *(<0.00001)*	-2.73698*** *(<0.00001)*
SEXR	1.20433*** *(<0.00001)*	1.16384*** *(<0.00001)*	1.0733*** *(<0.00001)*
MUSP	-0.0552998 *(0.40083)*	-0.115937** *(0.03593)*	-0.166333** *(0.01560)*
STSCP	0.467809*** *(<0.00001)*	0.417094*** *(<0.00001)*	0.494822*** *(<0.00001)*
Adjusted R-squared	0.961835	0.934889	0.938743
F-Statistics	108.1081	70.74071	87.83978
P-value(F)	5.75e-18	1.03e-15	7.53e-17
Akaike criterion	130.6293	137.8470	131.8562
Schwarz criterion	144.6275	150.2898	142.7436
Hannan-Quinn	135.4615	142.1423	135.6145

WLFP. Coefficient of PRIM is significant but negative. Two other educational splines MID and SEC are unable to affect WLFP. Inclusion of WGS as explanatory variables deteriorates the overall significance of models and also coefficient of variable WGS does not come out significant hence it is not included in the models on the belief that it does not determine the rural WLFP.

Estimated results of the models reported in the table 4 suggest that personal variables (educational variables and wages) are not determining the rural WLFP. Insignificance of coefficients of educational variables included in the models is due to unavailability of education based employment opportunities in the rural areas especially for females. It seems that that rural women's participation in the labour force is a matter of survival and hence wages does not affect participation decision.

Coefficient of the variable UR is highly significant and negative for all the three models (Table.4). The variable UR (unemployment rate) is included in the models to assess the impact of labour market condition on WLFP. Negative coefficient of UR confirms the presence of 'discouraged workers effect' mentioned above. Coefficient of the variable SEXR has positive significant effect on rural WLFP according to all the three models reported in the table.4. Hence states which have positive attitude toward women have high participation of women in labour force. Two variables MUSP and STSCP included in the models to capture the religious and cast factors determining the WLFP have significant coefficients. MUSP affects WLFP negatively and STSCP affects positively. Lower participation of Muslim women's in the labour force is on expected line. Due to the various religious impediments and almost absence of safety nets by the Government for Muslim women their participation in the labour force is low. All three models suggest that STSCP has strong positive effect on rural WLFP. Participation of scheduled tribes and scheduled cast women is high due to the provision of various Government sponsored programs for the upliftment of the groups and reservation policy pursued by the Government.

Results for Urban WLFP are given in table 6. Unlike rural WLFP household characteristic variables have significant effect on urban WLFP. Coefficient of FHH has positive significant impact on WLFP. Positive sign of FHH was as expected as in such households women have more responsibilities toward their families. Coefficient of AHS is positive but not significant (Model II). Coefficient of CHP is significant in all three models but it is positive opposite to the prior expectation. Hence for urban women children population does not retard their participation in labour force.

Two of the three educational splines MID and PRIM are significant determinants of urban WLFP. Coefficient of the variable PRIM does not comes out significant and its inclusion reduces the overall significance of the model hence it does not appear in any of the three model estimated for the urban WLFP. Coefficient of WGS, second personal variable included in the model also has positive significant coefficient. Results of urban WLFP model suggest that personal variables are significant determinants of women's labour force participation. Coefficient of UR (Model I and Model II) is negative but not as significant as for rural model.

It appears that 'discourage worker effect' for urban women is not as strong as for rural women

Table.6. Heteroskedasticity-corrected Estimation Results
Dependent variable: Urban WLFP

Variables	Model-III	Model-II	Model- I
Const	-145.464 *(0.31176)*	-380.785*** *(0.00050)*	-348.514*** *(0.00009)*
FHH	0.37071** *(0.03157)*	0.493964*** *(0.00050)*	0.487326*** *(0.00042)*
AHS		1.06861 *(0.95139)*	
CHP	1.22819*** *(0.00450)*	1.70997*** *(<0.00001)*	1.59285*** *(<0.00001)*
PRIM			
MID	0.422535** *(0.04108)*	0.753048*** *(0.00023)*	0.653722*** *(0.00037)*
SEC	0.0334029 *(0.82201)*	0.180701 *(0.13330)*	0.219138** *(0.01164)*
WGS	0.26732 *(0.17215)*	0.312404*** *(0.00813)*	0.255706*** *(0.00388)*
UR	-0.110818* *(0.06617)*	-0.0700936 *(0.43126)*	
SEXR	0.27382*** *(0.00246)*	0.240175*** *(0.00401)*	0.235428*** *(0.00429)*
MUSP	-0.0795773* *(0.07825)*	-0.102033** *(0.02234)*	-0.0987578*** *(0.00680)*
STSCP	0.0691349 *(0.19545)*		
Adjusted R-squared	0.957287	0.846451	0.895710
F-Statistics	77.20030	21.82528	42.71624
P-value(F)	9.18e-16	1.03e-09	5.54e-13
Akaike criterion	138.5253	138.1634	160.3262
Schwarz criterion	155.6342	153.7169	172.7690
Hannan-Quinn	144.4313	143.5325	164.6215

Variable SEXR is again one of the most significant positive determinants of the WLFP. Variable MUSP affect WLFP inversely. All models in table 6 give statistically significant coefficient of variable MUSP. Variable STSCP is unable to determine the urban WLFP significantly. Model I in table 6 gives coefficient of the variable STSCP which is significant at 19.5 % level.

6. Conclusion and Policy Implications

To investigate the factors determining the WLFP in interstate settings we have estimated two separate regression models for labour force participation of rural and urban women. Regression model estimated for the labour force participation of rural women suggests that among household characteristic variable children population (0-4 age group) has negative effect on women's labour force participation. Personal variables, education and wages have no significant effect on rural women's labour force participation. Negative coefficient of unemployment rate suggests the presence of strong 'discourage workers effect'. States with high sex ratio are experiencing high participation of rural women's participation in labour force. higher sex ratio shows the positive attitude of that particular state towards women hence it can also be said that states which have positive attitude toward women have higher women's participation in labour force. Muslim population has negative effect while scheduled tribes and scheduled cast population has positive effect on rural women's labour force participation. Regression model estimated for urban women's labour force participation suggest that household characteristic variables like household size, female headed household and child population are significant determinant of urban women's labour force participation. Personal variables education and wages also have significant effect on urban women's labour force participation. In case of urban women discourage worker effect is not as strong as for the rural women. Sex ratio is again a significant positive determinant as in the case of rural women. States with higher Muslim population have less participation of urban women in labour force. Scheduled tribe and scheduled cast population is not a significant determinant of urban women's labour force participation. One important difference between the two models (rural women's and urban women's) is that personal variables (education and wages) are significant determinants of urban women's labour force participation but unable to determine rural women's labour force participation.

Some of the broad policy implications which emerged from the current study are as follows:

(a) there is a need to generate education based jobs for women in rural areas. Various states Governments should prepare and implement policies for the participation of rural women's in permanent salaried jobs

(b) States Governments should initiate awareness generation to adopt positive attitude towards women among public since it is one of the most important impediment in women's participation in economic activities

(c) Various states should design and implement some special schemes for the participation of Muslim women's in labour force.

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Table.7. Labour Force Participation and Female-Male ratio during 1993-94 and 2004-05 (Rural)

States	1993-94		2004-05		Female Male Ratio 1993-94	Female Male Ratio 2004-05
	Female	Male	Female	Male		
Andhra Pradesh	725	903	655	867	0.80	0.76
Arunachal Pradesh	636	789	644	806	0.81	0.80
Assam	260	847	328	872	0.31	0.38
Bihar	271	867	231	878	0.31	0.26
Goa	391	777	299	783	0.50	0.38
Gujarat	581	891	621	894	0.65	0.69
Haryana	442	802	484	802	0.55	0.60
Himachal Pradesh	730	887	713	818	0.82	0.87
Jammu & Kashmir	600	862	389	807	0.70	0.48
Karnataka	615	894	620	877	0.69	0.71
Kerala	358	826	418	809	0.43	0.52
Madhya Pradesh	631	898	574	876	0.70	0.66
Maharashtra	707	859	657	835	0.82	0.79
Manipur	482	751	482	766	0.64	0.63
Meghalaya	735	916	756	897	0.80	0.84
Mizoram	481	827	623	867	0.58	0.72
Nagaland	345	683	746	817	0.51	0.91
Orissa	461	868	493	882	0.53	0.56
Punjab	328	843	475	844	0.39	0.56
Rajasthan	673	878	626	848	0.77	0.74
Sikkim	285	850	468	807	0.34	0.58
Tamil Nadu	651	869	631	853	0.75	0.74
Tripura	203	826	173	854	0.25	0.20
Uttar Pradesh	347	884	391	854	0.39	0.46
West Bengal	291	897	268	866	0.32	0.31
A & N Islands	681	915	391	852	0.74	0.46
Chandigarh	179	853	84	908	0.21	0.09
Dadra & Nagar Haveli	795	907	766	829	0.88	0.92
Daman & Diu	395	868	226	864	0.46	0.26
Delhi	162	909	85	845	0.18	0.10
Lakshadweep	302	827	161	910	0.37	0.18
Pondicherry	415	834	495	861	0.50	0.57
All India	**490**	**876**	**494**	**859**	**0.56**	**0.58**

Source: NSSO

Table.8. Labour Force Participation and Female-Male ratio during 1993-94 and 2004-05 (Urban)

States	1993-94		2004-05		Female Male Ratio 1993-94	Female Male Ratio 2004-05
	Female	Male	Female	Male		
Andhra Pradesh	288	815	309	797	0.35	0.39
Arunachal Pradesh	165	782	213	729	0.21	0.29
Assam	162	768	169	820	0.21	0.21
Bihar	120	738	108	735	0.16	0.15
Goa	301	778	280	761	0.39	0.37
Gujarat	216	809	209	823	0.27	0.25
Haryana	241	830	196	774	0.29	0.25
Himachal Pradesh	278	723	360	861	0.38	0.42
Jammu & Kashmir	200	768	149	755	0.26	0.20
Karnataka	247	806	261	801	0.31	0.33
Kerala	329	813	386	792	0.40	0.49
Madhya Pradesh	228	789	227	814	0.29	0.28
Maharashtra	253	789	269	790	0.32	0.34
Manipur	327	686	336	708	0.48	0.47
Meghalaya	305	789	419	689	0.39	0.61
Mizoram	398	753	396	721	0.53	0.55
Nagaland	169	671	402	750	0.25	0.54
Orissa	229	776	278	781	0.30	0.36
Punjab	147	843	211	801	0.17	0.26
Rajasthan	240	782	283	775	0.31	0.37
Sikkim	219	859	233	777	0.25	0.30
Tamil Nadu	337	832	329	811	0.41	0.41
Tripura	216	774	299	797	0.28	0.38
Uttar Pradesh	162	790	175	802	0.21	0.22
West Bengal	219	815	210	793	0.27	0.26
A & N Islands	327	867	253	808	0.38	0.31
Chandigarh	336	849	202	726	0.40	0.28
Dadra & Nagar Haveli	440	910	283	921	0.48	0.31
Daman & Diu	188	732	290	790	0.26	0.37
Delhi	141	803	127	759	0.18	0.17
Lakshadweep	222	818	323	754	0.27	0.43
Pondicherry	258	783	258	769	0.33	0.34
All India	**238**	**801**	**244**	**792**	**0.30**	**0.31**

Source: NSSO

1. Formula used for calculating female Male ratio is same here as for the table.1
2. Tables 7 and 8 do not include the figures for three states Jharkhand, Uttaranchal and Chhattisgarh which came into existence during the year 2000.