

SPATIO-TEMPORAL VARIATIONS AND GENDER GAP IN WORK PARTICIPATION RATES IN RELATION WITH LITERACY: A CASE STUDY OF MADHYA PRADESH

KABITA AUDDYA

Govt. Approved PTT

Department of Geography

Magrahat College, West Bengal

Abstract

Education and work participation are two most important indicators of economic development in a country. In almost every country in the world, men are more likely to participate in labour markets than women. It was well documented that the educational condition of women has improved in the past few decades but their work participation rate is still low. Here, the paper tried to see reasons behind this difference. There are many determinants of work participation rate but we limit this paper to education. Here, the paper tried to analyse the pattern of spatio-temporal variation and gap in male-female work participation rates and the relationship between work participation rate and female literacy. The co-rrrelation between improvement does not show significant relation. In addition, it was found that women with low literacy rates are actively engaged in agricultural sector in rural areas. But other than agricultural sector work participation rate of females are less than men in both rural and urban areas. The co-rrrelation between work participation rate and sex - ratio is also gives a positive result. But it is not significantly high. Finally, the paper concludes with some general observations and suggestions.

Keywords: Gender Gap, Work-Participation Rate, Literacy, Spatio-Temporal Variations.

Introduction:

The working population and work participation rate highlights the occupational distribution of a region. Women in any country play a pivotal role in the development process and discussion on development remains incomplete without the inclusion of gender dimension into it. Women of the nation constitute half of the resource and half of the potential in all societies. According to UN Fourth Conference on Women, "Equality between women and men is a matter of human rights and a condition for social justice and is also a necessary and fundamental pre-requisite for equality, development and peace." Development of women by and large depends on their economic independence which is determined by whether they have a paid employment. Gap between male -female work participation rates is key indicator of level of development for any nation. But the question is how to increase the participation of women in economic activity or total labour force. The first and foremost way is the spread of education among women. Education and literacy is the first and foremost way to equalize gender gap in work force participation between male and female. Female Literacy rate has been taken as indicator of attainment of education level among women and women work participation rate as the indicator of the participation of women in labour force.

Data and Methodology:

The present study has been made here to highlight the spatio-temporal variations and gender gap in work participation rates among the males and females of the state of Madhya Pradesh using secondary data released by the Census 2001 and 2011. The analysis is by and large based on state level and district-wise data which is used to investigate the spatio-temporal and gender-wise disparities in workers and work participation rates of Madhya Pradesh. The unit of analysis is the district. For the sake of spatial comparison, 10 districts have been considered. The data have been computed and compared as required. Simple percentage and rates along with Cartographic representation are the main methods used in the analysis and interpretation. The paper concludes with some general observations and suggestions. Work participation rate is defined as the percentage of total workers (main and marginal) to total population.

$$\text{Work Participation Rate} = \frac{\text{Total workers (main + marginal)}}{\text{total population}} \times 100$$

Objectives:

- To study the gender-wise work participation rates in Madhya Pradesh in 2001 and 2011.
- To analyse the spatio-temporal disparities in work participation rate in Madhya Pradesh.
- To examine the gender gap in different work categories by sex and residence.
- To analyse the relationship among work participation rate, literacy rate and sex-ratio in Madhya Pradesh.

The Study Area:

The study area of the present work is the state of Madhya Pradesh. Madhya Pradesh literally means "Central Province", and is located in the geographic heart of India, between latitude 21°15'N-26°88'N and longitude 74°03'E-82°90'E. It borders the states of Uttar Pradesh to the northeast, Chhattisgarh to the southeast, Maharashtra to the south, Gujarat to the west, and Rajasthan to the northwest. Its total area is 308,252 km². The total population of this state is 72,626,809; out of this 52557404 people lived in rural area and 20069405 in urban area. Among the total population 37,612,306 are male and 35,014,503 are female. In rural areas both male and female are nearly equal in numbers while in urban areas number of male is higher than female population. The migration of more numbers of male members to the urban areas for better work opportunities is the main reason behind this.

Analysis:

Work participation rate of India and Madhya Pradesh in 2001 and 2011:

The findings in Table 1 shows the male and female workers and work participation rates in Madhya Pradesh in comparison with India in 2001 and 2011. The temporal analysis of total workers of India explains that the work participation rate has registered very slow increase (+0.7) in the last decade. Similar trend is observed in Madhya Pradesh also. The total work participation rate for Madhya Pradesh is higher than that of India in the same period. In India, only 39.1 percent of total population was economically active

Table 1: Worker and Work Participation Rate of India and Madhya Pradesh in 2001 and 2011

Census Year	India		Madhya Pradesh	
	Worker (No.)	Work Participation Rate (%)	Worker (No.)	Work Participation Rate (%)
2001	402,234,724	39.1	25,793,519	42.7
2011	481,888,868	39.8	31,574,133	43.5
Change	+79,654,144	+0.7	+5,780,614	+0.8

Source: Census of India. Provisional Population Totals, 2001 & 2011

in 2001 which has increased to 39.8 percent in 2011. In comparison, the corresponding figure for Madhya Pradesh has increased from 42.7 percent in 2001 to 43.5 percent in 2011 indicating an increase of 0.8% over the last decade which is slightly higher than India.

Gender Gap and Work Participation Rate:

Table 2 shows the temporal variation of male-female work participation rate and gender gap among them in Madhya Pradesh with comparison to India year in 2001 and 2011. As like as India the male work participation rate is higher than females in Madhya Pradesh also. In India the gap in male - female work participation rate is increased from 26.1 per cent in 2001 to 27.8 per cent in 2011. Likewise, in Madhya Pradesh the gap in male - female work participation rate is increased from 18.3 per cent in 2001 to 21.0 per cent in 2011.

Table 2: Gender Gap in Work Participation Rate in India and Madhya Pradesh in 2001 And 2011

Census Year	India			Madhya Pradesh		
	Work Participation Rate (%)		Gender Gap	Work Participation Rate (%)		Gender Gap
	Male	Female		Male	Female	
2001	51.7	25.6	26.1	51.5	33.2	18.3
2011	53.3	25.5	27.8	53.6	32.6	21.0

Source: Census of India. State Primary Census Abstract, 2001 & 2011

Table 3 shows the Gender Gap and Work Participation Rate of Madhya Pradesh by residence in 2001 and 2011. It is observed that the female work participation is very low in comparison to male work participation rate for total, rural and urban population in Madhya Pradesh. But in comparison to urban areas female work - participation rate is higher in rural areas in all the districts. This can be co-rrrelation with proportion of labourers in agricultural activities. In Madhya Pradesh total female work participation rate to total female population is slightly decreased from 33.2 per cent in 2001 to 32.6 per cent in 2011. In urban areas female work-participation rate (15.1%) is less than a third of male work participation rate (51.7%), but in rural areas position of female work participation rate (39.3%) is slightly better in the year 2011. The districts which have comparatively higher proportion of female workers in urban areas also have higher proportion of workers in house hold industries and other worker categories. It may be pointed out here that participation of female workers depends on among factors- their marital status, the numbers of children born to them, social customs, as well as the attitude of society towards female participation in work force.

Table 3: Gender Gap and Work Participation Rate of Madhya Pradesh by Residence in 2001 and 2011

Census Year	Work Participation Rate In 2001 (%)		Gender Gap (%)	Work Participation Rate In 2011 (%)		Gender Gap (%)
	Male	Female		Male	Female	
	Total	51.5		33.2	18.3	
Rural	53.0	40.7	12.3	47.4	39.3	8.1
Urban	54.3	12.0	42.3	51.7	15.1	36.0

Source: State Census Hand Book – Madhya Pradesh 2001 & 2011

In total workers of Madhya Pradesh the gender gap in work participation rate is increased from 18.3 per cent in 2001 to 21.0 per cent in 2011. But both in rural and urban areas this picture is completely opposite. In rural areas the gap in male - female work participation rate is decreased from 12.3 per cent in 2001 to 8.1 per cent in 2011. Likewise, in urban areas the gap in male - female work participation rate is decreased from 42.3 per cent in 2001 to 36.6 per cent in 2011. This is a good sign of development of a state.

Percentage of Workers in Different Industrial Categories by Sex in 2001 and 2011:

In table 5, the analysis of total workers and percentage of different categories of workers in Madhya Pradesh explains that cultivators and house hold industry workers are decreasing in percentage of agricultural labourers and other workers are increasing in 2001 and 2011 period in Madhya Pradesh. It is observed that the main occupation of Madhya Pradesh population is agriculture and allied activities. The people are mainly engaged in the agriculture as agricultural labour. The agriculture sector (cultivators and agricultural labourers) accounted for 71.5 per cent in 2001 and 69.8 per cent in 2011. If we consider female work participation in different industrial categories, an interesting picture emerges. Cultivators and agricultural labourers put together account for more than 80 per cent of the total female workers. Regarding cultivators of

Table 5: Percentage of Workers in Different Industrial Categories by Sex in 2001 And 2011

Census Year	Cultivators (%)		Agricultural Labourers (%)		Workers in House Hold Industries (%)		Other Workers (%)	
	Male	Female	Male	Female	Male	Female	Male	Female
2001	42.5	43.3	21.7	40.4	3.2	5.4	32.6	10.9
2011	32.7	28.2	31.3	51.5	2.5	3.9	33.4	16.1

Source: District Census Hand Book – Madhya Pradesh 2001 & 2011

Madhya Pradesh, where in 2001, the percentage of male cultivators was 42.5 percent which is decreased to 32.7 percent in the year 2011. Similarly the percentage of female cultivators to female workers in 2001 was 43.3 which is decreased to 28.5 percent in 2011. Concerning agricultural labourers of Madhya Pradesh, where both the percentage of male and female agricultural labourers is increasing. The percentage of male agricultural labourers to total male workers was 21.7 in 2001, which increased to 31.3 percent in 2011. And another side the percentage of female agricultural labourers to total female workers in 2001 was 40.4 which is increased to 51.5 percent in 2011. Regarding house hold industry workers, for males in 2001 the percentage was 3.2 which decreased to 2.5 percentages in 2011 and for the females the percentage decreased from 5.4 in 2001 to 3.9 per cent in 2011. The above information regarding house hold industry workers reiterates the fact that more initiatives are required to be taken to develop house hold industry in rural areas. Concerning other workers, 32.6 percent males were engaged in this category in 2001 which enhanced to 33.4 percent in 2011. Likewise, in Madhya Pradesh, the percentage of female house hold industry workers was 10.9 in 2001 which increased to 16.1 in 2011.

Distribution of Workers in Different Industrial Categories by Sex and Gender Gap In 2011 (District-Wise):

As per census 2011 the proportion of female cultivators is less than males in all the districts of the study area. The probable reason may be that land is still in the names of the male member of the household. The best performing district for male and female cultivators are Bhind (55.61%) and Ujjain (39.50%) respectively. Jabalpur district has lowest proportion (12.65%) of female workers as cultivators. The gap between male and female cultivators varies from minimum 4.5 per cent in Indore followed by Rewa (6.17%) to maximum 25.65 per cent in Bhind. The percentage of female agricultural labour is higher than that of male in all the districts of the study area. Shahdol district of Madhya Pradesh has registered both highest proportion of male (52.63%) and highest proportion of female (68.88%) as agricultural labourer. The gap between male and female workers as agricultural labourer is highest in Gwalior (-22.72%) and lowest in Sagar (-05.44%). For men agriculture is not the only avenue for wage earning and other casual work provides more wages than agriculture, therefore they seek work as construction labour, and other such skilled and unskilled work. Whereas women have the responsibility of family care and therefore seek work close to their homes and thus continue to work as agricultural labour. In Table 6, we can observe a wide female to male gender gap in agricultural labour force in all the districts reiterating the fact that women make up a considerable work force in agriculture in Madhya Pradesh. From the findings in Table 6 we can infer that women are the major agricultural labour work force in all the selected districts of the study area. Moreover if we combine the percentage of women agricultural labour and the cultivators they constitute about more than 80% of the agricultural work force. The movement of men out of agriculture as reflected in their higher participation (10.49% to 27.28%) in the other category of workers than men in all the districts of the study area probably has led to an increase in women's share of the agricultural workforce.

Table 6: District- Wise Distribution of Workers in Different Industrial categories by Sex and Gender Gap In 2011

Sl. No.	Districts	Cultivators			Agricultural Labourers			Workers In Household Industrie			Other Workers		
		Male (%)	Female (%)	Gender Gap (%)	Male (%)	Female (%)	Gender Gap (%)	Male (%)	Female (%)	Gender Gap (%)	Male (%)	Female (%)	Gender Gap (%)
1	Sheopur	49.15	30.45	18.70	38.35	59.73	-21.38	0.85	1.39	-0.54	11.65	8.43	3.22
2	Gwalior	45.40	27.75	17.65	31.11	53.83	-22.72	1.77	3.33	-1.56	21.71	15.08	6.63
3	Sagar	32.06	13.90	18.16	47.19	52.63	-5.44	5.82	23.29	-17.47	14.93	10.18	4.75
4	Rewa	31.35	25.18	6.17	46.80	60.02	-13.22	4.04	5.13	-1.09	17.81	9.67	8.14
5	Shahdol	26.18	16.70	9.48	52.63	68.88	-16.25	2.44	2.62	-0.18	18.75	11.81	6.94

6	Ujjain	48.10	39.50	8.6	39.34	54.51	-15.17	1.22	1.18	0.04	11.34	4.82	6.52
7	Indore	36.69	32.19	4.5	34.42	56.28	-21.86	1.61	1.65	-0.04	27.28	9.88	17.40
8	Bhopal	36.82	25.64	11.18	38.82	59.09	-20.27	1.99	2.38	-0.39	22.36	12.89	9.47
9	Bhind	55.61	29.96	25.65	32.98	43.62	-10.64	0.92	5.45	-4.53	10.49	20.97	-10.48
10	Jabalpur	25.22	12.65	12.57	48.70	66.47	-17.77	4.46	8.93	-4.47	21.61	11.95	9.66

Source: District Census Hand Book – Madhya Pradesh 2001 & 2011

The percentage of male workers in household industry is less than the females in all the districts of the study area which is in contrast for the other workers category where males outnumber females in all the districts. The reasons that can be attributed are the actualization of the workforce and men are still considered as the bread winners of the family so their participation in wage earning is high. Jabalpur district has registered the highest proportion of male (4.46%) and female (8.93%) workers in household industry category. The minimum and maximum gap between male and female workers in this category is 0.04 per cent in Ujjain and -17.47 per cent in Sagar respectively. The best performing district for male and female workers in other workers category are Indore (27.28%) and Bhind (20.97%) respectively. Lowest proportions of male worker and female worker in this category have been registered in Bhind (10.49%) and Ujjain (4.82%) respectively. The gap between male and female workers as others worker is highest in Indore (17.40%) and lowest in Bhind (-10.48%). It is observed that the districts with high level of work participation in different industrial category reflect fewer gaps between male and female work participation rate.

Relationship among Female Work Participation Rate, Female Literacy Rate and Sex-Ratio of Madhya Pradesh in 2011 (District-Wise):

The female literacy rate has been taken as an indicator of education of women and women's work participation rate has been taken as an indicator of the extent of engagement of women in economic activities. Female work participation rate has been defined as the percentage of total female workers to total female population. So, FWPR = Total Female Workers / Total Female Population * 100. The paper tries to co-relate female literacy level and their participation in productive economic activities. It is theoretically expected that the higher the level of education, the higher will be the participation rate in economic activities. The picture of literacy rate and the participation rate of women in economic activities in Madhya Pradesh given in table 4. There is inter-district variation in Madhya Pradesh in respect of those two variables. Female work participation rate is one of the most important indicators of socio-economic development. Shahdol leads with 38.14 per cent female work participation rate among all selected districts of Madhya Pradesh followed by Rewa (32.87%) and Sagar (28.87%). Bhind has recorded least female work participation rate (8.37%) among the selected states of Madhya Pradesh in 2011. In Shahdol basic pattern of economy is agriculture. In the agricultural sector, there is a negative relationship between literacy and rural female labour participation as literacy enhances their employability and aspirations

Table 4: Female work- participation rate and Female Literacy Rate of Madhya Pradesh in 2011 (Selected District-Wise)

Sl. No.	Districts	Female Work Participation Rate (%)	Female Literacy Rate (%)	Sex Ratio
1	Sheopur	11.94	44.23	901
2	Gwalior	14.49	67.38	864
3	Sagar	28.87	67.02	893
4	Rewa	32.87	61.16	931
5	Shahdol	38.14	59.99	974
6	Ujjain	15.99	60.74	955
7	Indore	16.03	74.02	928
8	Bhopal	16.43	74.87	918
9	Bhind	8.37	49.70	837
10	Jabalpur	25.27	73.80	929
Madhya Pradesh (Total)		32.60	59.20	931

Source: Statistical Handbook Madhya Pradesh, 2011

for better jobs and to shift from agriculture to non-farm work. Another striking fact that is emanating from the above table is that Bhopal (74.9%) and Indore (74.0%) have high female literacy rate but in female work participation rate it records far below, that is, 16.43% and 16.03% respectively. In order to assess the inter relationship among the variables, Karl Pearson's technique of correlation coefficient has been used. Table shows that literacy and women work participation have positive relation ($r = +0.2371$) but they are not significantly related. It implies that with the increase of literacy rate, female participation is not increasing. From the data, it was revealed that the participation of women in the economic activities had been ignored. It is clear that that the female work participation is affected by literacy. It means that higher the level of education, higher the level of women's participation in agriculture. But in case of rural sector, the relationship between the female literacy rate and female work participation is negative. Another variable, which is considered as the determinant of female work participation rate is the sex ratio. The relationship between sex ratio and female labour force participation rate is also positive ($r = +0.6223$). This means to say that, the districts with higher sex ratio have higher women available to join labour force and high female participation in economic activities. The factors like sex ratio and female literacy rate are expected to have a direct effect on female rural work participation.

Conclusion:

The paper has analyzed the spatio-temporal variations of male-female work participation rate in Madhya Pradesh on the basis of Census Report of 2001 and 2011. The participation of women in Madhya Pradesh was less as compared to their male counterpart and it varied from one region to another. The paper has also given a brief picture of gender gap in work participation rate of India and Madhya Pradesh based on the Census Report of 2001 and 2011. The major finding of the paper is that there is widespread variation in Madhya Pradesh in respect of female literacy rate and female WPR which are summarized in table 4. Participation of women in the rural sector is always larger than the male members of the society. This is because of the low mobility of women from the villages, due to religious and social restriction. On the supply side, reproductive work and domestic roles prove to be significant variables in influencing female labour force participation. Above socio-economic norms and values have a strong stake in the development process. Lastly, the paper has found that the higher proportion of female work force in Madhya Pradesh is engaged in rural agricultural activities. The proportion of women agricultural labour is higher than males in all the selected districts of the study area. One of the reasons could be that more males have moved out of the agricultural labour force but women still tend to be employed as wage labour in agricultural activities. It is imperative therefore, to provide technical knowledge and skills to build capacity of women agricultural labour to harness their potential to contribute towards sustainable agricultural growth. One of the expectations from the use of education is that it will bring reduction in inequalities in the society assuming that education leads to equalization of status between individuals coming from higher to unequal socio-economic strata of the society. From the point of view of an individual, education provides essential qualifications to fulfil certain economic, political and cultural functions, and consequently improves his socio-economic status.

References

1. Census of India. State Primary Census Abstract, Office of the Registrar General and Census Commissioner, India, New Delhi, 2001 and 2011.
2. Census of India. Provisional Population Totals, Office of the Registrar General and Census Commissioner, India, New Delhi, 2001 and 2011.
3. Census of India. District Census Abstract, Office of the Registrar General and Census Commissioner, India, New Delhi, 2011
4. Statistical Handbook Madhya Pradesh, Bureau of Applied Economics & Statistics Government of Madhya Pradesh, 2011

