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# Spatial Pattern of Work Participation Rate in Ahmednagar District of Maharashtra: A Comparative Assessment

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**Abstract:** *In this paper attempt is made to comprehensive study of trend of work participation rate from district to national level in general and male-female in particular during the decade 1991 to 2011. The present study is based mainly on secondary sources of data which is collected from Census of India and Maharashtra, District Census Handbook of Ahmednagar district, 1991 and 2001, Primary Census Abstract of Ahmednagar District, 2011. The work participation rate is defined as the percentage of total workers (main and marginal) to the total population. For the present study, the overall work participation as well as the male-female rate is calculated. Ongoing study shows that the trend of overall work participation rate is increased not only in the region of study, but also in the state of Maharashtra and India since 1991 and it is also found that the overall work participation rate of the study area is comparatively higher than that of the state and the national average throughout the study period. Male work participation rate is lower than the state and national average in 1991, while it is higher than national average and near to the state average in 2011. On the other hand, female work participation rate in the study area always higher than the state and the national average throughout the study period.*

**Key Words:** *Trend, Work Participation Rate, Main Workers, Marginal Workers.*

## I. INTRODUCTION

Working population is one of the most significant aspects of the population which indicates the level of socio-economic development of any country. However, in India agriculture is a predominant activity, the proportion of working population is dependent upon the various factors like, age and sex structure of the population, age of marriage, size of family, education, health, attitude to work, availability of work, etc. Women constitute the half of total population, their work participation rates are comparatively much lower than the male participation rates in almost all the countries of the world. Hence, the information regarding work participation rate is essential for the study of levels of economic development.

Gatade and Pawar (2012) analysed spatial pattern of economic activities in Sangli district and pointed out that the work participation rate is declining in primary and secondary economic activities whereas it is increased in the tertiary economic activity. In the another study Pawar and Patil (2015) analysed the female labour force planning in drought-prone tahsils of Ahmednagar district of Maharashtra state and observed that male work participation is considerably higher than females. Further, the sector-wise relationship between female literacy and female work participation indicates that there is very high and negative correlation in agricultural sector, whereas very high and positive correlation in non-agricultural sector. Work has been defined by the Census of India as 'participation in any economically productive activity'. In practice, such participation may be physical or mental in nature. 'Work' involves not only actual work but also effective supervision and direction of work. It also includes unpaid work on farm or in family enterprise.

## II. OBJECTIVES

- A. To analyze the trend of overall and male-female work participation rate from district to national level (1991-2011).
- B. To comprehensive study of overall work participation rate in the study area during the decade 1991 to 2011.

## III. STUDY REGION

Ahmadnagar district is selected for investigation purpose. It is situated partly in the upper Godavari basin and partly in the Bhima basin occupying a somewhat central position in the Maharashtra state. It lies in between 18° 2' and 19° 9' north latitude and 73° 9'

and 75° 5' east longitude. Topographically entire district classified in to three parts like, The Sahyadri ranges, Plateau region and Bhima, Godavari basins (Fig. 1).

Fig.1 Location Map of Ahmadnagar District



#### IV. DATABASE AND METHODOLOGY

The present study is entirely based on secondary data which is collected form Census of India, District Census Handbook of Ahmadnagar, 1991 and Primary Census Abstract of Ahmadnagar District 2001, 2011. The collected data is processed and presented in the form of tables and Q-GIS maps. The work participation rate is defined as the percentage of total workers (main and marginal) to the total population. For the present analysis Overall and male-female work participation rate is calculated by using the following formula.

$$TWPR = \frac{\text{Total Workers (Main+Marginal)}}{\text{Total Population}} \times 100$$

$$MWPR = \frac{\text{Total Male Workers}}{\text{Total Male Population}} \times 100$$

$$FWPR = \frac{\text{Total Female Workers}}{\text{Total Female population}} \times 100$$

Where,

- TWPR = Total Work Participation Rate
- MWPR = Total Male Work Participation Rate
- FWPR = Total female work participation Rate

**V. TREND OF OVERALL AND MALE-FEMALE WORK PARTICIPATION RATE (1991-2011)**

The table 1 and Fig 2 represent the trend of overall and male-female work participation rate in the study area, state of Maharashtra and India during the decade of 1991-2011. When the work participation rate of Ahmadnagar district was compared to the state of Maharashtra and India, it was found that the work participation rate in the district was 46.77 per cent, which is higher than that of the state and the national average of 42.84 per cent and 37.68 per cent respectively during 1991. The male work participation rate in the study area was 51.29 per cent, which was lower than the state (52.03 per cent) and the national average (51.56 per cent). In 1991, female work participation rate (41.96 per cent) was higher than the state (33.02 per cent) and also than the national average (22.73 per cent). It is observed that female work participation rate was much lower than that of the male work participation rate in the study area, in the state of Maharashtra and country also.

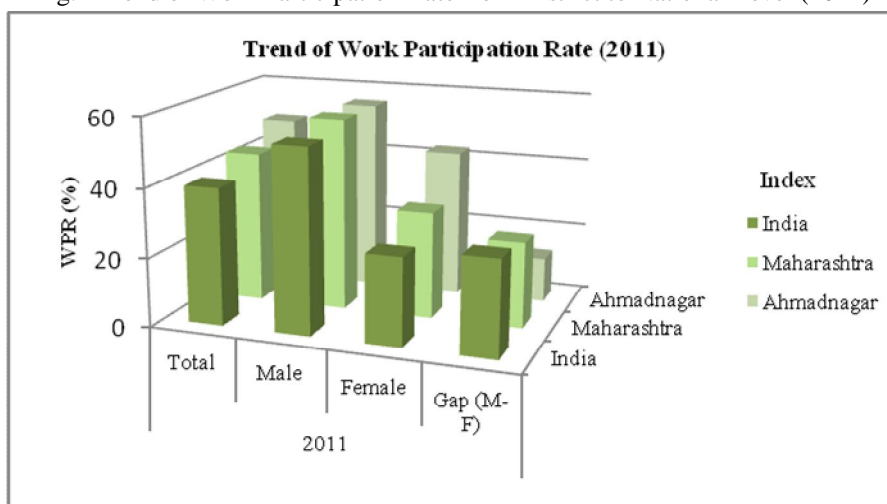
In 2011, the overall work participation rate in the study area was observed 49.40 per cent, which was higher than the state (43.99 per cent) and the national average (39.79 per cent). The male work participation rate in the study area was 55.65 per cent which was slightly lower than the state average (56.00 per cent), whereas it was slightly higher than the national average (53.26 per cent). Female work participation rate was found 42.74 per cent, which was also higher than the national (25.51 per cent) and the state average (31.06 per cent).

Table 1 Work Participation Rate in India, Maharashtra and Ahmadnagar District (1991 - 2011)

Sr. No.	Region	1991			
		Total	Male	Female	Gap (M-F)
1	India	37.68	51.56	22.73	28.83
2	Maharashtra	42.84	52.03	33.02	19.01
3	Ahmadnagar	46.77	51.29	41.96	9.33
Sr. No.	Region	2011			
		Total	Male	Female	Gap (M-F)
1	India	39.79	53.26	25.51	27.75
2	Maharashtra	43.99	56	31.06	24.94
3	Ahmadnagar	49.4	55.65	42.74	12.91

Source: 1) Census of India, 1991 and 2011  
 Census of Maharashtra and District Census Handbook of Ahmadnagar, 1991  
 Primary Census Abstract of Ahmadnagar District, 2001 and 2011

Fig.2 Trend of Work Participation Rate from District to National Level (2011)



It is found that there is an increase in total work participation rate of 2.63 per cent at district level, 1.15 per cent at state level and 2.11 per cent at national level during 1991 to 2011. Male work participation rate is found increased by 4.36 per cent, while female work participation rate is found increased only 0.78 per cent in the study area. It is also found that there is increase in male work participation rate (3.97 per cent), while there is decrease in female work participation rate of -1.96 per cent at the state level and increase by 1.7 per cent and 2.78 per cent respectively at national level from 1991 to 2011. However, it is found that though the male work participation rate is comparatively higher than the female work participation rate, the gap between male and female goes down at national level whereas grown up at state and district level also during the decade 1991-2011.

It is observed that the trend of overall work participation rate has increased not only in the study area, but also in the state of Maharashtra and India since 1991. The increasing trend of male work participation has also been observed from national to district level in 2011 over 1991. It is important to note that the gap in general work participation rate has grown up by 3.38 per cent at district level, 5.93 per cent at state level, due to increasing the male work participation rate much more than the female work participation rate, whereas it has narrowed down by 1.08 per cent at national level during the last two decades. In the study area, it was found that gap between male and female work participation rate was remained lower than the state as well as national average from 1991 to 2011. Although, the notable point is that the continuous increase in the gap in between male and female work participation rate at district and state level whereas it is decreased at national level in 2001 over 1991, but remained increased from national to district level during the last decade 2001-2011.

It is noticed that overall work participation rate of the study region was comparatively higher than that of the state and the national average throughout the study period. Male work participation rate was lower than the state and national average in 1991, while it was higher than national average and lower than the state average in 2011. On the other hand female work participation rate in the study area was always higher than the state and the national average throughout the study period. It is also noticed that the highest female dependency was observed at national level followed at state level, whereas lowest female dependency was observed at district level during the study period.

## VI. SPATIAL PATTERNS OF WORK PARTICIPATION RATE (1991-2011)

### A. Total Work Participation Rate, 1991

Table 2 and Fig. 3 shows the spatial patterns of work participation rate in general in the study area during 1991. The total work participation rate was found 46.77 per cent for district as a whole in 1991. The highest total work participation rate was observed in the Karjat tahsil (51.55 Per cent), while lowest was observed in the Nagar tahsil (39.02 per cent). In 1991, there are as many as 4 tahsils, like Karjat (51.55 per cent), Pathardi (50.01 per cent), Shevgaon (50.18 per cent) and Akole (50.19 per cent) identified with the very high (Above 50.00 per cent) work participation rate and again 4 tahsils, like Nevasa (48.09 per cent), Parner (49.80 per cent), Shrigonda (49.52 per cent) and Jamkhed (49.50 per cent) identified with the high work participation rate (47.00 to 50.00 per cent) in the study area.

There are 3 tahsils, viz. Kopargaon (44.12 per cent), Rahuri (44.70 per cent) and Sangamner (46.67 per cent) which fall in the category of moderate work participation rate, which is in between 44.00 per cent to 47.00 per cent. Only Rahata (42.20 per cent) tahsil was identified with the low work participation rate (41.00 per cent to 44.00 per cent). In case of very low work participation rate, there are 2 tahsils, viz. Shrirampur (38.46 per cent) and Nagar (39.02 per cent) observed with the below 41.00 per cent work participation rate. A considerable variation is found in total work participation rates ( $SD=4.36$ ) among the tahsil of the study area in 1991. Generally, work participation rate was found comparatively higher level in the less developed and un-urbanized tahsils than the progressive and urbanized tahsils within the district.

### B. Total Work Participation Rate, 2001

As per 2001, the average work participation rate of the study area was found 46.72 per cent. The highest work participation rate was found in the Parner tahsil with 53.05 per cent and lowest was found in the Nagar tahsil with 38.68 per cent. It is found that there are 3 tahsils, like Akole (51.84 per cent), Parner (53.05 per cent) and Shrigonda (50.05 per cent) observed with more than 50.00 per cent work participation rate. Whereas, Shevgaon (49.13 per cent), Pathardi (48.28 per cent), Rahuri (49.96 per cent), and Karjat (47.65 per cent) tahsils denoted with the high work participation rate (Table 2 and Fig 3).

Further, in the 4 tahsils viz. Sangamner (46.31 per cent), Kopargaon (44.14 per cent), Nevasa (46.58 per cent) and Jamkhed (46.01 per cent) fall in the category of moderate work participation rate. Rahata (42.37 per cent) tahsil was found remained in the low work participation rate category, while Shrirampur and Nagar tahsil remained observed with below 41.00 per cent of work participation rate, i.e. 40.01 per cent, 38.68 per cent respectively. In the area of study, overall work participation rate was depended upon the

various physical, social, economic and demographic factors. There was a significant difference in work participation rates among the tahsils of the district (SD= 4.23).

Table 2 Ahmadnagar District: Total Work Participation Rate (1991 - 2011)

Sr. No.	Tahsil	Total Work Participation Rate		
		1991	2001	2011
1	Akole	50.19	51.84	52.79
2	Sangamner	46.67	46.31	48.97
3	Kopargaon	44.12	44.14	45.5
4	Rahata	42.2	42.37	44.33
5	Shrirampur	38.46	40.01	43.15
6	Nevasa	48.9	46.58	50.54
7	Shevgaon	50.18	49.13	51.12
8	Pathardi	50.01	48.28	52.1
9	Nagar	39.02	38.68	41.52
10	Rahuri	44.70	49.96	47.22
11	Parner	49.80	53.05	54.84
12	Shrigonda	49.52	50.05	54.35
13	Karjat	51.55	47.65	54.01
14	Jamkhed	49.50	46.01	51.11
District Average		46.77	46.72	49.4
SD		4.36	4.23	4.37

Source: District Census Handbook of Ahamadnagar, 1991.  
Primary Census Abstract of Ahamadnagar, 2001and 2011.

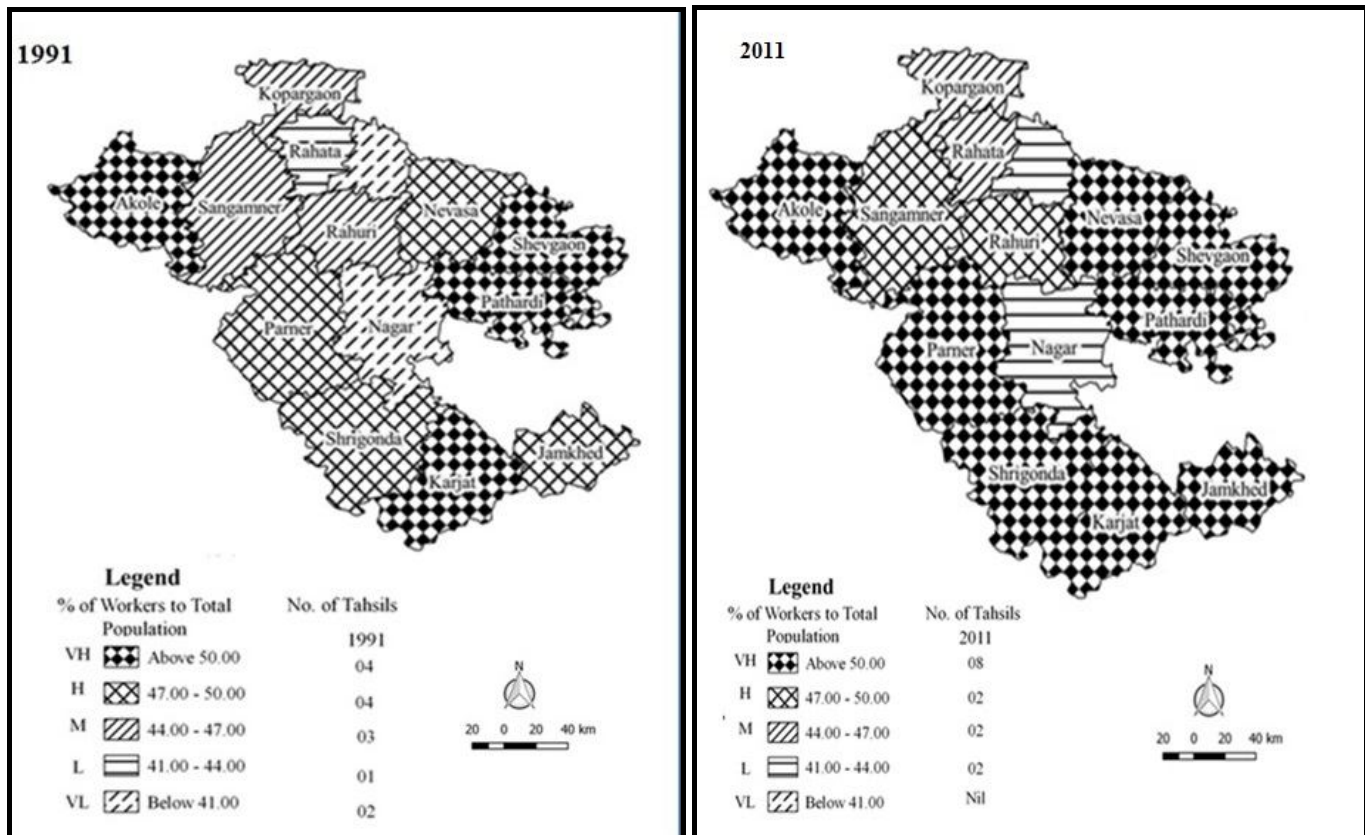
C. Total Work Participation Rate, 2011

Table 2 as well as Fig. 3 show the spatial patterns of work participation rate in general in the study area during 2011. It is noticed that there remains a wide spatial variation in the overall work participation rate at tahsil level (SD= 4.37). In the area of study, the average work participation rate was 46.77 per cent during 1991, while it was rises up to 49.40 per cent during 2011. Hence, the total work participation rate was increased by 2.63 per cent during the decades of 1991-2011. The total work participation rate is highest in the Parner tahsil (54.84 Per cent), while lowest in the Nagar tahsil (41.52 per cent). In fact, in Parner tahsil workers are migrated towards Pune and Mumbai for working purpose and also most of the workers are engaged in agricultural due to industrially less developed and drought prone region. In Nagar tahsil we found peoples are employed in various government offices, schools, colleges, banks, hospitals and other services due to its urban and industrial nature.

There are total 8 tahsils, like Akole (52.79), Nevasa (50.54 per cent), Shevgaon (51.12 per cent), Pathardi (52.10 per cent), Parner (54.84 per cent), Shrigonda (54.35 per cent), Karjat (54.01 per cent) and Jamkhed (51.11 per cent) observed with the very high level of work participation rate, which is above 50.00 per cent. It is noticed that total work participation rate is comparatively higher level in those tahsils located in hilly and drought prone area than those tahsils are located in the plain and irrigated area. There are 2 tahsil, viz. Sangamner (48.97 per cent) and Rahuri (47.22per cent), observed with the higher level of work participation rate, which is ranged from 47.00 per cent to 50.00 per cent. There are again 2 tahsil, namely Kopargaon (45.50 per cent) and Rahata (44.33 per cent) observed with the moderate level of work participation rate. There are only 2 tahsil, namely Shrirampur (43.15 per cent) and Nagar (41.52 per cent) identified with low work participation rate.

It is interesting to note that there are 2 tahsils which fall in the category of very low work participation (below 41.00 per cent) during 1991, but none of the tahsils left behind in this category during 2011. On the other hand there are 4 tahsil identified with very high work participation rate in 1991, while 8 tahsils are indentified with the same category during 2011. It clearly indicates that there is increase in overall work participation rate in 2011 over 1991.

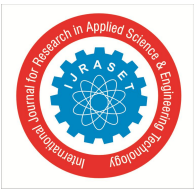
Fig. 3 Work participation Rate in Ahmadnagar District (1991-2011)



## VII.CONCLUSION

Present study shows that the trend of overall work participation rate has increased not only in the study area, but also in the state of Maharashtra and India since 1991. The increasing trend of male work participation has observed from national to district level in 2011 over 1991. On the other hand, decreasing trend of female work participation is observed at national and state level whereas, increasing trend is observed at district level during 2011. It is important to note that the gap in general work participation rate has grown up by 3.38 per cent at district level, 5.93 per cent at state level, due to increasing the male work participation rate much more than the female work participation rate. Whereas it has narrowed down by 1.08 per cent at national level during the last two decades. In the study area, it was found that gap between male and female work participation rate was remained lower than the state as well as national average from 1991 to 2011. It is noticed that overall work participation rate of the study region was comparatively higher than that of the state and the national average throughout the study period. Male work participation rate was lower than the state and national average in 1991, while it was higher than national average and lower than the state average in 2001 and 2011. On the other hand female work participation rate in the study area was always higher than the state and the national average throughout the study period. It is also noticed that the highest female dependence was observed at national level followed at state level, whereas lowest female dependency was observed at district level during the study period.

It is found that the area of study has witnessed with slightly increasing trend of both male and female work participation rates. There has been found considerable spatial variation in total and male-female work participation rates in the study area during 1991-2011. The average work participation rate was increased from 46.77 per cent in 1991 to 49.40 per cent in 2011, whereas male and female work participation rate was also increased from 51.29 per cent and 41.96 per cent in 1991 to 55.65 per cent and 42.74 per cent in 2011, which clearly show that in the study area, the average male work participation rate was considerably higher than the female work participation rate during the study period. In other words, females are much lagging behind as compared to males with respect to work participation rate in all the tahsils. The male-female disparity in work participation was high in the developed tahsils, on the other hand it was low in the drought-prone and less developed tahsil. That means female of less developed part are comparatively more employed than the females of the developed part of the study area. It is noticed that tahsils in the northern part of the district



are comparatively more industrialized, urbanized and agriculturally developed, which experiences more disparities in male-female work participation rate than the tahsils of the southern part.

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