

# SPATIO TEMPORAL ANALYSIS OF LITERACY RATE IN JHARGRAM SUBDIVISION OF PASCHIM MEDINIPUR DURING 1971 TO 2011

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**Abstract**—Literacy rate is one of the indicators of the overall development of any area. India has shown a remarkable increase in its crude literacy rate since its independence. But still it is well under the average literacy rate of the world. West Bengal being one of the most populous states of India has shown the same increasing trend in literacy rate. Paschim Medinipur is a very highly populated district of West Bengal. The western part of this district consists of Jhargram Subdivision which is economically very backward compared to the other Subdivisions of this district. This paper analyses the trend of literacy rate in different C.D Blocks of Jhargram Subdivision spatio-temporally over a period of forty years. It is found that the literacy rate is continuously increasing in the area but has remained lower than that of National and State levels. It has been found that although the educational level has increased in the area but in reality a large number of population of Binpur I, Binpur II, Gopiballavpur II and Nayagram, who are included in literate group, cannot write anything other than their names. Thus there exists a gap between actual number of educated people and literacy rate produced by Census of India.

**Index Terms**—Literacy rate, education, population composition, human resource, indicators of development.

## I. INTRODUCTION

Among various components of composition of population the most important is the level of literacy because it gives people the sense of judgment of good and bad and provides awareness. The low levels of educations are responsible for a backward economy [1]. The definition of literacy differs from country to country but generally it is the length of schooling that determines the difference between a literate and an illiterate. According to G. T Trewartha the mere ability to read and write one's own name does not mean proper literacy [2]. India's crude literacy rates have grown from 18.33 percent in 1951 to 74.04 in 2011 but still it is well below the world average of 84 percent. India currently has the largest amount of illiterate population and there has been a sluggish growth of literacy operating in the country. West Bengal has shown a better scenario regarding the history of literacy from independence where it was 24.61 in 1951, which has risen to 77.08 percent in 2011. Both the values are well above the national average. Given the national and state level of literacy rates this paper will now put some light on the situation of literacy in Jhargram Subdivision during 1971 to 2011. Two concept have been dealt in this paper, i.e. crude literacy and effective literacy. The crude literacy is the percentage proportion of literate population tot total population, while effective literacy is the percentage proportion of literate population to the population above the age group of 0 to 6 years. Since effective literacy could not be computed for census data prior to 1991 thus a comparison has been made between effective literacy between 1991 and 2011.

## II. STUDY AREA

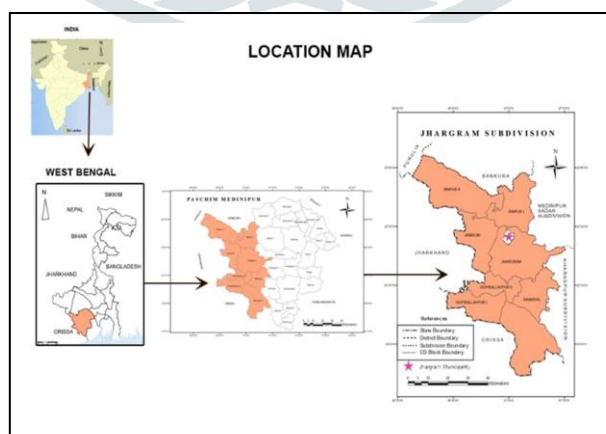


Figure 1 Map showing location of Jhargram Subdivision

Jhargram Subdivision is located between 22°00' N to 22°51'06"N latitudes and 86°32'30"E to 87°14'24"E longitudes. It forms the western part of Paschim Medinipur District. Jhargram Subdivision is surrounded by Orissa and Jharkhand towards its south-western and western part, Purulia District towards its north western part, Bankura District towards its north and Medinipur Subdivision and Kharagpur Subdivision towards its eastern and south eastern part respectively. Jhargram Subdivision consists of eight Community Development Blocks, namely, Binpur-I, Binpur-II, Gopiballavpur-I, Gopiballavpur-II, Jhargram, Nayagram, Jamboni and Sankrail and Jhargram Municipality. These eight blocks contain seventy nine Gram Panchayats. The Subdivision has its head quarter at Jhargram. Jhargram Subdivision is situated among the hilly and rolling uplands of Chhotanagpur plateau and the undulating tract of Rarh Bengal [3]. The geological formation of the area is mainly

lateritic, which occupies the central as well as the southern parts of the area, while the eastern part is characterized by alluvium of Lower Ganga Plain. The general slope of the area is from north-west to east south-east. There are three rivers (Kangsabati, Subarnarekha and Dulung) which drain the Subdivision from north-west to south-east. The area is one of the drought prone areas of Paschim Medinipur District. The climate is warm humid tropical in nature and falls under Koppen’s Aw type of climatic classification. The vegetation of the Subdivision is dominated by jungles consisting of Shorea robusta (Sal) or by mixed forest where species of Alagia, Schleichera, Schrebera, Terminalia and similar trees with many shrubs and climbers are found [4].

**III. METHODOLOGY**

The present study is done mainly with the help of secondary data. The data sets of population are collected from District Census Handbook of Medinipur and Paschim Medinipur for the year 1971, 1991 and 2011. A number of books and journals have been consulted while ideating about the present study. While calculating crude and effective literacy rates of population the following formulas have been used-

$$CLR = \frac{L}{P} * 100 \tag{1}$$

Where, CLR is Crude Literacy Rate  
 L= Total Literate Population of a given year  
 P= Total Population of a given year

$$ELR = \frac{L}{EP} * 100 \tag{2}$$

Where, CLR is Crude Literacy Rate  
 L= Total Literate Population of a given year  
 EP= Total Effective Population of a given year (Population excluding 0 to 6 years of age group)

**IV. SPATIO TEMPORAL ANALYSIS OF LITERACY RATES**

The spatio temporal analysis denotes the changes that have taken place in terms of literacy rates over a particular space and time. The idea is basically to find out the nature of areal differences between different administrative units of the aforementioned Subdivision of Paschim Medinipur. This analysis gives a better picture of the regional variation regarding literacy rates prevailing in Jhargram Subdivision over a period of forty years.

**Crude Literacy Rate of Jhargram Subdivision**

Crude literacy rate is the general percentage of literate people among the total population of the chosen region. It takes into account all the sections of population and derives the literacy rate including the number of population who have not yet attained the minimum age of schooling. Figure 2, 3, 4 and Table 1 give an account of the trend of crude literacy at C.D Block level in Jhargram Subdivision during the Census years of 1971, 1991 and 2011

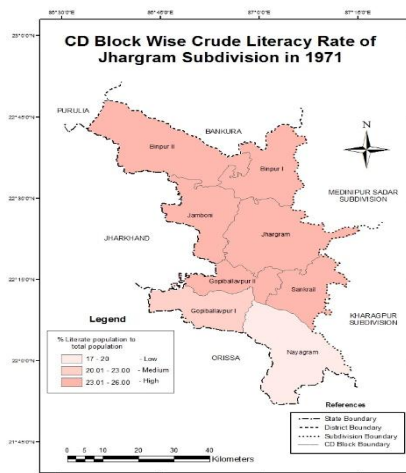


Figure 2

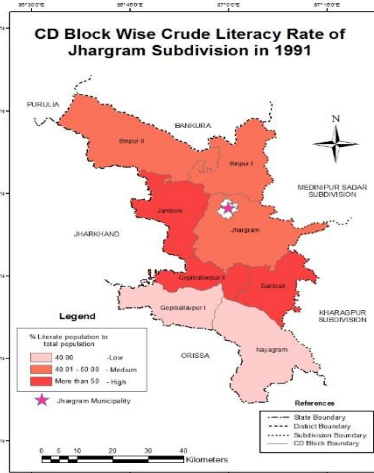


Figure 3

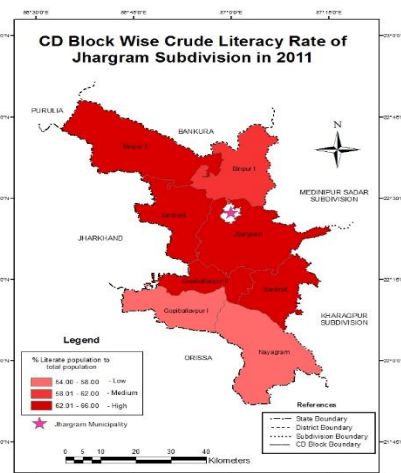


Figure 4

Table 1 C.D Block Wise Crude Literacy of Jhargram Subdivision from 1971 to 2011

CD Blocks	Crude literacy rate (%)		
	1971	1991	2011
Jhargram	25.41	46.51	63.60
Jamboni	25.21	75.00	63.91
Binpur I	23.71	44.65	61.32
Binpur II	25.35	43.27	62.17
Gopiballavpur I	22.70	39.30	57.50
Gopiballavpur II	26.03	51.20	63.34
Sankrail	24.89	51.74	65.01
Nayagram	19.46	39.18	55.82
<b>Jhargram Subdivision</b>	<b>25.20</b>	<b>48.67</b>	<b>61.56</b>

Source: District Census Handbook of Medinipur and Paschim Medinipur

From Table 1 and Fig.2 it is seen that in 1971 the highest amount of literacy is found in Gopiballavpur II (26.03%). The lowest literacy rate is present in Nayagram (19.46%). Four blocks of Jhargram, Jamboni, Binpur II and Gopiballavpur II are above the literacy rate of Jhargram Subdivision (25.20%). Gopiballavpur I shows medium literacy rate, while except Gopiballavpur I and Nayagram all the other six blocks show high literacy rates. In this year Jhargram Subdivision attains the literacy rate of 25.20 percent.

In 1991 it is seen that all the blocks of Jhargram Subdivision has experienced a boost in literacy levels (48.67%). Among the CD Blocks Jamboni shows a remarkable increase in literacy rates to 75 percent, which seems a bit unusual as the other blocks do not show literacy rates more than 52 percent. This unusual increase may be due to influx of in migrants from neighbouring districts. The lowest literacy is seen in Nayagram (39.18%). Sankrail, Gopiballavpur II and Jamboni have literacy rates greater than that of Jhargram Subdivision (48.67%). Apart from Nayagram, Gopiballavpur I has low literacy rate, Binpur I, Binpur II and Jhargram have medium literacy rates and Sankrail and Gopiballavpur II along with Jamboni have high literacy rates.

In 2011 literacy rates have further increased in all the CD blocks of Jhargram Subdivision (61.56%). The highest literacy rate is present in Sankrail (65.01%) percent while the lowest literacy rate of 55.82 percent is present in Nayagram block. Nayagram's literacy is below the literacy levels of Jhargram Subdivision (61.56%). Jamboni, Jhargram, Binpur II, Gopiballavpur II and Sankrail have high literacy rates. Binpur I has moderate literacy rate, while Gopiballavpur I along with Nayagram have low literacy rate. It is found that apart from Nayagram all the other blocks with high number of tribal population have shown considerable rise in literacy levels in the study area.

**Crude Literacy of Jhargram Municipal Area (Jhargram Urban Area)**

In 1971 according to District Census Handbook of Medinipur, 1971, it found that the crude literacy of Jhargram urban area is 61.15 percent, which is quite high from the Subdivisional average. In 1991 the Jhargram Municipality records crude literacy rate of 68.19 percent and in 2011 it further increases to 80.81 percent. Both the values are higher than the Jhargram Subdivisional average. Being an urban area better educational facilities and better economic conditions must have played a positive role in producing higher levels of literacy in the area.

**Effective Literacy Rate of Jhargram Subdivision**

Effective literacy brings out the actual percentage of literate people among the number of population excluding the age group of zero to six years. Thus the percentage of literate people to the population available for education can be derived. Figure 5 and Table 2 portray the nature of effective literacy in Jhargram Subdivision.

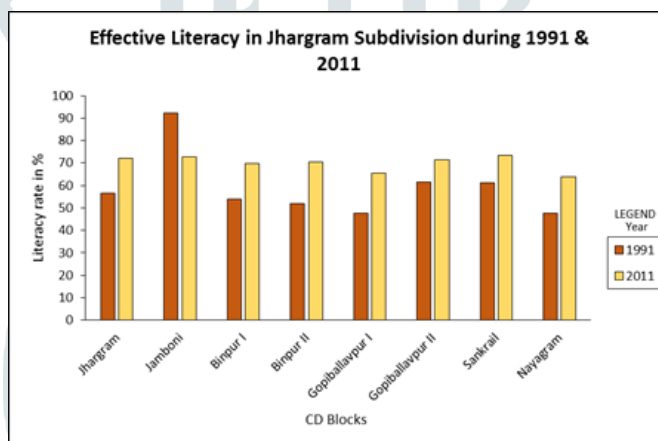


Figure 5 Effective Literacy of Jhargram Subdivision in 1991 and 2011

Table 2 Effective literacy rate in Jhargram Subdivision in 1991 and 2011

CD Block	Effective Literacy 1991 (%)	Effective Literacy 2011 (%)
Jhargram	56.51	72.23
Jamboni	92.12	72.63
Binpur I	53.82	69.74
Binpur II	51.96	70.46
Gopiballavpur I	47.57	65.44
Gopiballavpur II	61.51	71.40
Sankrail	61.32	73.35
Nayagram	47.55	63.70
<b>Jhargram Subdivision</b>	<b>48.81</b>	<b>69.87</b>

Source: District Census Handbook of Medinipur and Paschim Medinipur

In 1991 Jhargram Subdivision has effective literacy of 48.81 percent. The lowest effective literacy is found in Nayagram (47.55%). Gopiballavpur is another block which shows low effective literacy (47.57%). Apart from these two blocks, all the other blocks show more than fifty percent effective literacy in 1991. Highest effective literacy is found in Jamboni (92.12%)

In 2011 the effective literacy has further increased to 69.87 percent in Jhargram Subdivision. The Highest value is seen in Sankrail (73.35%), while Nayagram shows the lowest of 63.70 percent. Five blocks out of eight show effective literacy more than seventy percent in Jhargram Subdivision.

**Effective Literacy of Jhargram Municipal Area (Jhargram Urban Area)**

In 1991 the effective literacy in Jhargram Municipality is 79.40 percent and in 2011 it is 89 percent. The high effective literacy values indicate improved educational environment in Jhargram Municipality.

**Male and Female Literacy**

In India there exists a gender gap between male and female literacy rates. This disparity is a stimulator of various problems regarding family planning, population stabilization efforts and women empowerment. The crude literacy of male and female population has been calculated for the years of 1971, 1991 and 2011 to give an overview of the nature of the gender gap in literacy in Jhargram Subdivision.

Figure 6, 7, 8 show the trend of male and female literacy rates over a period of forty years.

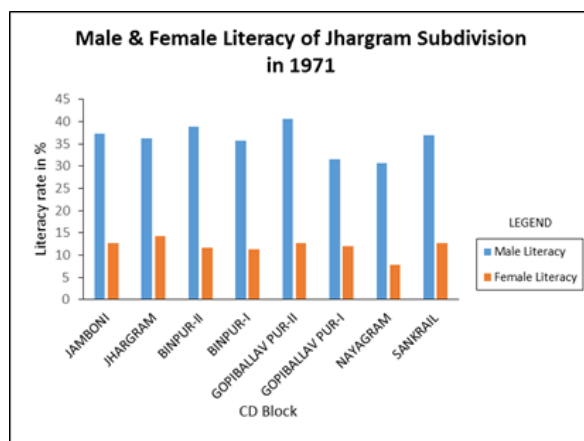


Figure 6 Male and Female Literacy of Jhargram Subdivision in 1971

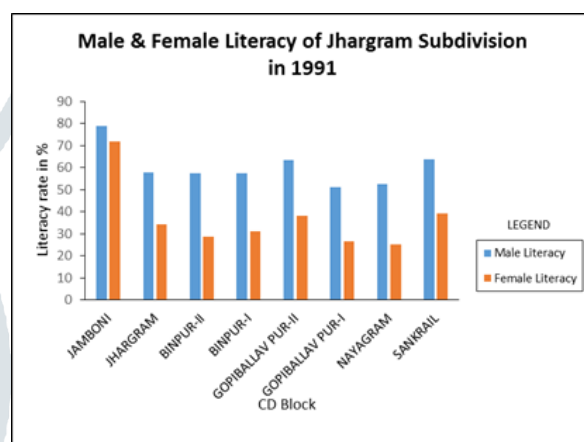


Figure 7 Male and Female Literacy of Jhargram Subdivision in 1991

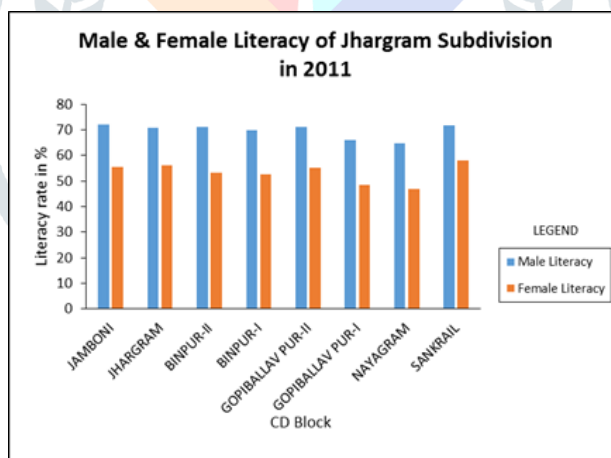


Figure 8 Male and Female Literacy of Jhargram Subdivision in 2011

Table 3 Male and female crude literacy of Jhargram Subdivision in 1971, 1991 and 2011

CD Block	1971 Crude Literacy (%)		1991 Crude Literacy (%)		2011 Crude Literacy (%)	
	Male Literacy	Female Literacy	Male Literacy	Female Literacy	Male Literacy	Female Literacy
Jamboni	37.26	12.64	78.76	71.69	72.17	55.36
Jhargram	36.15	14.23	57.92	34.45	70.92	56.11
Binpur-Ii	38.85	11.64	57	29	71.14	53.11
Binpur-I	35.78	11.26	57	31	69.97	52.48
Gopiballavpur-II	40.59	12.64	63.48	38.01	71.25	55.13
Gopiballavpur-I	31.54	12.02	51.11	26.68	66.01	48.56
Nayagram	30.69	7.80	52.63	25.22	64.78	46.74
Sankrail	36.89	12.61	63.61	39.30	71.76	58.13
<b>Jhargram Subdivision</b>	<b>39.68</b>	<b>16.27</b>	<b>61.89</b>	<b>39.60</b>	<b>71.40</b>	<b>55.85</b>

Source: District Census Handbook of Medinipur and Paschim Medinipur

In 1971 there exists a wide gap between the male and female literacy. Jhargram Subdivision has male literacy of 39.68 percent and female literacy of only 16.27 percent. Highest male literacy is seen in Gopiballavpur II (40.59%) among the blocks. The lowest is present in Nayagram (30.69%). While highest female literacy is seen in Jhargram block (14.23%) and the lowest is seen in Nayagram block (7.80%). The biggest gap between male and female literacy rate can be seen in Gopiballavpur II and the lowest gap is present in Gopiballavpur I.

In 1991 both male and female literacy rates have shown an improvement with 61.89 percent of male literacy and 39.60 percent of female literacy rates in Jhargram Subdivision. Jamboni shows the highest values of 78.76 percent of male literacy. The lowest literacy among male population is found in Gopiballavpur I (51.11%). Jamboni also have highest amount of female literates (71.69%). Apart Jamboni the other blocks do not even cross the 40 percent mark in literacy rate. The lowest female literacy is found in Nayagram (25.22%). Jamboni and Gopiballavpur II have reduced the gap between male and female literacy. The remaining blocks have widened the gap even more. The highest gap is found in Binpur II and the lowest is found in Jamboni.

In 2011 both male (71.40%) and female literacy (55.85%) rates have increased in Jhargram Subdivision. The highest male literacy is found in Jamboni (72.17%). The lowest male literacy is present in Nayagram (64.78%). The female literacy is highest in Sankrail (58.13%), while the lowest is seen at Nayagram (46.74%). The disparity between male and female literacy rate have shrunk further in 2011. The widest gap is found in Nayagram and the shortest gap is seen in Sankrail.

## V. CONCLUSION

From the analysis of secondary data it is seen that the educational levels are improving in the study area, but it is also observed that the literacy rates of Jhargram Subdivision is well under the literacy rates of State and National levels. During the field survey the author has come across several individuals especially in tribal inhabited villages of Binpur I, Binpur II, Nayagram and Gopiballavpur II, who can only read and write their names. Other than this they cannot read or write anything. So on paper these people are considered as literates but in real sense they are not educated at all and the purpose of education is lost in these cases.

The male literacy has always been higher than the female literacy in Jhargram Subdivision. In 1971 the difference between male and female literacy rates has been highest. Over the years the gap between male and female literacy rates has shrunk to a considerable level. 2011 witnesses the smallest difference between male and female literacy rates of Jhargram Subdivision.

Thus educational levels are showing a positive trend in Jhargram Subdivision, but at ground level proper implementation of literacy programmes is needed to educate the people properly for betterment of the society in near future.

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