SPATIO-TEMPORAL VARIATION IN EDUCATIONAL STATUS AND LEVEL OF SOCIO-ECONOMIC DEVELOPMENT IN ALIGARH DISTRICT, U.P, INDIA

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Abstract

The study is based on the block-wise published data obtained from statistical bulletin of Aligarh district 2001 and 2010. The 12 indicators for educational status and 43 indicators for socio-economic development have been taken for the analysis. In the present study an attempt is made to examine the block-wise study of relationship between educational status and level of socio-economic development. The main findings brought out the foregoing analysis are that the massive expansion of educational facilities and awareness towards the importance of education has help in socio-economic transformation of the district. The central and southern part of the district shows high level of educational status and socio-economic development whereas the western and eastern margin shows low educational status and socio-economic development. It is evident that educational status of any region is based on educational, infrastructural facilities and socio-economic level.

Keywords: *educational status, socio-economic development, infrastructural facilities and industrial development.*

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Introduction

Education is an important variable for essential social development. It is the basis of creation and dissemination system that triggers technical progress, which is the main component of economic growth. Improvement in education level indicated improvement in the quality of human resources (Chandna and Sindhu, 1980).

Education is that constructive progress, which drags a person out from darkness, poverty and misery and leads him on the poles of enlightenment, prosperity and happiness by developing his individuality in all its aspects i.e., physical, mental, he becomes a responsible, dynamic, resourceful and enterprising citizen of strong and good moral character. He uses all his capabilities to develop his own self, his society and his nation to the highest extent by contributing to nation, honour, national groovy, culture and civilization (Sodhi and Suri, 1998).

Education plays a vital role in human life. It is one of the most important factors of development. Socio-Economic developmental conditions in any society depend upon the availability of education facilities. In the early days schooling may not have been widely available nor have the opportunities been abundant for educated people. But its need was felt very much. Because it is a vehicle, which helps in conveying ideas, thoughts and events over time and space and therefore it is an instrument for conveying information as well as containing information. It also involves all round development of human personality bringing out the best in men. The purpose of education is therefore, to make the human being capable and develop their competence and skills to meet challenges of life.

Education is considered as a social instrument for developing human resources and human capital formation. However, the relationship between education and development is not as simple as it appears to be. Education becomes meaningful when it provides knowledge, skill of reading, writing and for solving the problem and improving the quality of life. Education, organized and oriented on these lines is certainly going to have a lasting impact on income, agricultural productivity, fertility rate, birth spacing, pre and postnatal health, nutrition, knowledge, attitudes and values.

Education is crucial to every aspect of social and economic development. Education is increasingly being recognized to be the heart of the developmental process. For this, three dynamically inter-related factors are involved: the economic benefits of education, the impact of

education on population growth, health and social well-being; and the relationship between education and democratic society (UNESCO, 2001).

The growth of education and socio-economic development is interdependent, as higher education is both a catalyst in socio-economic development as well as affected by socio-economic development. The products of higher education become agents of development which in turn influence the course of higher education. (http://mohdzan.com?papers/hkpaper99/default.asp).

The socio-economic development of an area, region, or a country, to a major extent, depends on the development of its production sector. The development of production sector cannot take place until the provision of appropriate level and adequate distribution of social facilities is made, as these infrastructural facilities play a critical role in the process of balanced regional development (Sharma, 1989).

Socio-economic development is the process of social and economic development in a society (Wikipedia, 2010). Socio economic development refers to the ability to produce an adequate and growing supply of goods and services, productivity and efficiency, to accumulate capital, and to distribute the fruits of production in a relatively equitable manner. The gap between rich and poor, developed and undeveloped, or first and third world nations reflects variations in these socio-economic capacities. While there is widespread agreement that socio-economic development involves production, accumulation and distribution process, the study of development has been heavily influenced by particular sociological concepts and economic measures.

Sociological studies have emphasized the traditional-to-modern transition as part of the larger process of social change. Economists on these perspectives have shaped the contemporary definition of socio-economic development (Jaffree, 1998).

Therefore, it is essential to study educational levels because overall development of the country depends upon it. The topical studies conducted in the relevant field done by Berrey, (1960); Harbinson and Mayers, (1964); Rao, (1964); Tritha (1966), King, (1969); Vaidyanathan (1972), Premi (1976), Raza and Aggarwal (1986) have studied the spatial distribution of literacy in India. Besides, a number of studies (Mukherjee (1968), Krishan and Chandna (1974), Rao, (1977); Siddique (1977), Dube and Misra, (1981); Aggarwal, (1987); Garrett, (1984); Kapoor, (1984); Dash and Ahmad (1985), Zaidi, (1986); Mathur (1988), Tripathi(1989), Tiwari and Tripathi

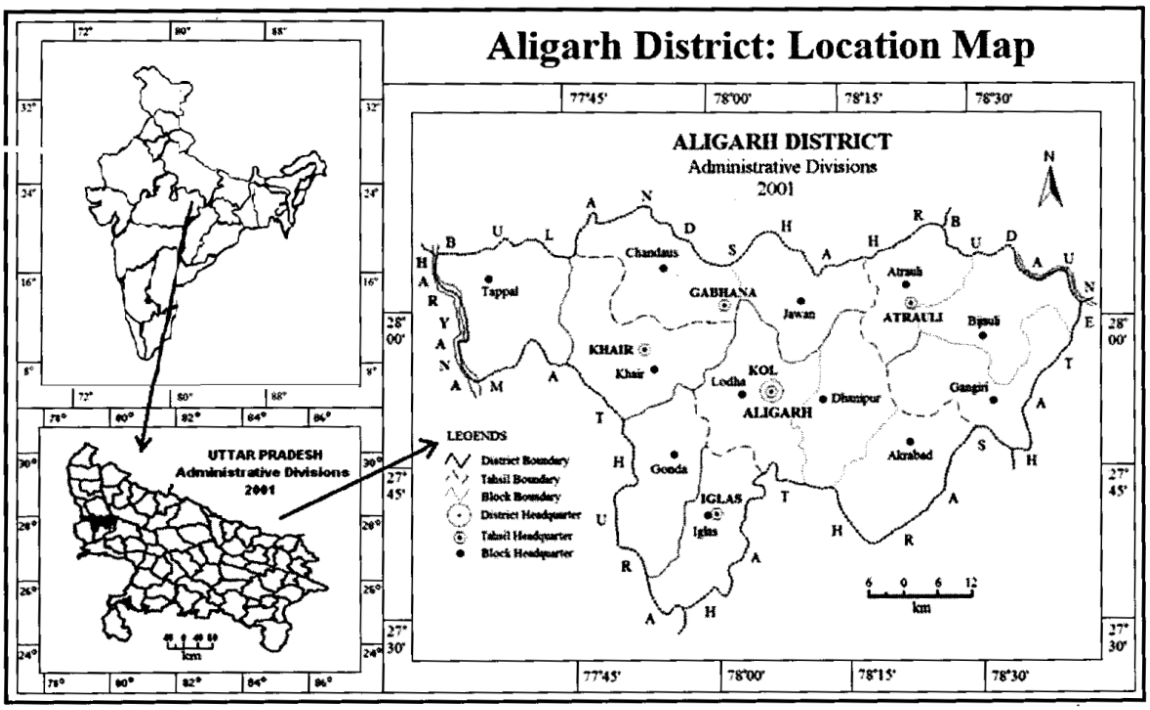
(1993) have been made at different states of India. Gupta and Sadasyuk,(1961); Schwartzberg, (1962); Mitra, (1965); Bose, (1968); Nath, (1970); Knox,(1975); Maclaran, (1978); Banerjee, (1984); Banerjee, (1992); Byun and Kim, (1995); Ahmad & Shamim,(1998); The report of National Council of Applied Economic Research (NCAER), (2002); Atchoarena and Gasperini, (2003); Jayanthi, (2003); and Roy, (2008); and Kaur,et.al(2011)have studied various aspects of socio-economic development.

Keeping in view the importance of education and its impact on socio-economic development, Aligarh district of U.P. has been selected as an area for study because the area under investigation is rapidly changing from agriculture to industrial activities. The educational status of the district is increasing due to opening of new schools and colleges in rural part of the district, though regional variations are found in educational status and level of socio-economic development. The principal objective of this paper is to examine the spatio-temporal variations in the educational status and level of socio-economic development in the district on one hand and to assess the inter-relationship between educational status and socio-economic development on another hand.

2. Study Area

Aligarh is an important district of Uttar Pradesh. It is situated at a distance of 130 k.m. south-east of Delhi on Delhi-Kolkata railway route.The latitude is $27^{o}29'$ to $28^{o}11'$ North latitude and $77^{o}29'$ to $78^{o}38'$ East longitude. Topographically the district represents a shallow trough-sauce pan shape like appearance with the river Ganga in the north-east and the River Yamuna in the north-west forming the high land peripheries. Physiographically the district contains vast alluvial plains having a gentle slope from north to south and south-east. The climate is hot and dry in summer and cool and dry in winter with an intervening rainy season. The district has a total area of 3700.4 sq.km. With a population of 3,673,849 persons in 2011(provisional). From the administrative point of view the district has been divided into 12 development blocks, namely Tappal, Chandaus, Khair, Jawa, Lodha, Dhanipur, Gonda, Iglas, Atrauli, Bijauli, Gangiri, and Akrabad which include altogether 1210 inhabited villages.

Aligarh District: Administrative Divisions, 2001



Source: Census of India & Vikas Bhawan, Aligarh, 2008

Figure 1

3. Database and Methodology

Socio-economic development entirely depends upon the proper exploitation of the available resources-material and human. Hence, a total involvement and willing participation of human resources is of great importance. But a large majority of the population could not be expected to play such a role when India embarked upon planned development. Not only the general level of education too low, but the type of education being imparted was uncreative (Patil, 1978).

Education has become a crucial strategic factor in every major economy of the world. For accelerating rate of growth and equalizing the distribution of income, education has been placed as a central issue in the economic infrastructure. The growing importance of education has been paralled by the abundance of economic literature, and yet no body is clearly able to explain a linkage between education and lalour productivity. Thus, socio-economic analysis seems to contribute the understanding among countries so as to complement empirical works on the role of education in productivity analysis (Byun and Kim, 1995).

Data have a very vital and significant role in giving the abstract shape of the unit. These also help in either comparing or contrasting units within the framework of particular geographic phenomena. The collected data was processes in tabular form in order to derive specific conclusions.

The following twelve indicators for educational development and forty three indicators were selected for measuring the socio-economic development (Table 1 and 2).

Table 1: Indicators of Status of Education

	Indicators	**Description**
1.	**A. Literacy Rates:**	
	Total Literate	X1 Percentage of total literates to total population.
	Male literates	X2 Percentage of male literates to male population.
	Female literates	X3 Percentage of Female literates to Female population.
2.	**B. Teacher-Students Ratio:**	
	Teacher-students Ratio in J.B.S.	X4 Number of teacher per 100 students in J.B.S.
	Teacher-students Ratio in S.B.S.	X5 Number of teacher per 100 students in S.B.S.
	Teacher-students Ratio in H.S.S.	X6 Number of teacher per 100 students in H.S.S.
3.	**C. Areal Spread of Educational Institutions**	
	No. of J.B.S./ pop.	X7 Number of junior basic schools per lakh population.
	No. of S.B.S./ pop.	X8 Number of senior basic schools per lakh population.
	No. of H.S.S./ pop.	X9 Number of higher secondary schools per lakh population.
	No. of J.B.S./ 100 sq.km.	X10 Number of junior basic schools per100 sq.km.
	No. of J.B.S./ 100 sq.km.	X11 Number of senior basic schools per100 sq.km.
	No. of J.B.S./ 100 sq.km.	X12 Number of higher secondary schools per100 sq.km.

Table 2: Indicators of Level of Socio-Economic Development

	Indicator	Description
1.	Agricultural Development	X1 Percentage of net area sown to the gross area sown. X2 Percentage of area under grain on gross area sown. X3 Application of fertilizer (NPK) per hectare to gross area sown.

		X4 Percentage of net irrigated area to gross irrigated area. X5 Percentage of net irrigated area to net area sown. X6 Percentage of gross irrigated area to net irrigated area by public canals. X7 Percentage of gross irrigated to net area sown by tube-wells. X8 Number of bio-gas plants per hundred populations.
2.	Infrastructural Development	
	Transportation and Communication Facilities	X9 Total length of metalled roads km per lakh population X10 Total length of metalled roads km/1000 sq.km.of area. X11 Total length of metalled roads by PWD per lakh population. X12 Total length of metalled roads by PWD/1000sq.km. of area. X13Number of bus stations 100 sq.km. of area. X14 Number of bus stations 100 lakh population. X15 Number of post offices per lakh population. X16 Number of post offices per 100 sq.km.of area. X17 Number of public call offices per lakh population. X18 Number of public call offices per 100 sq.km.of area. X19 Number of telephone connections per lakh population. X20 Number of telephone connection 100 sq.km. of area. X21 Proportion of population per commercial bank branch. X22 Number of nationalized and rural banks per lakh population. X23 Number of hand pumps Mark-2/ lakh population. X24 Number of hand pumps Mark-2 /100 sq.km. of an area
	Health Facilities	X25 Number of allopathic hospitals and primary health centres per lakh population. X26 Number of availability of beds in allopathic hospitals and primary health centres lakh population. X27 Number of primary health centres per lakh population.

	Educational Facilities	X28 Percentage of total literates to total population. X29 Percentage of male literates to male population. X30 Percentage of Female literates to Female population. X31 Number of teacher per 100 students in J.B.S. X32 Number of teacher per 100 students in S.B.S. X33 Number of teacher per 100 students in H.S.S. X34Number of junior basic schools per lakh population. X35 Number of senior basic schools per lakh population. X36 Number of higher secondary schools per lakh population. X37 Number of junior basic schools per100 sq.km.area X38 Number of senior basic schools per100 sq.km.area X39 Number of higher secondary schools per100 sq.km.area.
3.	Industrial Development	
		X40 Number of small scale industries, registered, industries and khadi gram udhyog per hundred sq.km. of area. X41 Number of small scale industries, registered, industries and khadi gram udhyog per lakh population. X42 Number of workers in small scale industries, registered, industries and khadi gram udhyog per hundred sq.km. of area. X43 Number of small scale industries, registered, industries and khadi gram udhyog per hundred sq.km. of area.

The present study is based on secondary source of published data for the year 2001 and 2010 obtained from the statistical magazine of Aligarh district.

For measuring the relative score of various attributes of education and socio-economic development in Aligarh district. Standard score technique has been applied (Z-Score).

Where $$Z_i = \frac{X_i - \overline{X}}{S.D.}$$

Zi= Standard score for the ith observation

Xi= Original value of the observation

$\overline{X}$= Mean for all the values of X

S.D=Standard Deviation of X

A comparative study of educational status and socio-economic development will give significant result. To determine the status of education and socio-economic development, composite z-score of indicators of educational status and socio-economic development are calculated. Further, the results of the standard score obtained for different indicators were aggregated in order to find out the composite index or composite z-score.

The regional variation of both composite status of education and level of socio-economic development are summarized by classifying the blocks into high (more than X+0.5 SD), medium (X+0.5 to X-0.5 SD) and low (more than X -0.5 SD) levels for the year 2001 and 2010 (Figure 2 and 3). The raw data for each variable have been computed into standard scores. Lastly, Geographical Information System (GIS) and Advanced computer cartographic techniques have been applied to prepare the various choropleth maps.

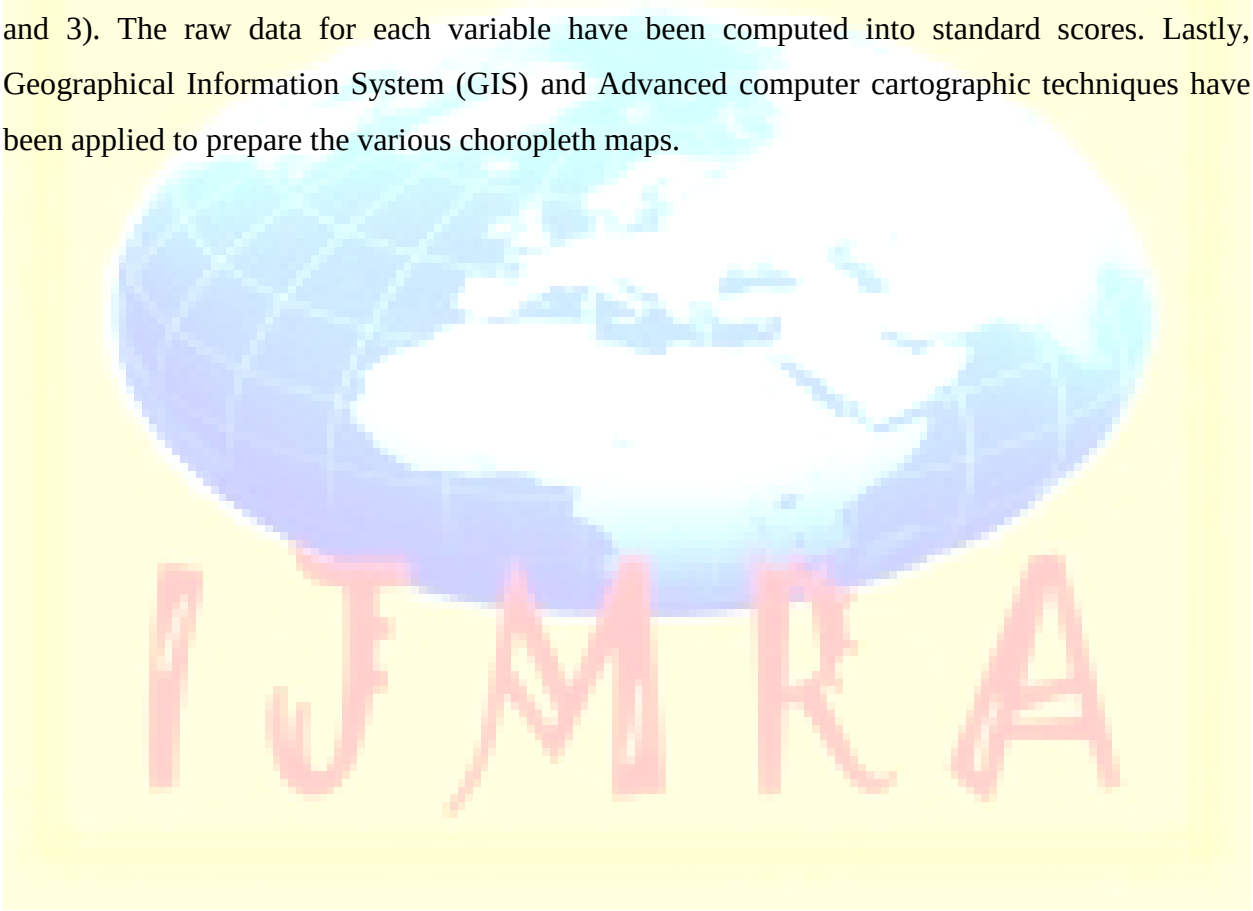


Table 3: Block-wise Educational Development (in Z-Score) with indicators in Aligarh district 2000-2001.

S.No	Block	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	Composite Mean Z-Score
1	Tappal	0.47	0.58	0.34	-1.13	-1.62	2.08	-1.39	-0.44	-0.13	-1.94	-1.56	-0.47	-0.43
2	Chandaus	0.93	0.79	1.05	-1.00	-1.83	0.16	0.17	0.12	0.37	-0.71	-0.63	0.10	-0.04
3	Khair	0.54	0.63	0.43	-0.93	0.38	0.95	0.72	0.25	0.33	-0.82	-0.92	-0.30	0.11
4	Jawan	0.43	0.32	0.61	0.50	0.00	-0.13	-0.27	-0.24	-1.10	0.95	1.15	-0.59	0.14
5	Lodha	0.53	0.25	0.86	1.03	1.45	-1.45	0.12	-0.63	-0.82	1.30	0.86	-0.53	0.25
6	Dhanipur	-0.03	-0.23	0.26	-0.53	0.36	-0.49	0.46	0.96	-0.97	0.32	0.94	-0.85	0.02
7	Gonda	0.71	0.99	0.24	-0.60	-1.12	-0.66	1.10	-1.15	0.04	1.51	-1.21	-0.09	-0.02
8	Iglas	0.53	0.65	0.31	0.40	0.26	0.36	0.75	1.75	-0.43	0.14	1.13	-0.41	0.45
9	Atrauli	-0.07	0.08	-0.25	-0.27	0.67	0.10	0.56	1.33	0.56	0.25	1.08	0.55	0.38
10	Bijauli	-2.03	-1.95	-2.09	1.73	0.00	-1.59	-0.86	-1.68	2.42	-0.03	-0.72	2.70	-0.34
11	Gangiri	-2.06	-2.06	-1.95	1.53	0.90	0.52	-2.17	-0.55	0.72	-1.01	-0.05	0.83	-0.45
12	Akrabad	0.05	-0.05	0.20	-0.63	0.52	0.18	0.82	0.27	-1.00	0.04	-0.08	-0.93	-0.05

Source: Calculation based on Sankhikiya Patrika (Statistical Bulletin), District Aligarh, 2000-2001.

Table 4: Block-wise Educational Development (in Z-Score) with indicators in Aligarh district 2009-2010.

S.No	Block	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	Composite Mean Z-Score
1	Tappal	0.11	0.15	0.09	-1.14	-1.19	-0.44	-1.68	-0.30	-0.51	-2.17	-1.13	-0.74	-0.75
2	Chandaus	0.66	0.45	0.89	0.14	0.29	-0.35	0.03	-0.18	0.20	1.62	-0.63	-0.07	0.25
3	Khair	-0.31	-0.37	-0.15	0.71	-0.14	-0.39	0.11	0.18	0.20	-0.95	-0.47	-0.12	-0.14
4	Jawan	0.38	0.22	0.60	-1.36	-1.10	-0.48	1.30	1.01	-0.74	0.88	1.19	-0.60	0.11
5	Lodha	0.77	0.46	1.08	-1.00	1.52	-0.30	1.15	0.89	-0.74	1.19	1.41	-0.53	0.49
6	Dhanipur	-0.12	-0.35	0.23	-0.86	-0.33	-0.47	0.33	-0.06	-0.62	0.23	0.15	-0.50	-0.20
7	Gonda	1.17	1.54	0.52	0.21	-0.38	-0.24	0.33	-0.53	-0.62	-0.18	0.57	-0.59	0.06
8	Iglas	0.82	0.97	0.50	0.64	0.24	-0.16	-0.41	0.53	-0.74	0.06	0.99	-0.54	0.24
9	Atrauli	0.1	0.3	-	1.8	0.4	-	0.7	1.7	1.0	0.1	1.5	0.8	0.70

		6	6	0.11	6	8	0.32	0	2	1	6	1	6	
10	Bijauli	-1.50	-1.22	-1.83	0.43	2.05	3.08	-1.68	-1.72	1.83	-0.10	-0.83	2.58	0.09
11	Gangiri	-2.32	-2.31	-2.15	0.79	-0.67	0.45	0.77	0.06	1.71	-0.66	-0.60	0.97	-0.33
12	Akrabad	0.19	0.08	0.32	-0.50	-1.05	-0.38	-0.94	-1.60	-0.97	-0.10	-1.03	-0.74	-0.56

Source: Calculation based on Sankhikiya Patrika (Statistical Bulletin), District Aligarh, 2009-2010.

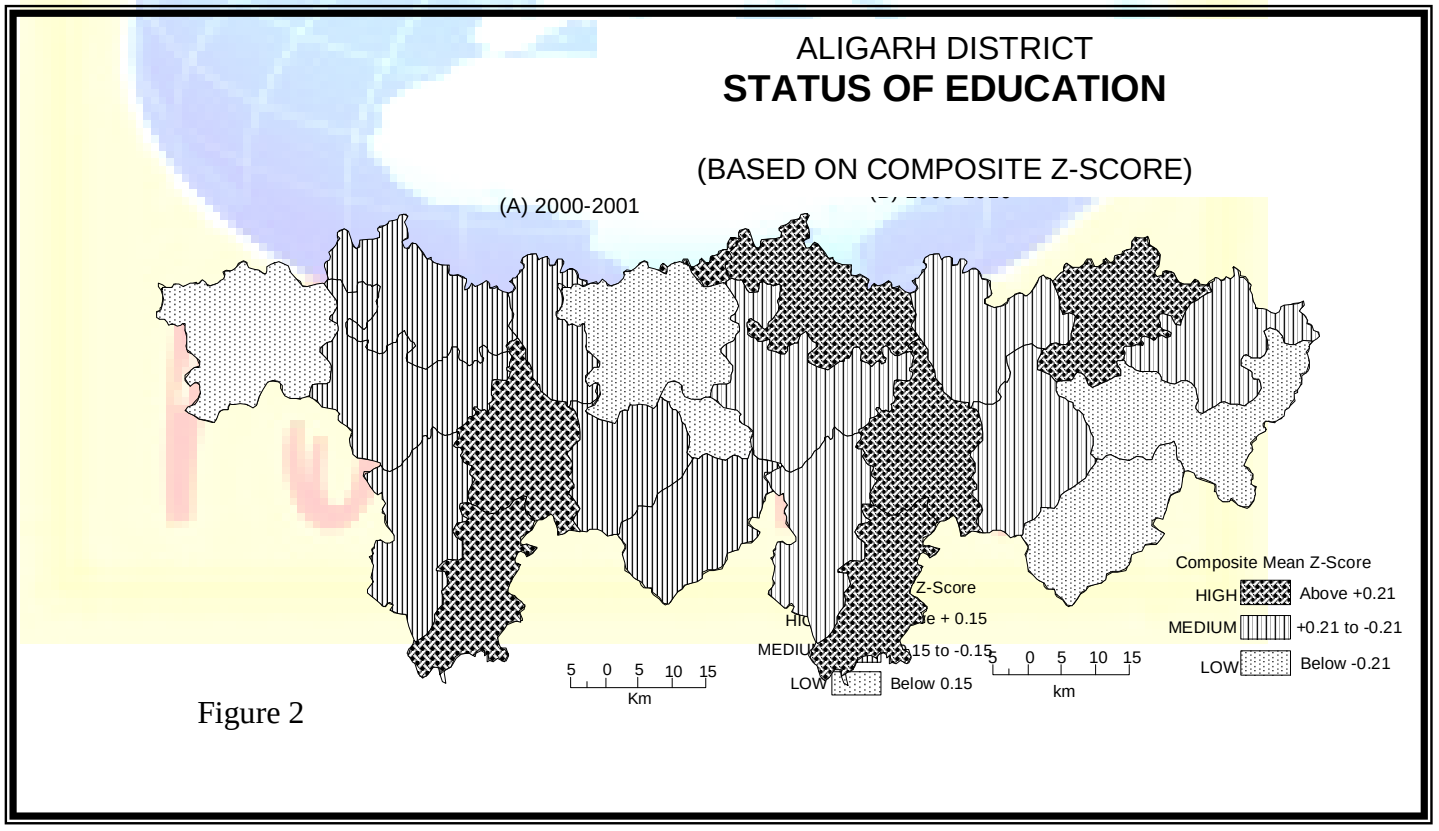


Figure 2

4. Discussion

Spatial Pattern of Status of Education and Relative Changes (2001 to 2010)

The spatial pattern of education (2010) shows many positive changes in all categories, if compared to the year 2001. The figure 2-A reveals that during 2001, the regional pattern of status of education shows that a compact region of high education status lies in the central and north eastern part of the district, consisting of three blocks, Lodha, Iglas and Atrauli (Figure 2-A). While in the year 2010, the region of high educational status expanded more towards northern part, consisting of four blocks Atrauli, Lodha, Chandaus and Iglas (Figure 2-B).

The area of medium scores shows a continuous distributional pattern almost covering the central part comprising the six blocks of district except the two blocks which shows high status of educational development. The blocks of Chandaus (in northern part), Khair (situated in north-western part),Gonda (in southern part)form a continuous belt and Jawan (in north part), Dhanipur (central part) and Akrabad (in south-eastern part) come under this category.

While in the year 2010, the blocks of medium educational status expanded mainly towards eastern part of the district. It covers five blocks of Khair, Jawan, Dhanipur and Gonda. The Bijauli block also lies in this category but fails to consist any identifiable region (Figure 2-B).

The areas of low educational status are distributed randomly in the year 2001. Three blocks Tappal, Bijauli and Gangiri come under this category .One block Tappal lies in western part and two blocks Bijauli and Gangiri lies in the eastern marginal part of the district (Figure 2-A). While in the year 2010, the scenario of this grade of educational status is different. In this year, two blocks Tappal and Gangiri lie in the category of low status of education, while one block i.e., Akrabad also shows the low status of education in this year whereas in 2001 it shows the medium educational status (Figure 2-B).

The three blocks of Bijauli which was lying under low level of educational status during 2001 has come to medium status of education in the year 2010 (Figure 2-B) and the block Chandaus which was in medium status of education during 2001 has gone up to a high status of education during the year 2010. The up-gradation of these blocks is due to remarkable increment of the number of junior and senior basic schools and improvement in infrastructure and other facilities in the year 2010, which promote the educational status of these blocks.

Table 5: Block-wise Distribution of level of Socio-Economic Development (in Z-score) with indicators in Aligarh district 2000-2001.

S.No	Block	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15
1	Tappal	-1.49	-0.46	-0.34	-0.92	0.72	1.86	-2.05	0.12	-1.31	-1.65	-1.31	-1.66	-1.13	-0.83	-0.57
2	Chandaus	-0.09	-0.22	-0.71	0.84	-0.19	-0.98	0.75	1.26	-0.58	-0.79	-0.70	-0.89	-0.62	-0.41	2.06
3	Khair	0.08	-0.93	-1.04	-1.42	2.59	1.45	-1.84	-0.71	-0.44	-0.77	-0.31	-0.67	-0.79	-0.48	2.00
4	Jawan	0.84	-0.43	-0.13	0.84	0.30	-0.40	0.43	-0.57	-0.70	-0.11	-0.73	-0.15	-0.79	-1.07	-0.86
5	Lodha	0.40	-0.41	0.60	-0.14	-0.04	-1.06	0.89	-1.21	-0.20	0.16	-0.11	0.24	0.45	-0.10	-0.42
6	Dhanipur	-2.40	-0.27	-0.07	0.93	0.19	0.89	-0.42	1.47	0.12	0.46	0.02	0.36	-0.80	-0.86	-0.09
7	Gonda	-0.13	0.43	0.03	-0.84	-0.44	-0.20	0.32	0.58	-0.43	-0.51	-0.38	-0.47	-0.04	0.14	-0.04
8	Iglas	-0.03	-0.77	0.91	-0.72	-0.19	-0.51	0.52	-1.11	0.50	0.37	0.35	0.24	1.72	1.84	-1.05
9	Atrauli	0.72	-0.22	-0.34	0.60	-0.46	-1.07	0.90	-0.75	2.36	2.48	2.29	2.45	1.90	1.86	-0.47
10	Bijauli	0.42	2.84	2.25	0.35	-1.50	-0.36	0.42	-0.84	-0.41	-0.21	-0.46	-0.26	-0.14	-0.37	-0.34
11	Gangiri	0.91	-0.25	-1.63	-1.18	-0.02	-0.43	0.47	1.39	-0.30	0.09	-0.20	0.18	-0.44	-0.56	-0.21
12	Akrabad	0.77	0.69	0.49	1.66	-0.95	0.81	-0.38	0.38	1.38	0.48	1.55	0.63	0.68	0.84	0.03

S.No	Block	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25	X26	X27	X28	X29	X30
1	Tappal	-2.16	-0.04	-0.47	3.01	-0.44	-0.37	0.63	2.36	-0.72	-0.84	-0.76	-0.76	0.47	0.58	0.34
2	Chandaus	1.26	-0.33	-0.49	-0.39	-0.48	-1.12	1.38	2.99	-0.42	0.56	0.19	0.19	0.93	0.79	1.05
3	Khair	0.57	0.31	-0.09	-0.39	-0.57	1.25	-1.14	3.02	0.31	0.00	-0.20	-0.20	0.54	0.63	0.43
4	Jawan	0.52	-0.67	-0.36	-0.36	0.05	-0.49	0.28	4.43	-0.66	0.00	2.27	2.27	0.43	0.32	0.61
5	Lodha	1.27	-0.36	0.06	0.35	2.40	0.60	-1.00	6.12	1.74	-0.28	-0.38	-0.38	0.53	0.25	0.86
6	Dhanipur	0.22	-0.75	-0.68	0.29	1.50	-1.21	1.34	3.95	0.05	-0.65	-0.67	-0.67	-0.03	-0.23	0.26
7	Gonda	-0.52	-0.20	-0.30	-0.17	0.09	-0.82	0.72	2.99	-0.85	-0.56	-0.60	-0.60	0.71	0.99	0.24
8	Iglas	-1.30	-0.08	-0.09	-0.26	-0.03	2.25	-1.88	4.45	1.55	-0.37	-0.52	-0.52	0.53	0.65	0.31
9	Atrauli	-0.39	2.95	3.05	-0.27	-0.01	-0.14	0.28	4.18	0.66	1.40	0.77	0.77	-0.07	0.08	-0.25
10	Bijauli	0.46	-0.82	-0.67	-0.54	-0.62	-0.28	0.13	4.17	-0.23	2.34	1.43	1.43	-2.03	-1.95	-2.09
11	Gangiri	0.29	-0.34	-0.21	-0.62	-0.87	-0.03	-0.09	3.09	-1.74	-1.21	-1.03	-1.03	-2.06	-2.06	-1.95
12	Akrabad	-0.24	0.32	0.24	-0.66	-1.03	0.38	-0.59	3.70	0.32	-0.37	-0.50	-0.50	0.05	-0.05	0.20

S.No	Block	X31	X32	X33	X34	X35	X36	X37	X38	X39	X40	X41	X42	X43	**Composite Z-Score**
1	Tappal	-1.13	-1.62	2.08	-1.39	-0.44	-0.13	-1.94	-1.56	-0.47	-0.55	-0.12	-0.37	0.02	**-1.46**
2	Chandaus	-1.00	-1.83	0.16	0.17	0.12	0.37	-0.71	-0.63	0.10	-0.46	-0.27	-0.65	-0.55	**-0.28**
3	Khair	-0.93	0.38	0.95	0.72	0.25	0.33	-0.82	-0.92	-0.30	0.02	0.46	0.07	0.47	**-0.13**
4	Jawan	0.50	0.00	-0.13	-0.27	-0.24	-1.10	0.95	1.15	-0.59	-0.58	-0.87	-0.54	-0.78	**-0.08**
5	Lodha	1.03	1.45	-1.45	0.12	-0.63	-0.82	1.30	0.86	-0.53	0.04	-0.41	0.61	0.14	**0.59**
6	Dhanipur	-0.53	0.36	-0.49	0.46	0.96	-0.97	0.32	0.94	-0.85	-0.60	-0.68	-0.28	-0.35	**-0.22**
7	Gonda	-0.60	-1.12	-0.66	1.10	-1.15	0.04	1.51	-1.21	-0.09	-0.09	0.03	-0.17	-0.07	**-0.49**
8	Iglas	0.40	0.26	0.36	0.75	1.75	-0.43	0.14	1.13	-0.41	0.70	0.72	-0.18	-0.17	**0.54**

9	Atrauli	-0.27	0.67	0.10	0.56	1.33	0.56	0.25	1.08	0.55	2.91	2.77	2.94	2.91	**2.55**
10	Bijauli	1.73	0.00	-1.59	-0.86	-1.68	2.42	-0.03	-0.72	2.70	-0.74	-0.90	-0.90	-1.01	**-0.22**
11	Gangiri	1.53	0.90	0.52	-2.17	-0.55	0.72	-1.01	-0.05	0.83	-0.13	-0.28	-0.24	-0.36	**-1.09**
12	Akrabad	-0.63	0.52	0.18	0.82	0.27	-1.00	0.04	-0.08	-0.93	0.50	-0.45	-0.29	-0.25	**0.29**

Source: Calculation based on Sankhikiya Patrika (Statistical Bulletin), District Aligarh, 2000-2001.

Table 6: Block-wise Distribution of level of Socio-Economic Development (in Z-score) with indicators in Aligarh district 2009-2010.

S.No	Block	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15
1	Tappal	-2.03	-0.65	-1.03	-0.60	0.71	-0.41	0.41	0.08	-1.00	-1.66	-1.15	-1.72	-1.09	-0.56	-0.30
2	Chandaus	-0.77	-0.15	-0.70	-0.12	0.60	-0.95	0.95	1.22	-0.34	-0.78	-0.57	-0.94	-0.76	-0.52	2.00
3	Khair	-0.84	-0.13	-0.82	-0.06	0.43	0.81	-0.81	-0.71	-0.29	-0.99	-0.27	-0.97	-0.82	-0.40	2.04
4	Jawan	0.66	0.04	0.11	1.46	2.40	-0.22	0.22	-0.44	-0.94	-0.02	-0.97	-0.08	-0.95	-1.29	-0.90
5	Lodha	0.16	-0.48	1.55	-0.11	-0.80	-1.05	1.04	-1.24	-0.55	0.47	-0.34	0.66	0.27	-0.42	-0.63
6	Dhanipur	0.05	0.65	0.37	0.93	-0.24	2.05	-2.06	1.56	0.32	0.45	0.05	0.18	-0.97	-1.07	-0.20
7	Gonda	-0.47	-0.32	-0.16	-0.57	0.04	0.58	-0.57	0.57	-0.31	-0.61	-0.24	-0.51	-0.09	0.05	-0.14
8	Iglas	-0.17	-2.46	0.75	-1.20	-0.19	-0.33	0.33	-1.12	0.56	0.39	0.42	0.25	1.91	1.90	-1.14
9	Atrauli	-0.34	0.34	-0.53	1.43	-0.13	-0.95	0.95	-0.86	2.48	2.26	2.36	2.11	1.45	1.55	-0.24
10	Bijauli	1.39	1.40	1.56	-1.06	-1.37	-0.23	0.23	-0.76	-0.61	-0.09	-0.44	0.05	0.00	-0.29	-0.32
11	Gangiri	1.00	1.14	-1.63	-1.21	-0.30	-0.70	0.70	1.34	-0.49	-0.16	-0.32	-0.03	0.15	-0.02	-0.16
12	Akrabad	1.34	0.62	0.53	1.10	-1.20	1.42	-1.41	0.36	1.16	0.76	1.46	0.99	0.92	1.07	0.00

S.No	Block	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25	X26	X27	X28	X29	X30
1	Tappal	-2.16	0.12	-0.47	0.05	-0.54	-0.64	0.86	-0.29	-1.44	-0.62	-0.77	-0.31	0.11	0.15	0.09
2	Chandaus	1.26	-0.62	-0.74	-0.45	-0.63	-1.07	1.32	-0.46	-0.83	0.38	1.23	0.23	0.66	0.45	0.89
3	Khair	0.57	-0.78	-0.95	0.72	0.13	1.04	-1.07	0.47	-0.80	-0.07	-0.51	0.33	-0.31	-0.37	-0.15
4	Jawan	0.52	1.28	1.93	0.07	0.66	-0.39	0.19	-0.84	0.66	0.29	0.75	-0.20	0.38	0.22	0.60
5	Lodha	1.27	-0.70	-0.26	-0.87	-0.45	0.87	-1.17	1.19	2.25	-0.44	-0.68	-0.10	0.77	0.46	1.08
6	Dhanipur	0.22	-0.60	-0.48	1.74	1.93	-1.05	1.17	-0.15	0.16	-0.71	-0.79	-0.42	-0.12	-0.35	0.23
7	Gonda	0.52	-0.28	-0.37	-1.21	-1.21	-0.70	0.59	-1.08	-0.83	-0.53	0.86	-0.96	1.17	1.54	0.52
8	Iglas	-1.30	-0.36	-0.34	1.01	1.00	2.34	-1.93	1.41	0.68	-0.62	-0.71	-0.85	0.82	0.97	0.50
9	Atrauli	-0.39	2.53	2.11	1.06	0.96	-0.40	0.49	1.22	0.44	1.29	0.10	1.95	0.16	0.36	-0.11
10	Bijauli	0.4	-	-	-	-	-	0.1	-	0.4	2.4	2.1	1.9	-	-	-

		6	0.91	0.71	1.54	1.41	0.28	2	0.14	5	7	0	5	1.50	1.22	1.83
11	Gangiri	0.29	0.26	0.34	0.10	0.25	-0.10	-0.05	-1.84	-0.73	-1.07	-0.96	-0.85	-2.32	-2.31	-2.15
12	Akrabad	-0.24	0.07	-0.05	-0.69	-0.71	0.38	-0.61	0.51	0.01	0.35	-0.64	-0.74	0.19	0.08	0.32

S.No	Block	X31	X32	X33	X34	X35	X36	X37	X38	X39	X40	X41	X42	X43	Composite Z-Score
1	Tappal	-1.14	-1.19	-0.44	-1.68	-0.30	-0.51	-2.17	-1.13	-0.74	-1.08	-0.62	-0.66	-0.56	-2.05
2	Chandaus	0.14	0.29	-0.35	0.03	-0.18	0.20	1.62	-0.63	-0.07	-0.38	-0.34	-0.47	-0.38	-0.05
3	Khair	0.71	-0.14	-0.39	0.11	0.18	0.20	-0.95	-0.47	-0.12	-0.53	-0.36	-0.33	-0.18	-0.55
4	Jawan	-1.36	-1.10	-0.48	1.30	1.01	-0.74	0.88	1.19	-0.60	0.18	-0.38	-0.12	-0.26	0.34
5	Lodha	-1.00	1.52	-0.30	1.15	0.89	-0.74	1.19	1.41	-0.53	2.67	0.44	0.53	0.23	0.65
6	Dhanip	-	-	-	0.3	-	-	0.2	0.1	-	0.5	-	-	-	0.09

	ur	0.86	0.33	0.47	3	0.06	0.62	3	5	0.50	6	0.08	0.01	0.03	
7	Gonda	0.21	-0.38	-0.24	0.33	-0.53	-0.62	-0.18	-0.57	-0.59	-0.94	3.04	-0.66	-0.62	-0.53
8	Iglas	0.64	0.24	-0.16	-0.41	0.53	-0.74	0.06	0.99	-0.54	0.36	-0.10	3.00	3.07	0.67
9	Atrauli	1.86	0.48	-0.32	0.70	1.72	1.01	0.16	1.51	0.86	0.12	-0.24	-0.33	-0.33	2.18
10	Bijauli	0.43	2.05	3.08	-1.68	-1.72	1.83	-0.10	-0.83	2.58	-0.41	-0.52	-0.49	-0.52	0.09
11	Gangiri	0.79	-0.67	0.45	0.77	0.06	1.71	-0.66	-0.60	0.97	0.28	-0.22	-0.39	-0.41	-0.68
12	Akrabad	-0.50	-1.05	-0.38	-0.94	-1.60	-0.97	-0.10	-1.03	-0.74	-0.84	-0.61	-0.07	-0.01	-0.15

Source: Calculation based on Sankhikiya Patrika (Statistical Bulletin), District Aligarh, 2009-2010.

ALIGARH DISTRICT

LEVEL OF SOCIO-ECONOMIC DEVELOPMENT

(BASED ON COMPOSITE Z-SCORE)

(A) 2000-2001 (B) 2009-2010

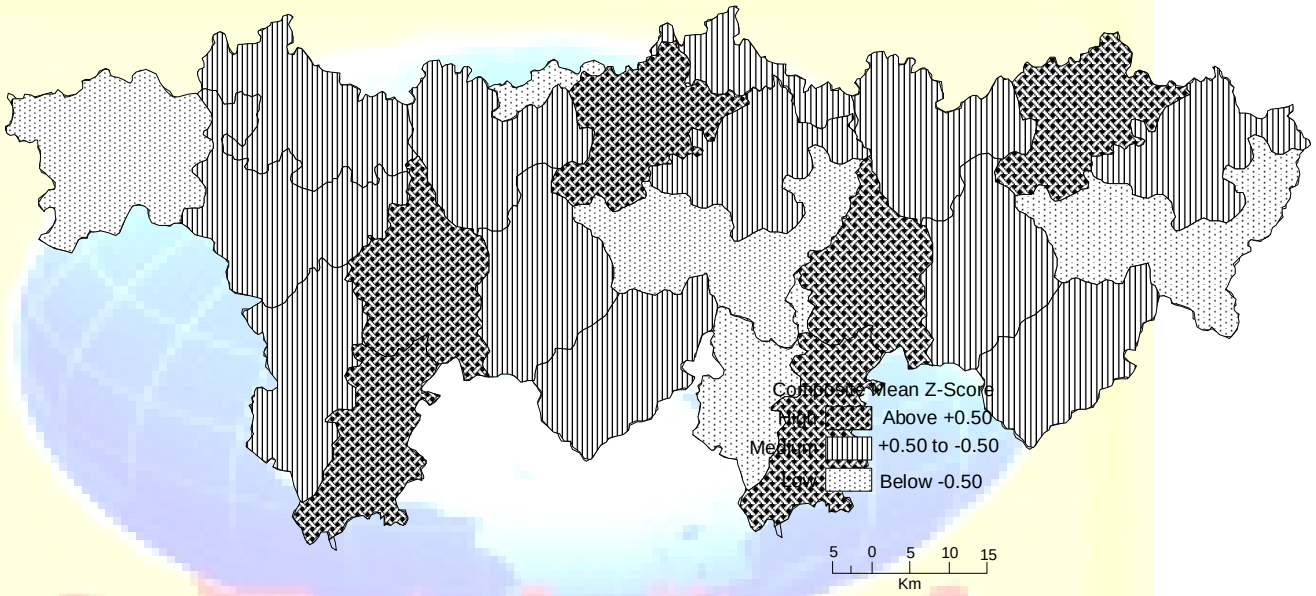


Figure 3

Spatial pattern of level of socio-economic development and relative changes (2001 to 2010)

The spatial pattern of level of socio-economic development (2010) shows many remarkable changes from the year 2001. The fig 3-A and 3-B show that during the years of 2001 and 2010, there are no more changes recognized in the high level of socio-economic development. In the year 2001, three blocks come under the high level of socio-economic development and it is distributed in two areas of the district: one area of high level of socio-economic development lies in the central and southern part of the district, comprising two blocks of Lodha and Iglas. The other area is located in the northern part, consisting of only the Atrauli block. All the three blocks also maintained their same (high grade) position in the year 2010.

Figure 3A, revealed that during the year 2001, the regional pattern of medium level of socio-economic development exhibited a compact and big region. It consists the blocks of Chandaus, Khair, Gonda, Jawan, Dhanipur and Akrabad. The Bijauli block also lies in this category but fails to constitute any identifiable region, while in the year 2011, the region of medium level of socio-economic development moved towards western direction comprising four blocks of Chandaus, Jawan, Dhanipur and Akrabad. The Bijauli block lies in this grade, but fails to make any identifiable region (Figure 3B).

The blocks of low level of socio-economic development are found distributed randomly (2001). Two blocks came under this category. One block, Tappal, is situated in the western part while another block, Gangiri, lies in the eastern part of Aligarh district (figure 3A).

The region of low level of socio-economic development during 2010 is situated in the western part of the district consisting of three blocks of Tappal, Khair and Gonda. The block Gangiri also lies in low grade of socio-economic development but fails to constitute any identifiable region. Two blocks (Khair and Jawan) lying under medium category during 2001 have come down to the low level of socio-economic development, due to poor health facilities and industrial development (Figure 3-B).

It is evident that education, the basic factor in socio-economic development, has played a vital role in transforming different regions and levels of development. As a result variations in level of development have converged in the study area. In general, the level of socio-economic development is commensurate to the degree of status of education.

Table5: Status of Education and Level of Socio-Economic Development in Aligarh District

S.No	Name of Block	Composite Z-Score of Educational Status		Composite Z-Score of Level of Socio-Economic Development	
		2000-2001	2009-2010	2000-2001	2009-2010
1	Tappal	-0.43	-0.75	-1.46	-2.05
2	Chandaus	-0.04	0.25	-0.28	-0.05
3	Khair	0.11	-0.14	-0.13	-0.55
4	Jawan	0.14	0.11	-0.08	0.34
5	Lodha	0.25	0.49	0.59	0.65
6	Dhanipur	0.02	-0.20	-0.22	0.09
7	Gonda	-0.02	0.06	-0.49	-0.53
8	Iglas	0.45	0.24	0.54	0.67
9	Atrauli	0.38	0.70	2.55	2.18
10	Bijauli	-0.34	0.09	-0.22	0.09
11	Gangiri	-0.45	-0.33	-1.09	-0.68
12	Akrabad	-0.05	-0.56	0.29	-0.15

Source: Sankhikiya Patrika (Statistical Bulletin), Aligarh District, 2000-2001 and 2009-10.

Relationship between Status of Education and Level of Socio-Economic Development (2001)

The status of education and level of socio-economic development in the year 2001 is based on the composite score of twelve and forty three indicators respectively (Table 5). It indicates that the blocks of Lodha, Iglas and Atrauli recorded the highest educational status, while the blocks of Atrauli, Iglas and Lodha represent the highest level of socio-economic development. The six blocks Chandaus, Akrabad, Khair, Jawan, Dhanipur and Gonda fall under the mediun status of education but in the same year 2001, seven blocks, Gonda, Dhanipur, Jawan, Chandaus, Khair, Akrabad and Bijauli come under the medium level of socio-economic development (Figure 2 and Figure 3).

The low status of education is found in the blocks of Tappal, Bijauli and Gangiri. On the other hand, the blocks of Tappal and Gangiri fall under the low level of socio-economic development.

In the year 2001, there are three blocks, Atrauli, Lodha and Iglas which were found high in both indicators (status of education and level of socio-economic development). These blocks represent positive relationship between status of education and level of socio-economic development. While during the same year, the two blocks Tappal and Gangiri show negative relationship between status of education and level of socio-economic development. These blocks are stagnant and lag behind due to inadequate infrastructural and lack of industrial development.

Relationship between Status of Education and Level of Socio-Economic Development (2009-10)

As mentioned earlier, the relationship between status of education and level of socio-economic development in the year 2009-10 is based on the composite scores of twelve and forty three indicators respectively (Table 5). It was observed that the block of Atrauli, Lodha, Iglas and Chandaus recorded the highest educational status, while the blocks Lodha, Atrauli and Iglas show the highest level of socio-economic development.

There are five blocks which come under the medium status of education i.e., Khair, Jawan, Dhanipur, Gonda and Bijauli and five blocks that fall under the medium level of socio-economic development viz. Jawan, Chandaus, Dhanipur, Akrabad and Bijauli. The low status of education is recorded only in three blocks, Tappal, Akrabad and Gangiri. On the other hand, the four blocks of Tappal, Khair, Gonda and Gangiri fall under the low level of socio-economic development (Figure 2B and Figure 3B).

In the year 2009-2010, three blocks are found high in both indicators (status of education and level of socio-economic development) i.e. Lodha, Atrauli and Iglas. These blocks represent positive relationship between both the indicators during the same year due to high development of agriculture, infrastructural and industrial development. Only one block Gangiri showed negative relationship between status of education and level of socio-economic development due to inadequate infrastructural facilities and lack of industrial development.

Conclusion

The preceding analysis clearly reveals that the status of education is positively associated to the level of socio-economic development because education is crucial to every aspect of social and economic development. There is a direct relationship between status of education and socio-economic development, as observed from the analysis. It is also seen that not a single block of

the district comes under the differentiated region high status of education and low level of socio-economic development or low status of education and high level of socio-economic development in both point of time of study.

The relationship between status of education and level of socio-economic development in 2001and 2010 shows that three blocks i.e. Lodha, Iglas and Atrauli form the integrated region of high level of both status of education as well as level of socio-economic development. One area lies in the south-central part consisting of the blocks Lodha and Iglas, another area lie in the north-eastern part of the district including the block of Atrauli. On the contrary, the integrated region of low level of both status of education and level of socio-economic development, consisting of two blocks Tappal and Gangiri. One block Bijauli come under the differentiated region of low status of education with medium level of socio-economic development and it lies in the north-eastern part of the district while remaining blocks fall under the medium grade in both status of education and level of socio-economic development. These blocks are found scattered all over the district in 2001. The one block Chandaus, fall under the differentiated region of high status of educational development with medium level of socio-economic development in northern part of the district. A dominant region differentiated of medium status of education and low level of socio-economic development makes an identifiable large and contiguous region consisting of two blocks Gonda and Khair. There is only block, Akrabad which comes under the differentiated region of low status of education with medium level of socio-economic development.

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