Urbanisation and Socio-Economic Characteristics of the Surrounding Small Towns of Guwahati City, Assam, India

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Abstract: The present paper comprises social and economic characteristics of the 24 surrounding small towns of Guwahati city. It includes the analysis of sex- ratio, literacy, education and composite Index and other demographic features. It is, therefore, essential to study the impact of these factors so as to accelerate the tempo of urban development in an organised way for the stagnant small urban centres in the study.

Keywords: Sex- Ratio, Composite Index, Demographic Features, Stagnant, Urban Centers.

1. INTRODUCTION

Urbanization, indeed, is the process of becoming urban, moving to cities, changing from agriculture to other pursuits common to cities, such as trade, manufacturing, industry and management, and corresponding changes of behaviour patterns. It is the process of expansion in the entire system of interrelationships by which a population maintains itself in its habitat (Hawley, 1981). An increase in the size of towns and cities leading to growth of urban population is the most significant dimension of urbanization. The urban centres are essentially non-agricultural in character. In ancient times there have been great many cities such as Rome or Baghdad but ever since industrialisation and increasing industrial production and territory level production cities have grown phenomenally and now urbanization is very much a part of our contemporary life. The nature of urban growth in a study region is understood at the state level and then by further disaggregating down to the district level. Even then the nature of towns' growth remains unclear (Sivaramakrishna, 2005).

2. METHODOLOGY

The paper is based on the both secondary data and primary data.Data and Maps**:-**Data for the purpose of spatio-temporal behavior of urbanization , growth trend of individual urban centers and their resource potentiality have been collected mainly through census publications, i.e. Town Directory, District census Handbooks, Assam Statistical Hand book, Several statistical publications of the government, including Master Plan of Guwahati City from Directorate of Town and Country Planning, Assam, Report of Directorate of Statistics and Evaluation, and published articles and journals from government and other organizations have also taken into consideration.

Different techniques of tabulation, calculation, correlation, cartographic representation and map preparation have constituted the essential parts of analysis. The degree and nature of imbalances and their relationship at different levels and the identification of facts have been achieved through analysis of 'Size Index',' Growth Index',' Density', and 'Ratios' etc. On the statistical and quantitative methods the applications of cartographic techniques such as maps and tables have proved helpful in giving the geographic treatment of the study on a sound base.

1. Sex- Ratio:

In 1991, Assam recorded a sex ratio of 923 per thousand male, is an improvement over the sex ratio by 9 points against the all India average improvement of 6 points during the period. The decadal variation in the sex ratio for India indicates

that over the decades there has been a steady decline in the female sex ratio whereas in case of Assam, the sex ratio had a fluctuating increase over time.

Table 1: Sex-Ratio of the Small Towns, 1971

Sex Ratio Range	Nature & Degree	Small Towns Sex-Ratio	Total No. of Towns	Classes of Towns				
				I	III	IV	V	VI
Below 700	Low	Nalbari(656),Pathsala(676), Rangia(677), Tangla(687), Tihu(579) Guwahati(690)	6	1	1	2	1	1
700-750	Lower Medium	Kharupetia(740),Sarbhog (745) Mangaldoi(724)	3	-	1	1	1	-
750-800	Medium	Barpeta Road(795),Palasbari(799)	2	-	1	-	-	1
800-850	High	Barpeta(845), Howli(827)	2	-	1	1	-	-
850-900	Very High	NorthGuwahati(881), Sarthebari(870), Sualkuchi(940)	3	-	-	2	1	-
Total			16	1	4	6	3	2

Data Source: - Census of India 1991 and 2001, Town Directory

In the Census of 1971, the highest ratio of females was found in Sualkuchi Class III town of 940, followed by Class IV towns, i.e 845 per thousand male and 870 per thousand male respectively. The lowest ratio was found in Tihu Class-VI town, viz. 579 per thousand male was most masculine in character (Table 1).

Table 2: Sex-Ratio of the Small Towns , 1991

Sex Ratio Range	Nature & Degree	Small Towns Sex-Ratio	Total No. of Towns	Classes of Towns				
				I	III	IV	V	VI
Below 800	Low	Rangia(713),Tihu(779), Guwahati(783)	3	1	1	-	-	1
800-850	Low Medium	Bohari(831),Jagiroad(828),North Guwahati(848),Pathsala(830), Tangla(821), Udalguri(849)	6	-	-	4	2	-
850-900	Medium	Barpeta Road(894), Kharupetia(886), Palasbari(886),Mangaldoi(859), Marigaon(875)Nalbari(860)	5	-	2	3	-	
900-950	High	Howli(946), Sarbhog(902)	2	-		1	1	
Above 950	Very High	Barpeta(962), Sualkuchi(1003)Sarthebari(968)	3	-	1	1	1	-
			19	1	4	9	4	1

Data Source: - Census of India, 1991 and 2001Town Directory

The study region has the highest of 1003 per thousand male in Sualkuchi and lowest of 713 per thousand male in Rangia in 1991. Small towns like Howli 946 per thousand male, Barpeta 962 per thousand male, Sarthebari 968 per thousand male, Sarbhog 902 per thousand male. In 1991 the sex ratio of Tihu town improved to 779 per thousand male as against 579 per thousand male in 1971. The sex ratio in Guwahati, the capital of Assam, was only 783 (Table 2), may be due to the flow of male workers for availing job opportunities both in formal as well as informal sectors. Low medium level of sex ratio is studied by R.C Sharma, the study revealed that migration of an individual produces demographic impact. The physical separation between husband and wife as a result of migration gives the female partner less scope for conception that results in low fertility of migrant household (Sharma, 1992).

Table 3: Sex-Ratio of the Small Towns, 2001

Sex Ratio Range	Nature & Degree	Small Towns Sex-Ratio	Total No. of Towns	Classes of Towns				
				I	III	IV	V	VI
Below 800	Low	Tangla (774)	1	-	-	1	-	-
800-899	Medium	Barpeta Road(888), Howli(867),Bohari(888), Pathsala(841), Rangia(832)Palasbari(892), Dharapur(864), Guwahati(835), North Guwahati(861),Chandrapur(824)Tihu(894) Kharupetia(890), Jagiroad(856)	13	1	2	4	5	1
900-999	High	Sarbhog (949),Barpeta(984),Sarthebari(929), Kochpara(943)Nalbari(913),Mangaldoi(906), Udalguri (925), Marigoan (920)	8	-	4	1	3	-
1000 & Above	High	Sualkuchi(1022), Bamun Sualkuchi(1022)	2	-		-	2	-
Total			24	1	6	6	10	1

 Data Source: Census of India, 2001Town Directory

The Table 3 shows the sex ratio of sample small towns in 2001. The ratio is less in Class IV and Class V because they are small industrial and administrative towns. In these towns the working population generally consisted of males, they are either engaged in construction or professional jobs. Most of them immigrated and left their families behind in their villages. The low sex ratio in Class I towns' i.e Guwahati (835) may be attributed to high male percentage among the service holders.

The salient features of the sex-ratio of small towns in the region as per 2001 Census revealed a wide variation. Although on an average the small towns of the study region have an average of 864, yet it varies from a high sex ratio of 1022 in Sualkuchi and Bamun Sualkuchi and the lowest of 774 in Tangla. Tihu town with lowest sex ratio of 579 in 1971 displays an improved sex ratio of 894 in 2001. Old small towns of the region such as Barpeta 984, Palasbari 892, and Mangaldoi 906 respectively display high sex- ratio and the explanations are not far to seek as the large scale out migration of males to neighbouring towns and the interplay of a variety of social practices including gender discrimination. A very striking feature is that of Sualkuchi town who has a high sex-ratio of 1022 , it may be due to active commercial handlooms, of which 54.75 percent are performed by the women weavers, who are basically hired from the outside of Sualkuch.

2. Literacy:

Guwahati registered around 9 percent growth in literacy rate between 1991 and 2001 as compared to literacy rate of Assam was 53.78 percent in 2001, which is lower than the all India average of 65.37 percent. This increase in literacy rate may be attributed to the transformation of socio-cultural importance of education in the society and the growing government emphasis on education.

Table 4: Pattern of Literacy of the Small Towns in the Study Region, 2001

Literacy Range in percent	Nature and Degree	Total No. of Towns	Classes of Towns					
			I	II	III	IV	V	VI
50-60	Very low	03	-	-	-	1	1	1
60-70	Low	12	-	-	3	5	4	-
70-80	Medium	09	1	-	3	1	4	-
80-90	High	-	-	-	-	-	-	-

 Data Source: Census of India, 2001 Town Directory

No small towns were found in the high degree of literacy rate, in between 80-90 percent. Secondly, literacy rate in medium degree in between 70 to 80 percent, 9 small towns were found, may be due to Guwahati the only Class-I city and availability of educational facilities together growing awareness among the city dwellers. While in the low degree in between 60- 70 percent, twelve small towns were found in the study region. And in the very low degree of literacy 3

towns were found, is mainly due to low level of urbanization as well as lack of proper infrastructure for the spread of literacy (Table 4).

- **Male-Female Differential in Literacy 2001**

A remarkable thing that is clear from the study is that the differential indices have inverse relationship with urban literacy rates. This means that where literacy rate is high male-female differential index (DI) is low and where literacy is low DI is high.

Table 5: Indices of Male-Female Differential in Literacy

Index of Differential	Pattern	Number of Towns	Class of Towns				
			I	III	IV	V	VI
0.01- 0.06	Low	2	-	-	1	1	-
0.07- 0.12	Moderate	11	-	4	1	5	1
0.13-0.18	High	8	1	2	3	2	-
0.19 – Above	Very High	3	-	-	2	1	-
Total		24	1	6	7	9	1

Data Source: Census of India, 2001Town Directory

Based on the male-female differential index (DI) of literacy the towns are grouped into four ranges the lowest of 0.01-0.06 and the very high of 0.19. Guwahati city falls in the high range of 0.13-0.18 whereas two towns of Class size of IV and V namely, Kharupetia and Kochpara falls in the low range of 0.01-0.06. It shows that 'differential index' is associated with literacy level rather than Class size of the towns (Table 5).

3. Composite Index (Ci) Of Infrastructure Facilities in the Small Towns:

In order to study the level of infrastructural facilities in the towns, a total of 52 variables have been adopted from Census Town Directory 1991-2001. These variables are the functions against the broad heads of Education, Medical, Entertainment and other civic amenities. After putting the weighted values to each functions the values were added together to find out the weighted mean of functions i.e the Composite Index of a town. The Composite Index has been calculated separately for education, health and entertainment. The Composite Index of infrastructural facilities of small towns for the period of 1991-2001 has been displayed. Based on the Composite Index the towns were grouped in orders.

- **First Order:**

The first order towns are the highest order towns with high Composite Index above 200. In this order there is only one town, Guwahati with 787.4 Composite Index in 1991 which increased to 1012.57 points of Composite Index (Table 6). It indicate that Guwahati has maintained its dominance and lead as the prominent town over the other towns. The city is still controlling certain important functions of the region like higher education, medical, cinema, libraries and with all other civic and socio-economic facilities. In terms of population size also Guwahati city has high growth of population than the rest of the towns which guarantees its future dominance in the region.

Table 6: Composite Index of Small Towns in the Study Region 1991 and 2001

Composite Index range	Nature & Degree	Number of small Towns		Name of Small Towns
		1991	2001	
➢ 50	Very Low	0	02	Dharapur (46.99ci^2), Chandrapur(48.09ci^2)
50- 100	Low	11	11	Sarbhog(63.9ci^{1}69.40ci^2), Howli (74.3ci^{1}95.08 ci^2)Bohari(54.1ci^1 62.30ci^2), Pathsala(76.5ci^{1}91.80ci^2),Sualkuchi(70.4 ci^1 73.22ci^2) Bamun Sualkuchi(56.83ci^1), Palasbari(54.1ci^{1}66.67ci^2),Kochpara(54.10ci^1), Tihu (65.5ci^{1}72.13ci^2), Udalguri(69.4ci^{1}81.97ci^2), Morigaon(85.2ci^{1}93.99ci^2) Barpeta Road (86.3ci^1)

100-150	Medium	06	07	Barpeta Road (116.94ci^1), Sarthebari(124.59ci^2), Rangia(111.4$ci^1$122.95ci^2), North Ghy (101.09ci^2)Tangla(102.19ci^1),Kharupetia(100.0ci^2) Jagiroad(101.6$ci^1$118.58ci^2) Barpeta (116.9 ci^1) Mangaldoi(124.0ci^1)
150-200	High	01	03	Barpeta(150.82ci^2), Nalbari (177.6$ci^1$185.25ci^2), Mangaldoi(159.56ci^2)
More than 200	Very High	01	01	Guwahati (787.43$ci^1$1012.99 ci^2)

Data Source: Census of India, 2001Town Directory, (Figures in the parenthesis indicate Composite Index[1]1991 Composite Index[2]2001)

- **The second order:**

3 towns namely Barpeta with the Composite Index of 150.82, Nalbari with 185.25 and Mangaldoi with Composite Index of 159.56 in 2001 belong to the second order with the Composite Index of 150-200. In the context of Assam only one town Dibrugarh belong to this order with 416.94 of Composite Index. In 1991, Barpeta town with Composite Index of 116.9 and Mangaldoi town 124.0 were in the range of 100-150 respectively. It indicates improvement in the infrastructural facilities in Barpeta and Mangaldoi town. The numbers of Arts, Science and Commerce Colleges have shown high increase in numbers. In medical facilities, there are a good number of increases in family planning clinics, T.B hospitals, dispensaries, nursing homes etc. Though infrastructural facilities are increasing the population growth has been much higher in comparison to the growth of medical facilities thereby creating pressure on the existing stock.

- **The Third Order:**

In the third order there are 7 numbers of towns .These towns fall in the Composite Index range of 100 to 150 of Composite Index, constitute 29 percent of the total towns in the study region. In the context of Assam, Nowgaon Class I town falls in this order with a high population growth of 1, 08.786 as per 2001.

 Rangia Class III town is higher in terms of infrastructural facilities; in 1991 the Composite Index of Rangia town was 111.4 which have increased to 122.9. The town has attracted many central functions like schools and colleges, hospitals, Libraries etc. Barpeta Road Class III town with Composite Index of 116.9 falls in the third order; there are increase numbers of educational schools, colleges, clinics and hospitals. In 2001, the town has 6 numbers of private hospitals with 4 government hospitals, two health centres (Figure 1), which was very less in 1991 as Barpeta Road with Composite Index of 86.3 was in the range of 50-100. Rest of the towns under this order are, Sarthebari with 124.5 of Composite Index, North Guwahati with 101.0 of Composite Index, Tangla 102.1 of Composite Index, Kharupetia 100.0 Composite Index and Jagiroad with 118.5 of Composite Index in 2001.

- **The Fourth Order:**

In the fourth order towns fall under the low range of 50-100, based on Composite Index. There are eleven towns in the fourth order in 2001, constituting 45 percent. In the hierarchy of towns of Assam Jorhat and Tinsukia falls under this category.

Marigaon Class III town was declared District headquarter in 1991 the town has attracted many central functions such as 5 numbers of different science and arts colleges, 10 numbers of primary schools, 4 middle schools, 5 secondary schools, 5 numbers of Family Welfare Centers, 2 Health Centers, 4 hospitals. In 1991 there were only few numbers of schools and colleges, 5 numbers of primary schools, 2 middle schools, 3 secondary schools 2 numbers of Family Welfare Center and 2 hospitals. Other towns of this order in 2001 are Pathsala Composite Index of 91.8, Sualkuchi 73.2 Composite Index, Udalguri 81.9 Composite Index, Palasbari 66.6 Composite Index etc.

- **The Fifth Order:**

This is the lowest and bottom level order of towns. The Composite Index of infrastructural facilities is less than 50. The 2 towns are Dharapur (46.99) and Chandrapur (48.09) of Composite Index order. No town was present in this lowest range of Composite Index in 1991 (Table 6). The towns belonging to this category are poorly accessible and have a very low level of socio-economic infrastructural facilities and also both of the towns are Census towns not declared as fullfleged town.

It is observed from the above analysis that the development in infrastructural facilities has been more in Class III towns than the other Class size of the towns.The analysis gives us a clear understanding that high Composite Index stands at 1012.57 points in Guwahati city and as low as 46.99 Composite Index points in Dharapur town. This wide variation may have a close relation with that of the inequalities in urbanization. Guwahati with highest Composite Index records the highest percentage share of urban population as against the Dharapur town.

The study region is experiencing a rapid growth in recent decades; the growth of small towns has been hampered by bigger towns, as the big towns have the entire necessary infrastructure. People flock towards the big towns to grab the best opportunities, bypassing small and medium towns.
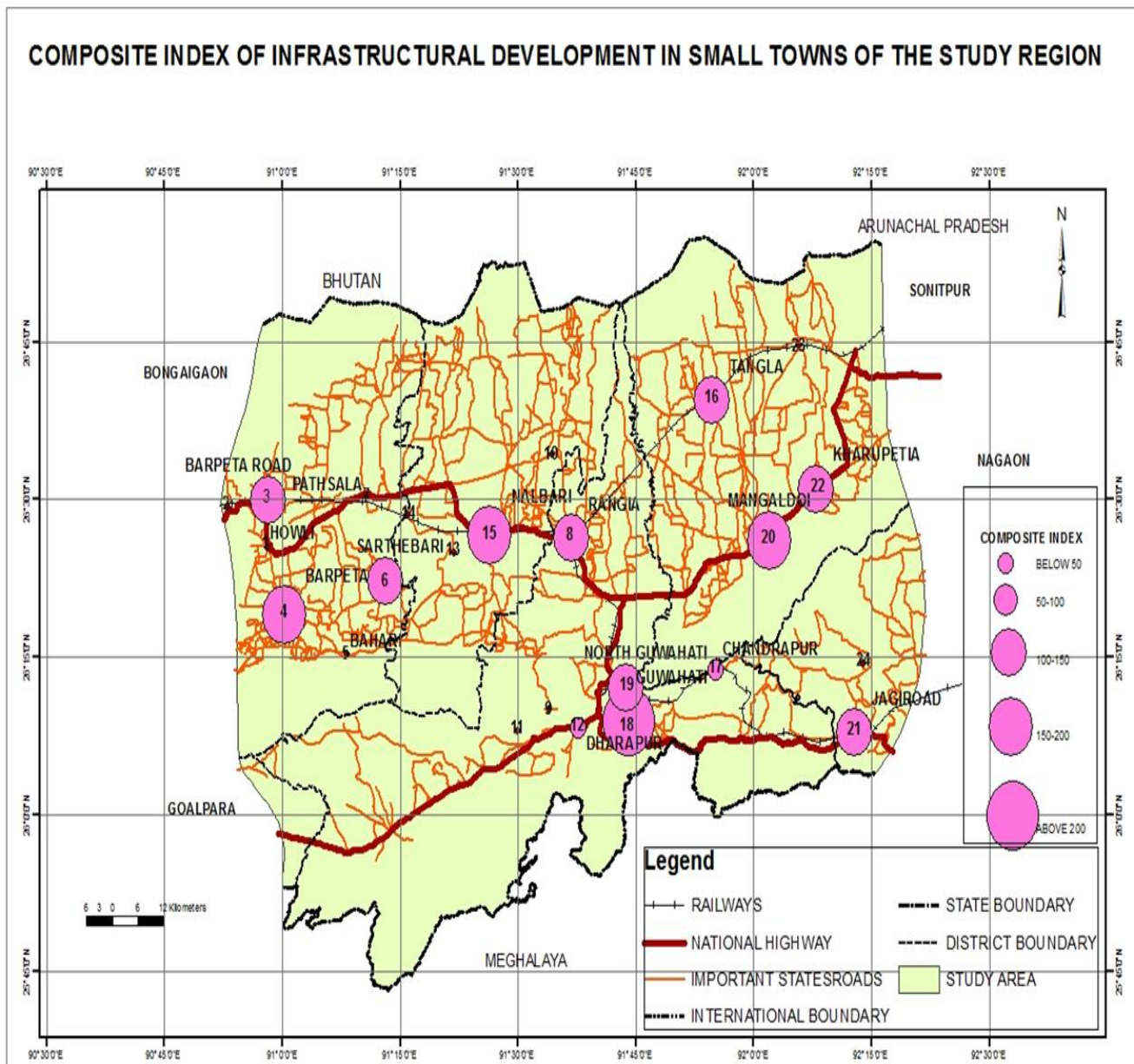

Figure 1: Composite Index of the Small Towns in the Study Region

The level of infrastructural facilities has changed manifold between 1991 and 2001. The different civic and infrastructural facilities in the small towns have been analyzed in the following paragraphs.

4. Civic and Other Amenities in the small towns:

Access to electricity, water, sanitation, fire services and clean fuel are critical determinants of health and well being of people living both in rural and urban areas Clegg and Rahman (2004).

- **Sewerage and Drainage in the small towns:**

In 1991, there were shortages of proper drainage system and most of the towns had open surface drains. In some of the towns sewerage system is found but it is limited only. In 1991, method of carriage of the night soil in most of the towns was through head load and in some towns wheel barrow was in use. In 2001, except Kochpara (Census town), Dharapur (Census Town), Bohari and North Guwahati, all other towns like Barpeta, Nalbari, Udalguri, Marigaon, has septic tank latrines sewerage and pit system.

- **Drinking water facilities in the small towns:**

In 1991 the sources of drinking water in most of the towns are tubewell and wells and in some towns taps are in use. The towns namely, Barpeta, Nalbari, Marigaon, Rangia, Mangaldoi are equipped with municipal water supply and hand pumps. In the towns like Kochpara, Bohari, Chandrapur, there are shortage in supply of clean drinking water and people has to depend on well and tube well as the supply of municipal water is limited to some areas. In 2001, most of the small towns in the study region are partially equipped with clean drinking water supply from taps, wells and tubewells.

- **Power supply in the small towns:**

Electricity has become one of the basic human needs. Rural Electrification is, therefore, a vital programme for socio-economic development of rural areas. The small towns of the study area are mostly rural based so the small towns come under the privilege of rural electrification. The total number of domestic electric connection in 2001 was 105,203, which was 58341 in 1991. This indicates the improvement is seen in the power supply to the residential areas in some of the small towns of the study area. Towns like Kochpara, Bohari, Chandrapur, and Howli are still in poor condition in regard to power supply. The number of industrial connection is 1975 which is very low and shows the poor development of industrial units in the region. In terms of commercial connection it is 22,580 is also very low.

- **Fire fighting service in the small towns:**

The fire fighting services are very limited in the study region. In towns like Chandrapur, Bamun Sualkuchi, Bohari and Kochpara fire services is nil at the time of emergency they depend on nearby town. The rest of the towns have limited fire fighting services.The whole scenario of civic and other amenities is unsatisfactory; it is a matter of grave concern over the deplorable civic amenities in the study area.

3. CONCLUSIONS

- The salient features of the sex-ratio of small towns in the region as per 2001 census revealed a wide variation. Although on an average the small towns of the study region have an average of 864 females per thousand male, yet it varies from a high sex ratio of 1022 in Sualkuchi and Bamun Sualkuchi, may be due to active commercial handlooms, of which 54.75 percent are performed by the women weavers, who are basically hired from the outside of Sualkuchi and the Guwahati city with 835 the low sex ratio, may be attributed to high male percent among the immigrants.

- Based on the male-female differential index (DI) of literacy the towns are grouped into four ranges the lowest of 0.01-0.06 and the very high of 0.19. Guwahati city falls in the high range of 0.13-0.18 whereas two towns of Class size of IV and V namely, Kharupetia and Kochpara falls in the low range of 0.01-0.06. It shows that 'differential index' is associated with literacy level rather than Class size of the towns. Hence, higher is the literacy rate lower is the male-female differential index and vice- versa.

- Guwahati and the small towns are classified into 5 categories based on availability of the infrastructure facilities measured in terms of centrality score. Maximum of towns i.e more than 90 percent falls into 3rd, 4th, 5th order with CS range of 50-150. Only Guwahati city in first order followed by 3 towns namely, Barpeta, Nalbari and Mangaldoi in the 2nd order with centrality score (CS) range of 150-200. This shows a wide gap between the CS of Guwahati city with 1012.99 and the next higher Class size towns with CS of around 200.

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