Patterns of Urbanization and Associated Infrastructure and Socio-Economic Development in Nagaland, India

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Abstract: Urbanization may be understood as an important process of socio-economic transformation caused basically by the growth of towns and their population. It basically involves shift of an ever increasing labour force from agriculture to the non-agricultural sector, and a change in population distribution from scattered rural areas to more compact towns. This is no less true in the case of Nagaland, where the process of urbanization began primarily from the time of British occupation of the Naga Hills inhabited by various tribal groups in the late nineteenth century. Although quite slow in the beginning, it has greatly influenced the demographic, socio-cultural and economic characteristics of the urban people in the state. The nature and dimension of urbanization and urban development is however found to vary across the state depending on a host of geographical factors. With this background an attempt is made in this paper to analyse the spatio-temporal variation in patterns of urbanization in the state of Nagaland, and to examine its influence on the demographic, infrastructure and socio-economic characteristics.

Keywords: Urbanization, Demographic Characteristic, Infrastructure, Socio-economic characteristic, Nagaland.

Introduction

Urbanization, an important social and economic process, is basically associated with the growth of towns and their population and increased non-agricultural functions. It primarily involves shift of an ever increasing labour force from agriculture to the non-agricultural sector, and a change in population distribution from scattered in rural areas to more compact in towns. In general, urbanization is the process of population concentration which takes place in two ways: the multiplication of points of concentration and the increase in size of individual concentrations (Tisdale, 1942). The process of urbanization has also been the dominant demographic trend with its high pace of social and economic development (Koiri, 2014). In addition, economic restructuring and changing demographic and migration patterns have significantly altered the population compositions of urban region (Boterman et. al., 2017). This phenomenon of urbanization in the world has become very fast in recent times, and now around 55 per cent of global population lives in the urban areas. However, the process of urban change in the South-Asian region has been relatively modest, and its urbanization pattern presents enormous challenges due to extreme poverty and pressure on urban services (Cohen, 2004). So far India is concerned, although the level of urbanization is considerably low (31.14 per cent), it has been gaining momentum in the recent times. Nevertheless it is believed that the new impetus from the government is likely to boost the Indian economy and create job opportunities, which in turn would lead to increase pull factors conducive to accelerated rural to urban migration (Bhagat and Mohanty, 2009). Moreover, the urbanization process in India has continued to be top-heavy, oriented towards large cities (Sivaramakrishnan *et al.*, 2005). This is also no less true in the case of Nagaland,

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where the level of urbanization has witnessed marked increase from17.22 per cent to 28.85 per cent during 2001-2011. Saikia (1995) in her published research "Process of Urbanization in Nagaland: A Case Study of Kohima and Dimapur Towns" tries to study the urban areas of Nagaland and states that the process of urbanization shows an increasing trend in the state. She also stated that Dimapur, the only plain district in Nagaland being well connected by road, rail and airways, has higher chances of urban development than in other parts of the state. The Human Development Report of Nagaland (2009) titled "Rural-Urban Migration" briefly explains the phases of urbanization in Nagaland since the British occupation of the Naga Hills in the nineteenth century, which marks the onset of the process of urbanization in the state. However, the real process of urbanization with acceleration has begun during the late twentieth century. According to this report, the process of urbanization in the state has resulted in many social, economic and cultural changes and the result of these changes can now be seen in the form of social unrest, unplanned and unsystematic economic development and diminishing cultural traits of the Naga society.

On the other hand, the nature of urbanization and associated socio-economic characteristics of the urban dwellers in Nagaland have been somewhat different from many other parts of the country due to highly rugged mountainous terrain, lack of industrialization and predominance of tribal culture, of course with the influence of Christianity. With this background an attempt is made in this paper to analyse the trend of urbanization, spatial patterns of nature of urbanization and emerging infrastructure and socio-economic development characteristics of the urban areas in Nagaland.

Materials and Methods

The study is primarily based on secondary data obtained from different Census of India publications for the period 1901-2011 in general and 1981-2011 in particular including Basic Statistics of North Eastern Region published by North Eastern Council. The data for understanding demographic and socio-economic characteristics and urban infrastructures have been collected largely from district census handbooks of Nagaland, 2011. However, in order to have a picture of ground reality, a random sample survey of one hundred Naga households has been conducted in four different localities of Dimapur town during April-May 2017. The data so obtained have been processed, analysed and presented by using some simple but meaningful statistical and cartographic techniques. The pattern of spatial distribution of urban population in the state including its changing trend during 1991-2011 has been assessed through Lorenz Curve and Gini's coefficient. In order to understand the changing nature of urban development in the state, rank-size relationship and primacy analysis has been done for the year 1991 and 2011. In addition, composite Z-score[*] is computed to find out the levels of socio-economic development (based on indicators like literacy rate, proportion of 0-6 population, female literacy rate, proportion of non-agricultural workers and proportion of electrified houses) and infrastructure development (based on availability of amenities like sanitary toilets, electrified houses, hospitals and health centres, primary and middle schools, secondary and senior secondary schools, colleges and banks) among individual urban centres of the state. Furthermore, correlation analysis has been done to examine the nature and extent of relationship of town population size with the corresponding levels of socio-economic and infrastructure development. Conclusions have been drawn based on results of data analysis and personal field observations.

Geographical Context of the Study Area

The state of Nagaland (India) located between $25°6'N$ to$27°4'N$ latitude and $93°20'E$ to $95°15'E$ longitude (Figure 1),shares its boundary with Assam on the west, Myanmar on the east, Arunachal Pradesh and parts of Assam on the north and Manipur on the south. Covering an area of 16,527 sq. km., Nagaland is basically a part of eastern Himalayas consisting of a narrow strip of hills that runs north-east to south-west and face the Assam plains to its west and north-west. The Barail range enters the state at the south-west corner and runs in a north-easterly direction almost up to Kohima. Broadly 94 per cent of the state's area falls under hilly and rugged terrain and only 6 per cent land is plain. It is drained by four main rivers-Dhansiri, Dikhow, Doyang and the Janji. Nagaland is characterized by a sub-tropical type of climate with temperature of $16°C$-$30°C$ during summer and $4°C$-$20°C$ during winter. Its average annual rainfall is about 200cm to 250cm. Rainfall is high during the monsoon from June to September, whereas during winter it is scanty.

As per 2011 Census, the state has total 11 administrative districts with a total population of 1,980,602 and a sex ratio of 931 females per thousand males. Its population density is 119 persons per km^2. Nagaland is a tribal and Christian dominated state. The proportions of scheduled tribes and Christians to total population in the state are 89.1 per cent and 87.8 per cent respectively. The Naga people belonging to sixteen major tribal groups constitute the majority of the state's population. Literacy rate of the state is 79.55 per cent. It is third in the list only next to Mizoram and Tripura among the states of the north-east region of India. The state's economy is still dominated by agriculture and allied sector with predominance of *shifting cultivation*.

Figure 1: Location map of Nagaland
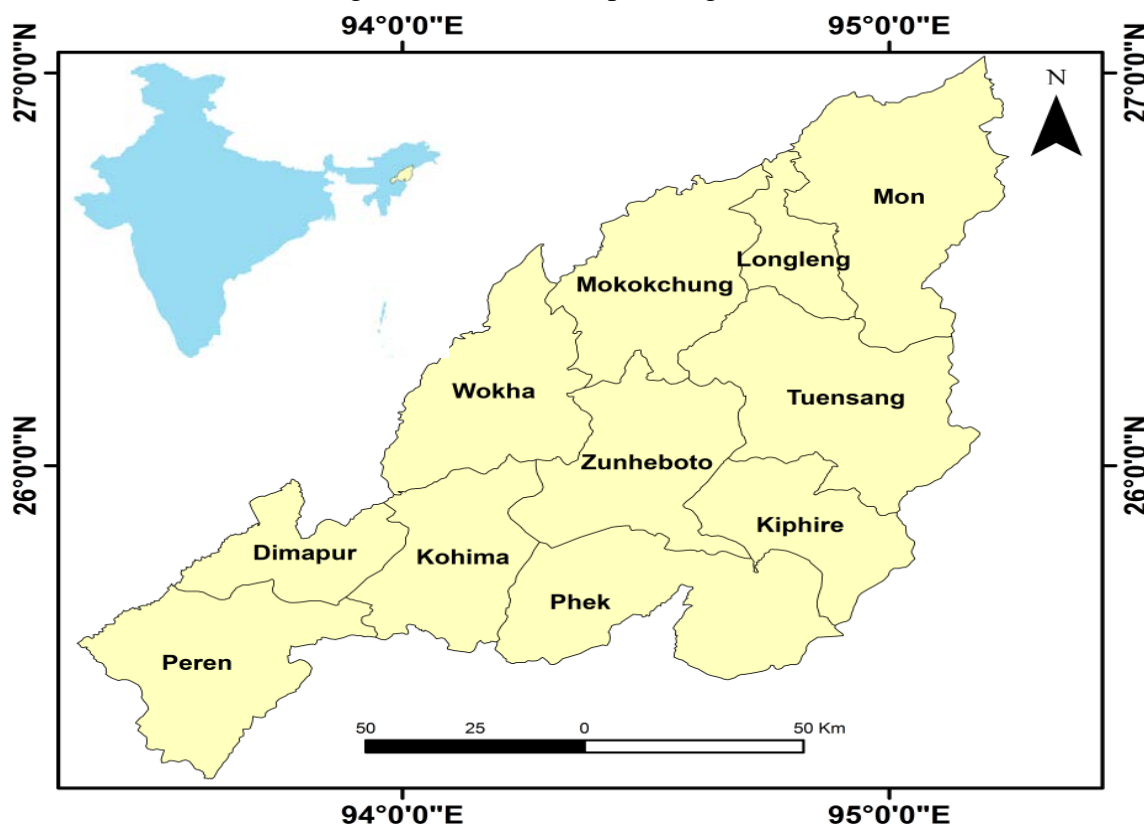
Results and Discussion

Trend of Urbanization

The process of urbanization in the Naga Hills began during British rule in the later part of nineteenth century. The records show that Kohima and Wokha became towns in 1878, followed by Mokokchung in 1888. Tuensang emerged as a town much later in 1948. It was only in the post-Independence period, with the introduction of the national policy for tribal development, rapid urbanization started in Nagaland. Since the formation of the state in 1963, the small administrative blocks and headquarters have been steadily growing in number and population, as more and more people migrated from the surrounding villages in search of jobs, education, health care and various other facilities which were not available in the villages. However, as per the Census of India definition, till 1971 there were only three towns in Nagaland-Kohima, Mokokchung and Dimapur. Subsequently, a large number of small townships, service centres and market centres have emerged along with formation of new administrative districts in different parts of the state through administrative reorganisation.

So far the trend of growth of urban population in Nagaland is concerned; it increased from about 3 thousand to 570 thousand during 1901-2011. Consequently the level of urbanization (proportion of urban population to total population) increased from 3.04 per cent in 1901 to 28.85 per cent in 2011 as against the corresponding national averages of 10.84 per cent and 31.14 per cent (Table 1). It is observed that the process of urbanization in Nagaland gained momentum considerably after attainment of statehood and more vigorously since 2001. As a result, the gap of level of urbanization for the period 1901-2011 between the state and the country has declined significantly (7.80 per cent point in 1901 to 2.29 per cent point in 2011). Moreover, the annual growth rate of urban population during 1971-2011 had been significantly higher in Nagaland (6.20 per cent) than the corresponding national average growth rate (3.15 per cent) (Table 2).

Table 1: Trend of Urban Population Growth in India and Nagaland, 1901-2011

Census Year	Total Population		Urban Population		Percent of Urban Population	
	India	Nagaland	India	Nagaland	India	Nagaland
1901	238396327	101550	2581873	3093	10.84	3.04
1911	252093390	149038	25941633	2,423	10.29	1.62
1921	251321213	158801	28086167	2790	11.17	1.75
1931	278977238	178844	33455989	2759	11.99	1.54
1941	318660580	189641	44153297	3507	13.85	1.84
1951	361088090	212975	62443709	4125	17.29	1.93
1961	439234771	369200	78936603	19157	17.97	5.18
1971	548159652	516449	109113977	51394	19.91	9.95
1981	683329097	774930	159462547	120234	23.33	15.51
1991	846302688	1209546	217177625	208223	25.71	17.21
2001	1028737436	1990036	285354954	342787	27.78	17.22
2011	1210854977	1978502	377105760	570966	31.14	28.85

Source: Census of India, (Series-1), Final Population Totals: Brief Analysis of PCA, 1991 and 2011

Table 2: Urban Population Growth Rate in Nagaland and India, 1971-2011

State	Average Annual Growth Rate of Urban Population (%)		
	1971-1991	**1991-2011**	**1971-2011**
Nagaland	7.24	5.17	6.20
India	3.51	2.79	3.15

Source: Census of India, (Series-1), Final Population Totals: Brief Analysis of PCA, 1991 and 2011.

Such a high growth rate of urban population in the state has been primarily due to emergence of a number of new towns and increasing volume of rural-urban migration to the large urban centres. This is also reflected in the analysis of components of urban population growth in the state during 1971-2011. Of the three broad components, the contribution of both migration and urban area expansion, and emergence of new urban centres have been found to be highly significant (more than 40 per cent due to each component) as compared to natural growth component (with contribution of less than 15 per cent) in the state both during 1971-1991 and 1991-2011 (Table 3). This is indicative of the prevalence of quite vibrant urbanization process in the state. As such the role of natural growth of population in the urban areas of the state has remained quite insignificant.

Table 3: Components of Urban Population Growth in Nagaland, 1971-2011

Period	Increase due to Natural Growth (%)	Increase due to Emergence of new Urban Centers (%)	Increase due to Migration and Urban Area Expansion (%)
1971-1991	13.31	40.83	45.86
1991-2011	12.36	45.49	42.15

Source: Census of India, 1971 and 2011, Nagaland, Primary Census Abstract.

Further, although the level of urbanization in Nagaland has witnessed considerable increase during the last two decades (from 17.21 per cent in 1991 to 28.85 per cent in 2011), it appears to be almost spatially balanced across the state. This phenomenon is also reflected in the Lorenz Curve, which shows almost uniform distribution of urban population in both 1991 and 2011, and as such the values of Gini's coefficient are found to be 0.30 and 0.28 in the respective years (Figure 2).

Figure 2: Distribution pattern of urban population in Nagaland through Lorenz Curve, 1991 and 2011
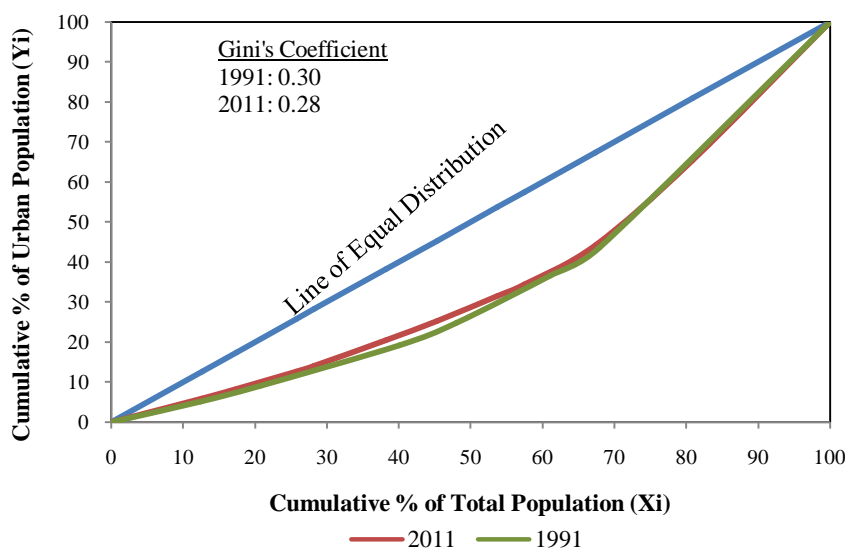
Category-Wise Growth of Urban Centres

An urban centre may be defined as a large and densely populated human settlement with modern infrastructure of built environment. In Nagaland, there are 11 administrative districts and these districts have a number of small and big towns depending on their population. The number of urban centres in Nagaland had been as small as 3 in 1971, which increased to 9 in 1991 and 26 in 2011. At present, out of 26 towns in 2011, there are 19 statutory towns and 7 Census towns distributed unevenly across Nagaland.

Table 4: Number of Urban Centres under Different Size Categories at District level in Nagaland, 1991 and 2011

District/State	Year	Below 5000 (VI)	5000-9,999 (V)	10,000-19,999 (IV)	20,000-49,999 (III)	50,000-99,999 (II)	Above 100,000 (I)	Total
Mon	1991	0	0	1	0	0	0	1
	2011	0	1	0	1	0	0	2
Mokokchung	1991	0	0	0	1	0	0	1
	2011	1	2	0	1	0	0	4
Zunheboto	1991	0	0	1	0	0	0	1
	2011	1	0	0	1	0	0	2
Wokha	1991	0	0	1	0	0	0	1
	2011	0	0	0	1	0	0	1
Dimapur	1991	-	-	-	-	-	-	-
	2011	0	3	2	1		1	7
Phek	1991	0	1	0	0	0	0	1
	2011	0	0	2	0	0	0	2
Tuensang	1991	0	0	0	1	0	0	1
	2011	0	0	0	1	0	0	1
Longleng	1991	-	-	-	-	-	-	-
	2011	0	1	0	0	0	0	1
Kiphire	1991	-	-	-	-	-	-	-
	2011	0	0	1	0	0	0	1
Kohima	1991	0	1	0	0	2	0	3
	2011	0	1	1	0	1	0	3
Peren	1991	-	-	-	-	-	-	-
	2011	0	2	0	0	0	0	2
Nagaland	**1991**	**0**	**2**	**3**	**2**	**2**	**0**	**9**
	2011	**2**	**10**	**6**	**6**	**1**	**1**	**26**

Source: Census of India, 1991 and 2011, India and Nagaland, Primary Census Abstract.

The urban centres are also categorized under different classes (class I to class VI) depending on their size of population. According to the 2011 Census, Nagaland has 2 urban centres under class VI (with population below 5,000), 10 under class V (with population 5,000-9,999), 6 each under class IV (with population 10,000-19,999) and class III (with population 20,000-49,999) (Table 4). Out of the remaining two, while Dimapur, the commercial hub of Nagaland, has emerged as class I city (with population 1,00,000 and above) with population 123 thousand, the state capital Kohima still remains as Class II town (with population 50,000-99,999) with population 99 thousand. Accordingly, the only class I city Dimapur accounts for 21.5 per cent of the state's total urban population (Table 5).

Table 5: Percentage Distribution of Urban Population by Size Class in Nagaland andIndia

State	Year	Below 5000 (VI)	5000-9,999 (V)	10,000-19,999 (IV)	20,000-49,999 (III)	50,000-99,999 (II)	Above 100,000 (I)
Nagaland	1971	-	-	50.1	41.9	-	-
	1991	-	8.2	17.6	22.0	52.2	-
	2011	1.6	13.0	14.6	32.0	17.3	21.5
India	1971	0.4	4.6	10.9	16.0	10.9	57.2
	1991	0.3	2.6	7.7	13.3	10.9	65.2
	2011	0.5	4.2	8.4	15.4	11.0	60.5

Source: Census of India, 1971, 1991 and 2011, India and Nagaland, Primary Census Abstract

Figure 3: Class-wise distribution of Urban Centres in Nagaland, 2011
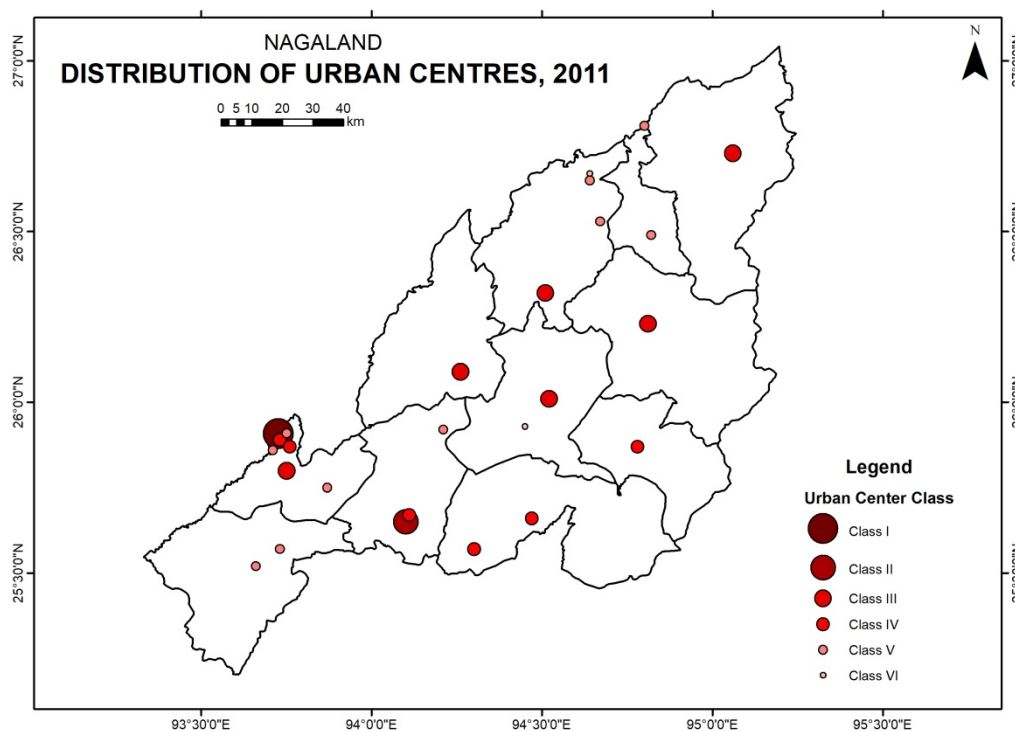
Urban Development Pattern
The rank-size relationship analysis of the urban centres in Nagaland is indicative of relatively recent urban development process with considerably steeper slope, and instead of decline in the slope, it has rather slightly increased during 1991-2011 (Figure 4).

Figure 4: Rank-Size Relationship of Urban Centres in Nagaland, 1991 and 2011
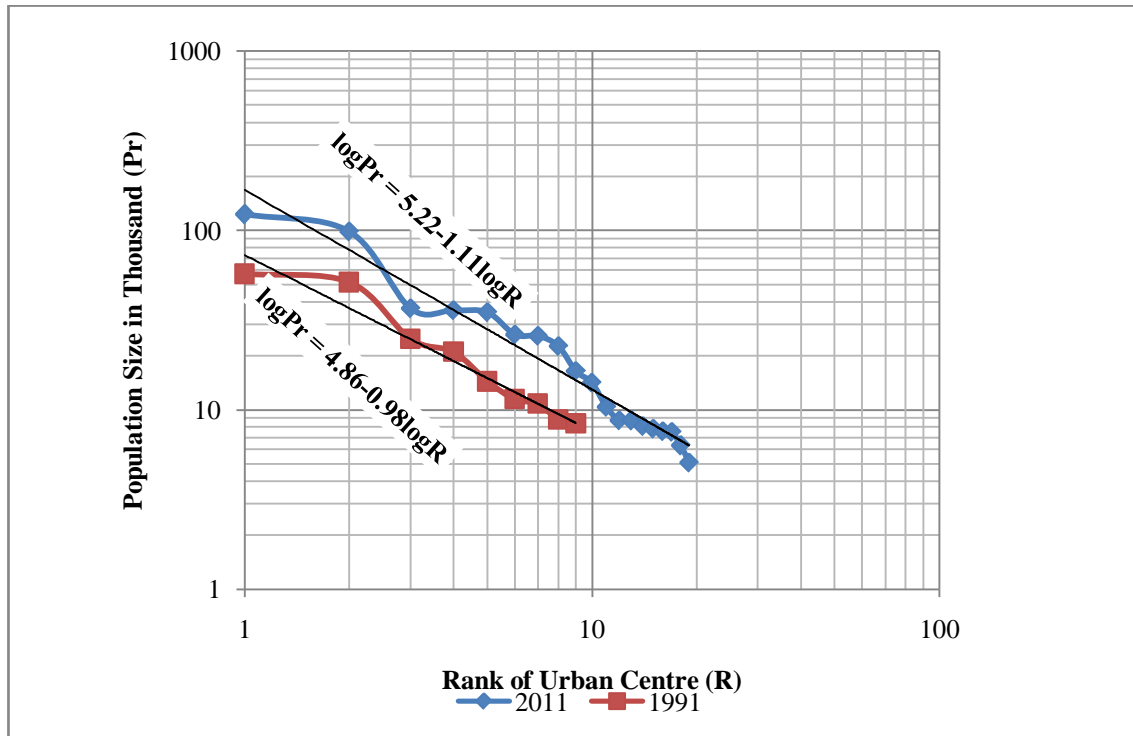
It is further observed that although smaller towns are emerging in the state, almost parallel growth of two largest towns (Dimapur and Kohima) in the state has kept the growth of the primate city Dimapur somewhat slow. As a consequence, the population of Dimapur town (1,22,834 as per 2011 Census) has been behind its expected population for 2011 (1,68,286) as per rank-size relationship. Although most of the urban centres in the state are quite small in terms of population size, the Primacy Index of Dimapur upon Kohima is found to be quite low (1.24 as against the theoretical value of 2.0). It means both the two largest urban centres in the state have been growing (one as commercial town and another as administrative town) almost equally (Table 6).The 4-city primacy index also reveals the same phenomenon with respect to urban primacy development in the state. However, the increase in the value of primacy index in 2011 (0.71) over 1991 (0.59) is indicative of a gradual progress towards a balanced urban development in the state.

Table 6: Urban Primacy index in Nagaland, 1971-2011

Year	1st Ranking Urban Center with Population	2nd Ranking Urban Center with Population	3rd Ranking Urban Center with Population	4th Ranking Urban Center with Population	2 City Primacy Index	4 City Primacy Index
1971	Kohima (21,546)	Mokokchung (17,423)	Tuensang	-	1.24	-
1991	Dimapur (57,182)	Kohima (51,418)	Mokokchung (24,803)	Tuensang (21,018)	1.11	0.59
2011	Dimapur (122,834)	Kohima (99,039)	Tuensang (36,774)	Mokokchung (35,913)	1.24	0.71

Source: Calculated based on data from Census of India, 1971, 1991 and 2011, Primary Census Abstract, Nagaland.

It may further be mentioned that in view of the locational advantage of Dimapur town in terms of multiple modes of transport nodality, being close to Assam as the regional gateway and having considerably plain topography, it has great potential to witness rapid growth in population and area along with expansion of diverse functions and resource mobilisation in near future.

Spatio-Temporal Variation in Levels of Urbanization

Urbanization in Nagaland presents a remarkable pattern with respect to the spatial and temporal variation of the levels of urbanization. As already mentioned, the real growth of urbanization in Nagaland in terms of both the level of urbanization and number of urban centres has taken place during the last two decades (Table 1 and Table 4). Depending on variation in topography, accessibility and resource mobilization, there exists marked spatial variation in the level of urbanization and number of urban centres in different parts of the state. Accordingly, the state's urbanization is largely concentrated in the south-western part with urbanization level of 52.2 per cent in Dimapur district and 45.18 per cent in Kohima district (Table 7). Moreover, out of 26 urban centres in the state, as many as 10 including Dimapur and Kohima towns are located in these two districts. Temporal variation shows that the level of urbanization in the state has rapidly increased. It had only three urban centres during 1971, which increased to nine urban centres in 1991 and twenty six urban centres in 2011 spreading in most parts of the state. The rapid increase in the number of urban centres and the proportion of urban population over total population in the past five decades is a solid evidence of the growing pace of urbanization in Nagaland.

Table 7: Inter-district variation in the Trend of Number of Urban Centres and Urbanization Level in Nagaland, 1971-2011

Districts/State	No. of Urban Centres			Percent of Urban Population		
	1971	1991	2011	1971	1991	2011
Mon	-	1	2	-	7.20	13.7
Mokokchung	1	1	4	21.10	15.66	28.6
Zunheboto	-	1	2	-	11.88	19.6
Wokha	-	1	1	-	17.40	21.04
Dimapur	-	-	7	-	-	52.2
Phek	-	1	2	-	8.18	15.04
Tuensang	-	1	1	-	18.59	18.70
Longleng	-	-	1	-	-	15.08
Kiphire	-	-	1	-	-	22.27
Kohima	2	3	3	32.32	35.46	45.18
Peren	-	-	2	-	-	14.48
Nagaland	**3**	**9**	**26**	**9.95**	**17.21**	**28.85**
India	**2462**	**4659**	**7933**	**19.90**	**25.71**	**31.14**

Source: Census of India, 1971, 1991 and 2011, Nagaland, Primary Census Abstract.

Demographic Characteristics

The most important and remarkable demographic change in Nagaland in the recent years is the increase in urban centres and their population. The pressure of population has been on the increase in most of the large urban centres with large volume of rural to urban migration in search of education, employment and better amenities for living. Fertility, mortality and mobility, which affect the growth of population in an area, also constitute important determinants of the socio-economic development of the area concerned. So far the data on Crude Birth Rate (CBR), Crude Death Rate (CDR) and Infant Mortality Rate (IMR)

are concerned, it has been found to be considerably better in urban Nagaland as compared to urban India during the last three decades (Table 8). This has resulted in the spatial and temporal variation in some of its demographic characteristics as discussed below.

Table 8: CBR, CDR and IMR of Nagaland and India, 1991-2011

Year	Crude Birth Rate (Urban)		Crude Death Rate (Urban)		Infant Mortality Rate (Urban)	
	Nagaland	India	Nagaland	India	Nagaland	India
1991	10.1	24.3	0.8	7.1	07	52
2001	12.4	20.3	2.6	6.3	23	43
2011	15.5	17.6	2.9	5.7	20	29

Source: Census of India, 2014, SRS Bulletin (2001), India.

The age composition of urban population, which is indicative of prevailing fertility pattern and life expectancy, is not found to be encouraging in Nagaland even as compared to India, although the performance of Nagaland in respect of CBR, CDR and IMR is considerably better than the country as a whole (Table 8). The somewhat better performance of CBR, CDR and IMR in urban Nagaland may largely be attributed to sample selection and significantly small sample size. However, due to considerably large proportion of children population the dependency of children (0-14 age group) and old people (60+ age group) upon adult (15-59 age group) is still found to be quite high in urban Nagaland (Table 9). The sex ratio (number of females per thousand males) has also been quite low in most of the urban areas of the state (908).

Table 9: Age Composition of Urban Population in Nagaland and India, 1981 and 2011

State	Urban Age Composition (%)					
	0-14 years		15-59 years		60+ years	
	1981	2011	1981	2011	1981	2011
Nagaland	37.7	30.99	60.62	65.26	1.68	3.75
India	36.53	26.21	58.03	65.69	5.44	8.10

Source: Census of India, 1981 and 2011

Socio-Economic Characteristics

Besides demographic attributes, the socio-economic attributes like literacy rate, educational attainment, work participation rate, occupational composition, etc. among urban dwellers reflect their quality of life and also level of urban development in the state of Nagaland. So far literacy rate in Nagaland is concerned; it is as high as 89.62 per cent in the urban areas as against the state's total literacy rate of 79.6 per cent. It is encouraging to note that its urban literacy is even higher than corresponding national average (84.1 per cent). The progress in urban literacy has been found to be quite rapid after 1971 (Table 10). Although urban literacy rate in the state does not significantly vary among the districts, it is found to be as low as 84.47 per cent in Mon district and as high as 95.79 per cent in Wokha district. Presence of quite a large number of illiterate people from outside the state has kept the urban literacy rate somewhat unexpectedly low in the most urbanized districts of Dimapur and Kohima. This phenomenon is also reflected in the literacy rate of Dimapur city (86.03 per cent). In order to explore the ground reality in this respect a random sample survey of 100 Naga households has been conducted in four different localities of Dimapur city, viz. Lhomithi colony, Notun Bosti, Island Colony and Duncan Bosti. Accordingly, the survey reveals that the literacy rate among the Nagas in the city is as high as 97.8 per cent with proportion of graduate and postgraduate literate of 30.31 per cent. Hence, this is indicative of

the fact that the educational attainment of urban Naga people has become quite high. It is also because a large segment of educated Naga people moves from rural to urban areas.

Table 10: Urban Literacy Rate at District Level in Nagaland, 1971-2011

District	Urban Literacy Rate (%)		
	1971	**1991**	**2011**
1.Mon	-	70.96	84.47
2.Mokokchung	67.48	87.65	93.58
3.Zunheboto	-	83.12	94.49
4.Wokha	-	88.05	95.79
5.Dimapur	-	-	87.39
6.Phek	-	81.62	88.29
7.Tuensang	-	76.48	91.99
8.Longleng	-	-	91.45
9.Kiphire	-	-	87.33
10.Kohima	59.9	83.83	90.00
11.Peren	-	-	85.55
Nagaland	**63.19**	**83.10**	**89.62**

Source: Census of India (Series-I), 1971 and 2011

As regards work participation, it is found to be slightly higher in urban Nagaland (37.43 per cent) than urban India (35.30 per cent). In the case of gender differential in work participation also the picture is quite encouraging in Nagaland (Male: 47.94 per cent; Female: 25.87 per cent) as compared to India as a whole (Male: 53.76 per cent; Female: 15.44 per cent). The prevalence of considerably high participation of Naga women in work is largely associated with high status of women and less societal restriction for women to work outside along with men. This phenomenon is also associated with ecological compulsion, which makes most of the economic activities labour intensive. It is further observed that the urban work participation in Nagaland is almost equally high at par the state average in most of the districts with the exception of Kiphire (28.24 per cent) and Peren (66.34 per cent) (Table11). The exceptionally high work participation in Peren district is mainly due to ecological compulsion and very poor urban development with dominance of rural landscape and primary economic activities.

Table 11: Urban Work Participation in Nagaland at District Level, 2011

District	Total Work Participation (in %)
1.Mon	37.70
2.Mokokchung	39.54
3.Zunheboto	33.74
4.Wokha	35.11
5.Dimapur	37.64
6.Phek	38.78
7.Tuensang	36.45
8.Longleng	37.97
9.Kiphire	28.24
10.Kohima	35.51
11.Peren	66.34
Nagaland	**37.43**
India	**35.30**

Source: Census of India, 2011, Nagaland, Primary Census Abstract.

As expected, the proportion of non-agricultural workers in urban Nagaland is found to be quite high (91.66 per cent) with considerable gender differential. However, unlike work participation rate, the proportion of non-agricultural workers in Nagaland is slightly lower than the national average (Table 12). Of course, there exists significant inter-district variation in this respect, and as such it is found to vary from as low as 66.02 per cent in Peren to as high as 97.57 per cent in Dimapur (Table 13).

Table 12: Percentage of Male and Female Non-Agricultural workers (urban) in Nagaland and India, 2011

Spatial Unit	Non-agricultural workers (in %)		
	Person	Male	Female
Nagaland	91.66	94.26	84.81
India	92.81	93.51	90.05

Source: Census of India, Nagaland, 2011.

Table 13: Proportion of Urban Non-Agricultural Workers in Nagaland at District Level, 2011

District	Non-agricultural workers (in %)
1.Mon	81.49
2.Mokokchung	90.26
3.Zunheboto	92.12
4.Wokha	94.10
5.Dimapur	97.57
6.Phek	76.41
7.Tuensang	75.83
8.Longleng	85.87
9.Kiphire	70.26
10.Kohima	96.14
11.Peren	66.02
Nagaland	**91.66**

Source: Census of India, 2011, Nagaland, Primary Census Abstract.

In this way apart from Peren, the districts like Kiphire, Tuensang and Phek record considerably low proportion of non-agricultural workers due to poor urban base and lack of occupational diversities. On the other hand, the districts of Dimapur and Kohima turn out to have very high proportion of non-agricultural workers due to strong urban base, diverse occupations and more resource mobilization.

Urbanization and Socio-Economic Development

Urbanization, which is largely associated with expansion of non-agricultural sector, concentration of infrastructures and mobilization of resources, acts as an engine of overall socio-economic development with its impact in the surrounding rural areas. Nagaland, whose level of urbanization is seen to be increasing rapidly during the past few decades, exhibits these characteristics of urbanization in a unique way. Although in general the level of socio-economic development among the urban dwellers increases along with the rise in the population size of the urban centres, it is found to be somewhat different in the case of Nagaland. Such phenomenon is found to be more so in the large urban areas of the state, where being attracted by more economic opportunities and infrastructures, large number of people with considerably low socio-economic qualities and skills migrate. This is also clearly reflected in low level of socio-economic development (with composite Z-score of 1.07) in the largest urban centre Dimapur with population 122 thousand as against considerably high

level of socio-economic development (with composite Z-score 4.87) in one of the smallest urban centres named 'Satakha' in Zunheboto district with population of less than five thousand (Table 14 and Fig. 5). In view of this, the relationship between population size of the urban centres and corresponding composite scores of socio-economic development in the state is found to be very weak positive (r= +0.16).

Table14: Composite Z-Scores of Socio-Economic and Infrastructural Developments of the Urban Centres in Nagaland, 2011

Sl. No.	Urban Centre	Population Size (2011)	Composite Z-Score	
			Socio-Economic Development	Infrastructural Development
1	Dimapur	1,22,834	1.07	20.93
2	Kuda	16,108	-0.75	-3.26
3	Rangapahar	6,673	4.50	-4.49
4	Chumukedima	25,885	0.91	-2.15
5	Puranabazar A	7,385	3.26	-3.73
6	Diphupar A	10,246	4.14	-3.46
7	Medziphema	8,738	-0.32	-4.37
8	Tseminyu	6,315	-1.60	-4.08
9	Kohima	99,039	3.13	17.93
10	Kohima Village	15,734	1.44	-2.44
11	Tuli	7,864	-2.55	-4.28
12	Tsudikong	4,416	0.20	-4.51
13	Changtongya	7,532	3.39	-4.02
14	Mokokchung	35,913	1.95	8.84
15	Tuensang	36,774	-0.97	8.43
16	Wokha	35,004	4.64	-1.94
17	Naginimora	8,116	-4.09	-3.77
18	Mon	26,328	-3.52	-2.89
19	Zunheboto	22,633	0.75	6.89
20	Satakha	4,964	4.87	-3.43
21	Phek	14,204	-0.63	-2.91
22	Pfutsuro	10,371	-2.44	-3.67
23	Kiphire	16,487	-5.80	-3.32
24	Jalukie	8,706	-5.36	-3.18
25	Peren	5,084	-4.14	6.58
26	Longleng	7,613	-2.06	-3.48

Source: Calculated based on data from Census of India, 2011, PCA, Nagaland and District Census Handbooks, Nagaland.

Urbanization and Infrastructural Development

Urbanization, which is characterized by agglomeration of production and consumption stimulates overall economic and population growth. The growth and development of an urban centre may also be best judged through its infrastructure base (urban amenities). So far the level of infrastructure development among the urban areas in Nagaland is concerned, it is found to be very high in large urban areas like Dimapur and Kohima (with composite Z-score of 20.93 and 17.93 respectively) and very low in the small urban areas like Tsudikong and Rangapahar (with composite Z-score of -4.51 and -4.49 respectively) (Table 14 and Figure 6).

Figure 5: Relationship between Population Size and Socio-Economic Development of Urban Centres in Nagaland, 2011
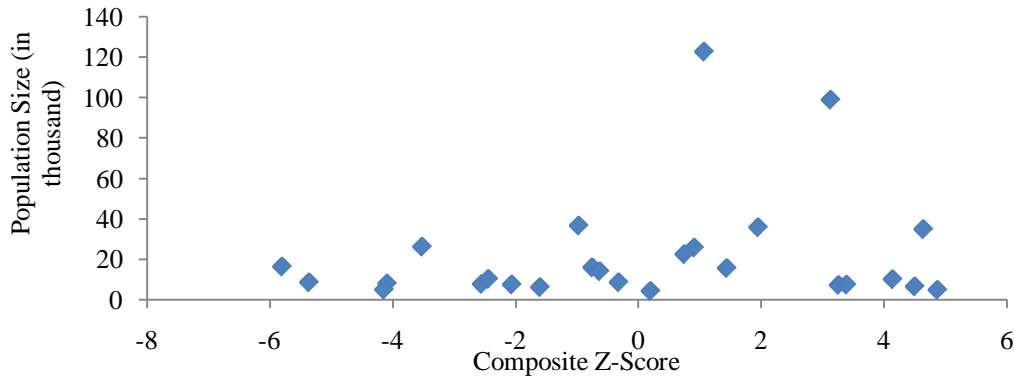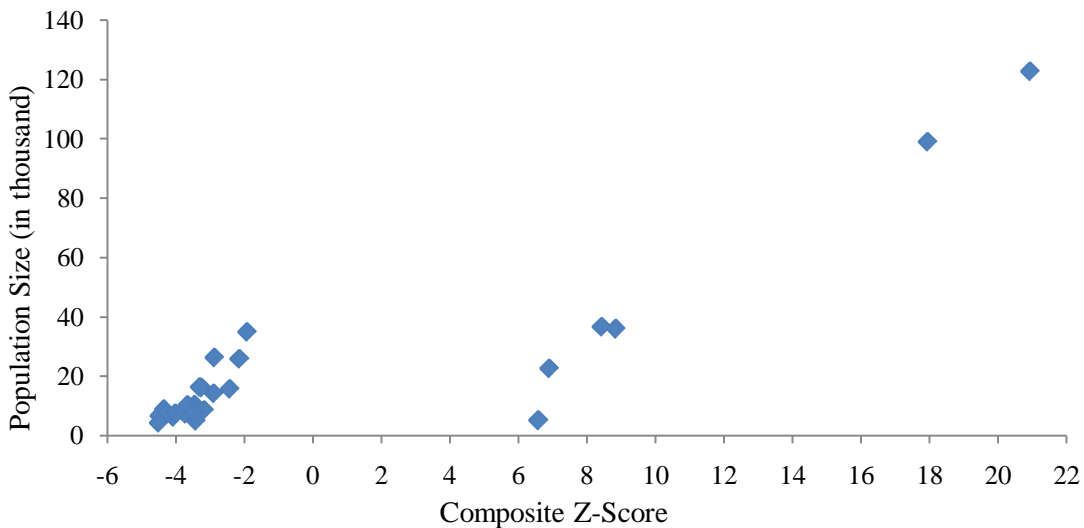

Figure 6: Relationship between Population Size and Infrastructural Development of Urban Centres in Nagaland, 2011

In view of this, the relationship between population size of the urban centres and corresponding composite scores of infrastructure development in the state is found to be somewhat high positive (r= +0.56). This is indicative of the fact that the urban areas with large population can support increased infrastructure with more investment. However, higher level of infrastructure development as found in the large urban areas may not always result in higher level of socio-economic development. This phenomenon is reflected in the prevalence of very weak positive relationship between them in the state of Nagaland (r= +0.13).

Conclusion

The foregoing discussion reveals that urbanization in Nagaland has been a recent phenomenon and it remained very slow until the attainment of statehood. The marked urban development has taken place in the state following increase in the number of urban centres from merely 3 in 1971 to as high as 26 in 2011 mainly due to conversion of several newly formed district and sub-division headquarters into towns. As a result, emergence of a large number of towns with population less than 50,000 has made the pattern of urbanization in the state spatially balanced. Moreover, with considerably fast urban development mainly in the

south-western districts of Dimapur and Kohima the urbanization level in the state has increased to 28.85 per cent in 2011. The impact of urbanization has been clearly reflected in the improvement of demographic and socio-economic characteristics of the urban areas in the state. On the other hand, the contribution of infrastructural development towards urban growth is found to be more pervasive. However, the socio-economic progress is still lagging behind in major part of the state due to lack of adequate urban infrastructure base, resource mobilization and associated economic opportunities. The long continued disturbed situation has also been responsible for industrial backwardness and consequent low urban development in the state. Hence, there is the need of peaceful environment and planned development of infrastructure base including improvement of transport and communication system with cordial inter-state relations with neighbours. All these would go a long way towards a balanced and sustainable urban development of Nagaland.

Note

* Composite Z-Score, $CI_j = \sum(X_{ij} - \bar{X}i)/\sigma i$

where, CI_j is the composite index of the jth urban centre
X_{ij} is the value for i^{th} attribute and j^{th} urban centre
$\bar{X}i$ is the mean value for i^{th} attribute and
σi is the standard deviation value of the ith attribute

While adding the individual Z-value for each attribute to get the composite score, the algebraic sign of the negative attribute has been reversed to make it compatible with that of the positive attribute.

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