

Pace of urbanization in Nadia district - An experience of 30 years

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Abstract

Urbanization is one of the oldest and most traditional processes of change that has helped shape the societies around the world. Urbanization is not merely a modern phenomenon, but a rapid and historic transformation of human social roots on a global scale, whereby predominantly rural culture is being rapidly replaced by predominantly urban culture. Urbanization is arguably the most dramatic form of highly irreversible land transformation. The term urbanization can represent the level of urban development relative to overall population, or it can represent the rate at which the urban proportion is increasing. Urbanization is closely linked to modernization, industrialization, and the sociological process of rationalization. Among the most significant changes now affecting mankind of developing countries is the ever-increasing level of urbanization as well as the number of urban centres. Thus the number of urban centres is necessarily a factor in the study of urbanization and national development as well. While urbanization is a worldwide phenomenon, it is exceptionally dynamic in India, where unprecedented urban growth rates have occurred over the last 30 years. West Bengal is a key human resource in India, with the state being fourth most populous and second most densely populated regions in India. Nadia is one of the historical urbanized districts of west Bengal. In the present work the urban scenario of Nadia in last 30 years has been attempted to examine. To investigate the impact on urbanization different quantitative and qualitative techniques have been adopted.

Keywords: Industrialization, land transformation, urbanization, modernization.

Introduction

Urban settlement is a hearth of the human settlement. Historically, the process of urbanization speeded up in the wake of industrial revolution in the western world leading to the expansion of infrastructure such as transport and communication,

which propelled increased rural to urban migration (Paul and Chatterjee, 2012). Thuo, A. D. M. (2013) focused on the expansion of the cities into the rural-urban fringes is creating direct and indirect impacts with those living there facing new challenges and opportunities in meeting

their life needs and accommodating the by-products of urbanization. Although urbanization in these areas provides opportunities for employment, better housing, education, knowledge and technology transfer, and ready markets for the agricultural products, increase in population places enormous stress on natural resources and existing social services and infrastructure.

The Urbanization occurs naturally from individual and corporate efforts to reduce time and expense in commuting and transportation while improving opportunities for jobs, education, housing, and transportation. Living in cities permits individuals and families to take advantage of the opportunities of proximity, diversity, and marketplace competition. People move into cities to seek economic opportunities (Bordoloi and Sarmah, 2012).

Urban settlement is primarily evolved from the coalescence and symbiotic interaction between people, economic activities, different modes of communication and basic infrastructure. Rapid urban development ensuing dramatic changes in the landscape have been recently witnessed in many developing countries as a result of fast economic advancements. India had witnessed an enormous transformation of urban scene in the last few decades. In the 2011 Census, 475 places with 981 Outgrowths (OGs) have been identified as Urban agglomerations (UAs) as against 384 with 962 OGs in 2001 Census (Deka et al., 2012).

The total urban population in the country as per Census 2011 is more than 377 million constituting 31.16% of the total

population which was 25.70% and 27.82% in 1991 and 2001 respectively (Census 1991, 2001, 2011). West Bengal is one of the urbanized states of India and Nadia is one of those districts of west Bengal. The urban scenario of Nadia has been changed dynamically in last 30 years. As per census of 1981, 21.57 percent people lived in urban area of Nadia and 27.84 percent in 2011. (Census, 2011).

Study area

The name of Nadia is derived from Nabadwip. Some experts opined that the name of Nabadwip is derived from Nine is land i.e., i) Antadwwip ii) Simantadwip iii) Gourunomdwip vi) Madhyadwip v) Koledwip vi) Ritudwip vii) Madodrumdwip viii) Jagrudwip and ix) Rudradwip. According to Narchari-a renowned author of Baishnav literature there is no separate village named Nadia. Nabadwip is surrounded by nine islands which are separated from each other but called one village. The Administrative headquarters Continued to be at Krishnagar from the period of British Ruler since 1772 (Brief industrial profile of Nadia). The district is covered under Presidency Division and occupies 11th position in the State in respect of its size with an area of 3927 sq. km. It lies in the heart of Bengal Delta held within the arms of Ganga and Bhagirathi on the west and Mathabhanga on the North. The shape of the district is irregular lying north to south. In the present time the district of Nadia in West Bengal extends from latitude 22°53' north to 24°11' North and from longitude 88°09' East to 88°48' East. It is bordered on the North and North – West by the district of Murshidabad in the west the river Bhagirathi except for a small

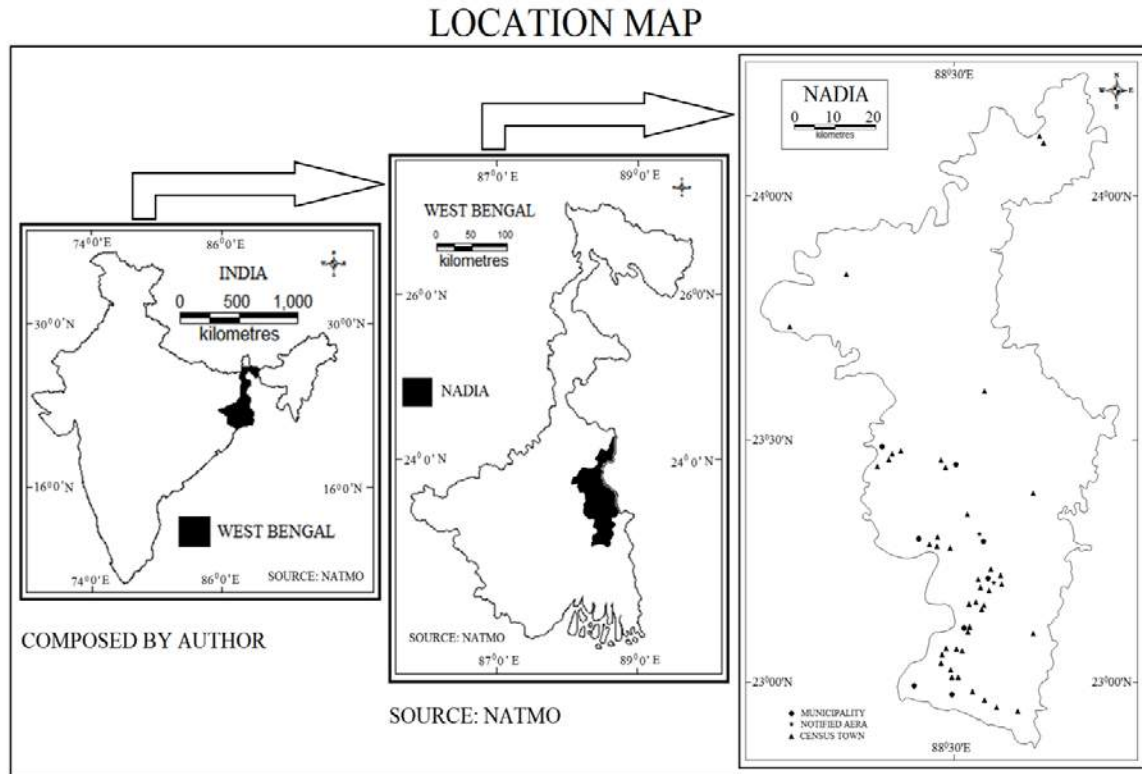


Fig. 1. Showing the Administrative unit of the study area.

strip of land around Nabadwip town forms the boundary of the district with Burdwan and Hooghly. In the south and south-east the district is bounded by North 24 Parganas. Krishnanagar is the district headquarters of Nadia district. Nadia is one of the populous districts in West Bengal (District statistical hand book, Nadia,1981).

Objective

Basic objectives of the present paper are as follows;

1. To know about urban population of the study area.
2. Trends and Pattern of Urbanization in Nadia during 1981 – 2011.
3. Level of Urbanization in the District of Nadia during 1981 – 2011

Data source and methodology

To analyze the shift of urban scenario in Nadia districts in last thirty years, the data have been collected from various sources. Secondary data have been collected from Census of India, Bureau of Applied Statistics and Economics, Govt. of West Bengal; different Local Urban Bodies, Ministry of Urban affairs, Govt. of West Bengal etc. Primary data have been collected through field investigation of different urban centres of Nadia districts.

To investigate the shift of urban scenario in Nadia, both qualitative and quantitative methods have been adopted. However, in quantitative analysis both simple and standard statistical techniques have been used for analyzing the study.

Table 1. Relative Growth of Urban and Rural Population in Nadia, 1981-2011 (Source: Computed by the Researcher from Census Reports, 1971 – 2011).

Census Years	Population		Percentage of Population		Percentage of Increase		Number of Urban Centres	Percentage of Increase of Urban Centres
	Urban	Rural	Urban	Rural	Urban	Rural		
1971	418059	1812211	18.70	81.30	---	---	13	---
1981	639869	2324384	21.59	78.41	53.06	28.26	23	76.92
1991	871818	2980279	22.63	77.37	36.25	28.22	31	34.78
2001	979519	3625308	21.27	77.73	12.35	21.64	34	9.68
2011	1438873	3728727	27.84	72.16	46.89	2.85	70	105.88

Findings and analysis

Historically, the Nadia districts was an urban centre based settlement. But after the independence of this country, District Nadia of West Bengal, India has been experiencing a very high rate of urbanization. But the real urbanization in terms of volume of urban population and number of urban centres has been increased in last thirty years. Urban population in the district has increased from 639869 in 1981 to 1438873 in 2011 implying a nearly 150 percent increase during the last 30 years (i.e., 1981 – 2011). During the same period, number of urban centres has been increased from 23 to 67 indicating nearly 2.9 times multiplication and of urban population has been increased 21.59 percentages in 1981 to 27.84 percentage in 2011. The speed of urbanization in this district is high during the last three decades (i.e., 1981 – 2011).

Trends and pattern of urbanization in Nadia during 1981-2011

It is clearly seen, that urban population in Nadia during last 30 years (i.e., 1981 –

2011) has increased in 799004 and therefore, the progress of urbanization can be analyzed under the following heads:

Period of Slow and Steady Urbanization (1981 – 1991)

During 1981–1991, there was a net increase of 8 urban centres and total urban population increased by 231949, but the percentage of urban population increased 36.25% in compared to 53.06% in 1971-1981 which was significantly below from earlier decades. The percentage of rural population increased 28.22% in compared to 28.26% in 1971-1981 which was remaining almost same from earlier decades. So, the rural growth was increased in same way which was shown the last decade but the urban population increased not same speed which was shown in last decade (Table 1).

The pace of urbanization of that decade was decreased in compared to 1971- 1981 while the total number of urban centres increased at a number of 8. Such type of increased has been found in the classification of cities, Class – I and Class – V

and others class size variation was remain same. Though in this decade 8 new urban centres were rose but the increased of percentage of urban population was dropped. In this decade the rural-urban dichotomy is gradually rising given birth to rural-urban continuum. The non municipal town was increased in 137.5% in 1981 to 1991. In this decade natural increase of urban population was huge but the rural-urban migration, was not changed the trend of urbanization.

Period of decrease Urbanization (1991-2001)

During 1991 – 2001, there was a net increase of 3 urban centres and total urban population increased by 107701, but the percentage of urban population increased 12.35% in compared to 36.25% in 1981-1991 which was significantly below from earlier decades. The percentage of rural population increased 21.64% in compared to 28.22% in 1981-1991 which was significantly falling from earlier decades. So, the rural growth was huge decreased, which was shown the last decade but the urban population increased not huge pace which was shown in previous decades (Table 1).

The intensity of urbanization of that decade was decreased in compared to 1981- 1991 while the total number of urban centres increased at a number of 3. Such type of increased has been found in the classification of cities, Class – II Class – IV and Class – VI and others class size variation was remain almost same. Though in this decade 3 new urban centres were rose but the increased of percentage of urban population was significantly dropped. In this

decade the rural-urban dichotomy is also gradually rising given birth to rural-urban continuum. “The state of West Bengal is famous for its decentralized governance process even before the 73rd and 74th constitutional amendment bills passed in India in 1993 and 1994. Decentralized process is also practiced in the formation of ULBs in West Bengal” (Samanta, 2012). The district of Nadia has been urbanized through West Bengal Municipal Act 1993, Section 3. In this period Kalyani and Goyespur Notified Area has been transform into municipality and Taherpur and Magurkhali non municipal town was declared as statutory town in the form of Notified Area Authority. In this decade natural increase of urban population was not so vast and rural population was significantly dropped, but the rural-urban migration, was not changed the trend of urbanization.

Period of Rapid Urbanization (2001 –2011)

During 2001–2011, there was a net increase of 36 urban centres and total urban population increased by 459354, but the percentage of urban population increased 46.89% in compared to 12.35% in 1991-2001 which was significantly excessive from earlier decades. The percentage of rural population increased 2.85% in compared to 21.64% in 1991-2001 which was significantly increased from earlier decades. So the rural growth was huge decreased, which was shown the last decade and the urban population increased in huge pace, which was shown in previous decades (Table 1).

In Nadia district, the percentage of urban population was 21.59% in 1981 and bounce

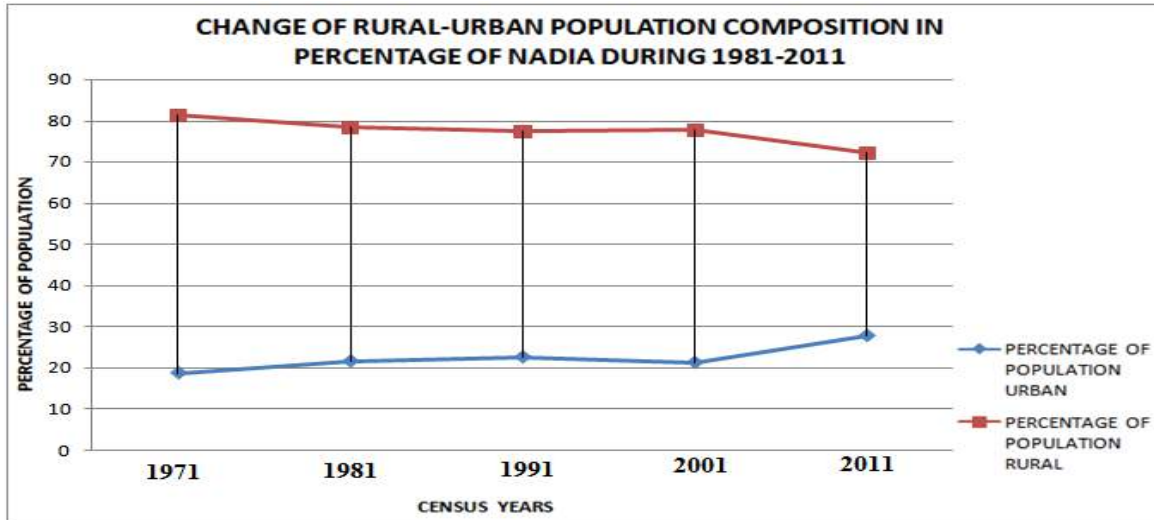


Fig 2. showing the change of urban and rural population in percentage of the Nadia in 1981-2011.

up into 27.84% in 2011. During this period composition of urban-rural Population was significantly changed. It is very interesting to note that during the span of these 30 years, urban population increased by 799004 while rural population by 1404343. But the percentage increase of urban population (124.87%) was more than double of that of the rural population (60.42%). This differential growth rate was mainly attributed by the migration from rural areas of Nadia and this rural-urban migration was specific in last decade.

Urban concentration was found mainly in the east bank of Hooghly River and its branches, like churni, Jalangi due to most favourable geo-economic consideration. Part of urban area of Nadia also including KMDA and this area was highly urbanized due to expanding with road and rail network gathered momentum to attract population and began to develop as most urbanized areas within the district.

The pace of urbanization of last decade was increased in compared to previous decades while the total number of urban centres increased at a number of 36. Such type of increased has been found in the classification of cities, Class – I, Class – III, Class – IV and Class – V and others class size variation was remain same. Though in this decade 36 new urban centres were rose and the increased of percentage of urban population was significantly charged. In this decade the rural-urban dichotomy is specifically rising given birth to rural-urban continuum. The non municipal town was increased in 266.67% in 1991 to 2001. In this decade natural increase of urban population and the rural-urban migration, was changed the trend of urbanization of Nadia.

Comparative studies of Trends of Urbanization in India, west Bengal and Nadia during 1901 – 2011

India has a long history of urbanization. “About the 11 percent of the total

population of the country lived in urban areas at the 1900" (Khullar, 2006). But the real urbanization has been generated in the last century. In this particular point of analysis three different regional scales has been measured. In the case of India, the percentage of urban population to total population has also recorded a gradual increase from one decade to another with the only exception of a decline from 10.84 % percent in 1901 to 10.29 percent in 1911. "This decline is largely attributed to the devastating plague epidemic of 1911 which spread mainly in urban areas and brought an exodus of urban population to rural areas" (Khullar, 2006).

But this devastating plague epidemic of 1911 has not been affected the increasing trend of urbanization in west Bengal. But in the case of Nadia, the trend of urbanization has been fluctuating in different decades; negative in 1921 due to First World War and 2001 due to devastating flood in 2000, huge positive in 1951 due to Bengal partition of the country resulted in a massive influx of refugees into Nadia from Bangladesh.

Level of urbanization in the district of Nadia during 1981-2011

In the early part of this analysis an approach has been made to identify the nature, and tempo of urbanization in Nadia District during 4 census (1981–2011) dates. This part of the study throws a light on the level of urbanization in spatio-temporal variation in the district of Nadia in 2011 considering the Sub-divisions as the areal unit of study. The main objective of this

study is to identify the level of urbanization in the Sub-divisions of the district in last decade. Different parameters are used to measure the level of urbanization in the study area of which commonest is the percentage of urban population to total population of an area.

The following decisive factors are taken into consideration for measure the levels of urbanization namely:

- a)** Percentage of Urban Population to Total Urban Population of the Sub-division,
- b)** Percentage of Urban Area to Total Urban Area of the Sub-division
- c)** Urban population Density.

Percentage of Urban Population to Total Urban Population of the Sub-division

In 2011, 2 Sub-divisions having huge concentration of urban population sharing about 67.20 percent by Ranaghat and Kalyani Sub-division and remaining 32.80 percent placed in 12 others two sub-divisions. Maximum percentage of urban population has situated in Ranaghat Sub-division (41.50), just followed by Krishnagar sub-division (31.22), Kalyani sub-division (25.70) and remaining in Tehatta sub-division. In 1981-2011, administrative units of Nadia district has delimited with new sub-division and new urban area emerged (Kalyani and Goyespur Municipality in 1994) and the concept of Non-municipal town replaced by census town. In spite of that, the picture remains almost same in every previous census dates.

Several important changes had taken place during 1981–2011 in respect of urban

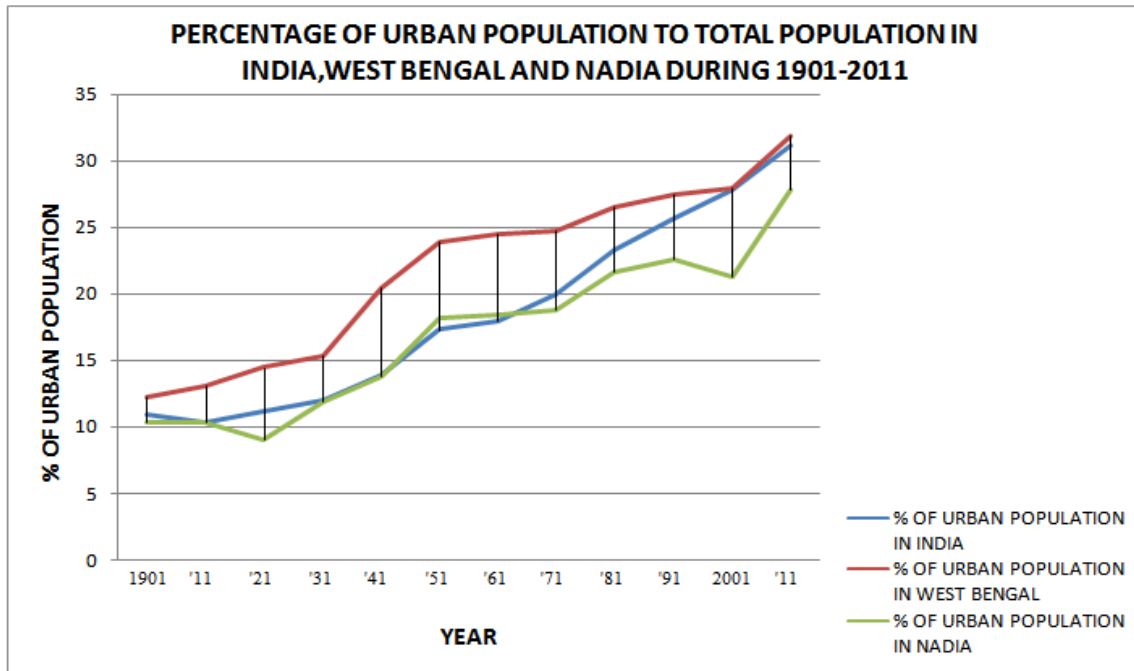


Fig. 3. showing the trend of urbanization at different regional level (Source: Census of India 2011).

Table 2. Degree of urbanization of Nadia during 1981-2011 (Source: Computed by the Researcher from Census Reports, 1981- 2011).

NAME OF SUB-DIVISION	DEGREE OF URBANIZATION			
	1981	1991	2001	2011
Tehatta	14.20	14.28	1.28	2.84
Krishnagar			17.17	21.95
Ranaghat	31.34	33.65	32.08	41.68
Kalyani		32.20	31.10	41.47
Nadia District	21.59	22.63	21.27	27.84

population share in spatial level which has been listed below:

1. Due to part of Kolkata Urban Agglomeration; Kalyani Sub-division having a share of near about 25 percent of urban population in last census date.
2. Kalyani and Goyespur Notified Area has been transform into municipality and Taherpur and Magurkhali non municipal town was declared as statutory town in the form of Notified Area Authority came in the

scene of urbanization first in 2001, after that the share of urban population is increasing very sharply.

3. Krishnagar Sub-division has marinating a steady pace of urban growth. As per census records Nabadwip (old settlement of this district) and Krishnagar is the Sadar (District Capital) of Nadia, it shown a steady pace.
4. The border sub-division, Tehatta having a marginal urban population share.

Percentage of Urban Area to Total Urban Area of the Sub-division

In 1981, Nadia District has 4.57% of urban area to total district area and in the 2011, it has been increased 6.84 percent, Kalyani sub-division has almost 36.35 percent of its share whereas, Ranaghat, Krishnagar and Tehatta has a share of rest of the 63.65 percent of urban area in 2011. Having 36.35 percent of urban area of the district in Kalyani sub-division, it contains 25.70 percent of urban population share and rest of the 74.30 percent of urban population concentrated in 63.65 percent district urban area. This picture remains more or less same in every back census dates.

Several features are coming out from this discussion which is listed below:

1. Kalyani sub-division shares only 40.21 percent of urban area though it has 23.15 percent of urban population concentration in 1981. But after thirty years, the percentage share of urban area to total urban area of this sub-division of the district was constantly declining due to spreading of urban growth in different C.D. Blocks of the district during three census dates.
2. Ranaghat sub-division having shared of more than 21.5 percent of urban area though it has 41.50 percent of urban population concentration in 2011.

Urban population Density

Urban population density calculates the volume of urban population / sq. unit of urban area and is a measure of urban concentration in spatial variation. In 1981, urban population density of Nadia, it has been found that Santipur and Birnagar Municipality; Kalyani and, Goyespur Notified Area; Char Brahmanagar,

Maheshganj and Kancharapara Out growth, Jagadanandapur, Bagula, Taherpur and Madanpur Non municipality town were well below that district average (3566 sq/km). On the other hand Krishnanagar, Nabadwip, Ranaghat and Chakdaha municipality; Char Majdia, Satigachha, Ranaghat and Nasra Notified area; Gadigachha, Phulia, Aistala and Haringhata farm Non municipality town were well above from district picture. This picture has been change in 2011. After the thirty years, administrative unit has delimited with new sub-division and new urban area emerged and analysis has been done in sub-division level taking as an aerial unit. In 2011, average urban population density of Nadia was 5356 sq/km and urban area of Krishnagar, Nabadwip, Santipur, Ranaghat, Chakdaha, Cooper's camp , Char Majdia, Phulia, Satigachha, Nasra, Chaduria and Digha are well above from district average, and the similar density or well below from the district average has been found remaining urban area of the districts.

The main findings from this analysis are:

1. The urban area of Kalyani sub-division has been increased on very rapidly but the urban population growth not so first. But the volumes of urban population of Chakdah block 25.70% of the district.
2. The huge number of census town has been emerged in the last decade.
3. The maximum urbanized block is Nabadwip, which is one of the old settlements of Nadia.

Class-Size variation of Nadia District during 1981-2011

The class-size variation is a specific temporal way to analyzing factor of urbanization. The decadal change of

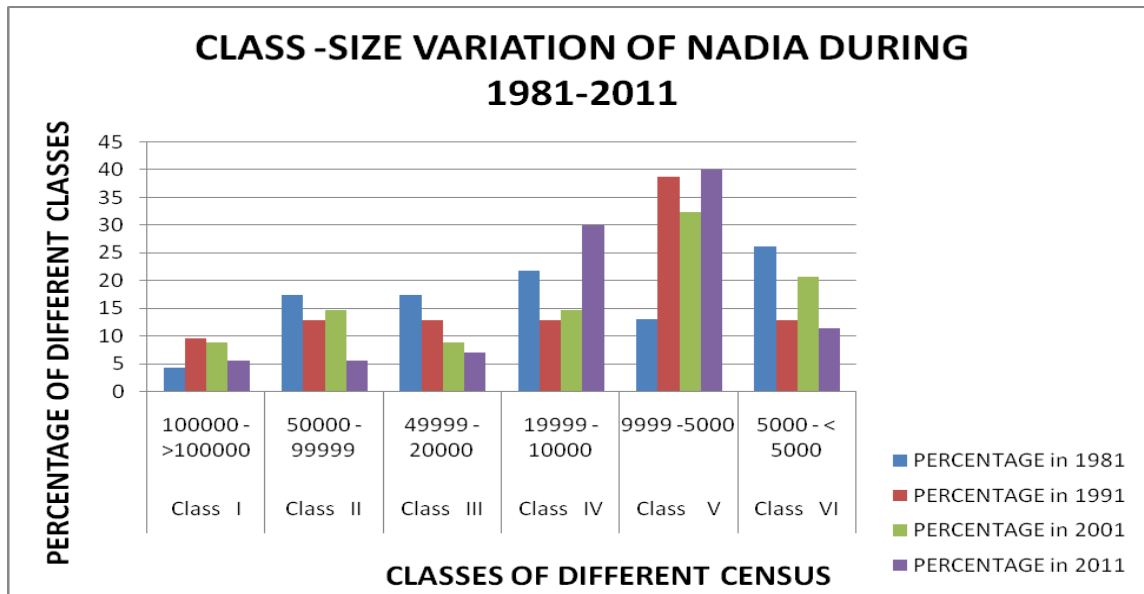


Fig. 4. Class- size variation of Nadia district during 1981-2011.

Class	Criteria	Class –Size Variation of Nadia During 1981-2011							
		1981		1991		2001		2011	
		*NO.	%	NO.	%	NO.	%	NO.	%
Class I	100000 ->100000	1	4.36	3	9.68	3	8.82	4	5.71
Class II	50000 - 99999	4	17.39	4	12.90	5	14.70	4	5.71
Class III	49999 - 20000	4	17.39	4	12.90	3	8.82	5	7.14
Class IV	19999 -10000	5	21.74	4	12.90	5	14.70	21	30
Class V	9999 -5000	3	13.04	12	38.72	11	32.35	28	40
Class VI	5000 - <5000	6	26.08	4	12.90	7	20.61	8	11.42
TOTAL		23	100	31	100	34	100	70	100

* NO.= Number

Source: Computed by the Researcher from Census Reports, 1981 – 2011.

population of urban areas is the concern factor of these studies. In here, the data on urban places and their population are presented in six-fold classification given below (based on census report of 1971). The above table shows that the largest growth of urban centres has taken place in case of Class-IV and Class-V cities. The largest populated cities have been emerged in traditional rate. The dynamic change of lower Order cities has been emerged in new

upper order city in every decade. The Class-I and Class-II categories of cities having a large number of population but the number of cities is very few. The number of urban centre has been increased in every decades and that is why the percentage of each class has been changed.

Spatio – Temporal Pattern of Urbanization in the District of Nadia

The urbanization has been measured by the concentration of urban people in the

Table 4. Level of Urbanization by locational quotient method (Source: Computed by the Researcher from Census Reports, 1981 – 2011).

Census Year	Composite Value for Level of Urbanization by locational quotient method			
	VERY HIGH	HIGH	MODARATE	LOW
1981	Nabadwip Krishnagar Santipur Haringhata	Ranaghat Hanskhali Nakashipara	Chakdah	Karimpur Tehatta Krishnaganj Kaliganj Chapra
1991	Nakashipara Krishnagar - I Krishnagar - II Nabadwip Santipur Ranaghat - II Hanskhali Haringhata	Ranaghat – I Chakdah	-----	Karimpur - I Karimpur - II Tehatta - I Tehatta - II Krishnaganj Kaliganj Chapra
2001	Krishnagar - I Nabadwip Santipur Ranaghat - II Karimpur - I Hanskhali	Nakashipara Ranaghat – I Chakdah	-----	Krishnagar - II Karimpur - II Tehatta - I Tehatta - II Krishnaganj Kaliganj Chapra Hanskhali Haringhata
2011	Krishnagar - I Nakashipara Nabadwip Santipur Ranaghat - II Haringhata	Karimpur - I Chapra Hanskhali Ranaghat - I Chakdah	Kaliganj	Krishnagar - II Karimpur - II Tehatta - I Tehatta - II Krishnaganj

urban area in the way of locational quotient methods and discussed above showing spatio – temporal patterns in the district of Nadia during 1981 – 2011. In the analysis of Spatio – Temporal Pattern of Urbanization the locational quotient of different decade has been used.

1. Low level of urbanization has been found throughout the all census dates in the Karimpur I (Tehatta Sub-division), Chapra (Krishnanagar Sub-division), which are mainly located within the border and maintain a low concentration of urbanization and no urbanization has been found in the Karimpur II (Tehatta Sub-division), Tehatta – I (Tehatta Sub-division)

and II and Kaliganj C.D. block (Krishnanagar Sub-division) due to remoteness and located within the border area.

2. Maximum level of urbanization has been found throughout the all census dates in the Krishnagar–I and Nabadwip (Krishnanagar Sub-division), Santipur, Ranaghat-II (Ranaghat Sub-division), and unstable high concentration of urbanization has been found Nakashipara (Krishnanagar Sub-division), Hanskhali (Ranaghat Sub-division), Haringhata (Kalyani Sub-division) which are mainly located beside the Hooghly river and eastern Bengal railway.

3. From 1981–2011, Ranaghat Sub-division, Kalyani Sub-division has been an emerging

urban area, which was urbanized in very short period with rapid intensity. Now Kalyani Sub-division has been carried 25percent of urban population of Nadia and specially part of urban area of Chakdah block is included with KMDA.

Conclusion

A spatio-temporal analysis of the levels of urbanization with respect to above mentioned different parameters in the Sub-division (for 1981 and 2011) of Nadia reveals that there are wide disparities in the level of urbanization experienced in the different parts of district. High levels of urbanization are seen in different cities likes; Krishnagar, Nabadwip, Santipur, Ranaghat, and unstable high concentration of urbanization has been found Nakashipara , Hanskhali , Haringhata which are mainly located beside the eastern Bengal railway in 2011. A study of locational quotient method for levels of urbanization shows that the value of C.D. Blocks (for 1981 and 2011) of Nadia district indicating a significant breakpoint between river side rails based area and other area of the district. After 2001, a locational shift of population has been observed and this transformation is very significantly in Kalyani sub-division to Ranaghat Subdivision. Tehatta Subdivision having shared very low percentage of urban area and a marginal urban population shared. Kalyani sub-division shares only 40.21percent of urban area though it has 23.15 percent of urban population concentration in 1981. But after thirty years, the scenario of urbanization of this Sub-division has changed. The planed city Kalyani and Goyespur, the traditionally

urbanized city Chakdaha and new urban area of Haringhata Municipality (2014) and some census towns, Outgrowths has spreading all over the Kalyani Sub-division during 3 census dates. Now having 36.35 percent of urban area of the district in Kalyani sub-division, it contains 25.70 percent of urban population share and this sub-division will be emerged as a fully urbanized area due to part of Kolkata Urban Agglomeration in near future.

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