

HISTORY OF SUCCESSIVE GROWTH AND MORPHOLOGICAL FEATURES OF PATNA

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ABSTRACT

Urban population of the developing nations of the world is ever on increase. Its growth rate is comparatively greater than those of the developed world. Mobility of the people from rural areas to the urban areas is one of the prime factor for the rapid growth of population where Push-Pull theory has been active. Migration in urban areas affects the distribution and development of resources. Germani (1964) considers "Migration as the process expressing those basic changes which are transforming the urban centres.

Keywords: *Successive Growth, Morphological Features, Push-Pull theory, Growth Rate.*

Introduction

As urban centres grow, they continue to attract population although urban communities also grow by natural increase i.e. excess of birth over deaths." Attempt has been made to investigate the geographical consequences of rural-urban migration in Patna that had influenced the growth and morphological changes in Patna. Modern technology, mass communication, industrialization and urban growth are undoubtedly the most important instrument of change in the society.

Selection of the Study Area

Patna is an ancient town having religious, political, economic, educational and cultural value. This town is located on the right bank of river Ganga south of Hajipur. Mahatama Gandhi Setu gives direct access to people of North Bihar in Patna. Construction of Mahatama Gandhi Setu in 1982 leads to rapid growth of Patna and has attracted the author to study the migrating population of the town and its resultant rapid growth and morphology. This study needs intensive fieldwork, as the analysis of data depends upon the primary data. Thus, it becomes easier for the researcher, a native of the town to collect primary data .Due to this factor Patna became the study area for the author.

Research Methodology

Patna urban agglomeration is divided into 57 municipal wards which have been further grouped under 6 zones namely; Western Patna, South west Patna, North central Patna, South central Patna, North eastern Patna and South eastern Patna. For the generation of data of the present work 6 wards have been randomly selected from each zones. An interview of 100 households was conducted in each of the sampled ward making a total of 600 households. Natural increase of ward wise population between 1991-2011 was calculated on the basis of birth and death rates of the population of the town. Cartographic method was applied to illustrate the available data. It is made by using different statistical and cartographic techniques depending upon the nature of data.

Aims and Objectives

The objective of this study, therefore, is to observe a wide range of behaviour in order to abstract and derive the operation of this system so as to know about the successive growth and morphology of the city of Patna. This is done in order to know about the processes that bring changes in the external shape and internal structure of Patna.

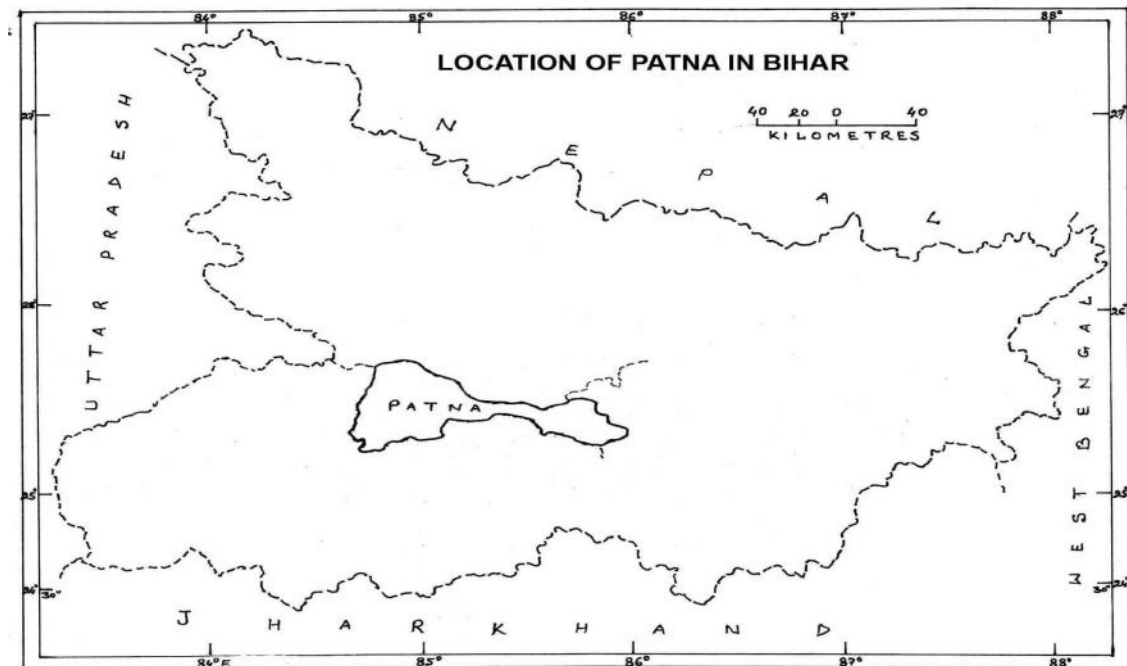
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History of Successive Growth of Patna

Right from the time of its origin the city of Patna has been a source of different service not only for its citizens but also for the people of its neighbouring area. That is why it has gained multifunctional character. Certainly, the functional specialization has been changing from time to time in trade & commerce, administration, education, health etc. At present it is quite difficult to say its specialization except the administration but the importance of health services, educational functions cannot be much neglected. Its haphazard, spontaneous and unplanned growth in greater part through a long period has resulted in the overlapping and intermixing of various land use.

Although, the unplanned growth of the city has caused the development of mixed land use in most parts, except in the newly planned areas. However, dominance of various functions in various parts cannot be rooted out. Residential uses have spread throughout the length and breadth of the city having three areas of largest concentration. The first of its kind is the Kankarbagh Colony located south of the railway line is purely residential in character. The Second largest concentration lies in the middle of the city. This is mixed with commercial function along Ashok Rajpath where the commercial establishments occupy the ground floor. Business-cum-residential houses are found along the approach roads connecting Ashok Rajpath and along the lower roads. Except roadside houses, all other buildings are dominated by residential function. The third concentration of buildings lies in the eastern portion of Patna near Paschim Darwaja, which is also mixed with commercial use. Muradpur area is known for commercial activities rather than of residential function. In Muradpur locality the most famous Patna Market is situated. This market was founded in 1947 to offer a modern concept of shopping and became a rendezvous for town's elites. The presence of residential houses around the City Chowk, Mahendru, Muradpur etc. have resulted in overcrowding of the locality. The residential areas of these localities lack civic amenities, sanitation and wide streets. In these areas development of many pockets of slum are the direct result of uncontrolled expansion and unplanned growth of the city.

The city of Patna is located in the heart of the Ganga plain in Bihar. It is bounded by the river Ganga in the north, Flood plain of the river Punpun in the South, Flood plain of the Son in the west and the confluence of the river Punpun with Ganga near Fatuha in the east. This city is located between the latitudes $25^{\circ}35' N$ to $25^{\circ} 38' N$ and longitudes $85^{\circ}5' E$ to $85^{\circ}16' E$ having an area of 109.218 with a population of 1961532 lakh people (2001 census) residing in its fold. It has been divided into 47 municipal wards and 10 other wards. It is situated on the levee of the river Ganga having a linear shape. It stretches east- west about 12 miles long and has a very small width of one mile to three miles only.



The evolution of the city reveals interesting historic account. The origin of the township dates back to 5th century. B.C when there was a village on the present site. One of the legends revealing its origin points out that it was named after the princess Palate of Prince Putraka mentioned in Katha Sarit Sagar ' and in Heuntsang's Travel. In early times, the city was also known as Kusumpura or Pushapapura (The City of Flowers). According to another legend, it was originally known as Patali from which later on it became Srinagar. Pataliputra appears to have been derived from Patali, a trumpet flower (Bignoni Suaveolens). Megasthenes called it Palimbrotha and later on, it came to be known as Azimabad after the Governor of Bihar, Prince Azim-us-Shan who was the grandson of Aurangzeb during 1618-1707 in the Mughal period.

The analysis of the expansion of the settlement reveals the fact that the city has expanded in different phases. In the 5th century B.C. the city had only a village on the present site of Paschim Darwaza called Pataligram. Magadha King Ajatshatru built a fortress at this village to protect it from the possible attack of Licchavis of Vaishali. Later on a market developed inside the fortress. After sometime the city expanded rapidly along the bank of the river Ganga. According to that report Pataliputra were a mile long, 1.7-mile broad city surrounded by 600 feet broad and 30 cubits deep moat. The antiquarian remains and excavation proved that the present day Kumhrar was within the boundary of the town in the period of king Ashoka (273-231 B.C). During the rule of Samudra Gupta (326 A.D.), Patna was the capital city of Magadha Empire but it was turned to ruins by the invasion of the Huns as described by Huentasang.

The urban landscape of Patna again flourished in the period of Shershah and became the business centre for trade and commerce in Ganga Plain. He established his capital at Pataliputra in AD1541 and fortified it. The remnants of the fortress of Shershah are Paschim and Purab Darwaza marking, the two end point of that fortified city. The area had a large market outside the eastern gate at Marufganj, which is still functioning.

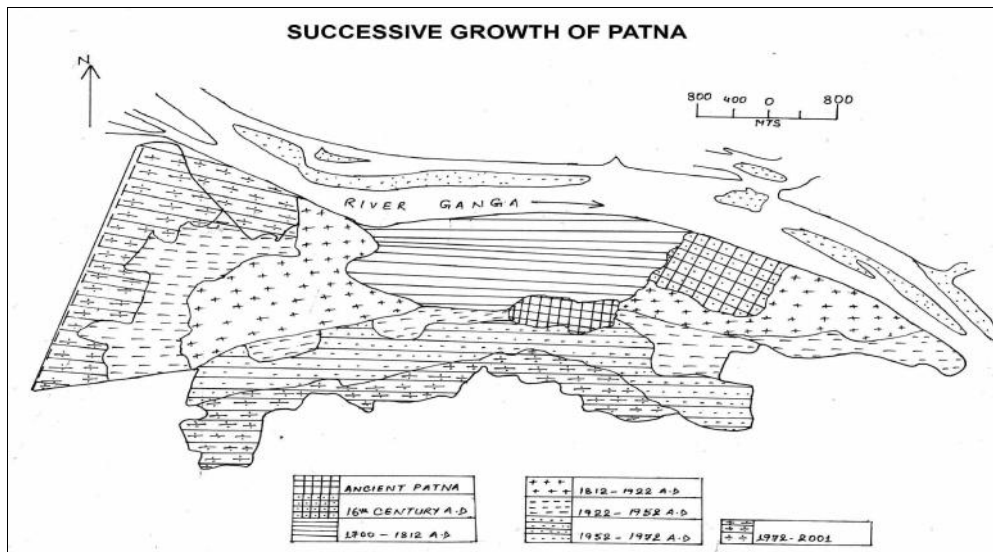
The next phase of the expansion of Patna could be observed during Mughal period. After Shershah, this city came under Mughal rule. In 1626 Parvez Shah, son of Jehangir commemorated his rule by building the mosque known as Pather Ki Masjid (Mosque of stone). Azim-us-Shan the grandson of Aurangzeb established his court at Patna in 1678 and the fort was reconstructed. He also named it as Azimabad after his name and during his reign the city expanded in the central portion.

The British occupancy also gave opportunity for further expansion of the city in the western portion. Before the British occupancy, the city had only developed along the bank of river Ganga as far as the present Gandhi Maidan or up to the present Gaya road in the west. Nevertheless, the British selected it as the capital of Bihar & Orissa in the year 1911-12. It resulted in the further expansion of govt. building, secretariat, high court etc.

Post independence period is also not less responsible in determining its rapid expansion of the city in different directions. After independence, the city changed its character to multifunctional nature. The city started specializing in administration, trade and commerce, education, health services and other professional services. A large number of rural-urban migrants were attracted and rapid increase in population took place. The settlement soon expanded outside the city limit. The new residential colonies came into being like Rajendra Nagar, Pataliputra Colony, Kankarbagh Colony etc. In the Year 1971, the Patna Municipal Corporation was established and it has changed the shape and brought new areas of Patna in the south under the new corporation boundaries.

The area between Kankarbagh Colony and Agam Kuan has now been included in it. Now the city starts expanding towards south into New Bye pass Road in the west upto Danapur Canal and in the east upto Fatuha. The construction of Mahatma Gandhi Setu has provided the opportunity to expand on the other side of river Ganga. Jadhua, Hajipur are experiencing the southward expansion of the city. Many new colonies and societies have been cropped up in these areas.

The city of Patna has a good locational advantage, as it is located in the heart of the Ganga plain in Bihar. It is bounded by the river Ganga in the north, Flood plain of the river Punpun in the South, Flood plain of the Son in the west and the confluence of the river Punpun with Ganga near Fatuha in the east. This city is located between the latitudes 25^o35' N to 25^o 38' N and longitudes 85^o5' E to 85^o16' E having an area of 109.218 sq. kms with a population of 1961532 lakh people (2001 census) residing in its fold. It has been divided into 47 municipal wards and 10 other wards. It is situated on the levee of the river Ganga having a linear shape. It stretches east- west about 12 miles long and has a very small width of one mile to three miles only. Thus it has elongated shape having east-west orientation.



Morphological Features of Patna

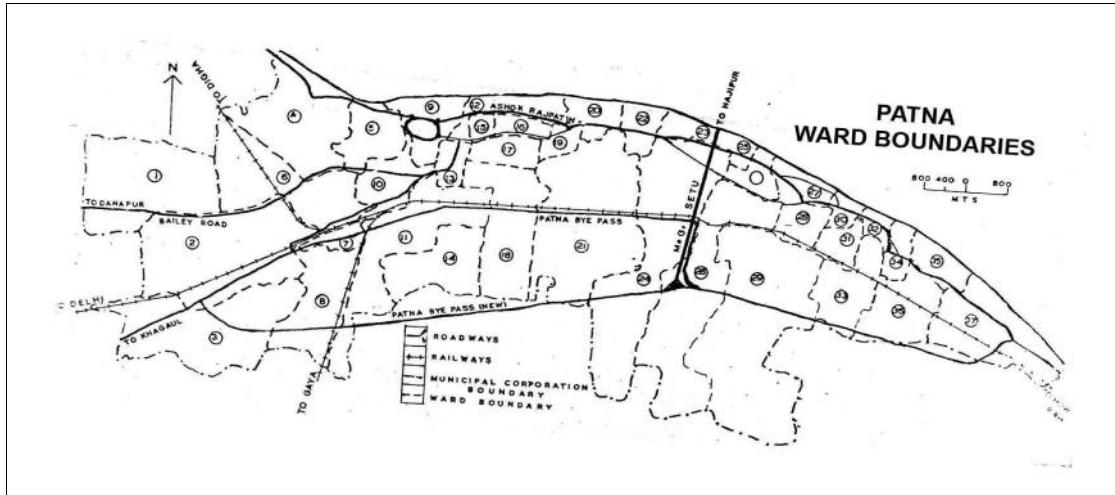
Although the description of successive growth of Patna has revealed the changing external shape and internal structure but its detailed morphological study is necessary as different parts of Patna have come into being in different phases and consists of distinct morphological features. No doubt the morphological analysis includes many aspects like the study of changing external shape, size and functional uses, built up areas, open spaces like playgrounds, stadiums, parks etc. It also deals with those aspects, which have a bearing on over-crowding and degeneration in certain areas that may be reconstructed for a comfortable and better living. The site and situation of Patna has greatly influenced its external form. Patna has an ideal and commanding site as it is located near the confluence of three riverside i.e., The Ganga, the Gandak and the Son along with the elongated levee on the southern bank of Ganga and the abandoned courses of Son. Its linear shape is due to the elongated levee of Ganga. It also explains why Patna is the largest city in India after Kolkata conurbation and narrowest among the large cities of India.

River Ganga restricts Patna's northward expansion while low-lying areas in the south restricts its further southward expansion. That is why the city has east-west expansion. The existence of Ashok Rajpath from the very beginning parallel to Ganga has also influenced its elongated growth. Right from the very beginning, settlement has developed along both sides of this road in a ribbon form. The construction of the railway line also helped the town in its expansion towards south. This railway line is a barrier from the floodwater of Punpun but it has now been shifted to the New Bye pass road and the Punpun embankments.

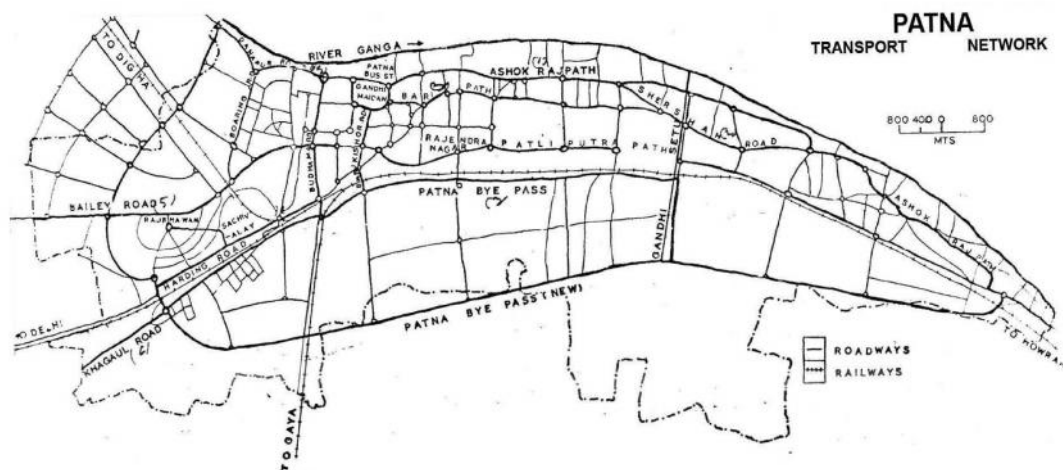
When we compare Patna with other urban agglomerations of India, the internal structure of this historic city presents distinct features in older as well as newly developed areas. Congestions, poor drainage and sanitation, narrow and zigzag lanes and by lanes, concentration of whole sale trade centres old buildings, little open space and absence of green patches except a few ones are the common features of old Patna. The newly developed areas comprised of administrative buildings, new residential colonies, railway colonies, military cantonment of Danapur and all new urban structures that have cropped up after, independence. The new sectors consist of broad metal led roads, parks and open spaces, educational institutions, shopping centres and covered drainage system etc. All the above-mentioned features characterize Western Patna. Being the oldest settled area East Patna consists of specialties of ancient cities or towns of India. The Central Patna has mixed features.

East Patna represents haphazard growth of mohallas & tolas with roads, lanes, houses without proper planning, narrow and zigzag lanes, by lanes and roads with meandering and curves cause traffic jam and accidents. There are two wholesale trading centres (mandi) of Bihar. In this area ground floor of multi-storeyed buildings is having all business establishments. Here lanes are narrow and crooked. Another noted business centre of East Patna is City Chowk area. Like other business areas of East Patna, here also roads are narrow and zigzag having very clumsy and compact growth of settlement. There are no intra-house space, ventilation, front yard etc. in the houses.

Here, houses are constructed with different building materials of different size without any proper plan and diversified vertical dimension. These houses are multi-functional in character and present an ugly look. Most of the houses are business cum residential area and provides space to small-scale industries, storage of goods etc. Lying between the old settled area of the east and newly developed area of the west is located Central Patna. It provides a different urban landscape. Majority of the houses of this area were built during the 19th century and therefore, are neither too new nor too old. Some have modern design and relatively more intra-house space, backyard space, courtyard, good ventilations and drainage.



Roads and lanes are slightly better than the old settled areas. Main roads are almost straight except a few while lanes are moderately straight and wider Central Business District (CBD) of the city lies at Bankipore, which is one of the most unplanned areas of Patna. Several educational institutions are located in this portion have planned houses, playground and open spaces with roads cutting each other at right angle. Certainly these educational institutions lack space for their expansion as they are bounded by the river Ganga in the north and congested market cum residential areas in the south of Ashok Rajpath. East and westward expansion is also not possible because of the existence of residential areas. South of Ashok Rajpath, several old mohallas like Mahendru, Lalbagh, Langartoli, Machuatoli, Kazipur, Nayatola, Laljitola, Pirmohani, Dariyapur, Bakerganj, Subzibagh, and Kadamkuan etc. have developed as dense residential cum commercial areas, especially the roadside houses. Roads and streets are comparatively better than those of East Patna are.



The new capital area of West Patna presents a district urban landscape. It has several key governments' installations like offices; officer and government's quarters, Rajbhawan, newly developed residential colonies etc. The planned development of this area consists of Rajbhawan, Secretariat, Assembly and Council Houses, High Court, Minister's Quarters, Officer's bungalows and Flats, Shrikrishnapuri, Shashtrinagar, Gardanibagh, A.G.Colony, Ashiana Nagar, Patel Nagar, Pataliputra Colony, Rajeev Nagar, S.K.Puri, Shivpuri, East and West Boring Road, Raja Bazaar, Samanpura houses are well planned. Government buildings are spacious, gigantic and good-looking. New Colonies have specified design, shape and size. Building materials provide better outlook than the houses of East and Central Patna. These houses have sufficient open space, ventilations, and sewage and drainage facilities. Many parks, zoological garden and playgrounds are also found. Roads and lanes are planned. Main roads are quite wider and lined with trees on both sides. Bailey road is an ideal example other roads and streets are metalled, right angled and wide. They provide house-to-house approach.

Western Patna is known for educational institutions like Patna women's college, Women's College, St. Michael's H/S, Loyola H/S, Notre dam G/H/S/, St. Xavier's H/S etc. It has the Patna Zoological Garden, many playgrounds, parks, and developed markets such as Raja Bazar on both sides of Bailey Road, Boring Road, Boring Canal Road, Pataliputra, Gola Road, Saguna More etc. Such features are absent in rest of Patna.

Summary and Conclusion

Patna, being one of the ancient capital cities of India, has been the focal point of trade, commerce, administration, education, professional services, culture etc. since time immemorial. Certainly, the intensity of pull factors geared up after independence of India on 15th August 1947. As revealed by the analysis of population growth data from 1951, the population growth rate has increased about two and a half times in 1981; five and a half times in 2001 and 8 times in 2011.

The city of Patna has developed on the elongated levee of river Ganga which has provided a favourable base for the expansion of the city in the east-west direction. It also has the advantage of central location between the most fertile plain of North Bihar and South Bihar. Patna Junction lies on the main rail route connecting Kolkata in the east and Delhi in the west. Portion of North and South Bihar are connected by a network of railways and roadways. Due to rapid urbanization caused by rural-urban migration, multi-dimensional development had taken place in Patna. This has changed the urban land-use and morphology remarkably during the last 40 years. Vast agricultural land have been converted into residential areas and open spaces inside the old settlement have been change to multi-storey apartments. Most of the old houses along the main roadsides of Patna have been transformed into concrete houses and are being used as market, commercial and office spaces. Although all areas of Patna has experienced remarkable changes but only few areas have been developed for specialized function such as industrial, administrative and educational. Most of the areas of the city have gone to residential purpose and mixed land-uses. As regards to road patterns, Patna has not experienced remarkable changes. The famous Ashok Rajpath is always a scene of traffic congestion which is unable to bear the traffic load during office hour. In order to reduce the chronic problem of traffic congestion many flyovers have been constructed across Patna. Bye-pass and New Bye-pass, Ganga Driveway etc have been constructed. Parallel to Mahatama Gandhi Setu, many new bridges have been constructed and many are under construction. Many new colonies have been developed in Western and Central Patna accommodation millions of migrants. Patna is expanding westward and has touched Bihta in the west. Western Patna is now the destination of the migrants who settled down in the newly developed colonies and societies.

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