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A Study on Historical Transformation of the Urban Integration Core of Khulna City, Bangladesh

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ABSTRACT: Khulna is the third largest thriving city of Bangladesh and surrounded by picturesque countryside, winding rivers, and a host of development centers. Since partition of British India in 1947, the city has been growing up as an important complex of trade, commerce and industries. This paper aims to relate the historical transformation of the morphology of the concern city by analyzing the spatial expansion. History reveals that the city arose as a market town on the bank of river Bhairab. At the very beginning of the paper, the Integration core has been tried to identify by analyzing the Master Plan of 1961. After identifying the initial urban core, the Master plan of 1993 & 2009 has been analyzed respectively by using Space Syntax, tool that simulates the likely social effects of urban designs, which has been done with axial analysis. It has been observed that the main Integration Core was initiated by the side of the river bank area as the river transports were the main catalysts for the City. Then with the time it shifted to the Dak-Bangla more/node, and now it has been found that the main vibrant nodal point is the Shib-Bari node.

KEYWORDS: Urban Morphology, Integrated Core, Spatial Expansion, Space Syntax, Axial Analysis.

1 INTRODUCTION

Being the 3rd largest city in Bangladesh, Khulna is often referred to as Industrial City, which is considered as one of the important industrial and commercial areas of the country. The city originated as a market town and array of administration. After the independence, a 'Five-Year Road Plan' was proposed by the government, which had 5,000 miles as a target road. Eventually, 2,000 miles of road was added to the already existing 600 miles by 1951, where we can see emphasizes were given to the water system. The CBD (Central Business District) of Khulna city was found beside the bank of the river Bhairab since the first master plan worked out in 1961. Now it has been determined "Dak-Bangla more/node". But in accordance with the spatial growth with expanding roads, integration core has been linearly shifted. The shift has been obvious from water to road and community to government. Road-based urbanism is still prioritized over water-based urbanism in the Khulna Master Plan. With Calcutta, trade of various goods like sugarcane and tobacco, was developed based on river route during early days. Khulna was declared a municipality in 1884, in 1985 became a railway link, in 1961 district headquarters, and a city corporation in 1984. And during the 1960s industrialization took place.

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1.1 OBJECTIVES

- Identifying the integration core of Khulna City.
- Analyzing the change of the most Integration Route.

1.2 RESEARCH QUESTION

- According to land use what are the economic hubs of the city of Khulna?
- What are the integrated cores of the city?

1.3 EXPECTED OUTPUT

- According to land use what are the economic hubs of the city of Khulna?
- What are the integrated cores of the city?

2 METHODOLOGY

This study has been done with the secondary data and map based because there was no trustworthy resource for the primary data. So, the physical configuration has been emphasized. In terms of expansion of the city and urban rural linkage, the domain of the study of the most integrated route is very concentrated. The current study attempts to trace the pattern of integrated core in Khulna city with most economic hub, with the map of Master Plan (1961), Master Plan (1993) and Master Plan (2009) condition. There were some limitations which made impedance in efficient conducting the study in question:

- This research has been conducted on the secondary materials
- No field survey was taken place.

2.1 CONCEPTUAL FRAMEWORK

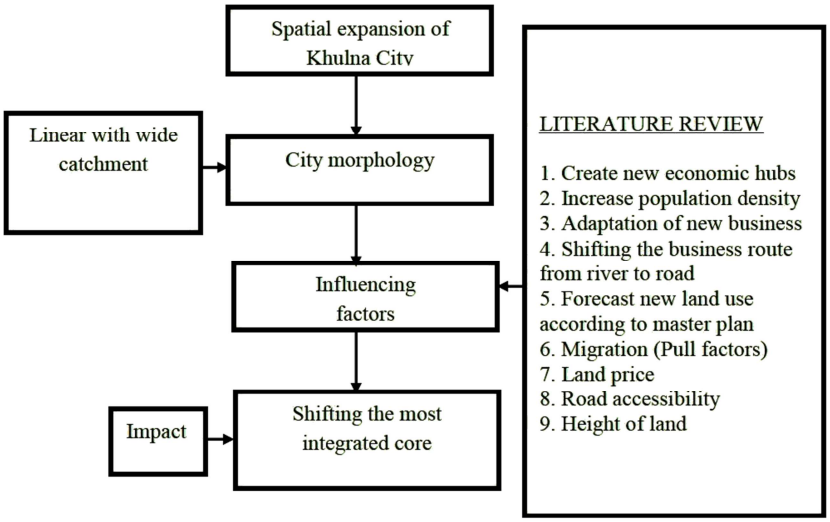

Fig. 1. The Conceptual Framework

Other factors which have great impact such as Migration, Social security, Community services facilities, Economic activities were excluded as the study dealt with only the spatial factors.

2.2 DATA COLLECTION

It is quite obvious that, in any research work, determining a methodology is very much crucial. In general words, a method is a particular procedure to accomplish or approach something and a methodology is a system of methods, a broad framework of systematically arranged various methods and techniques devised to conduct any research work or study. As there was no authentic or verified primary data available, in this particular research work only secondary data has been

collected and used. Like Strategic plan, Spatial growth of Khulna city (KDA), Master plan on land use zoning, Structure plan, and Khulna city corporation ward map, Road map 2009 from Khulna city corporation (KCC) and from literature review demographic, geographical, economical and historical data are collected.

2.3 METHODOLOGICAL FRAMEWORK OF THE STUDY

The detail methodological framework which has been followed to conduct the study is illustrated below where from the very beginning of the problem identification to final paper presentation can be clearly understood.

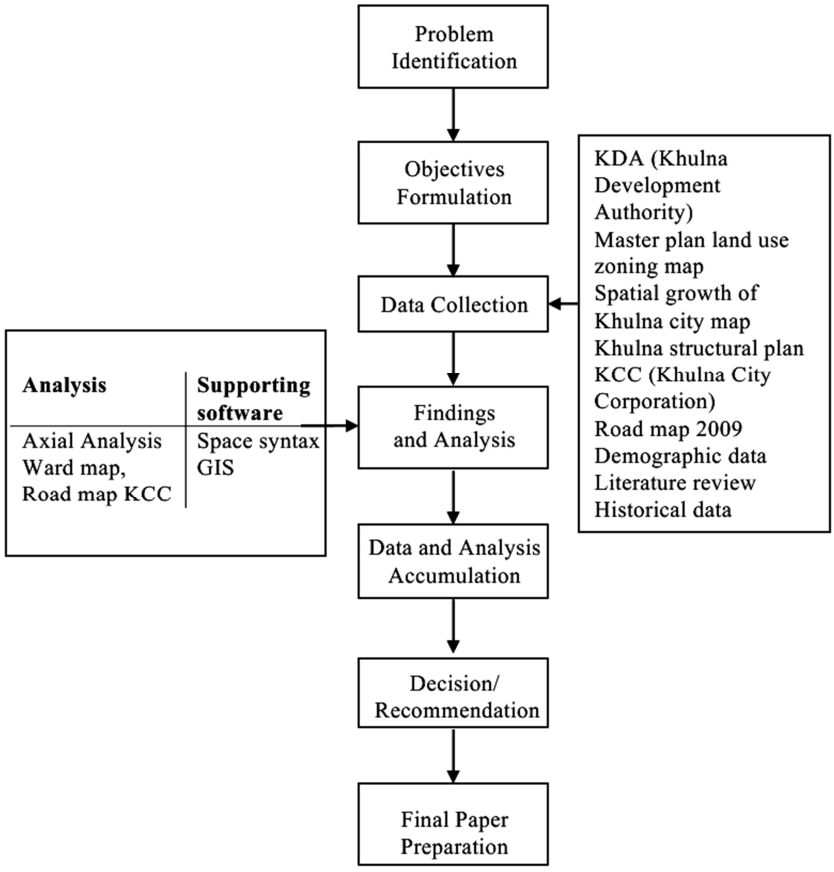

Fig. 2. The Methodological Framework of Study

3 FINDINGS AND ANALYSIS

3.1 CITY DIAGNOSIS

- It is located in the south-west region of Bangladesh with a number of growth centers.
- A good navigable river.
- Economical hub and tourism base of the area.
- Flood-free flat land for development.
- A regional capital with a substantial hinterland.
- Port facilities.
- An existing industrial base.
- Easy accessibility by road.

3.2 PLANNING ISSUES

- Geo-physical condition controls the physical shape of Khulna City. The planning options must respect such circumstances.

- The linkages of Khulna City with other towns and growth centers can make it a most important city in the region.
- Evolution of infrastructure with economic hub - Borobazar (From historical time), Shib-bari node/more (Current town), Zeropoint (Master plan projection), Khalishpur (Industrial area) and the emerging development of Noapara.
- More investment opportunities to be created.
- Institutional strengthening for growth management.
- All the economic hubs has established on the basis of the migrated people of the surrounding hinterland and bus stoppages.

3.3 LAND USE ZONING

According to the master plan, Khulna city was originated from the bank of the river Bhairab. Its development started from south-east portion at the pre-colonial period and "Boro-bzar" was the main CBD and steel now, but city center has been shifted at "Shib-bari node" and "Khalishpur" for industrialization to the north.

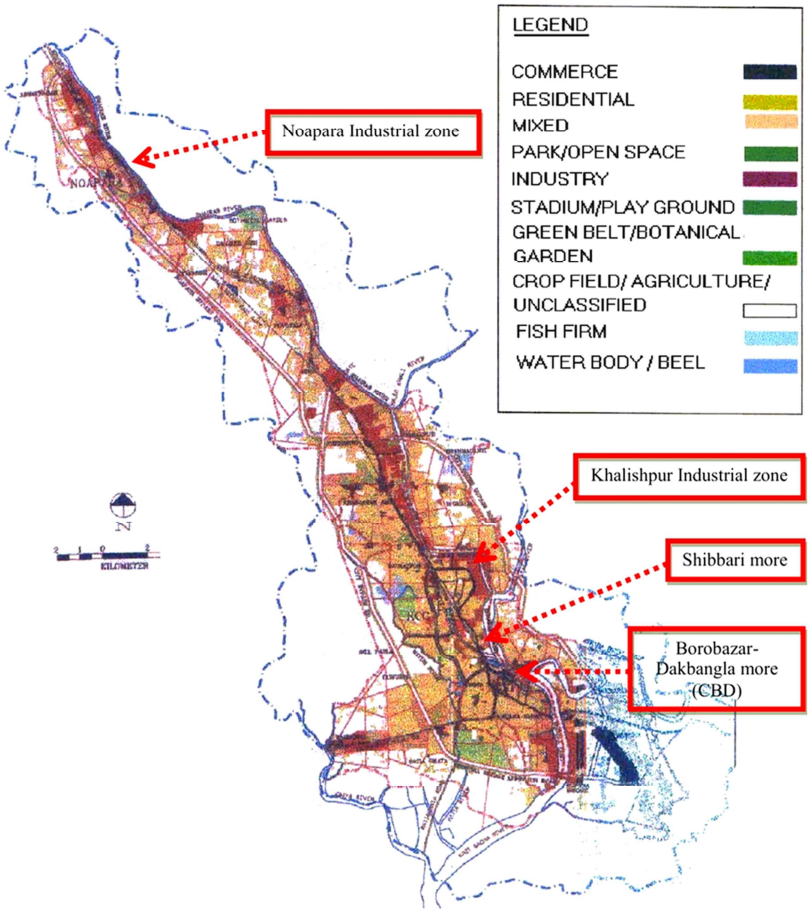

Fig. 3. Khulna Master Plan Land Use Zoning 2010-11 by KDA

- Borobazar-Dakbangla Node/More (CBD): River based trade & commerce shaped the city economy of Khulna. And that is why the city evolved around the river bank locally named "Boro Bazaar", the big market place. The frequent change of the city shaped Boro Bazaar as a mixed use zone rather merely commercial or business zone. For last decade, just to meet the demand of rapid urbanization process Boro Bazaar faced compact unplanned development along with the river side.
- Shib-bari Node/More: Shib-bari node has been developed as a new economic hub. That's why the vibrancy is mentionable here & the top for the present. All the commercial buildings, the Shopping Malls, a 4 star hotel named The City Inn & many other urban institutions have been developed here.
- Khalishpur Industrial Zone: Some prominent industries were established at Khalishpur industrial zone at the Pakistan period by East Pakistan Govt. sector. Then river route was used to transfer their raw materials and finished goods of

those industries. These were mainly jute, newsprint, hardboard mills and beside these industries a significant economic hub was established with markets, bazzar etc. After 1971, road network became prominent to these mills and others commercial sectors for time saving which reached an enormous scale by 2009. So, it is obvious that, the growth pattern of road is directly related with the city economy of Khulna. “Space syntax” shows the transformation of the integrated core has been shifted because of the economic growth of Khulna City.

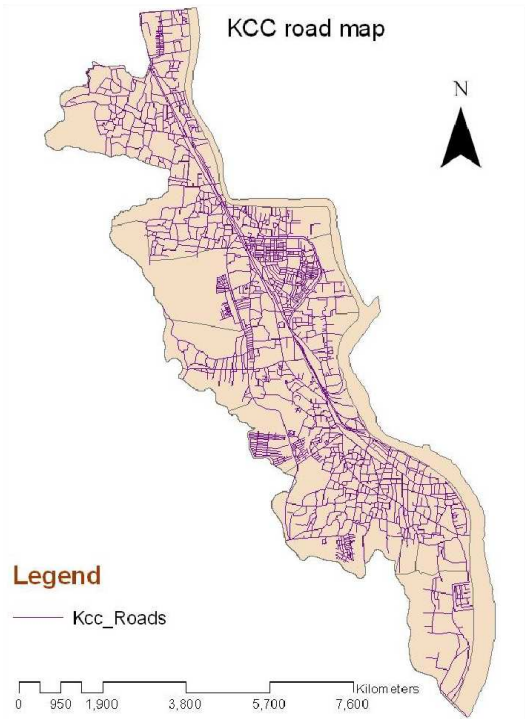

Fig. 4. Existing GIS Road Map of KCC Area, 2009

3.4 ANALYSE THE CHANGE OF THE MOST INTEGRATED ROUTE

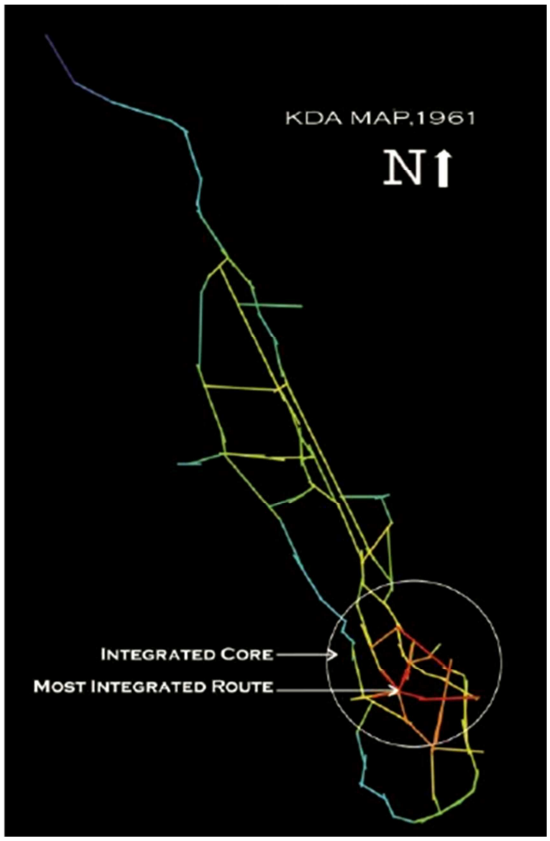

Fig. 5. Axial Analysis of Khulna City Master Plan, 1961

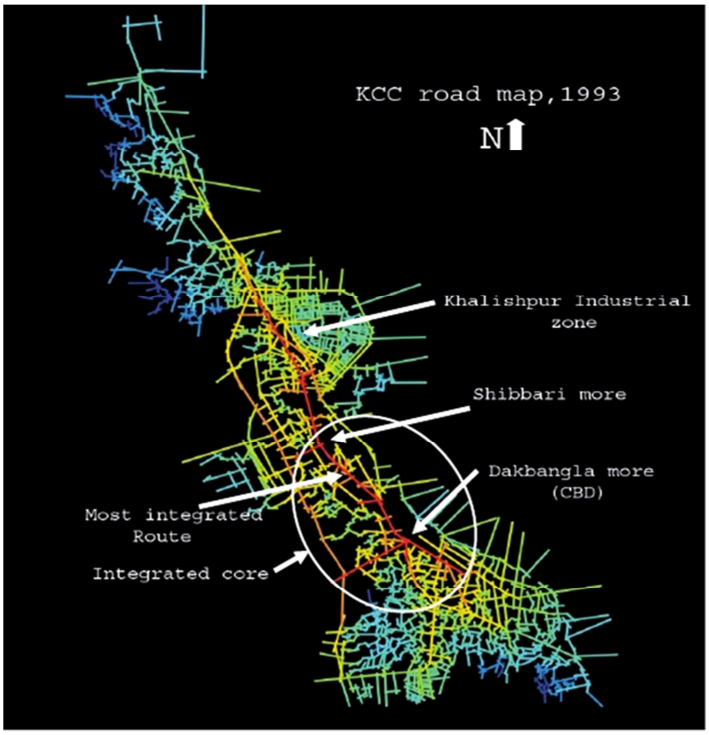

Fig. 6. Axial Analysis of Khulna City Master Plan, 1993

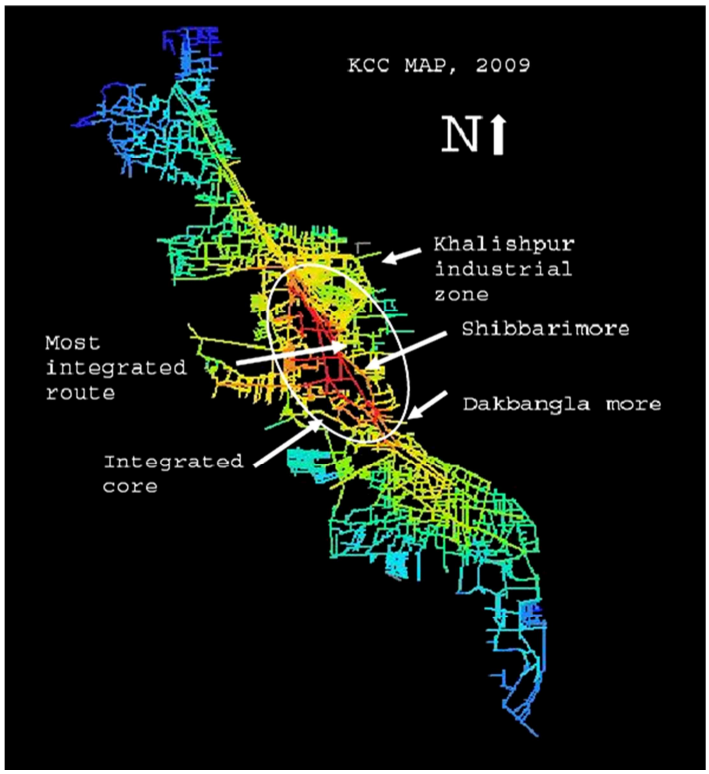

Fig. 7. Axial Analysis of Khulna City Master Plan, 2009

From the Axial Line Analysis it is evident that, the city integrated core, which is running to the north, has shifted from "Dak-bangla" to "Shib-bari node". In the past, Dak-bangla was important for its commercial potentiality and still now it bears the same. At the same time adjacent part of Shib-bari, which is the "Khalishpur industrial area" came out as a new integrated core. As city commerce is going to be established based on the "Jessore road", it has got the similar kind of importance. Here the analysis has been considered on the basis of Global theme (R= n), as the economy of the city is a broad idea.

4 OBSERVATIONS & FINDINGS

As it is clear from the above axial analysis, we can say, Khulna city is heading through a linear way and nearest hinterland are getting attracted for the economic purposes. Also the expansion is going from south-east to north-west, and the economy is heading towards the north. On this basis, it can be predicted that, "Noapara", the second industrial zone, will be the next integration core. Because of the linear city, some roads may be proposed vertically. At the vertical (West side) portion of the linear city, few growth centers and economic hubs may be initiated.

5 CONCLUSION

Mainly Khulna City expanded with its economic growth. Getting the backup strength from the activities in the city periphery, it can be observed that the city is expanding rapidly towards the fringe areas. In the western side of Khulna city the main priority on housing development is Khulna-Jessore by-pass and Khulna University areas. Recently, Khulna City Corporation (KCC) has decided to expand its boundary which will leave an impact in further urban growth. As the business activities are flourishing in the north and north western part, it is very essential to take any initiatives regarding the urban transformation pattern.

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