

Determination of Location Quotient (LQ) of Districts of Bangladesh based on Level of Urbanization and their Regionalization to study the Regional Disparities based on Indicators of Urban Area of Bangladesh

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Abstract:

To understand the growth pattern of different regions study of regional planning is an important aspect. This research has been conducted to study the urban growth pattern in all the districts of Bangladesh. Among various techniques of regional planning Location Quotient method has been used for this study based on Level of Urbanization for five indicators of urban area. These indicators are literacy rate, business as main source of income, availability of

electricity and sanitary facility and presence of pucca structures. Various analyses have been conducted to identify the advanced and lagging districts with respect to the national urbanization level. Then the similar districts have been grouped into five regions. The regions have been namely Very Poorly Urbanized, Poorly Urbanized, Moderately Urbanized, Urbanized and Highly Urbanized regions. After that inter regional and intra regional analyses have been done based on these indicators to study the disparities in the regions as well as the districts. Then interpretation of such disparities have been tried to investigate. Several maps have been prepared to show the regionally diversified areas. Finally major findings of the study have been identified which helped to interpret the trend of regional disparities among the regions.

Key words: Location Quotient, Urbanization, Regionalization, Disparity

1. Introduction

1.1 Background of the research

Bangladesh is one of the developing countries of South Asia and it is divided into 64 districts. In this country distribution of population is uneven. Moreover, various facilities are concentrated disproportionately rather than to an equitable manner. This causes disparity in the industrial development too. Regional planning is an important feature that measures the regional disparities and helps to overcome the disparities. Regional planning has various techniques of delineating regions. In the context of this study Location Quotient method can be a useful tool to analyze the disparities in the districts based on indicators of an urban area.

1.2 Objectives

1. To calculate the location quotient and understand the regional growth patterns in all the districts of Bangladesh.
2. To delineate the regions based on location quotient and find out the reasons of a region's development.
3. To analyze the data collected from secondary sources on the basis of 5 particular parameters: Business as main source of income, literacy rate, electricity connection, sanitary facility and pucca structure.

1.3 Scope and Limitation

The research provides the opportunity to get an idea about the level of urbanization and regional variation. This research would be helpful for the further research. There were no major limitations except the shortage of time.

1.4 Methodology

1.4.1 Research Identification: At first the research has been identified to study.

1.4.2 Formulation of Objective: Then the objectives have been formulated to carry out the research.

1.4.3 Identification of parameters: Five indicators of urban area namely Business as main source of income, literacy rate, electricity connection, sanitary facility and pucca structure have been selected as parameters.

1.4.4 Data Collection from secondary sources: Data have been collected from BBS.

1.4.5 Data Analysis and Processing: The data acquired from different sources have been organized and processed using SPSS, Microsoft Excel and Microsoft Word.

1.4.6 Major findings and Recommendation: The major findings have been revealed from the analysis of the collected data and recommendations have been proposed from them.

1.4.7 Preparation of Report: Combining all the analysis, major findings and recommendations, the report has been prepared with relevant graphs, tables and photography.

2: Theoretical Framework

2.1 Level of Urbanization: Urbanization is measured in terms of level (or sometimes called degree) of urbanization. Level of urbanization is defined as the percentage of total population of an area that is living in urban localities. Thus,

Level of urbanization = (Urban population/Total population)*100

For example, if the level of urbanization of Dhaka district is 92%, it implies that 92 out of 100 persons in Dhaka district are living in urban areas.

2.2 Location Quotient: Location Quotient (LQ) is the ratio that provides a convenient way to examine the specialization of economic activity in a region. LQs can be based on urbanization level employment, income or value added data etc. LQs are easy to compute and interpret the data. The general procedure for calculating LQ values based on urbanization level for all districts is given below:

$$LQ = \frac{\frac{\text{Urban Population of Specific District}}{\text{Total Population of Specific District}}}{\frac{\text{Total National Urban Population}}{\text{Total National Population}}}$$

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The value of LQ indicates the following:

LQ	Inference
<1	The Region is less specialized than the Nation in the research sector.
1	The Region and the Nation specialize to an equal degree in the research sector
>1	The Region is more specialized than the Nation in the research sector

For example,

L.Q for urbanization of Dhaka district = $(7901700 / 8618700) / (28605200 / 34970060) = 3.97$.

It means Dhaka is more urbanized than the national rate of urbanization.

2.3 Concept of Region: A first step in an outline of the concept of the region is to examine whether regions are natural phenomena or merely mental construction. There are two divergent views- one objective, the other subjective. The subjective view sees a region as a means to an end, simply an idea, a model, to in the study of the world. It is a method of classification, a device to segregate areal features, with the only “natural” region being the surface of the earth on which man finds his home. The objective view adopts an opposite stance, seeing the region as an end in itself, a real entity, an organism, that can be identified and mapped. (John 1974,)

2.4 Regionalization: Regionalization is the process of delineating regions. Regionalization means the grouping of some unit based on some criteria which form a homogenous region. The factors of a region must be different than factors of other regions. There are many criteria and techniques to delineate a region.

3: Data Analysis

3.1 Analysis of Districts in terms of Level of Urbanization and Location Quotient (LQ)

Bangladesh is a developing country. It is divided into 64 districts. The Level of urbanization in these districts is different. In comparison with the national progress the LQ of the districts are also different. The following two tables show the top 5 and bottom 5 districts in terms of their level of urbanization and LQ:

Table 3.1: Top 5 districts based on level of urbanization and LQ

District Name	Level of Urbanization	LQ
1.Dhaka	91.68%	3.97
2.Narayanganj	55.55%	2.41
3.Khulna	53.29%	2.31
4.Chittagong	50.34%	2.18
5.Gazipur	44.68%	1.93

Table 3.2: Bottom 5 districts based on level of urbanization and LQ

District Name	Level of Urbanization	LQ
1.Satkhira	7.19%	0.31
2. Manikganj	7.49%	0.32
3. Thakurgaon	7.86%	0.34
4. Naogaon	8.16%	0.35
5. Gaibandha	8.48%	0.37

The scenario of 2001 shows that, being the capital city of Bangladesh, Dhaka has the benefit of having many facilities. It has good housing, transport, communication, education, health and economic etc facilities. It also provides easy employment opportunity in the informal sector. These attract people from other disadvantaged areas of the nation to improve their living condition. As a result Dhaka has become the Central Place of the country and day by day it is sprawling. Narayanganj and Gazipur also have become very urbanized as a result of spread effect of Dhaka. Chittagong has become another important district for its business facility through its seaport. On the other hand, Satkhira could not urbanize much because of its

remoteness characteristics and the presence of the Sunderban forest area.

In terms of Location Quotient, 10 districts are more urbanized than the National level. Among them Dhaka is the most progressing district. Rests of the districts (54) are lagging behind the national development rate. Among those Satkhira is the least progressed.

3.2 Regionalization of Bangladesh

Bangladesh is still a relatively less urbanized country compared to other Asian countries. However, the country experienced a remarkable rate of urban growth both in terms of urban population and urban centers immediately after its independence in 1971. But this growth is not even in all the districts. To understand the regional disparity in the districts location quotient method has been applied by using level of urbanization data. For simplification, Location Quotient values have been classified in to five categories. Each of these categories is identified as a different region. These are Very Poorly Urbanized, Poorly Urbanized, Moderately Urbanized, Urbanized and Highly Urbanized region. A table below shows the distribution of the districts of Bangladesh into these 5 regions:

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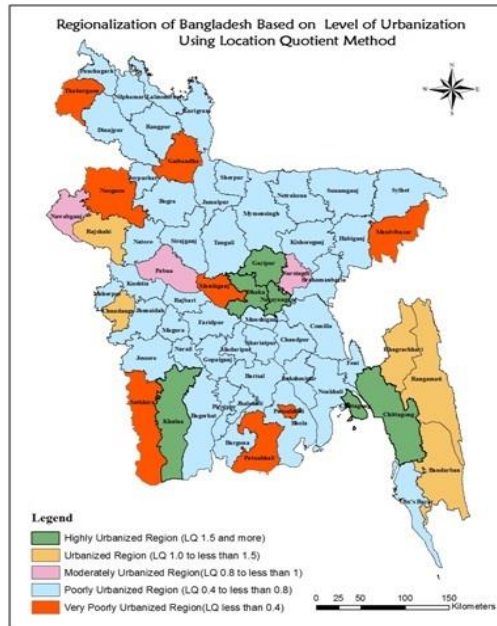
Table 3.3: Distribution of Districts into Regions based on LQ

Region	Range of LQ	Frequency	Districts
Very Poorly Urbanized	Less than 0.4	7	Gaibandha, Manikganj, Satkhira, Moulvibazar Naogaon, Patuakhali, Thakurgaon.
Poorly Urbanized	0.4 to Less than 0.8	44	Bagerhat, Barguna, Barisal, Bhola, Bogra, Meherpur Brahmanbaria, Chandpur, Comilla, Sylhet, Munshiganj Cox's Bazar, Dinajpur, Faridpur, Feni, Narail, Natore Gopalganj, Habiganj, Jamalpur, Jessore, Jhalokati, Jhenaidah, Joypurhat, Sherpur, Magura, Sirajganj, Rangpur, Nilphamari. Kishoreganj, Kurigram, Kushtia, Tangail Lakshmipur, Lalmonirhat, Madaripur, Pirojpur, Mymensingh, Netrakona, Sunamganj Nilphamari, Noakhali, Panchagarh, Shariatpur.
Moderately Urbanized	0.8 to Less than 1.0	3	Narsingdi, Nawabganj, Pabna
Urbanized	1.0 Less than 1.5	5	Bandarban, Chuadanga, Khagrachhari Rajshahi, Rangamati
Highly Urbanized	1.5 and above	5	Chittagong, Dhaka, Gazipur, Khulna Narayanganj

Source: Zilla Series, BBS, 2001

It can be seen from the chart that, “Poorly Urbanized” region has the most number of districts and it occupies 68.75% of the total districts of Bangladesh. This region is less developed and it also lags behind in respect to the national level of urbanization. Agriculture is the main occupation of these districts and availability of services are very poor. The “Very Poorly Urbanized” region is less developed than the Poorly Urbanized region due to the remoteness and lack of facilities. “Urbanized” region mainly include the hill tracts. The principal reason behind the improvement of hill tracts in the level of urbanization is due to the development of hilly areas into urban localities and settlement of internal migrants into those urban localities by giving them incentives. “Highly Urbanized” regions are very few in number which include Chittagong, Dhaka, Gazipur, Khulna and Narayanganj. The primary reasons behind the fast growing trend of urbanizations of these districts are location of various government and non-government offices,

industrial and commercial organizations, educational institutions etc. From the regionalization it indicates that Bangladesh has not yet managed to develop even half of its area. It means that most of the districts of Bangladesh are deprived of urban facilities.



Map: Map Showing Regionalization of Bangladesh Based on Level of

3.3 Analysis of LQ with indicators of Urban area

To accomplish any analysis in a study coefficient of Determination and coefficient of correlation analysis is very important to determine both the nature and the strength of a relationship between two variables.

A scatter diagram has been plotted for each of the indicator to determine whether there is a relationship between Location Quotient (LQ) of 64 districts and the indicators. The diagram gives the pattern that indicates that the variables are related and also the direction of the relationship between these two variables. For each diagram, the independent variable that

is LQ of 64 districts have been plotted along the X axis and dependent variable (that is percentage of dwelling unit involved in business, percentage of household having electricity and sanitary facility, percentage of pucca structure and literacy rate of the districts) has been plotted along the Y axis. A best fitted line has been drawn to show this relationship.

From the charts (in Appendix) the value of R^2 and r is determined which are presented in a table below:

Table 3.4: Correlation between indicators of urban area and LQ of different districts

Indicators of Urban area	Coefficient of Determination, R^2	Coefficient of Correlation, r
Business as main source of income	0.314	0.561
Literacy Rate (in %)	0.175	0.418
Availability of Electricity (in %)	0.529	0.728
Availability of Sanitary Facility (in %)	0.209	0.458
Availability of Pucca Structure (in %)	0.596	0.772

Coefficient of Correlation, r

To identify the strength of relationship between LQ of 64 districts and indicators of urban area “bivariate correlation” has been used. The coefficient ranges from -1 to +1, including 0.

The values from the table show that there is a moderate correlation between LQ of particular district and percentage of business, percentage of sanitation facility and literacy rate. There is a high correlation between the LQ rate and electricity availability in the districts of Bangladesh because of high standard of living and comparatively easy procedure to provide electricity in compact urban areas. A strong correlation exists between LQ of particular district and percentage of pucca structure in the districts of Bangladesh. This is due availability of costly building materials (brick, cement etc), affordability and of urban people.

Coefficient of Determination, R^2

R^2 is the coefficient of determination which is the primary way to measure amount of variation of dependent variable that is explained by the regression line. From the figures it has been found that there is a positive relationship between LQ of 64 districts and each indicator. Here, percentage of business, household having electricity and sanitary facility, percentage of pucca structure and literacy rate increases with increases of LQ of a particular district. The value of $R^2 = 0.175$ for literacy rate indicates that 17.5% of the variation in the literacy rate in various districts can be explain by the regression line. Consequently, value of $R^2 = 0.596$ means 59.6% of the variation in the presence of the Pucca Structure.

3.4 Intra Regional Analyses

Intra regional analysis is the analysis within the region. Here comparison of various indicators of urban area within the regions is analyzed.

3.4.1 Comparison of Indicators in Very Poorly Urbanized Region

Literacy rate is moderate in all its districts because Bangladesh government implemented education program for all districts. Pucca structures are rare in Patuakhali as it is located near the coastal area. Although LQ is low in Satkhira but its business involvement is higher than other districts of this region.

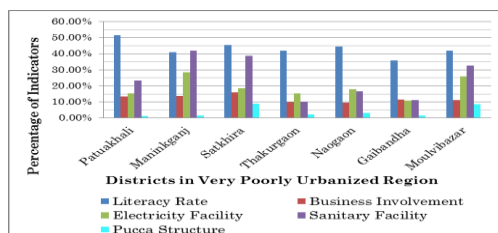


Fig no.3.1: Comparison of indicators of urban area in very poorly urbanized region

3.4.2 Comparison of Indicators in Poorly Urbanized Regions

Munshiganj has the highest availability of electricity facility compared to other districts in this region followed by Feni and Comilla. Jhalakati has the highest literacy rate in this region. Munshiganj is outstanding among others for having more than 20% households involved in business as it is located near to the Dhaka city. Very low percentage of sanitary facility is available in Dinajpur and Nilphamari because these are situated at the remote place of the north and people are not that much aware about the hygiene. Sylhet has more than 20% pucca structure because a large amount of remittances comes from the abroad. The charts are attached in the appendix (Figure no. 1,2,3,4,5)

3.4.3 Comparison of Indicators in Moderately Urbanized Regions

Only 3 regions are moderately urbanized and all of these have moderate literacy rate. Narshingdi has more electricity and sanitary facility than others because the communication system of this district is very good. The Dhaka-Sylhet highway, one of the important highways of Bangladesh, passes through Narsingdi. It is only one hour distance from Dhaka.

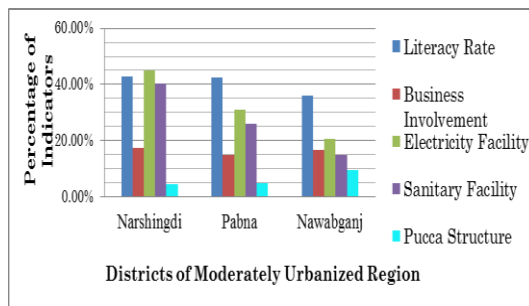


Fig no.3.2: Comparison of indicators of urban area in moderately urbanized region

3.4.4 Comparison of Indicators in Urbanized Regions

Rajshahi has the highest literacy rate than other districts in this region because there are many major educational institutes in Rajshahi. It also has highest electricity and sanitary facility than others being the divisional headquarter. Chuadanga has more pucca structures than others. Reason behind this can be the available good transportation system that helps transporting of buildings materials easily.

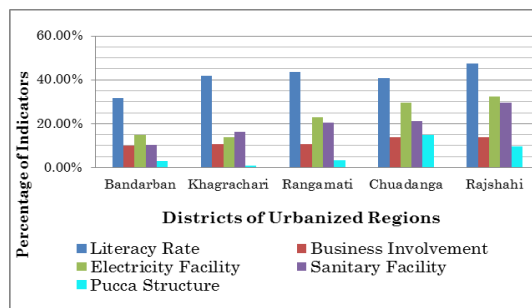


Fig no.3.3: Comparison of indicators of urban area in urbanized region.

Source: Zilla Series, BBS, 2001

3.4.5 Comparison of Indicators in Highly Urbanized Regions

Dhaka has the highest electricity and sanitation facility because it is the capital of Bangladesh and is very well connected to the rest of the nation. Its literacy rate is higher than others because most of the reputed educational centers are located here.

In the capital there is massive opportunity for involvement into various kinds of businesses. The industrial growth of Dhaka is stimulating the growth of its surrounding districts such as Narayanganj and Gazipur as a result of its spread effect.

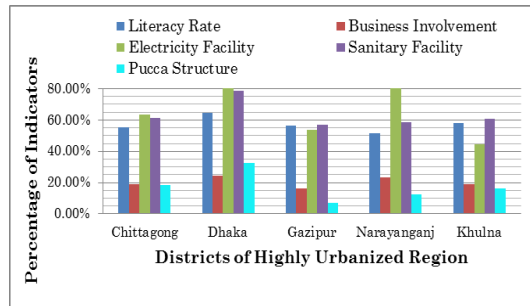


Fig no.3.4: Comparison of indicators of urban area in highly urbanized region.

Narayanganj has the next highest involvement in business after Dhaka because it is a center of business and industry, especially the jute trade and processing plants, and the textile sector of the country. Being the second largest city and port city of Bangladesh, Chittagong has high electricity and sanitary facility and high presence of pucca structures.

3.5 Inter Regional Analysis

3.5.1 Relationship between Regions and Distribution of districts based on percentage of involvement in business

As Bangladesh is mainly an agricultural country business is not its primary income source. It has been found that there is no district in Bangladesh that has more than 25% of its household to be involved in Business. But it is expected that, with the increase of level of urbanization involvement in business occupation also increases.

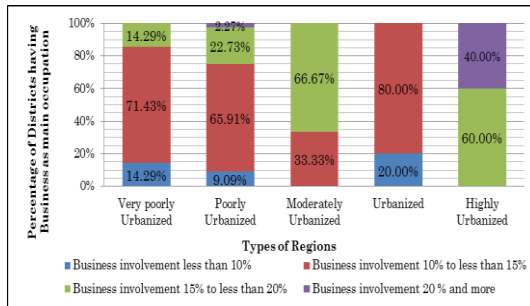


Fig no.3.5: Relationship between Regions and Distribution of districts based on percentage of involvement in business

The above chart shows that, involvement in business increases with the increase of urbanization level. As the agricultural land decreases with the increase of level of urbanization more people are involved in business occupation to earn their livelihood. In the very poorly urbanized region 10% to 15% households are occupied in business activity which constitutes 71.43% districts of that region. Highly urbanized region include Dhaka, Narayanganj and Khulna district where involvement of business occupation is more because of establishment of numerous industries and commercial organizations and easy opportunity to involve in business sector. The percentage of involvement in business in urbanized region is more compare to the low and moderate urbanized regions. Rangamati, Bandarban, Khagrachari have become urbanized due to the spread effect of urbanization in Chittagong area. But most of their revenue comes from tourism and agriculture.

3.5.2 Relationship between Regions and Distribution of districts based on percentage of Literacy Rate

Literacy rate indicates a nation's progressive nature. Many policy analysts consider literacy rates as a crucial measure to enhance a region's human capital. Literate people can be

trained generally have a higher socio-economic status and enjoy better health and employment prospects.

The chart gives the idea of the literacy condition in different urbanized regions. It is praiseworthy that even in poorly urbanized region the literacy rate is above 30%. This is because Government of Bangladesh has taken various projects to promote the education of its children such as Compulsory primary education for all, stipends for female students, a nationwide integrated education system and a food-for-education literacy movement.

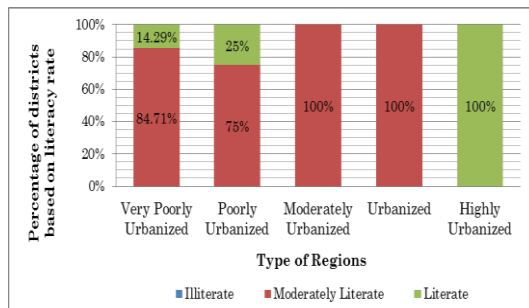


Fig no.3.6: Relationship between Regions and Distribution of districts based on percentage of literacy rate. Source: Zilla Series, BBS, 2001

A large section of the country’s national budget is set aside to help put these programs into action and to promote education and make it more accessible. In poorly urbanized region 75% of its districts constitute moderately literate population. With increase in level of urbanization the literacy rate also increases. That is why highly urbanized region (Chittagong, Dhaka, Gazipur, Narayanganj, Khulna) has more literate population than any other region.

3.5.3 Relationship between Regions and Distribution of districts based on percentage of Electricity Connection

Usually urbanized areas are characterized by availability of electricity facility. The next chart shows the availability of electricity in the districts.

It has been found that highly urbanized region has more electricity connection than poorly urbanized region. It is difficult to provide electricity connection in rural area because the settlement is scattered.

As it is easy to provide connection in compact area and less costly, electricity connection is greatly improved with the increase of level of urbanization.

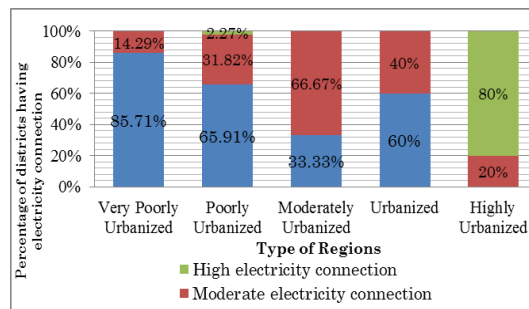


Fig no.3.7: Relationship between Regions and Distribution of districts based on percentage of electricity connection. Source: Zilla Series, BBS, 2001

Thus 80% districts of highly urbanized region have high electricity connection. It is noticeable that because of the presence of hill tracts in urbanized region (Rangamati, Bandarban, Khagrachari districts) the electricity connection is very poor. That is why 60% districts of urbanized region have low electricity connection.

3.5.4 Relationship between Regions and Distribution of districts based on percentage of availability of Sanitary Facility

Improvement in sanitation facility is one of the indicators of the progression of urbanization level.

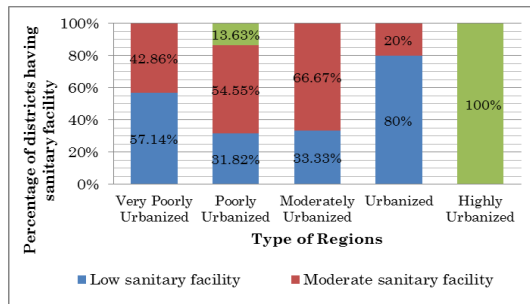


Fig no.3.8: Relationship between Regions and Distribution of districts based on percentage of sanitary facility, Source: Zilla Series, BBS, 2001

With the increase of level of urbanization the sanitation facility also increased. There is no district in the very poorly urbanized and urbanized region that gets high sanitary facility. 80% districts of urbanized region have low sanitary facility due the remoteness of the area. The people are unaware about the importance of sanitation facility and also very poor to afford it.

3.5.5 Relationship between Regions and Distribution of districts based on percentage of Pucca Structure

Presence of pucca structure is an important indicator of urbanized area. The intensity of pucca structures in an area can explain its progress quite well.

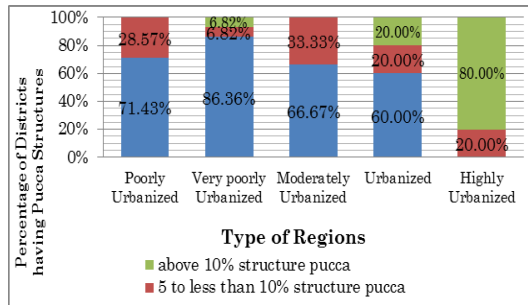


Fig no.3.9: Relationship between Regions and Distribution of districts based on percentage of Pucca structure. Source: Zilla Series, BBS, 2001

The chart shows that, Satkhira has less than 5% pucca structure because it contains Sunderban forest and the building elements of houses near forest areas are mainly wood, bamboo, straw and leaves etc. Among poorly urbanized districts Jessore and Meherpur have more than 10% pucca structures. This might be because of their adjacency to urbanized and highly urbanized areas. This is the effect of urbanization in the nearby regions. Dhaka being the capital again shows highest rates of presence of pucca structures because of getting more facility of transportation of the materials, more labour and more technology etc.

4: Major findings and Conclusion

4.1 Major Findings

1. Level of urbanization is not same in all the districts.
2. Dhaka is the central place of Bangladesh and it influences the development its surrounding districts as an impact of spread effect.
3. Satkhira could not urbanize much because of its remoteness characteristics and the presence of the Sunderban forest area.

4. Both urbanized (LQ 1 to less than 1.5) and highly urbanized (LQ 1.5 and above) regions constitute 7.8% districts of Bangladesh.
5. Level of Urbanization has the strongest impact on presence of pucca structures.
6. Literacy rate is not influenced by the level of urbanization because Bangladesh government implemented education program for all districts.
7. Highly urbanized region (Chittagong, Dhaka, Gazipur, Narayanganj, Khulna) has more literate population than any other region.
8. Rangamati, Bandarban, Khagrachari have become urbanized due to the spread effect of urbanization in Chittagong area.
9. Because of the presence of hill tracts in urbanized region (Rangamati, Bandarban, Khagrachari districts) the electricity connection is very poor.
10. There is no district in the very poorly urbanized and urbanized region that gets high sanitary facility.

4.2 Conclusion

Regional disparities mainly reflect differences in overall prosperity among the regions. Urbanization level is not uniform among all the districts of Bangladesh. So development is not uniform among the regions. Some regions are always found out to be less privileged than the others. The reasons behind the regional disparity may be economic, political, social, cultural and perhaps environmental (physical) factors in the region. Sustainable balance can be only obtained by gaining economic opportunity, providing urban facilities and others facilities. Effective government policies can provide such opportunities to enhance balanced economic development and ensuring equity in development program among the all regions

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Determination of Location Quotient of 64 districts of Bangladesh

District No.	District Name	Urban Population	Total Population	Level of Urbanization	LQ
1	Barisal	394400	2348440	16.79%	0.73
2	Bhola	254840	1703200	14.96%	0.65
3	Jhalakati	116980	692680	16.89%	0.73
4	Pirojpur	175420	1099780	15.95%	0.69
5	Barguna	94480	845060	11.18%	0.48
6	Patuakhali	124180	1464800	8.48%	0.37
7	Bandarban	92300	300740	30.69%	1.33
8	Chittagong	3294400	6543860	50.34%	2.18
9	Cox's Bazar	230640	1759560	13.11%	0.57
10	Brahmanbaria	310720	2377980	13.07%	0.57
11	Chandpur	308340	2241020	13.76%	0.60
12	Comilla	480740	4591340	10.47%	0.45
13	Khagrachari	160500	516900	31.05%	1.34
14	Feni	168540	1205980	13.98%	0.61
15	Lakshmipur	224080	1486540	15.07%	0.65
16	Noakhali	280520	2570640	10.91%	0.47
17	Rangamati	173360	525100	33.01%	1.43
18	Dhaka	7901700	8618700	91.68%	3.97
19	Gazipur	904000	2023260	44.68%	1.93
20	Manikganj	97460	1301900	7.49%	0.32
21	Munshiganj	166960	1289100	12.95%	0.56
22	Narayanganj	1205900	2170740	55.55%	2.41
23	Narshingdi	363760	1901840	19.13%	0.83
24	Faridpur	218820	1742720	12.56%	0.54
25	Gopalganj	106740	1151800	9.27%	0.40
26	Madaripur	139100	1129940	12.31%	0.53
27	Rajbari	117380	952280	12.33%	0.53
28	Shariatpur	100300	1080680	9.28%	0.40
29	Jamalpur	360640	2106040	17.12%	0.74
30	Sherpur	144580	1267940	11.40%	0.49
31	Kishoreganj	335720	2557240	13.13%	0.57
32	Mymensingh	615600	4460120	13.80%	0.60
33	Netrokona	183720	1971240	9.32%	0.40
34	Tangail	423680	3261600	12.99%	0.56
35	Jessore	426220	2469680	17.26%	0.75
36	Jhenaidah	201920	1568440	12.87%	0.56
37	Magura	95300	821840	11.60%	0.50
38	Narail	67480	694900	9.71%	0.42

Md. Abu Hanif, Anika Tabassum, Antora Mohsena Hauque, Md. Rifat Hossain, Dr. Sarwar Jahan, Anindya Kishore Debnath- **Determination of Location Quotient (LQ) of Districts of Bangladesh based on Level of Urbanization and their Regionalization to study the Regional Disparities based on Indicators of Urban Area of Bangladesh**

District No.	District Name	Urban Population	Total Population	Level of Urbanization	LQ
39	Bagerhat	240360	1516820	15.85%	0.69
40	Khulna	1256620	2357940	53.29%	2.31
41	Satkhira	132680	1845120	21.94%	0.31
42	Chuadanga	265460	1005180	10.59%	1.14
43	Kushitia	170560	1737360	8.16%	0.43
44	Meherpur	63980	587620	13.78%	0.47
45	Bogra	391760	3015400	22.88%	0.56
46	Joypurhat	79080	856560	9.23%	0.40
47	Dinajpur	354920	2640940	13.44%	0.58
48	Panchagarh	87680	837980	10.46%	0.45
49	Thakurgaon	95420	1214660	7.86%	0.34
50	Pabna	474920	2164960	21.94%	0.95
51	Sirajganj	283020	2673060	10.59%	0.46
52	Naogaon	194600	2385900	8.16%	0.35
53	Natore	209080	1517000	13.78%	0.60
54	Nawabganj	325280	1421740	22.88%	0.99
55	Rajshahi	775000	2274340	34.08%	1.48
56	Gaibandha	180520	2129700	8.48%	0.37
57	kurigram	252240	1762920	14.31%	0.62
58	Lalmonirhat	137920	1104360	12.49%	0.54
59	Nilphamari	193540	1562160	12.39%	0.54
60	Rangpur	402760	2527060	15.94%	0.69
61	Hobiganj	190660	1750180	10.89%	0.47
62	Moulvibazar	136460	1608860	8.48%	0.37
63	Sunamganj	194300	1990360	9.76%	0.42
64	Sylhet	454960	2547320	17.86%	0.77
Total		28605200	127725880		

Source: Zilla Series, BBS 2001