

Identifying the Growth Centers Connectivity Based on Road Network and Market Accessibility in the North-West Part of Bangladesh

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Abstract

Different socio-economic theories suggest that Growth Center is a major connection between urban and rural areas and an effective rural development strategy. The purpose of the study is to reveal the connectivity of neighboring growth centers supported by road network and market accessibility of rural areas of the south-west part of Bangladesh. This analysis will help to realize the connectivity of growth centers in rural development through rural-urban connectivity and grow attention in growth center development. Among the 539 Growth Centers of this region, 2 Growth Centers have been selected randomly from the two different districts which are Machmail Hat (Baghmara union-Rajshahi district-Rajshahi division) and Kachinia Hat (Khansama union-Dinajpur district-Rangpur division). The data has been collected through observation, focus group discussion, questionnaire survey, and also secondary sources like LGED, BBS, local NGOs, Union Parishad, research papers, etc. The analysis shows a good connectivity of the growth centers with the nearer growth centers though mainly with local roads and shows a good marketing relationship where the intermediate persons play a major role.

Introduction

According to ESCAP (1979), Growth Center is the focal points with a specific level of facilities (Khan and Akther, 2000). It's a 'growing point' included with its vicinity and its effects on the spread of development. In Bangladesh, rural markets are considered as growth centers (LGED, 1995). According to World Bank (1996), there are about 8000

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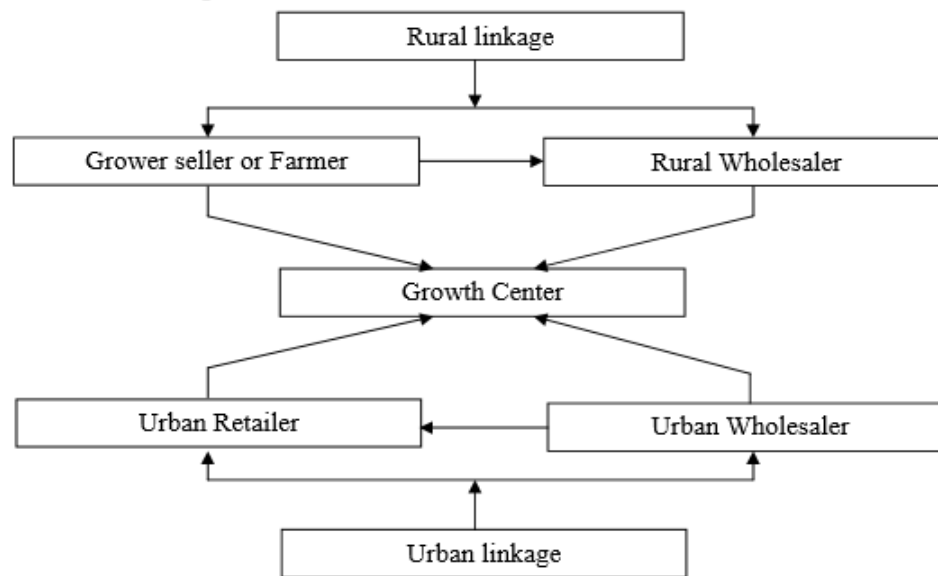
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rural markets (hats and bazaars) in Bangladesh i.e. assembly market, primary market, secondary market and terminal market (Khan and Akther, 2000). In the context of Bangladesh, growth centers are rural markets or intermediate urban centers that have been identified by Planning Commission on the basis of socio-economic and administrative criteria for making development investment [LGED, 1995]. From 1984 to 1993, about 1400 rural markets were identified as rural growth centers. Then another 700 rural hat or bazaars were added to the list to take the number to 2100 (World Bank, 1996; LGED, 2008). The increase of growth centers from 1400 to 2100 was due to an increase of population and regional growth and thus regional priorities will have to be defined in view of the natural potential of the regions (LGED, 2004).

The significance of the study of rural-urban linkage lies in its potential to address the worldwide phenomenon of urbanization and the related issues of food demand, environmental deterioration and widening rural-urban gap (Dhital, 2004). There are several types of interaction between rural and urban e.g. flow of people, market interactions, flow of wastes, sectoral interactions, communication linkage, technological linkages, service delivery linkages, social interaction linkages, political administrative and organizational linkages etc (Tacoli, 1998; Revapathi, n.d.). In market-based rural-urban linkage through small and intermediate urban centers, several marketing intermediaries can play an active role (Tracey-White, 2005). The linkages of marketing intermediaries from rural and urban areas create rural-urban interaction in growth centers.



Source: Tracey-White, 2005

Figure1: The linkages of different marketing intermediaries from rural and urban areas creating rural-urban interaction in growth centers

Thus, the more increase in the numbers of buyers in these markets, more will be the trade volume and turn over which perpetuate local development. But these rural markets are

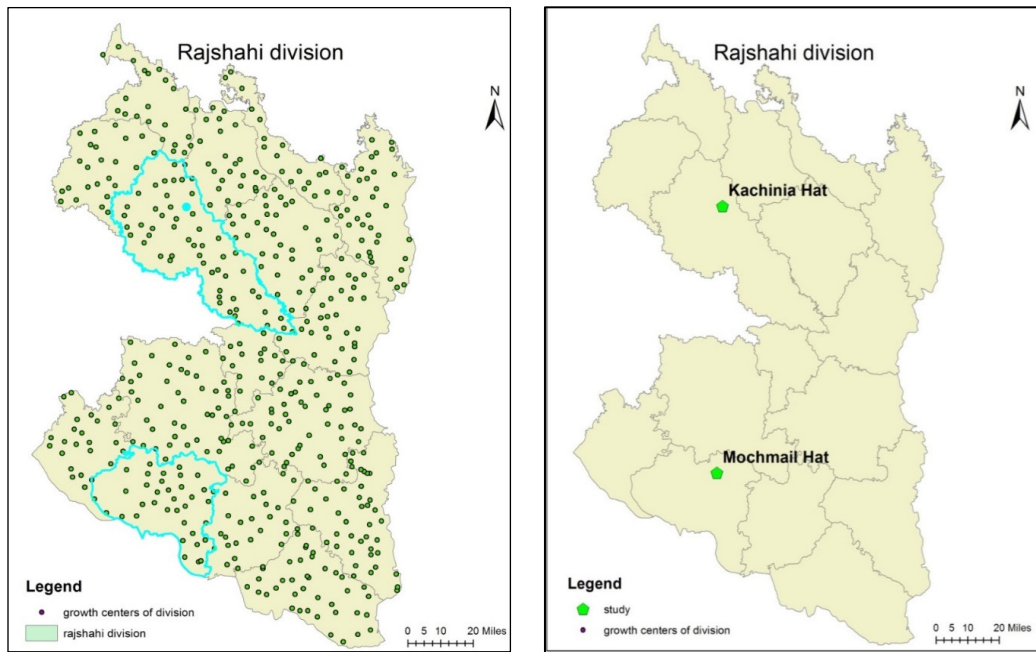
beset with many problems which are mostly associated with infrastructure (Hossain, 2001). So, special attention should be given regionally for growth center development for changing the rural people's livelihood style and the sustainable development of the catchment area of the growth center (Momen, 1997).

The main objective of the study is to identify the linkage of the growth centers through road network and to find out the accessibility to the services and facilities of the linked growth centers essential for the development of growth centers.

Methodology

The methodology of this study includes a selection of study area and sample size, preparation of questionnaire, a collection of data and analytical techniques. To reveal the connectivity of the growth centers by the linkage of the neighboring growth centers through road network and market accessibility, data has been collected through observation, focus group discussion, questionnaire survey, and secondary sources, like LGED, BBS, Local NGOs, Union Parishad, research papers, and other documents.

Study Area Profile



Source: Authors' preparation, 2017

Figure 2: Location of the study area

The Kachinia Hat and the Mochmail Hat are the two growth centers, which are randomly selected from the north-west part of Bangladesh to analyze this study. Formerly, Rangpur division was under Rajshahi division. The Kachinia Hat is at Khansama Union of Rangpur District in Rangpur division. It was approximately established in 1998 and

was declared as a growth center in 2009. Again the Mochmail Hat is situated at Baghmara Union of Rajshahi District in Rajshahi Division. The year of establishment of Machmail Hat is approximately 1997 and it was declared as a growth center in 2007. After the declaration of these two rural hats as Growth Centers, there has been a huge development in rural road connectivity that helped other rural development efforts.

Data Collection Procedure

A well-designed questionnaire survey including both closed and open-ended questions has been conducted with 100 samples. From 38 growth centers in Rajshahi district, the selected four growth centers are Bagha hat from Bagha thana, Mochmail Hat from Baghmara thana, Charchhat Hat from Charchhat thana and Kaligonj Hat from Tanore thana (25 random sample for each specific thana). The analysis mainly focuses on connectivity and mobility of the growth center, so the questionnaire included the issues to cover the present scenario of the growth centers. Connectivity and mobility of the growth center involve accessibility towards linked growth center, mobility ensured by the condition of the road, transport system, distance and travel time etc. Connectivity and mobility of the growth center were ensured by Questionnaire Survey and Data collection from secondary sources. The questionnaire has been prepared for the producer, the wholesaler as well as the middleman. In observation method, the information is sought by way of investigator's own direct observation without asking the respondent. The focus group discussion is a rapid assessment, semi-structured data gathering method in which a purposively selected set of participants gather to discuss issues and concerns based on a list of key themes drawn up by the researcher/facilitator (Kumar 1987). These two methods of primary data collection have also helped in the analysis. The analysis is then presented in a systematic way to make it easily readable and realization to the reader.

Results and Discussion

The study mainly focuses on the connectivity of the growth center with the surroundings, the major road network connectivity of these growth centres, market accessibility and intermediate persons' role in the specific growth centers.

Connectivity with Surrounding Growth Centers

Connectivity with Surrounding Growth Centers for Mochmoil Hat

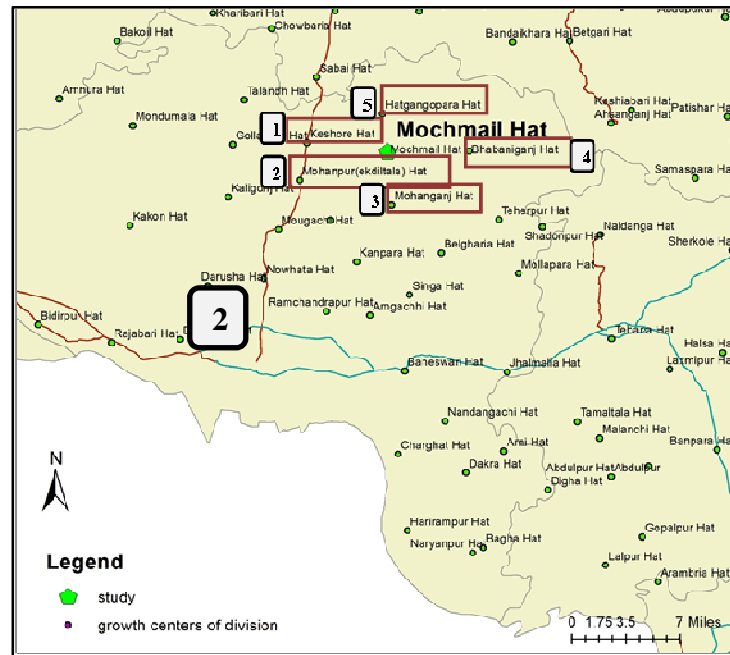
This growth center is strongly connected with the other surrounding places. Mochmoil Hat is connected with surrounding five growth centers with which it is interdependent for various activities.

Keshor Hat: Though local road, the road connectivity between Keshor Hat and Mochmoil Hat is good. Auto, bus, votvoti, etc. transports are available on this road to carry people. Transport cost has increased with the decrease in money value. Marketing relationship is found to be the best comparing with the other linked growth centers.

Mohanpur Hat: The connectivity of Mochmoil Hat with Mohanpur hat is good. The road connectivity is good with a local road. Transport modes to carry people from one place to another are auto, bus, mini-bus, and votvoti. Transport cost has increased with the

decrease in money value. Marketing relationship is good as there is a good relationship between products export and import.

Mohanganj Hat: The connectivity of Mochmoil Hat with Mohanganj hat is moderate. The road connectivity is good with a local road. Available transport modes are auto, bus, nosimon, and karimon. Transport cost has increased with time and decrease in money value. Marketing relationship is moderate as the products export and import is in moderate condition. Actually only export occurs, and there is no import relationship with the Mohanganj.



Source: Authors' Preparation, 2017

Figure 3: Connectivity of the growth center (Mochmoil Hat) with nearer growth centers.

Bhabanigonj Hat: The connectivity of Mochmoil Hat with Bhabanigonj hat is moderate. The road connectivity is not good and the road is basically local road. Transport mode using to carry people from one place to another is auto, bus, nosimon and karimon. Transport cost has increased with the decrease in money value. Marketing relationship is in moderate condition. Only export occurs, and there is no import relationship with the Bhabanigonj.

Halgangopara Hat: The connectivity of Mochmoil Hat with Halgangopara hat is moderate. The road connectivity is bad and the condition of the road is not as good as the roads need to be reconstructed. Transport mode using to carry people from one place to another is auto, bus, nosimon and karimon. Transport cost has increased with the decrease in money value. Marketing relationship is in moderate condition. Due to the condition of the roads, the marketing relationship is not good between these growth centers. Following is the overview of the connectivity:

Table 1: The connectivity of Mochmoil Hat with nearer growth centers

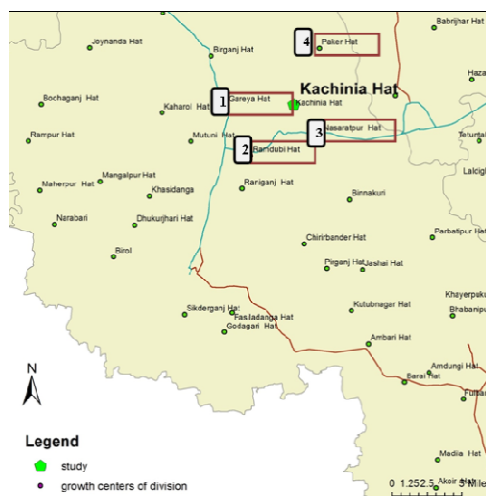
Name of the Growth centre	Road Network (linked)	Road condition	Transport mode	Transport Cost (before being growth centre)*	Transport Cost (after being growth centre)*	Marketing relationship	Overall Connectivity
Keshor Hat	Regional road	Good	Easy bike, Bus	5-7	10-12	Good	Good
Mohanpur Hat	Local road	Moderate	Bus, Mini Truck	5-7	12	Good	Good
Mohanganj Hat	Local road	Good	Bus, Nosiman, kariman	7	12	Moderate	Moderate
Bhabanigonj Hat	Local road	Moderate	Easy bike, bus	7	10	moderate	Moderate
Halgangopara Hat	Local road	Bad	Easy bike, Mini Bus	5	10	Good	Moderate

*calculated in taka per person cost

Source: Field Survey, 2017

Connectivity with Surrounding Growth Centers for Kachinia Hat

This growth center also has a good connectivity with the other surrounding places. These are interdependent with each other for various activities and reasons. Internal export import occurs with each other. There are 4 places which are strongly connected with Kachinia Hat growth center.



Source: Authors' preparation, 2017

Figure 4: Connectivity of the growth center (Kachinia Hat) with nearer growth centers

Gareya Hat: The connectivity of Kachinia Hat with Gareya hat is good. The road connectivity is good with a local road. Transport modes available to carry people from one place to another are auto, bus, CNG, etc. Transport cost has increased with the decrease in money value. Marketing relationship is in good condition.

Ramdubi Hat: The connectivity of Kachinia Hat with Ramdubi hat is good. The road connectivity is good and the condition of the road is also good though it is a local road. Transport modes using to carry people from one place to another area by easy bike, bus, CNG, etc. Transport cost has increased with the decrease in money value. Marketing relationship is in good condition. Marketing relationship is good as the products export and import is in good condition.

Nasaratpur Hat: The connectivity of Kachinia Hat with Nasaratpur hat is good. The road connectivity is good and the condition of the road is also good though with a local road. Available transport modes are a van, CNG, etc. Transport cost has increased with the decrease in money value. But the transport cost here is very low. Marketing relationship is in good condition. Marketing relationship is good as the products export and import is in good condition.

Paker Hat: The connectivity of Kachinia Hat with Paker hat is good. The road connectivity is moderate and the condition of the road is not as good as it is a local road. Mainly easy bike, CNG etc. carry people from one place to another. Marketing relationship is moderate as products export and import is not occurring due to moderate road condition. The overall connectivity with road linkage and marketing relationship is summarized in Table 2

Table 2: The connectivity of Kachinia Hat with nearer growth centers

Name of the Growth centre	Road Network (linked)	Road condition	Transport mode	Transport Cost (before being growth centre)*	Transport Cost (after being growth centre)*	Marketing relationship	Overall Connectivity
Gareya Hat	Local road	Good	Easy bike, Van, CNG	5	10	Good	Good
Ramdubi Hat	Regional road	Good	Bus, Easy bike	5	12	Good	Good
Nasaratpur Hat	Local road	Good	CNG, Van	2	5	Good	Good
Paker Hat	Local road	Moderate	Easy bike, CNG	10	18-20	moderate	Moderate

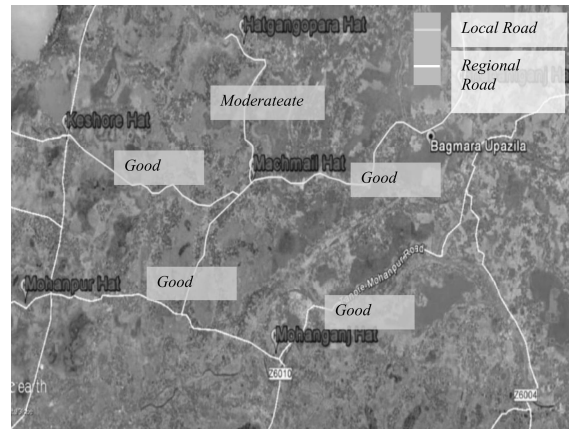
*calculated in taka per person cost

Source: Field Survey, 2017

Road Network Connectivity

Road Network Connectivity of Mochmoil Hat

Here only Hatgangopara hat to Mochmoil hat connectivity is moderate, where other connectivity is in good condition. The roads linked with Mochmoil growth center are basically local roads and the roads were reconstructed at the time of the declaration of these areas as growth centers and some governmental projects occur on reconstruction if the condition of the roads become bad. In Mochmoil hat and Keshor hat linked road was reconstructed approximately 2-3 years ago.

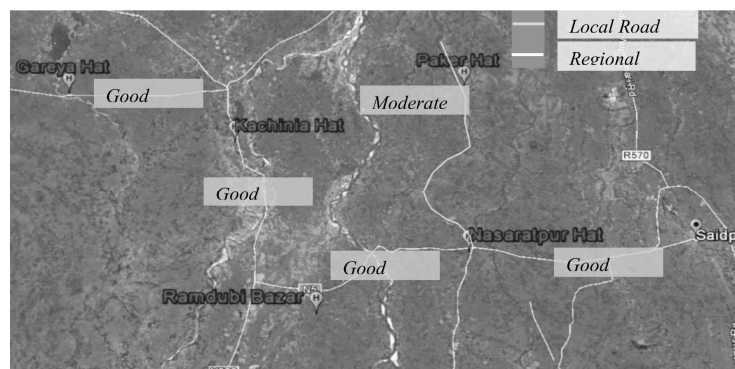


Source: Authors' preparation, 2017

Figure 5: Road network connectivity of Mochmoil Hat

Road Network Connectivity of Kachinia Hat

From the Figure 6, we can see that only Paker Hat to Kachinia Hat connectivity is moderate, where all others are in good condition. The roads linked with Kachinia growth center are basically local roads and the roads were reconstructed at the time of the declaration of these areas as growth centers and some governmental projects occur on reconstruction if the condition of the roads become bad. In Kachinia and Gareya Hats, linked road was reconstructed approximately 3-5 years ago.



Source: Authors' preparation, 2017

Figure 6: Road network connectivity of Kachinia Hat

Market Accessibility

Market Accessibility of Mochmoil Hat

Market accessibility depends on the factors, like road condition, production type etc. If the roads are in good condition and the production is of a different type then the marketing accessibility will be also in good condition. Here market accessibility focuses on the import and export of goods from and towards the growth center.

Table 3 describes the market accessibilities at a glance. From Mochmoil hat to other places export type market is higher in quantity. Betel leaf is more exported. Some other goods are being exported also, where banana and vegetables are imported into Mochmoil from the other places. The main production is Betel leaf and the betel leaf production is the most profitable business here.

Table 3: Market accessibility of Mochmoil Hat

Name	Linked Growth centres	Type	Transferred material
Mochmail Hat	1.Keshor Hat	Export	Betel Leaf
		Import	banana
	2.Mohanpur Hat	Export	Betel Leaf, Paddy
		Import	Banana, vegetables
	3.Mohanganj Hat	Export	-
		Import	papaya,
	4.Bhabanigonj Hat	Export	-
		Import	banana, papaya
	5.Halgangopara Hat	Export	Betel leaf
		Import	-

Market Accessibility of Kachinia Hat

Here also the market is export and import based and the main goods are Garlic, Watermelon, and Banana. In Kachinia hat, the most exported product is garlic. Garlic is not only an export material to neighboring growth centers, it also exports garlic to core district city and neighboring districts though the profit is not much. Watermelon is also an important export material in the area. The profit is high in the production of watermelon.

Marketing connectivity here represents the connectivity of the export and import relationships among the growth centers through intermediate persons. Grower sellers from surrounding rural areas come to the growth center to sell their crops to the rural and urban wholesalers or the rural wholesalers go to the areas to collect crops directly from the farms. These wholesalers then sell the products to the urban wholesalers or retailers; distribute them in various places and storage the rest in godowns. All these businesses take place very early in the morning. The growth centers become very much busy and chaotic at this time, dealing among grower sellers, wholesalers and retailers.

Table 4: Market accessibility of Kachinia Hat

Name	Linked Growth centres	Type	Transferred material
Kachinia Hat	1.Gareya Hat	Export	Garlic,Watermelon.
		Import	banana
	2.Ramdubi Hat	Export	Garlic, Watermelon
		Import	-
	3.Nasaratpur Hat	Export	Watermelon,banana.
		Import	-
	4.Paker Hat	Export	-
		Import	Watermelon

Intermediate Person's Role in Growth Centers

Intermediate persons have a huge role to run the economic activities in the growth centers. They buy and sell goods and try to earn profits. They export goods to the other tertiary places from the growth centers. Again, they import goods to the growth center to their part in a large quantity. Followings are the intermediate person's activities in growth centers at a glance:

Buy products

They buy different types of product, such as Rice, Betel Leaf, Bamboo, Potato etc. They buy these products from the farmers directly in the field or in Machmail Hat. They import Banana, vegetables etc. from other growth centers. In case of Kachinia Hat, they buy different types of products, such as Paddy, Garlic, Watermelon, Potato etc. They buy these products from farmers directly in the field or in Kachinia Hat. They import Banana, vegetables etc. from other growth centers.

Sell products

They sell these products to another party in Machmail Hat or Kachinia Hat. Sometimes they sell this type of product to others nearer growth centers for more profit.

Transport mode

They used different transport modes to transport imported or exported products from one place to another. They use Truck, Votvoti, Nosimon, Korimon etc. to transfer products.

Transport cost

In Machmail Hat, the transport cost is 10-12 taka per person on an average, where 15-20 taka in Kachinia Hat.

Intermediate persons play an important role in import and export of the products, but sometimes they are the reason for the less profit gained by the farmers. In Machmail hat, the intermediate persons earn a lot as they export the products to surrounding districts and the export products are Betel Leaf, Bamboo, Fish etc. wherein Kachinia Hat, the export products are mainly garlic and watermelon. In Mochmoil hat, the intermediate person earns less than in Kachinia hat.

Conclusion

The growth center is the bridge for urban and rural connectivity, and the key to the development for the rural areas. Bangladesh has 2100 growth centres which need to be more developed for developing the rural areas. The areas, which were considered remote, are even developing due to being growth centres. The numbers of growth centres are not enough to serve the whole country. But to upgrade the condition of backdated growth centres is needed more than to increase in number.

Occasionally, the conditions of the growth center are getting worse due to the connectivity and lack of accessibility. The scenario of the growth centers of the north-west part of Bangladesh is reflected in the sample growth centers of Mochmoil hat and Kachinia hat. So upgrading the growth centers by giving compensation on fertilizers, pesticides, storage facilities etc. inputs for the farmers or the reconstruction of the road which are in a bad condition is needed. Connectivity mainly depends on the availability of the transport facility and market accessibility of the surroundings. The upgrade of the conditions and connectivity of the growth centers can lead to the development of the rural areas, which will lead to the development of the whole nation as about 70 percent people in Bangladesh live in rural areas (Bangladesh RIGC, 2017).

Acknowledgement: *This research was conducted in the Department of Urban and Regional Planning of Rajshahi University of Engineering and Technology (RUET) under the supervision of Hossain Mohiuddin, Lecturer (On Leave) and Nazia Hossain, Lecturer. Thanks to Ruksana Mustari for her help in the survey.*

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