

Analysis of Factors Responsible for the Multinational Companies Not Moving in Rajshahi: A Comparative Study on the Locating Factors of Leading MNC

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Abstract

This case study conducts on finding the reason behind not moving multinational companies (MNCs) industries or branches in the Rajshahi district based on dominant locating factors of leading MNCs of Bangladesh. Despite Rajshahi's cultural heritage of textile industries, sugar industry, food manufacturing industry, plastic industry, and research institutes, this city lacks significant multinational companies, unlike other divisional cities. In this paper, major locating factors of leading multinational companies in Bangladesh were investigated through 'TOPSIS Analysis', and easy transportation was come up with the main locating factor. Then 'Thematic Analysis' was used for qualitative data analysis, and here transportation facilities were found to be the principal reason behind not moving to the Rajshahi district. 'Google Earth' was used to exhibit the transportation route of different cities and compare these routes with Rajshahi's distribution center. It was found that, a gateway through a water path in the Padma river could open a new door for MNCs to locate their factories or branches in the Rajshahi district.

Keywords

Multinational company, Locating factors, TOPSIS analysis, Thematic analysis, Google Earth

1. Introduction

Rajshahi is one of the divisional cities in Bangladesh and is going through many structural developments. Besides the higher education rate this city is known for its cultural heritage of textile industries of silk manufacturing. BSCIC industry, Sopura Silk, Nadim Silk industry, Rajshahi Textile Mill etc are some textile companies of Rajshahi. Also, this city has sugar industry, Food manufacturing industry, plastic industry and some research institutes like Bangladesh Rice Research Institute, Bangladesh Silk Research and Training Institute, Bangladesh Rashom Research Center are some of the top most industries of Rajshahi city (Mills & Industries • companies • Rajshahi • Bangladesh 2022). While this city is full of domestic industries but at the same time it lacks some international floor. In spite of being a divisional city it has no multinational company. At this the city contains lack of cultural diversity, lack of international floor, deprive of employment opportunities worldwide, poor export-based industrialization, little scope of expanding local industries, little scope of high economies of scale, no extension of build up local infrastructure for MNC sector and no scope of improving technological parameters direct from foreign countries.

There are approximately 50 to 60 multinational companies including banks, NGO's, FMCG companies, hotel chains, consumer goods and services and more operating in Bangladesh since before 1971 (Ahaduzzaman and Barua 2022) (Top 10 Multinational Companies list in Bangladesh 2022). Berger, British American Tobacco, DHL, Nestle, Unilever, H&M are some major MNCs mentioned in ICC Bangladesh (Multinational Companies – ICC Bangladesh 2022). The companies are expanding and establishing their branches of plants and factories, distribution centers, customer service centers in different cities around the country. From recent information about 921 including all of the branches and every customer services in every corner are operating in this country (Top 10 Multinational Companies (MNC) in Bangladesh | International Companies 2022). Dhaka is holding most of them and then Chittagong and also other divisional cities like Sylhet, Rangpur, Khulna unlike Rajshahi. Bangladesh is holding the floor of many multinational companies in different cities but Rajshahi is not among them. In this city, though there are a few customer service centers and showrooms and all, there is just one distribution center of Unilever Bangladesh and just an export center of ACI but no major factory or plant or any corporate house. It's the era of the fourth industrial revolution and Industrial engineers are everywhere in every industry. So some of them prefer to be in multinational

companies but Rajshahi is not holding any of them. People go outside to different other cities leaving their home and family.

So if a scope of multinational companies to come here can be suggested, then this city will be of more economical value and will go through more development. Therefore this study focuses on the discussion about the locating of plants or corporate houses of multinational companies of consumer goods in Rajshahi.

1.1 Objectives

The objectives of this study are given below:

1. To find out the major locating factors the Multinational companies consider while entering a city
2. To find out the reason behind not establishing any multinational companies' plant or factories in Rajshahi based on locating factors
3. To discuss the factors that should be considered to build a multinational company in Rajshahi and the probable scope for them to come here in this city.

2. Literature Review

There are some significant location factors that should be considered for locating any industry or their factor for sustainable industrialization including availability of raw material, land, labor, transport, market etc. (Which are the main factors which influence the location of an industry? 2022). In a study of Khulna, location choice factors and cluster patterns of small and medium enterprises (SMEs) were analyzed. In this paper, it was found that the availability of low-cost open space, suitable transportation facilities, and agglomeration are the ideal location factors for establishing an industry like SME in Khulna city (Rahman and Kabir 2019). Besides, utility access, physical infrastructure, community and govt. support, and access to market area are also the major factors (Rahman and Kabir 2019). A suitable location for the possible industrial site through SDG in Khulna city was figure out in another paper. For an industrial setup in an urban context, suitable site selection is a major factor. Availability of space with natural resources should be consider in that case. 10% of the land is suitable for establishing a new industry in Khulna (Haque et al. 2021). A study conducted on location choices of multinational companies in transition economies had shown the significant traditional economic factors of FDI in MNCs in Ukraine. These factors had a great impact on the location choices of the firm's investment. Institutional qualities, local business culture, and transaction cost are also essential factors for establishing a firm's decision on location targeting (Zvirgzde et al. 2013). For internalization, resource seeking, market seeking, or efficiency-seeking factors motivates MNCs which deal with the ODI diagram (Zvirgzde et al. 2013). A research was done in Pakistan on the topic either location matters in firm's performance or not. It was analyzed on domestic and multinational companies and result was found that, internalization investment has a strong positive relation with the effective firm's performance. Domestic firms are more structured in managing working capital than multinational firms (Shah et al. 2018). In a study in China, some specific locating factors were studied that determine MNCs strategies to set their headquarters in Shanghai and Beijing. Four major factors were found out including business support, business cluster, proximity, path dependency for locating CHQ in China (Wang et al. 2011). A company's corporate social responsibility is also important for developing countries. Despite the presence of institutional voids and limited pressure from local stakeholders, MNC subsidiaries engage in corporate social responsibility activities in host countries (Roy and Quazi 2022). A paper conducted in Greece had showed that, host country's cultural and institutional factors have a great impact on MNC subsidiaries. Some specific HRM practices are more defined and afflicted by the host countries environment (Myloni et al. 2004). Competitor's responses, customer's preference, and knowledge flow are also significant issues to find out potential location factors for multinational companies. Quality parameter of MNC's location choices has some dependency on consumer utility function and competitor's current location (Hashai and Adler 2019).

Most of the paper which we studied had analyzed about location choices factors and other significant factors of different industries to target new location for industrialization. For multinational companies, major location factors were not properly specified. Different parameters had analyzed for multinational companies in many developed and developing countries. But for Bangladesh, specific locating factors of multinational companies which they consider for entering their factories in a city, had not research properly yet. This study aims to identify the major locating factors of leading MNCs in Bangladesh and investigate the barriers to entry factors of those MNCs for Rajshahi district.

3. Methods

Relevant data were collected through survey questionnaire. Major locating factors of MNCs in Bangladesh were found out through quantitative data collection and barriers factors for entering their industry in Rajshahi were analyzed through qualitative data collection. This study had conducted in three phases. In the first phase, locating factors of MNCs in Bangladesh, considering while entering a city were identified. Those factors were ranked as importance rating through 'TOPSIS Analysis' in excel. In the second phase, we explored the specific reasons through locating factors for why there is no multinational company's factories in Rajshahi on the basis of MNCs barriers to entry factors. Here 'Thematic Analysis' was used for qualitative data analysis using NVIVO software. Factors were analyzed by repeated patterns of data set. In the third phase, the implementation criteria which should be consider while entering a city was discussed. 'Google Earth' was used for describing the transportation route and comparison among themselves. We had also shown the correlation among those factors through SPSS tool. It represents the other factor's impact on resultant factors. Data validity and reliability was calculated through SPSS. A conceptual framework that represents the methodological approach for this study is shown below.

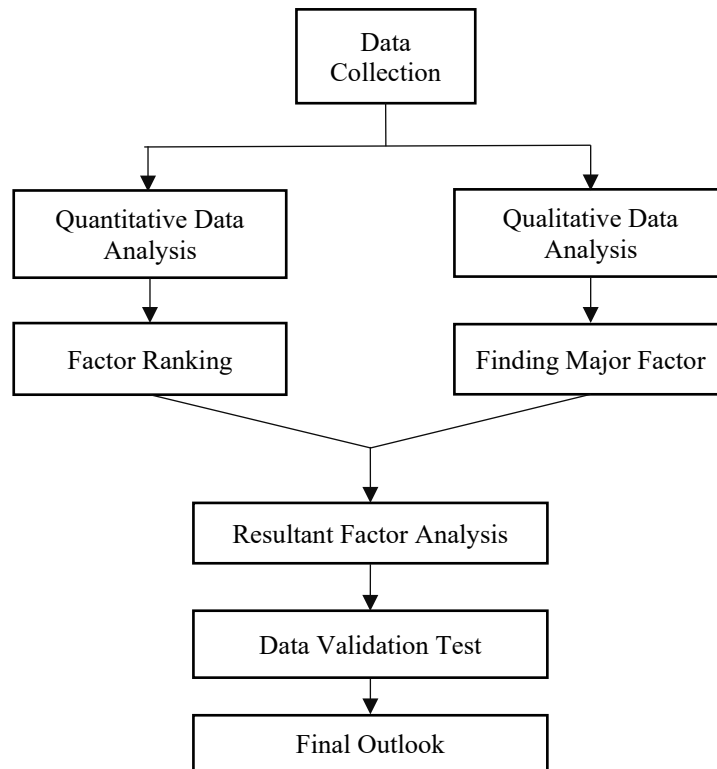


Figure 1. Methodological Framework

Figure 1 shows the methodological framework. After collecting qualitative and quantitative data, locating factors were ranked from quantitative data and found major factors for finding barrier to entry factors. Then resultant factors were analyzed and also showing the data correlation and data validation.

4. Data Collection

For data collection, we had set a survey questionnaire and reached out some leading multinational companies (MNCs) through this questionnaire. Qualitative data and quantitative data both were collected for our study. Twenty multinational company's responses were collected on rating some notable locating factors according to their company's importance rating. Here importance rating (1 to 5: lower to higher) from survey is shown below.

Table 1. Importance Rating on Factors

Attributes	Low Labour Cost	Availability of Space	Availability of Natural Resources	Better Physical Infrastructure	Easy Transportation	Technology Availability	Climate	Banking & Insurance Facilities
Company 1	3	2	1	3	4	5	2	5
Company 2	4	3	4	4	3	4	4	4
Company 3	3	3	4	5	5	5	3	5
Company 4	4	4	4	2	4	2	2	3
Company 5	5	5	5	4	4	4	2	3
Company 6	4	5	3	4	5	5	3	4
Company 7	5	4	4	5	5	5	5	5
Company 8	3	3	4	5	5	5	3	5
Company 9	5	5	5	4	5	4	4	5
Company 10	1	1	5	1	5	1	1	1
Company 11	4	5	5	5	5	5	4	4
Company 12	3	5	4	4	3	4	3	3
Company 13	1	4	5	2	5	4	3	3
Company 14	3	3	3	4	4	3	3	4
Company 15	4	3	2	2	3	5	4	5
Company 16	2	3	3	3	2	2	2	3
Company 17	4	4	5	5	4	5	4	5
Company 18	3	3	2	3	4	3	2	2
Company 19	2	3	3	3	4	3	2	3
Company 20	2	3	4	3	4	4	2	3

In table 1, importance rating from 1 to 5 on locating factors of different leading multinational companies are discussed here.

5. Result and Discussion

5.1 Numerical Results

After finishing data collection, we performed on TOPSIS analysis for ranking the locating factors on the basis of relative closeness test. Decision matrix table was formed on the basis of rating of factors from survey, then after finding normalized decision matrix, weighted decision matrix was calculated. Here weighted rating with 0.05 was kept same for all the companies. After all the calculation, we analyzed relative closeness test in table 2. Finally the locating factors were ranked on their corresponding properties.

Table 2. Relative Closeness Testing

Relative Closeness Testing		
Factors	Pi	Rank
Low Labor Cost	0.36	7
Availability of Space	0.44	5
Availability of Natural Resources	0.57	2
Better Physical Infrastructure	0.39	6
Easy Transportation	0.73	1
Technology Availability	0.54	3
Climate	0.25	8
Banking & Insurance facilities	0.49	4

Here, easy transportation had ranked the first position with 0.73 pi rating. Availability of natural resources had secured the second position with 0.57 rating and technology availability was at 0.57. After finding the major locating factor of leading MNCs in Bangladesh, we moved forward to the next phase where we explored the reason behind not moving into Rajshahi. A qualitative thematic analysis tool was used for discovering the resultant factor. Data set was taken by similarities and iterative patterns were calculated. Analyzing the data patterns, major factor lack of transportation facilities with 32% was found out as main barriers to entry factor for the Rajshahi district.

Table 3. Thematic Analysis of the factors

Table 4.6: Thematic Analysis of the factors

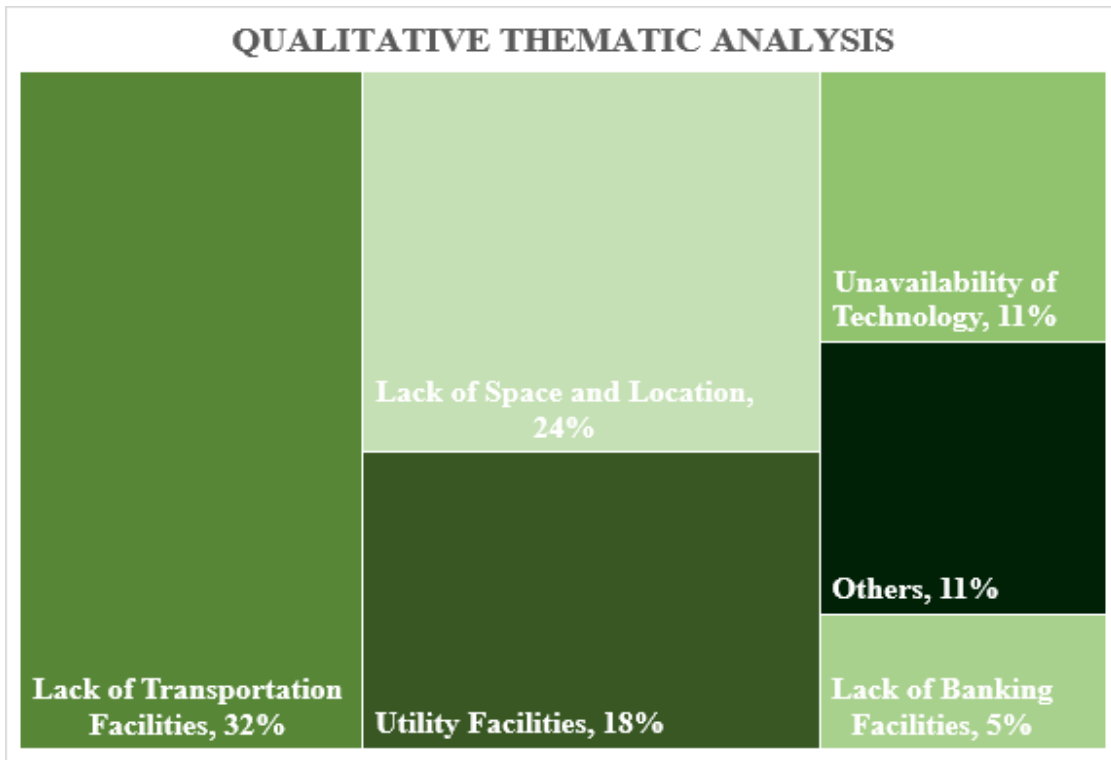


Table 3 shows the qualitative analysis of the locating factors that the respondents were describing. This table shows the percentage of the different factors which are the reasons that the multinational companies are not moving in Rajshahi. Here lack of transportation facilities is the most mentioned factor. From the TOPSIS analysis the major

factor, considered while locating any branch of plant or corporate house of multinational companies, was found easy transportation. Also from the Thematic analysis, the most mentioned reason behind the companies not to come in Rajshahi was found to be the lack of transportation facilities. So our study turned to the analysis of the transportation route of the different divisional cities where most of the branches of the companies are established. The analysis was done on the Google Earth software.

5.2 Graphical Results

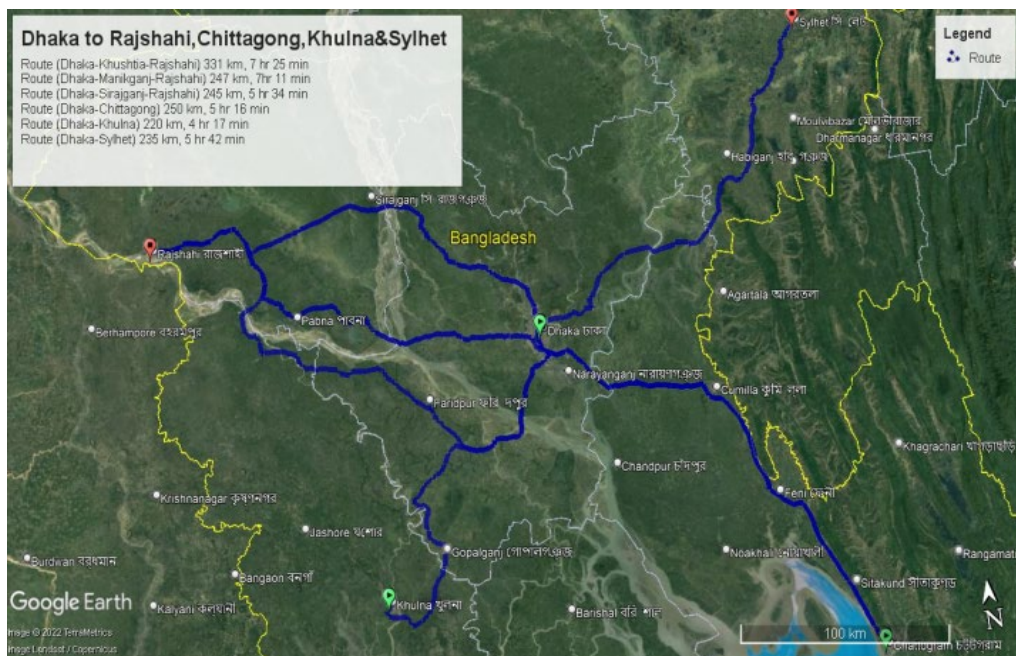


Figure 2. Transportation Routes from Dhaka to Rajshahi, Khulna, Chittagong and Sylhet

Figure 2 shows the transportation routes from Dhaka to Rajshahi, Chittagong, Khulna and Sylhet. From Dhaka to Rajshahi three routes are available for road transportation among which Dhaka to Sirajganj to Rajshahi is the shortest, easiest and most used route which is 245 km long and takes approximately 5 hours 34 minutes to reach. From Dhaka to other three cities have only one route each. From Dhaka to Chittagong it is 250 km long and takes 5 hours 16

minutes, from Dhaka to Sylhet it is 236 km and takes 5 hours 42 minutes and from Dhaka to Sylhet it takes only 4 hours 17 minutes to cross 220 km road.

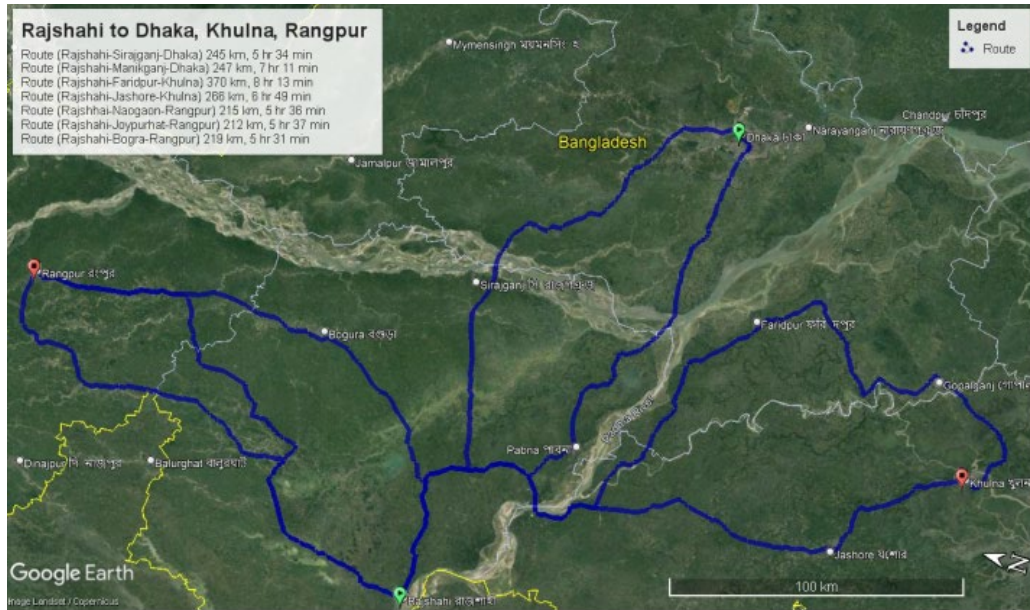


Figure 3. Transportation Routes from Rajshahi to Dhaka. Khulna and Rangpur

Figure 3 shows the available routes from Rajshahi to Dhaka, Khulna and the nearest divisional city Rangpur. From Rajshahi to Dhaka, the available routes were mentioned earlier. Then from Rajshahi to Khulna two routes are available. One route goes through Faridpur which is 370 km long and takes 8 hours 13 minutes and the other route goes through Jashore and takes 6 hours 49 minutes to cross 266 km way. Lastly there are three routes available from Rajshahi to Rangpur. One goes through Naogaon that takes 5 hours 36 minutes to cross 215 km, another is through Joypurhat which is 212 km long and time taken is 5 hours 37 minutes and the last one goes through Bogra which is the longest route of 219 km but takes the shortest time of 5 hours 31 minutes.

5.3 Proposed Improvements

From TOPSIS analysis, easy transportation was ranked the first position with 0.73 pi rating and from thematic analysis, the barriers to entry factor was found the transportation facilities with 32%. That means while transportation facilities is the most considerable factor for the MNCs to establish there branch, unfortunately this was the main lacking of Rajshahi city for which they are not moving in this city. Therefore, our concern in this study was to focus only on the transportation. So we moved forward with this factor to analyze it in our next step. From the fig 4.1 shown in result it was evident that Dhaka-Rajshahi has the largest number of available routes than Khulna, Chittagong and Sylhet. Though Dhaka to Khulna has the shortest path and takes minimum time to reach due to the recent construction of the Padma Bridge but at the beginning it was time consuming and difficult to cross the Padma River through ferry. But still Rajshahi stands behind any of these cities when it comes to the multinational companies. Also, in Figure 3 transportation routes were observed from Rajshahi to Rangpur and Khulna. Rajshahi to Khulna has two available routes but takes the longer time than Rajshahi to Dhaka while Rajshahi to Rangpur takes the shorter time in each and every route available. Here the routes from Rajshahi to Chittagong and Sylhet were not shown as they both go through Dhaka city. But if we look into the other cities like Chittagong, Khulna and Sylhet that holds most of the MNCs in the following figure shows the routes interconnecting each other.



Figure 4. Transportation Routes from Chittagong to Khulna and Sylhet

Figure 4 shows the transportation route from Chittagong to Sylhet and Khulna. From the figure Chittagong to Sylhet route takes 8 hours 23 minutes to cross 359 km path and Khulna-Chittagong has two available routes and both takes much longer time of 8 hours 9 minutes through Dhaka of 438 km and 11 hours 11 minutes through Barishal of 348 km long. So from all of these mapping and routes it is evident that though Rajshahi has better transportation routes than any of the other cities but still there is no branch of factory or corporate house of multinational companies while the Chittagong holds a large number of companies followed by Khulna and Sylhet. The main reason behind this lacking is the international transportation system. Both Chittagong and Khulna have sea ports for their shipment for export and import, and Sylhet has international Airport. Dhaka holds the most, as this city is at the center and has international airport and the suppliers around as well in Gazipur or Narayanganj which is near the city. But Rajshahi is lacking them as the city contains no sea port or airport that means it has no export and import center. This problem will remain a problem until an international route is confirmed. But if a route or a gateway through the water path is constructed through the river Padma through India then this city might hold some international values for multinational companies to come in this city.

5.4 Validation

To analyze the major factor found previously in result a correlation on the factors were established here to find out whether the factors have any significant impact on the transportation facilities if this factor is proceeded to work on.

Table 4. Correlation Analysis between the Factors

	Low Labor Cost	Availability of Space	Natural Resources	Physical Infrastructure	Transportation	Technology	Climate	Banking & Insurance
Low Labor Cost	1	0.604	0.084	0.558	0.062	0.47	0.619	0.57
Availability of Space	0.604	1	0.401	0.481	0.129	0.431	0.474	0.237

Natural Resources	0.084	0.401	1	0.218	0.400	0.010	0.199	-0.126
Physical Infrastructure	0.558	0.481	0.218	1	0.220	0.735	0.61	0.636
Transportation	0.062	0.129	0.400	0.220	1	0.328	0.136	0.142
Technology	0.47	0.431	0.010	0.735	0.328	1	0.641	0.774
Climate	0.619	0.474	0.199	0.61	0.136	0.641	1	0.731
Banking & Insurance	0.57	0.237	-0.126	0.636	0.142	0.774	0.731	1

Table 4 shows the correlation analysis between the factors. Here all the factors were correlated with each other. Since the easy transportation came up as our resultant factor, so this factor was highlighted with the correlation of other major factors. It is evident that, it is not that significantly correlated with other factors except natural resources with the number 0.400 and the technology with the number 0.328.

Correlation of factors was analyzed and discovered that transportation facilities slightly depends on natural facilities resources including gas, oil, water, and technology. To work on transportation facilities, these two factors also should be considered as well for proper implementation. We also analyzed the validation of our data of locating factors found from the survey on SPSS software.

Table 5. Reliability Analysis Table Khulna, Chittagong and Sylhet

Case Processing Summary			
		N	%
Cases	Valid	20	100.0
	Excluded	0	0.0
	Total	20	100.0

Reliability Statistics	
Cronbach's Alpha	No of Items
0.837	8

Table 5 shows the reliability analysis of the data. The reliability of our data was calculated to be 0.837.

6. Conclusion

This work of study analyzed the current situation of multinational companies in Rajshahi and the possibilities of the companies to come here if they want to expand their organizations with more diverse cultural value. From this analysis,

the major locating factor was found to be the transportation that the multinational companies consider while entering a city among many other locating factors. Also, the barrier to entry factor which is the reason that they are not moving here was found to be the lack of transportation facilities. So from further analysis it was evident that if a gateway through river Padma or any international pathway is formed in this city, the companies might move to Rajshahi. This study showed the possibilities to encourage the administrators to take chance to make the possible changes of measures to make this city more suitable to contain any of the factory or plants or corporate house to come in Rajshahi and make this city of more internationally economical values.

This work was based on only the factory or plants or corporate house of different multinational companies which are based on consumer goods and not the service. So, in future a scope of study on the service or banking and analyzing the possibilities of increasing distribution centers or service centers as well will always be open. This study was proceeded only with the major ranked factor as Transportation facilities but some other factors were also remarkably noticeable to work with. So we are looking forward to work on the other factors as well with more data than before.

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Biography

Tamanna Islam is an undergraduate student of Rajshahi University of Engineering & Technology at Industrial and

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Fariha Rahnuma is an undergraduate student of department of Industrial & Production Engineering at Rajshahi University of Engineering & Technology. She completed her SSC from Dhaka Shiksha Board Laboratory School & College and HSC from Dhaka City College. She is involved in some clubbing activities from the beginning of her campus life. She is experienced with content & creative writing, website writing, promotional marketing, and organizing events. Recently she has done an article published on the field of supply chain management titled on 'The Introduction of Multichannel & Omni channel Explaining Effects of Omni channel on Retail & Warehouse', and designed a prototype 'Mini, Portable & Sustainable Refrigerator' with her teammate in an academic course. She is highly ambitious to set her career path in any leading multinational sectors.

Md. Sazol Ahmmed is an Assistant professor of Department of Industrial & Production Engineering (IPE) at Rajshahi University of Engineering & Technology (RUET). He earned his Bachelor of Science in Industrial & Production Engineering from Rajshahi University of Engineering & Technology (RUET). He has done research activities in many engineering fields which include the area of supply chain management, operations management, machine learning with many more cases. He is keenly interested in mastering more areas of the engineering field. He also supervised many undergraduate students in various engineering sectors. Moreover, he has published around five international journal papers and some international conference articles.