Journal of Business Studies, Vol. XLII, No. 1, April 2021

https://doi.org/10.3329/dujbst.v42i1.59961

Analysis of Factors Affecting Bangladesh's Export to China: An Empirical Analysis

Mohammad Rakib Uddin Bhuiyan[*]
Afsanin Rafsan Alve[**]

Abstract: *The importance of bilateral trade analysis between Bangladesh and China is increasing as Bangladesh constantly searches for opportunities to reduce the enormous trade deficit with China. This study analyzes Bangladesh's export to China using the famous 'Trade Gravity Model.' The study examined Bangladesh's exports to China from 1999 to 2020 using factors: Gross Domestic Product (GDP) of Bangladesh, Gross Domestic Product (GDP) of China, Population of Bangladesh, Population of China, Relative Distance between Bangladesh and China, Weighted Average Tariff Rate imposed by China and Relevant Trade Agreements between Bangladesh and China. The findings suggest that the exports of Bangladesh to China will rise with the increase of GDPs of Bangladesh and China, the populations of Bangladesh and China, and with the growth of number of trade agreements between Bangladesh and China. The study also shows that Bangladesh's export to China will decrease with the increase of tariffs imposed by China on imports from Bangladesh and length of distance covered by the export order. The study's findings provide policy implications for Bangladesh towards its successful graduation from the Least Developed Countries (LDCs) status.*

Keywords: *Export, GDP, Tariff, Trade Agreements*

1.0 Introduction

Since the beginning, China has dominated the Bangladesh-China trade partnership, and Chaudhury (2020) mentioned that Bangladesh's trade deficit with China has increased around 1600 percent in the last two decades. The trade volume between Bangladesh and China is significant, where China is in the dominating position by exporting more than 15 billion US dollars to Bangladesh in 2020. In contrast, Bangladesh's export to China stands at little above 1 billion dollars in the same period. Bangladesh is currently struggling to reduce this trade gap. The recent response of the Chinese government (zero duty to 97 percent of Bangladeshi products) is strengthening Bangladeshi exporters to find new markets in China and boosting opportunities to reduce the trade gap soon (Latifee, 2020).

Although the economic philosophies of Bangladesh & China are different, both are trying to act as strategic partners (Gazi, 2021). China's 'Belt and Road Initiative (BRI)-2013 economic strategy has created new opportunities in bilateral trade partnerships between Bangladesh and China (Gazi, 2020). In a discussion meeting organized by HSBC Bangladesh, experts and

[*]Associate Professor, Department of International Business, University of Dhaka.
[**] Director, ARF Trade, Dhaka, Bangladesh.

officials hope that Bangladesh and China's economies are growing fast, and bilateral trade will rise with the further implementation of China's Belt and Road Initiative (XinhuaNet, 2017). Bangladesh should work comprehensively to identify the trade dynamics with solid strategy formulation, business-friendly policies, regulations, and better infrastructure and financial system to reduce the trade deficit with China (Sikder & Dou, 2020).

This study examines trade volume (export of Bangladesh to China) and core features of two countries' economies to demonstrate a pattern for Bangladeshi export flows to the Chinese region. The study objective is to analyze the core factors influencing the export of Bangladesh to China. This study searched how sensitive and influential the selected factors are in determining trade volume and how changes in a particular factor affect trade. This research is motivated by previous research in various jurisdictions. For instance, Muganyi & Chen (2016) document that China's bilateral trade for selected commodities is heavily influenced by the economic size, market status, language, distance, trade agreements, and culture with the selective agricultural trading partners.

This study is significant from the perspective of Bangladesh, as Bangladesh's economy has been undergoing a massive economic transformation over the last twenty years. Massive Chinese investment in several big infrastructures and the opening up of Chinese economic zones in Bangladesh have taken these two countries' trade relationships to another level. This study uses multiple sources of data from 1999 to 2020 to explain the export performance of Bangladesh to China, and the factors (gross domestic products, populations, trade agreements, tariffs, and distance) considered in the study are taken from relevant works of literature. The study findings can predict future export trends to formulate better policies regarding bilateral trade between Bangladesh and China.

The paper describes the following sections as follows. Section 2 provides the theoretical framework and review of previous relevant literature on export and trade flows from various perspectives. Section 3 discusses research methods, including empirical model, variables definition, and data source and hypothesis development. Section 4 and 5 present the discussion and findings, and concluding remarks of the paper.

2.0 Theoretical Background of the Study

2.1 Trade Gravity Model

The Gravity Model of International Trade is a worldwide recognized model generally used to forecast bilateral trade flows based on economic factors such as economic sizes and distance (Peter, 2020). The 'Trade Gravity Model' has analyzed bilateral trade over the last fifty years. The model has contributed to international trade research by giving rise to numerous publications and working papers (Shepherd, Doytchinova & Kravchenko, 2019).

The concept of the trade gravity model replicates Newton's universal law of gravitation, which

states that planets attract each other concerning their sizes and closeness. Jim Tinbergen, in 1962, proposed the gravity model, and the model argues that the pattern of trade flows between two countries moves on a pro-rata basis positively to their economic sizes and negatively to distance (Chaney, 2018).

Shepherd, Doytchinova & Kravchenko (2019) said that the gravity model provides a convenient testing bed on which researchers can analyze the impact of various factors on trade. Initially, the gravity model was an empirical model without an appropriate theoretical background, but gradually, this model started to contribute to the development of theoretical models (Baier & Standaert, 2020). In 1997, Eaton and Kortum derived the gravity equation from a Ricardian framework, and Deardorff derived the gravity equation from the Heckscher-Ohlin international trade theory (Rahman, 2006).

The trade gravity model does not hold exactly, and economic application of the trade gravity model is customary (Wu, 2015). Based on Scott Baier & Samuel Standaert's (2020) "Gravity Models and Empirical Trade", the basic mathematical expression of trade gravity model is $Eij = G\frac{Yi^{a1}}{Yj^{a2}}$ where, Eij is the trade between exporting country i and importing country j, Yi and Yj are the Gross Domestic Product (GDP) in country i and country j and Dij is the distance between country i and j, a is the constant and G constant is part of a. This equation, through a natural logarithm, can be transformed into a log-linear model, *ln*Eij = *ln*G+a1*ln*Yi+a2*ln*Yj+a3*ln*Dij. A substantial amount of research using the gravity equation with the help of ordinary least squares proved that the economic volume of the countries positively (a1>0, a2>0) and the distance negatively (a3<0) influence trade between countries. The coefficient estimates vary depending on the period and the sample of countries (Baier & Standaert, 2020).

2.2 Empirical Works

Trade partnership between Bangladesh and China must work toward achieving a dynamic development in the coming years. China's vital productive sectors, technology, and tariff policy will influence the growth of Bangladesh's export to China (Gazi, 2021). Bangladesh's trade deficit with China has been significant over the years because of China's large exports to Bangladesh, but Bangladesh can reduce the trade deficit with China by focusing on strategy implementation, trading policies, regulations, financial integration, infrastructural factors (Sikder & Dou, 2020). Since the first proposition of the Gravity Theory of Trade by Jan Tinbergen (1962), the theory has been in constant usage in many studies to date. Martinez-Zarzoso and Nowak-Lehmann (2005) used the gravity model to show the influence of macroeconomic factors on the export of MERCOSUR to the European Union. Sohn (2005) adopted the gravity model to delineate South Korea's trade flows and draw out pragmatic trade policies. The study findings suggest that South Korea can capitalize on the enormous trade potentials with China and Japan as they are the most desirable partners for a free trade agreement. North-South Korean trade will

increase remarkably if bilateral relation improves and North Korea participates in APEC.

Bhattacharyya & Banerjee (2006) used the gravity model to analyze India's bilateral trade with other countries. They found that India's trade was relatively more responsive to distance and less responsive to economic size. The model significantly explains 43 percent of the variations in India's business for the later years of the twentieth century. Portugal-Perez & Wilson (2009) calculated ad-valorem equivalents of improvements in trade statistics for a set of African nations using gravity-model estimates. The findings suggest that the surpluses generated for African exporters from reducing trade costs halfway to the magnitude of Mauritius have a more decisive outcome on the trade run than a significant reduction in trade barriers. Several other researchers (Do 2006; Doumbe & Belinga, 2015; Bi & Kong, 2022) use the gravity model in explaining the trade scenarios from the various country context with the help of macro-economic variables: economic size and per capita GDP, market size, distance, and exchange rate. Population sizes, culture, tariffs, and other business matters are dominant in the latest research on the trade gravity model.

The trade relationship between Bangladesh and China got enriched in various areas. However, Bangladesh should put more effort into diversifying its export to china than relying primarily on textiles and clothing goods (Sikder & Dou, 2020). Kabir (2017) concluded that China already had good business with Bangladesh. In contrast, Bangladesh exports less to China. This lagging in Bangladesh's export to China shows that Bangladesh has a significant opportunity to expand business with China in the future, ensuring both countries' economic welfare. He further suggested that Bangladesh must focus on new trade items (footwear, rawhides, and skins) in addition to the regular export items (textile and clothing) to reduce the trade deficit with China. Rahman & Dutta (2012) found that the factors positively affect Bangladesh's export are the exchange rate, partner countries' total import demand, and openness of the Bangladesh economy.

3.0 Research Methods

This study analyzed the prime factors influencing the export of Bangladesh to China using the Trade Gravity Model. With seven independent variables (GDP of Bangladesh, GDPb; GDP of China, GDPc; Population of Bangladesh, POPb; Population of China, POPc; Relative Geographic Distance between Bangladesh and China, RDStbc; Weighted Average Tariff Rate imposed by China, WATarifRc; and Relevant Trade Agreement between Bangladesh and China, RTAbc), the Trade Gravity Model equation of the study aims to explain the dependant variable, Export of Bangladesh to China, EXPbc.

Data on the selected variables are collected from the databases of the World Bank, WTO, CEPII, and Google Map for the period 1999 to 2020. For appropriate analysis and to avoid superiors' regression problems in the Trade Gravity Model, the Augmented Dickey-Fuller (ADF) Unit Root Test is applied in this study to test the stationarity of the time-series data for

each variable. The Autoregressive Distributed Lag (ARDL) bound testing is applied in this study as stationary and non-stationary time series variables exist among the selected variables. EVIEWS-12 software is used for statistical calculations.

3.1 Empirical Model

The traditional Trade Gravity Model is applied in this study to analyze core factors influencing Bangladesh's export to China. Seven independent variables are used in the regression model to describe Bangladesh's dependable variable export volume to China EXPbc. Natural logarithms of all variables are considered to get a log-linear equation for a more straightforward estimation than a non-linear equation.

The estimation equation for this study:

$$Ln\text{EXP}bc = ao + a1\ ln\text{GDP}bt + a2\ ln\text{GDP}ct + a3\ ln\text{POP}bt + a4\ ln\text{POP}ct + a5\ ln\text{RDISt}bct + a6\ ln\text{WATarifR}ct + a7\ \text{lnRTAbct}$$

Where: *ao* is a constant; EXP*bct* = Export volume of Bangladesh to China in *t* period; GDPbt = GDP of Bangladesh in *t* period; GDPct = GDP of China in *t* period; POP*bt* = Population of Bangladesh in *t* period; POP*ct* = Population of China in *t* period; RDISt*bct* = Relative Distance between Bangladesh and China in *t* period; WATarifR*ct* = Weighted Average Tariff Rate imposed by China in *t* period; RTA*bct* = Relevant Trade Agreements between Bangladesh and China in t period.

3.2 Variables Definitions and Data Sources

Export of Bangladesh to China (EXPbc): The export volume of Bangladesh to the china region is explained by this variable in this study. EXPbc is the dependable variable in the regression equation for this study. The export volume of Bangladesh (in Million USD) to the Chinese Region is collected from the World Bank website for 1999-2020.

Gross Domestic Product of Bangladesh (GDPb): The GDP of exporting country Bangladesh is considered in this study. The GDP of an exporting country represents a country's capability to produce and export products. The coefficient of GDP is expected to be positive for both exporting country Bangladesh and importing country China. The positive coefficient of GDP in the regression analysis of the Gravity Model equation indicates that export flows from the exporting country will increase with the increase of the GDP of exporting country. The GDP of Bangladesh (in Million USD) is collected from the World Bank database from 1999 through 2020.

Gross Domestic Product of China (GDPc): The GDP of importing country China is considered in this study. The GDP of China (in Million USD) is collected from the World Bank database from 1999 through 2020. The GDP of an importing country represents the market size, economic condition, income, and purchasing capabilities of the people of a region which influenced

imports of that particular country. The positive coefficient of GDP in the regression analysis of the Gravity Model equation indicates that export flows from the exporting country will increase with the increase of GDP of importing country.

The population of Bangladesh (POPb) & Population of China (POPc): In this study population of both the exporting country and the importing country is used to interpret the influence of the population of Bangladesh and China. Both positive and negative coefficients of the population of exporting and importing countries can be explained from different points of view to explain the regression equation of the Trade Gravity Model for bilateral trade analysis. The positive coefficient for the population of the exporting country indicates higher production capabilities and export volume with the increase of population, and the positive coefficient for the population of the importing country indicates a gradual increase in demand for imported products (Nuroglu, 2010). On the other hand, the negative coefficient for the exporting country's population indicates high demand in the local market and less export tendency. The negative coefficient for the population of the importing country indicates low per capita income and less demand for imported products (Hosnijeh, 2008). The data on the population of Bangladesh and China are collected from the World Bank database from 1999 to 2020.

Relative Geographical Distance between Bangladesh and China (RDStbc): Relative Geographical Distance between Bangladesh and China is another essential factor in this study. The distance variable is used as a proxy for transportation costs because trade costs are likely to increase with distance (Marimoutou, Peguin & Peguin-Feissolle, 2010). Measuring the distance between two countries is difficult, especially when a large country is involved (Marimoutou, Peguin & Peguin-Feissolle, 2010). Different measurement techniques are used to measure the distance variable in Trade Gravity Model. Frenkel et al. (1995) suggest using the log of the distance between the two destinations, especially the distance between the capitals of respective countries. Alternatively, the measurement between two locations can include the difference between borders, prime cities, or locations (Frenkel et al., 1995).The formula used to measure relative distance in this study is

$$\text{RDStbc} = \frac{\text{GDPct (in million \$)}}{\text{GDPbt (in million \$)}} * \text{Distance (Dhaka to Beijing in kilometers).}$$

The GDP of Bangladesh (in Million USD) and the GDP of China is collected from the World Bank database from 1999 to 2020. The geographic distance between Dhaka to Beijing is about 3017 kilometers (Google Maps).

Weighted Average Tariff Rate imposed by China (WATarifRc): Tariff influences trade between nations and trade volume between two countries increases significantly with lower tariffs (Hayakawa & Yoshimi, 2020). An increase in tariff rate generally reduces Bangladeshi exports

to China because it increases overall trade costs and increases the price of Bangladeshi products in the Chinese market. The weighted average tariff rates imposed by China for exporters worldwide are obtained from the World Integrated Trade Solutions (WITS) database from 1999 to 2020.

Relevant Trade Agreements between Bangladesh and China (RTAbc): Bilateral trade agreement increases trade volume and decreases trade costs by reducing or eliminating tariffs. The positive coefficient of this variable in the Trade Gravity Model indicates that an increase in the number of trade agreements between two specific countries will increase trade volume. The number of trade agreements between Bangladesh is collected from the World Bank, CEPII, RTA database of WTO, and World Bank doing business database.

3.3 Hypotheses Development

The stationarity test is essential in research where the underlying variables are based on time, and it is vital to determine the most appropriate form of the trend in the data (Mustaq, 2011). At the beginning of the 1970s, there was a great debate, and in 1974 Granger and Newbold provided the idea that macroeconomic data contained stochastic trends and characterized by unit root may lead towards spurious regressions (Mustaq, 2011). Therefore, unit root test is necessary to avoid superiors' regression problems in economic models like Trade Gravity Model, where variables containing stochastic trends, time-series data, or data characterized by unit root are used. In this study, testing data stationarity is essential before the regression analysis for the Trade Gravity Model. The Dickey-Fuller test is, also known as Dickey Pantula Test, is based on linear regression (Kotz et al., 2006). Augmented Dickey-Fuller (ADF) Test can be used for the data in which serial correlation can be impacted. ADF handles bigger and more complex models (Kotz et al., 2006).

The Augmented Dickey-Fuller Test (ADF) tests the null hypothesis that a unit root is present in a time-series data (the time series data is non-stationary), and the alternative hypothesis is that there is no unit root (the time series data is stationary).

Ho: There is a unit root (Time series is Non-stationary).

H1: There is no unit root (Time series is stationary).

4.0 Discussions & Findings

Table 1: Augmented Dickey Fuller (ADF) Unit Root test Results

Variables	Level		First Difference		Decision
	Prob. Intercept	***Prob. Trend & Intercept***	***Prob. Intercept***	***Prob. Trend & Intercept***	
*ln*EXP*bc*	0.2940	0.9990	0.0464	0.0342	Null Hypothesis is not rejected. The variable, *ln*EXP*bc* has a unit root and it is stationary at the differential level I (1).
*ln*GDP*b*	0.8898	0.0799	0.0114	0.1426	Null Hypothesis is not rejected. The variable, *ln*GDP*b* has a unit root and it is stationary at first differential level, I (1).
*ln*GDP*c*	0.6447	0.8368	0.0320	0.0612	Null Hypothesis is not rejected. The variable, *ln*GDP*c* has a unit root and it is stationary at I (1).
*ln*POP*b*	0.7836	0.1241	0.0228	0.1164	Null Hypothesis is not rejected. The variable, *ln*POP*b* has a unit root and it is stationary at the level I (1).
*ln*POP*c*	0.8666	0.4641	0.0743	0.0426	Null Hypothesis cannot be rejected. *ln*POP*c* variable has a unit root and it is stationary at first difference I(1).
*ln*RDSt*bc*	0.1426	0.2967	0.0162	0.0026	Null Hypothesis is not rejected. The variable, *ln*RDSt*bc* has a unit root and it is stationary at first difference I (1).
*ln*WATrifR*c*	0.0412	0.0119	0.0005	0.0011	Null Hypothesis is rejected. The variable, *ln*WATrifR*c* lacks unit root and it is stationary at level I (0).
*ln*RTA*bc*	0.0028	0.0072	0.0000	0.0054	Null Hypothesis is rejected. RTA*bc* has no unit root and it is stationary at level I (0).

Simple regression applies to a dataset where all the time series data are stationary at level I(0).

Similarly, cointegration works with a dataset where all variables are static at first difference. Autoregressive Distributed Lag (ARDL) model puts in where some variables are stationary at the level I(0) and some variables are stationary at the first difference I(1). The test outcome of the study presents mixed results about having unit root at the level and the first difference. Weighted Average Tariff Rate imposed by China (WATarifRc) and Relevant Trade Agreements between Bangladesh and China (RTAbc) variables are stationary at level I(0). On the other hand, Export of Bangladesh to China (EXPbc), Gross Domestic Product of Bangladesh (GDPb): Gross Domestic Product of China (GDPc), Population of Bangladesh (POPb), Population of China (POPc), Relative Geographical Distance between Bangladesh and China (RDStbc) variables are stationary at the first difference I(1). Therefore, Autoregressive Distributed Lag (ARDL) model should be applied in this study to explain and examine long-term cointegration among variables.

Table-2 Results of ARDL bound test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	5.66	10%	1.21	2.89
k	8	5%	2.26	3.49
		2.5%	2.68	3.69
		1%	2.89	3.87

The ARDL model is generally used to measure the relationship between variables using a single equation time series (Abonazel, 2020) and capture short-run and long-run causality relationships among variables (Bhattacharyya, 2019). The result reported in table-2 indicates long-run co-integration among all study variables exist as the F-statistic value (5.66) is higher than the critical values at the level I(0) and I(1). The critical values are (2.89 and 3.87); (2.68 and 3.69); (2.26 and 3.49) and (1.21 and 2.89) at 1%, 2.5%, 5%, and 10% significance levels respectively. Therefore, the regression coefficients of the ARDL test have both short and long-run impacts and estimation of coefficients can be effective for making decisions regarding bilateral trade between Bangladesh and China in the long run.

Table 3: **Regression coefficients of the ARDL test**

Variables	Coefficients	t-Statistic	Prob.
*ln*GDP*b*	1.061	2.429	0.007
*ln*GDP*c*	1.098	1.879	0.091
*ln*POP*b*	0.033	1.931	0.073
*ln*POP*c*	0.015	2.218	0.052
*ln*RDSt*bc*	-1.065	-1.376	0.123
*ln*WATrifR*c*	-0.256	-2.129	0.013
*ln*RTA*bc*	0.063	1.929	0.079

The estimated coefficient of the lnGDPb variable is positive (1.061) and statistically significant at 1% (Prob. 0.007 < 0.01). Therefore, this indicates that an increase in Gross Domestic Product (GDP) by 1% in Bangladesh will increase the export volume of Bangladesh to the Chinese region by 1.06%, keeping the other things constant. Again, the estimated coefficient of the lnGDPc variable is positive (1.098) and statistically significant at 10% (Prob. 0.091 < 0.1). It indicates a 1.09% increase in Bangladesh's export volume to China for a 1% increase in China's Gross Domestic Product (GDP), keeping the other things constant.

The estimated coefficient of lnPOPb variable is positive (0.033) and statistically significant at 10% (Prob. 0.073 < 0.1). It indicates that an increase in total population by 1% in Bangladesh will increase the export volume of Bangladesh to China by 0.033%, keeping other things constant. Usually, the positive coefficient of the population variable in the Trade Gravity Model for the exporting country indicates higher human resources, huge production capabilities, and extensive export capabilities with the increased population (Nuroglu, 2010). Again, the estimated coefficient of lnPOPc variable is positive (0.015) and statistically significant at 10% (Prob. 0.052 < 0.1). It indicates that an increase in total population by 1% in China will increase the export volume of Bangladesh to China by 0.015%, keeping other things constant. Usually, a positive coefficient for the importing country's population in Trade Gravity Model indicates a gradual increase in demand for imported products in the importing country (Nuroglu, 2010). In this study, the positive coefficient for lnPOPb and lnPOPc variables indicates that the export capabilities of Bangladesh are increasing, and the market for Bangladeshi products in the Chinese region are increasing with the increasing population in both countries.

The estimated coefficient of lnRDStbc is negative in this study (-1.065) and statistically insignificant at 1%, 5% and 10% (0.123 > 0.1). The estimated coefficient indicates that an increase in 1% increase in distance between Bangladesh and China will decrease the export volume of Bangladesh to China by 1.065%, keeping other things constant.

The estimated coefficient of lnWATrifRc variable is negative (-0.256) and statistically significant at 5% (Prob. 0.013 < 0.05) and at 10% (Prob. 0.013<0.1). The estimated coefficient indicates that an increase of 1% in the weighted average tariff rate imposed by China will decrease the export volume of Bangladesh to China by 0.256%, keeping other things constant.

The estimated coefficient of lnRTAbc variable is positive (0.063) and statistically significant at 10% (Prob. 0.079 < 0.1). It indicates that an increase in the relevant trade agreement between Bangladesh and China by 1% will increase the export volume of Bangladesh to China by 0.063%, keeping other things constant.

5.0 Conclusion and Further Research

This study aims at identifying the factors that contribute to the export of Bangladesh to China. Specifically, the study analyzes Bangladesh's export to China, considering the factors (Gross Domestic Products of Both Bangladesh and China, Populations of Bangladesh and China, the distance between Bangladesh and China, tariff imposed by China on imports from Bangladesh, and trade agreements between Bangladesh and China). The contribution of these factors to the export of a particular country is available in trade literature, and Bangladesh can be a good study site for this type of study as Bangladesh's economy has the highest trade flows and significant trade deficit with China. The study's findings based on data from 1999 to 2020, have substantial policy implications and can provide practical solutions to the massive trade deficit of Bangladesh with China.

Interestingly, the study's finding shows that gross domestic products of both Bangladesh and China are positively related to the export of Bangladesh to China. As Bangladesh's economy is growing very fast in terms of GDP growth, the future export of Bangladesh to China will increase. In line with GDP, the study also finds that populations and relative trade agreements between Bangladesh and China positively contribute to Bangladesh's export to China. As expected, this study reveals that Bangladesh's export to China has a negative association with the distance between Bangladesh and China and the average tariff imposed by China on Bangladeshi products. Currently, 97% of Bangladeshi products enjoy duty-free access to the China market, which may boost Bangladesh's export to China and reduce the existing trade deficit. This historical political and trade relationship between Bangladesh and China should not let go of wastage, rather to take care of with substantial attention.

This study is the first of its kind in Bangladesh, explaining Bangladesh to China export dynamics; however, trade in the real world is more complex and not limited to these factors considered in the study. The study is a beginning to advance further research from Bangladesh's perspective as Bangladesh's economy is undergoing massive economic and transformational growth, and thereby a new reality of Bangladesh's economy will emerge immediately. Keeping this in mind, future researchers can consider more factors, such as culture, inflation, investment, and

exchange rate (Goff, 2019; Stockman, 1985; Fang, Lai & Miller, 2006) to explain the export growth performance of Bangladesh to China. Moreover, the study can also be applied to other major trading partners of Bangladesh, for instance, India, Japan, USA and EU. Bangladesh's government has already fixed an ambitious export target by 2030, and the country is also officially graduating from Least Developed Countries (LDCs) by 2024. So. Substantial and suitable policy reforms must be done in the export sector of Bangladesh to achieve the export target and to face the challenges of LDC graduation.

References

Abonazel, M. & Elnabawy, N. (2020). Using the ARDL bound testing approach to study the inflation rate in Egypt. *Economic Consultant*, 31(3), 24-41.

Baier, S., & Standaert, S. (2020). Gravity Models and Empirical Trade. *Oxford research encyclopedia of economics and finance*, 1-48.

Bhattacharyya, R. & Banerjee, T. (2006). *Does the Gravity Model Explain India Direction of Trade? A Panel Data Approach* (IIMA Working Papers WP2006-09-01). Ahmedabad, Indian Institute of Management.

Bhattacharyya, R. (2019). *Changing Patterns of Energy Use and Its Linkage With Some Macroeconomic Variables in India and China*. Handbook of Research on Economic and Political Implications of Green Trading and Energy Use, Hershey, Pennsylvania, USA, IGI Global.

Bi, N.N. & Kong, X. (2022). Analysis of Fijis Regional Trade Using Gravity Model. *Open Journal of Business and Management*, 10, 17-38.

Carrère, C., Mrázová, M. & Neary, J.P. (2020). Gravity without Apology: the Science of Elasticities, Distance and Trade. *The Economic Journal*, 130(628), 880–910.

Chaney, T. (2018). The Gravity Equation in International Trade: An Explanation. *Journal of Political Economy*, 126(1), 150-177.

Chaudhury, D.R. (2020, July 11). China's trade concessions to Bangladesh a 'dual-deficit and debt trap. *The Economic Times*.

Do, T.T. (2006*). A Gravity Model of Trade between Vietnam and 23 European Countries* (Doctoral Dissertation). Available from diva-portal. Org.

Doumbe, E.D. & Belinga, T. (2015). A Gravity Model Analysis for Trade between Cameroon and Twenty-Eight European Union Countries. *Open Journal of Social Sciences*, 3,114-122.

Fang, W.S., Lai, Y.H. & Miller, S.M. (2006). Export Promotion through Exchange Rate Changes: Exchange Rate Depreciation or Stabilization? *Southern Economic Journal*, 72(3), 611-626.

Frankel, Jeffrey, Stein, E. & Shang-Jin, W. (1995). Trading Blocs and the Americas: The Natural, the Unnatural and the Super-natural. *Journal of Development Economics*, 47(1), 61–65.

Ganbaatar, B., Huang, J., Shuai, C., Nawaz, A., & Ali, M. (2021). Empirical Analysis of Factors Affecting the Bilateral Trade between Mongolia and China. *Sustainability*, 13(7), 40-51.

Gazi, M. A. I. (2021). Foreign Trade: An Analysis of Bilateral Trade between Bangladesh and China. *International Journal of Information, Business and Management*, 13(1), 93-106.

Goff, P.M. (2019). Trade and Culture: The Ongoing Debate. *International Journal of Cultural Policy*, 25(5), 547-551.

Hayakawa, K., & Yoshimi, T. (2020). *Tariff Rates in Gravity*. IDE Discussion Papers 796, Institute of Developing Economies, Japan External Trade Organization (JETRO): Chiba, Japan.

Hosnijeh, H.K. (2008). Trade Potential and Among Indian Ocean Border Countries: Application of the Gravity Model. *Iranian Economic Review*, 13(20), 13-23.

Jeffrey, F., Stein, E., & Wei, S. (1995). Trading blocs and the Americas: The natural, the unnatural, and the supernatural. *Journal of Development Economics*, 47, 61-95.

Kotz, S., Balakrishnan, N., Read, C.B. & Vidakovic, B. (2006). *Encyclopedia of statistical sciences*. 2nd edn. Hoboken, N.J.: Wiley-Interscience.

Latifee, E. H. (2020, December 3). *Grow Your Export with the Duty Free Facility in Chinese Market: Focus on RMG- Knitwear Sector of Bangladesh* (Webinar). Amin & Jahan Corporation Ltd.

Marimoutou, V., Peguin, D., & Feissolle A. (2010). The "distance-varying" gravity model in international economics: is the distance an obstacle to trade? *Economics Bulletin, AccessEcon*, 29(2), 1139-1155.

Martínez-Zarzoso, I & Nowak-Lehmann D.F. (2005). MERCOSUR-European Union trade: How important is EU trade liberalization for MERCOSUR's exports? *The International Trade Journal*, 19(1), 31-66.

Muganyi, T. & Chen, H. (2016). Strategic Economic Partnerships, Exchange Rate Policy and Agricultural Trade: A Gravity Model Analysis of China's Agricultural Trade Flows. *Open Journal of Social Sciences*, 4, 48-55.

Mushtaq, R. (2011). Augmented Dickey Fuller Test (August 17, 2011). Available at SSRN: https://ssrn.com/abstract=1911068.

Nuroglu, E. (2010). *The Impact of Population on Bilateral Trade Flows in the case of OIC*, Working Paper, International University of Sarajevo.

Portugal-Perez, A. & Wilson, J.S. (2008). Why Trade Facilitation Matters to Africa? *World Trade Review*, 8(03), 379-416.

Rahman, M.M. & Dutta, D. (2012). The Gravity Model Analysis of Bangladesh's Trade: A Panel Data Approach. *Journal of Asia-Pacific Business*, 13(3), 263-286.

Sahoo, P. (2013). Economic Relations with Bangladesh: China's ascent and India's decline. *South Asia Research*, 33(2), 123-139.

Sikder, M., & Dou, X. (2020). Bilateral Export Trading Analysis between Bangladesh and China: Opportunities and Prospects. *American International Journal of Business and Management Studies*, 2(2), 1–10.

Sohn, C-H. (2005). Does the Gravity Model Explain South Korea's Trade Flows. Japanese Economic Review, 56(4):417-430.

Stockman, A.C. (1985). Effects of Inflation on the Pattern of International Trade. *The Canadian Journal of Economics*, 18(3), 587-601.

Shepherd, B., Doytchinova, H.S., & Kravchenko, A. (2019). *The Gravity Model of International Trade: A User Guide (R version*).Bangkok, ESCAP.

Chuntao. L. (2017, March 30). *Sino-Bangladesh bilateral trade set to boom as China's Belt and Road initiative takes shape*. Xinhuanet: China.

Wu, H. (2015). Re-visiting the Distance Coefficient in Gravity Model. Cornell. *Quantitative Finance*. Catalogue number: https://arxiv.org/abs/1503.05283.