

The Impact of Trade Cost on Readymade Garment Export: The Case of Bangladesh

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Author's contribution

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ABSTRACT

The main purpose of this study is to understand whether the trade cost influences the export of Readymade Garment (RMG) export of Bangladesh. Theoretically, with an increase in the volume of exported goods, the costs will also increase. Therefore, this study is to examine the impact of trade costs on the readymade garment export performance of Bangladesh for the period of 2007 -2015. This study applied two types of panel data models: pooled OLS model and the Poisson-Pseudo Maximum Likelihood (PPML) estimation procedure have been employed in the estimation. The main contribution of the paper compared to other studies on Bangladesh lies in its approach in addressing the impact of trade costs on exports and using PPML gravity equation estimation. The results of the study indicate that trade costs have a significant negative impact on exports of Bangladesh. The major findings show that trade cost has a negative and significant impact on Bangladesh's bilateral RMG export performance. This implies that the Bangladeshi government should work to reduce domestic trade costs in order to boost efficiency and sustainably promote RMG export.

Keywords: *Readymade garment exports; trade costs; gravity model; PPML estimation; Bangladesh.*

1. INTRODUCTION

The trade cost is two critical aspects of international commerce that can impact competitiveness and export development, particularly in developing nations [1,2]. Trade cost is the key constraint towards economic development especially for developing countries, thus the trade cost becomes the major puzzle of international economics [3]. Trade costs are generally referred to as a significant determinant of the amount of trade. The effect of trade costs on trade volumes [4] is identified in an increasingly extensive literature on this topic. The importance of trade cost in assessing specialization and trade trends has also been underlined by modern economic literature [5]. Trade costs are usually costs related to transactions and transport of goods between various countries. Trade costs can also be described as costs of export, tariffs, and international transport, which are robustly linked to the diversification of geographical exports [3]. In developing countries, the trade costs are relatively high and these countries are facing constraints to exporting [1].

Trade costs also reduce firms' competitiveness and affect their integration in international markets. Bangladesh is a South Asia which has witnessed steady growth over the decades. The RMG industry is the main driver of the economic growth of Bangladesh and the country is in the second position in terms of exporting RMG products after China. In the year 2018, the total

export earnings from the RMG sector was US\$34 billion in Fig. 1 and this export volume contributes more than 84.21% of the country's total exports [6]. Despite the fact that Bangladesh's RMG sector is expanding and its contribution is being recognized, the business is experiencing competition from other competitive nations such as China, Vietnam, and Cambodia.

This study provides empirical evidence on the determinant of trade costs using the transport infrastructure of Bangladesh that significantly filling the gap between the size of trade costs and its determinant. This study provides the understanding of the factor that cause the differences in the trade costs over the textile products and help the country to understand more on the role of infrastructure towards trade costs and the impact on RMG export. Trade costs became one of the key factors in determining a country's trade competitiveness and currently present a considerably larger barrier to trade than before. Previous studies have shown that higher trade costs could be an obstacle to trade and that trade liberalization advances may be slowed down. The reduction in trading costs would undoubtedly help traders have more efficient and effective access to goods. However, with the recent development in trade cost which is based on a micro-gravity measurement approach developed by [7], it is possible now to better examine the trade costs. Unlike previous studies, the current study uses the manufacturing trade cost dataset to estimate its effect on the RMG export performance.

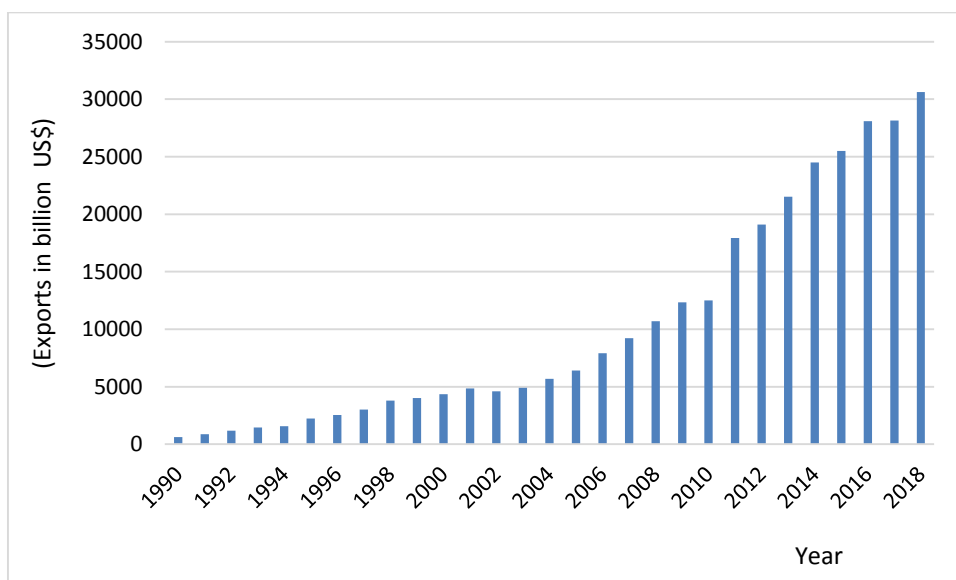


Fig. 1. Bangladesh ready-made garment export (US\$)
(Source: Bangladesh Garment Manufacturers and Exporters Association (BGMEA) [6])

In recent decades, there has been a slew of research examining the effects of distance on export. In recent decades, there has been a slew of research examining the influence of distance on export. The distance between the exporting and importing countries has been used as a proxy for international trade costs [8-12]. However, The influence of trade cost, on the other hand, is less commonly relate to and from their counterparts. This paper attempts to close the deficit and estimate the trade cost in a panel, the cost of Bangladesh's bilateral export value static and dynamic gravity models are used to create a framework. This study provides empirical evidence on the trade costs of the manufacturing sector of Bangladesh with its partner countries that significantly filling the gap between the trade costs and the RMG export relationship. The findings are intended to aid the government of Bangladesh to strengthen competitiveness, lower domestic trade costs and sustainably improve the RMG export. The following is a summary of the paper: The second section is a review of the literature. The econometric methods and data utilized for the empirical study are described in Section 3. Section 4 provides and analyses the key regression results, while Section 5 summarises the research, suggests policy implications, and discusses the study's limitations.

2. LITERATURE REVIEW

The international trade literature has demonstrated that high international trade costs tend to restrict trade flows between countries. Not only will substantial trade costs reduce the volume of commerce and patterns between countries but will impede the efficient and optimal resource allocation, regional trade prospects and economic integration are reduced [13]. High trade costs, for example, tend to produce significant distortions inefficient resource allocation and trade [12]. According to the literature on international trade, high international trade costs tend to limit trade flows between and among nations. Significant trade costs will not only diminish trade volume and pattern within and between nations, but will also block the efficient and optimum allocation of resources, as well as the prospects for regional trade and economic integration [14]. As a result, high trade transaction costs will limit trade expansion and produce significant distortions [15,16]. As a result, high international trade costs are a key barrier to regional commerce and integration.

A similar study was investigated by [17] using augmented gravity model, the factors of India's manufacturing exports into the southern (developing) and northern (developed) markets. Their findings indicated that the total GDP, GDP similarity, and the difference in per capita income in Indian exports were explained. The study found that trade costs such as distance had harmed India's exports to the north of the south market more negatively, as well as their proximity to the south market.

On the other hand, few studies for example [18] reveal that a lower trade cost leads to a higher export rate of products by countries. To assess the influence of trading cost in Pakistan this study employed the gravity model between its partner countries from 1994 to 2004 and found that export increase in Pakistan was mostly attributed to the reduction in the trade cost of its partner countries. Likewise, [19] examined the bilateral trade of Ethiopia and East African countries throughout 2004 to 2012 employing the gravity model. The study explored that trade costs have a significant negative impact on Ethiopia's bilateral trade. Trade reforms that establish governmental actions and methods for harmonizing and coordinating trade procedures, in particular customs clearance and other border procedures, can thus lead to increased levels of trade.

A considerable reduction in international trade costs can support increased trade and growth by means of regional trade agreements and policy synchronization. The impact of trade costs on the performance of the exports in the ECOWAS area is studied by [20] which uses data covering the 2006-2017 sample period and several panel data estimations approaches. Based on the findings, the authors recommend that trade processes should be simplified, harmonized, and coordinated to reduce the cost of export trade transactions and to encourage regional exports.

Among other variables of trade volume, trade cost plays a key influence in determining a nation's trade volume. [2] discussed that trade cost is the key to solving all of the international macroeconomics' major difficulties. Trade costs consist of all types of costs incurred by the producer in getting the goods to final consumers. This includes both domestic and international trade costs, such as policy restrictions, freight costs, time to delivery costs, different currencies, and local distribution costs [21].

[22] did some notable work in this area, where they analyzed transportation costs and international trade. Similarly, [23] investigated variables impacting export in Middle Eastern bilateral trade. [24] has also done significant work in this area. As a result of this little contribution, there isn't much room for growing literature on trade costs at the micro and macro levels. [18] disaggregated trade costs into natural costs, behind-the-border costs, implicit beyond-the-border costs, and explicit beyond-the-border costs the expense of crossing the border In order to go into these ideas further, due to a lack of comprehensive information about the house and the authors conclude that the expansion of partner nations the key reason for export was the decrease of explicit and implicit taxes beyond the border costs in partner nations.

According to [25], the challenges that developing country exporters experience in reaching developed markets are 50 percent more than those that Northern exporters experience. [26] claims that impoverished nations incur greater trade expenses as compared to affluent nations and that these costs are passed on to consumers. The cost of trade has a negative impact on the country's economic performance. Indeed, in nations whose trade costs are quite high, consumers see their wealth diminish as the cost of imported items rises. The absence of trade facilitation in Africa is the cause of the continent's high trade costs [27]. [28] examined data from 30 African nations and 100 trading partners and finds that exogenous characteristics such as distance and isolation have a positive and substantial impact on trade costs. However, the geographical location, the same official language, the shared border, and membership in the same regional community all have a negative and considerable impact on trade costs.

[29] found that high international trade costs provide major barriers to African commerce and regional integration and that a major reduction in international trade prices can improve the prospects for economic integration. [30] looked at the prospects for regional integration in Sub-Saharan Africa and show that providing trade infrastructure lowers international trade costs. The research suggests significant border impacts on regional trade costs, with great prospects to expand trade and GDP if the regional infrastructure is upgraded. [7] investigate the influence of export trade facilitation (measured by export transaction costs, or cost to export) on export performance in the ECOWAS sub-region.

They discover a negative association between export trade expenses and export performance using data from 2006 to 2017 and multiple panel data estimate methodologies. Based on their findings, the authors advocate that trade processes be simplified, harmonized, and coordinated in order to lower export trade transaction costs and encourage export in the area.

However, [24] claims that using Anderson and van Wincoop's gravity model has its problems. They may have misspecified their trade cost function, which might lead to the omission of trade cost variables. Furthermore, in the actual world, bilateral trade costs may be asymmetric: for example, one country might impose a higher tariff than the other. [24] proposes a micro-founded estimate of bilateral trade costs by adapting the theoretical gravity model introduced by [4]. This trade cost metric has a number of advantages. First, it incorporates a wide variety of trade cost factors; second, because the issue of multilateral resistance has been handled, it is reasonably simple to compute. Depending on this approach, [31] investigated the growth of the global trade flows across the Americas, Asia, Europe, and Oceania between 1870 and 2000 and discovered that the World War I trade boom was driven by declining trade costs, whereas the interwar trade bust was driven by rising trade costs. A similar technique is used by [32] to look at global agricultural trade from 1965 to 2010. The current literature mainly examined mostly the impact of trade costs and their effect on economic growth in a complete sense. However, the impact of trade cost on export performance focusing on the specific industry is rare in the literature. Thus, this study is going to fill the literature gap by examining the impact of trade cost on Bangladesh's RMG industry for the first time.

3. METHODOLOGY OF THE STUDY

This paper's theoretical framework is built on the gravity model's theoretical underpinning. The gravity model describes how distance, population size, economic level, and other factors influence the amount of commerce between countries [33]. The gravity model is one of the most impressive achievements in empirical economics. The gravity model became the focus of bilateral trade flow analysis after [26] application produce bilateral trade estimates. The gravity equation has long been a working instrument in trade analysis research, according to [34]. This study

employs the augmented gravity model of trade. The gravity model of trade analyses trade flows between two nations as a function of both nations' economic mass and their distance. It assumes that the trade flow between two nations is proportional to their economic mass or size (typically measured in terms of GDP) and inversely proportional to their distance. The following equation represents this mathematically:

$$X_{ij} = \frac{Y_i Y_j}{D_{ij}}$$

Where X_{ij} represents the flow of exports from country i to country j , Y_i and Y_j are the GDP of exporting country and importing country respectively, while D_{ij} is the distance between the countries. The above gravity equation is linearized by logarithmic transformation as:

$$\ln(X_{ij}) = \alpha + \beta \ln(Y_i) + \gamma \ln(Y_j) + \delta \ln(D_{ij}) \quad (1)$$

Distance is defined as a type of trade barrier in the formulation. However, in empirical trade research, trade obstacles go beyond physical distance. As a result, D_{ij} is a vector of trade barriers, and it has been represented by various measures depending on the primary topic of concern in numerous publications. In this study, an augmented gravity model of trade is applied to empirically examine the impact of trade cost on the bilateral RMG export flow in Bangladesh. In the past decades, extensive previous studies analysed the impact of distance on the export. Initially, distance has been used as a proxy of international trade costs for bilateral exports. Following [18,35] the model of the impact of trade cost on RMG export in Bangladesh is as:

$$\ln(EX)_{ijt} = \beta_0 + \beta_1 \ln(GDP)_{it} + \beta_2 \ln(GDP)_{jt} + \beta_3 \ln(POP)_{it} + \beta_4 \ln(POP)_{jt} + \beta_5 \ln(TC)_{ijt} + \beta_6 \ln(DIST)_{ij} + \beta_5 (Colony)_{i,j} + \beta_6 (LANG)_{i,j} + \beta_7 \text{Type of Trade Agreements}_{jk} + \lambda_j + \varepsilon_{ijt} \quad (2)$$

The study further utilized the Poisson Pseudo Maximum Likelihood (PPML) estimation method proposed by Santos-Silva and Tenreyro (2006). This is the most advanced estimation method in the gravity model. In the event of heteroskedasticity in the error term, Poisson estimation can account for the bias created by the logarithmic version of the gravity equation. Furthermore, the PPML estimator not only solves the problem of heteroscedasticity, but also occasionally taking the value of zero. [36]

compared this estimator to other sophisticated approaches and found that it performed well even when the explained variable had measurement errors. The PPML estimation approach, according to [37], is very simple to implement and resilient to misspecifications. The Poisson estimator also has the benefit of allowing for a continuous dependent variable. Technically, the PPML regression models are generalized linear models assuming the response variable has a Poisson distribution. The matrix representation of the mean of the Poisson distribution:

$$E(Y|X) = \exp(\beta x)$$

As a result, taking into account the aforesaid explanations, a panel data model was utilised in this work to estimate the gravity equation. The PPML model of equation (3) is as follows:

$$\begin{aligned} \ln(EX)_{ijt} = & \exp(\beta_0 + \beta_1 \ln(GDP)_{it} + \\ & \beta_2 \ln(GDP)_{jt} + \beta_3 \ln(POP)_{it} + \\ & \beta_4 \ln(POP)_{jt} + \beta_5 \ln(TC)_{ijt} + \beta_6 \ln(DIST)_{ij} + \\ & \beta_5 (Colony)_{i,j} + \beta_6 (LANG)_{i,j} + \\ & \beta_7 \text{Type of Trade Agreements}_{jk} + \lambda_j) + \varepsilon_{ijt} \quad (3) \end{aligned}$$

Where EX that indicates the bilateral RMG export value of Bangladesh to partner country j in the time t . On the other side, independent variables are: GDP_{ijt} is GDP between the country i and j . TC_{ijt} is the trade cost of Bangladesh to country j in the time t . $DIST_{ij}$ is the distance between i (Bangladesh) and j (partner countries). $Colony$ (dummy) is whether the country has common a colonial relationship with its trade partners. $LANG$ (dummy) is whether they have a common official language. The type of trade agreements namely SAFTA, AFTA, BIMSTEC, and D-8 are the active free trade agreements that act as a dummy variable that takes value 1 if the trading partners possess memberships with Bangladesh. If the partner country is a member of SAFTA, AFTA, BIMSTEC, and D-8 and 0 otherwise. λ_j is the country-specific error term. ε_{ijt} is the random error term. All variables except dummy variables are in log form and each model is estimated by using in the regression. As the trade costs measure nets out multilateral resistance components, the regressions do not have to include additional fixed effects to control multilateral resistance.

3.1 Measurement of Variables and Data Sources

[7] presents a trade cost measure based on Anderson and van Wincoop's modified gravity

model, albeit there are major differences. The improved strategy of Novy has a simple explanation. Both international and intra-national trade are affected by changes in bilateral trade restrictions. By supplying a cheaper and more efficient input, the relationship between trade costs and export performance may be shown. Data on trade costs are taken from the ESCAP-World Bank database and is an estimate of bilateral trade costs. In the estimation of trade cost, Novy used bilateral trade and gross national income for each country pair. Since then, efforts have been undertaken to expand and enhance the accuracy of trade cost estimates by generating more efficient proxies for data needed to compute bilateral trade costs, as well as including sectoral level trade costs [38,32]. This trade cost measure method can capture the comprehensive set of trade barriers like transportation costs tariffs and components that are difficult to observe, such as language barriers, informational costs, and bureaucratic red tape [24]. Since the current study seeks to understand the impact of different transportation modes and the costs on the ready-made garment export of Bangladesh. Therefore, the manufacturing trade cost data is used to draw more accurate policy implications specific to the RMG industry sector.

The indicator is based on the theoretical foundation using an inverse gravity approach developed in [24]. It measures international trade costs relative to the cost of domestic trade and computes them from the gap between observed trade and actual trade potential. [24] constructed a mean value from a microeconomic foundation to solve the difficulties of the direct gravity model in measuring the specific trade cost (distance, national boundaries, language, etc.) and the multilateral measuring resistance, which proves that the bilateral trade cost can be calculated by the relative amount of domestic trade and international trade, and the effect of multilateral resistance on trade cost is still controlled. The model of [39] is based on the Ricardian comparative advantage theory or from the model of [40]. [24] suggested all the derivation processes could be established. [29] used the method of [7] to measure the trade cost, and this paper also uses the model to estimate the bilateral trade cost between China and 86 trading partners. The indirect trade cost measure according to [41,42], which has been derived from [4] gravity model is calculated according to the following formula:

$$\tau_{ijkt} = \left(\frac{t_{ijkt}t_{jikt}}{t_{iikt}t_{jjkt}} \right)^{\frac{1}{2}} = \left(\frac{X_{iikt}X_{jjkt}}{X_{ijkt}X_{jikt}} \right)^{\frac{1}{2(\sigma_k-1)}} \quad (4)$$

T_{ijkt} denotes geometric trade cost between country i and country j at time t .

t_{ij} denotes international trade cost from country i to country j .

t_{ji} denotes international trade costs from country j to i .

t_{ii} denotes international trade costs of county i .

t_{jj} denotes international trade costs of country j .

x_{ij} denotes international trade flows from country i to country j .

x_{ji} denotes international trade flows from j to country i .

x_{ii} denotes the international trade of country i .

x_{jj} denotes the international trade of country j .

σ_k denotes sector-specific elasticity of substitution between goods in the sector k .

The study covers a total 82 importing countries. These countries are chosen based on the availability of required data. The estimation covers data over the years 2007 to 2015. The sources of data and definition are presented in Table 1 below.

4. RESULTS AND DISCUSSION

Tables 2 and 3 present the descriptive statistics and correlation analyses for the variables included in the analysis. the correlation coefficients matrix reveals that most of the independent variables have low correlations less than 0.7.

The regression analysis results on how the trade costs can influence the readymade industry export are shown in Table 4. The first column shows the results for POLS regression and the second column shows the results of PPML estimation. Table 4 shows the impact of trade cost on the readymade export in Bangladesh. This table includes the trade cost from Bangladesh to importing countries. All the independent variables have a positive relationship with Bangladesh's bilateral export value except the trade cost from Bangladesh to the importing country has a negative relationship with Bangladesh's readymade garment product export value. Trade cost is one of th40e key factors determining Bangladeshi bilateral export value. This analysis consists of pooled ordinary square regression (OLS) and PPML. The study

also performs the PPML estimation to tackle the zero trade issue and to get more robust results.

Theoretically, it is known that trade cost is significantly responsible for the performance of export.

Trade cost is one of the key factors determining Bangladeshi bilateral garment export. A higher trade cost implied a lower potential demand for export from trading partners or importing countries. The result of the impact of trade cost on readymade export is consistent in all models. The findings show that trade cost has a significant negative impact on bilateral export value, whereby every 1% increase in the trade cost will decrease the Bangladeshi readymade garment export value by 1.8% in the OLS model and 3.1% in the PPML model. This means a

higher trade cost implies lower potential demand for export from importers. The empirical results further indicate that the GDP of exporters and importers is statistically significant and affects the export of Bangladesh's garment products. The coefficient of GDP of exporter and importer countries shows positive and significant results. If the coefficients of GDP of partner countries increase it means that importers' demand elasticity for foreign goods [43]. The GDP of exporters and importers are responsible for increasing the readymade garment export respectively 0.8% and 0.5%. The time-invariant variables such as distance and common language are coming out as expected signs. The higher the distance between Bangladesh and the importing countries it tends to reduce the trade flow is.

Table 1. Description of variables and data sources

Variables	Definitions	Data source
EX	Value of readymade garment export (US\$) from exporting country (Bangladesh) to importing countries	International Trade Centre (ITC)
TC	Manufacturing trade cost of Bangladesh to partner country	ESCAP-World Bank
GDP	GDP per capita	World Development Indicator
POP	Country's population	World Development Indicator
DIST	Distance in km between the capitals of countries i and j	CEPII
Common Language	Dummy variable taking the Value 1 for countries sharing the same official language, or 0 otherwise.	CEPII
Colonial Ties	Dummy variable Value 1 for countries having colonial ties, or 0 otherwise.	CEPII

Table 2. Descriptive statistics of variables

Variable	Mean	Standard deviation	Minimum	Maximum
Exports	639386.30	5029192.00	5.00	134000000.00
Trade Cost	229.49	109.49	82.75	983.56
GDPi	683.43	158.26	459.61	1002.39
GDPj	21316.98	20505.84	194.87	104965.30
POPi	139000000.00	12000000.00	4259800.00	156000000.00
POPj	72400000.00	203000000.00	56000.00	1370000000.00
colony	0.01	0.12	0.00	1.00
Comlanguage	.0125	.1111291	0	1.00
Distance	6673.43	3625.30	674.16	17888.71

Table 3. Correlation coefficient between variables

	Exports	GDPi	GDPj	POPi	POPj	Comlanguage	Distance	Trade cost
Exports	1							
GDPi	0.136	1						
GDPj	0.7967	0.072	1					
POPi	0.1346	0.9884	0.0721	1				
POPj	0.1018	0.0254	0.4391	0.0251	1			
Comlanguage	0.2837	0.0097	0.096	0.0092	-0.0214	1		
Distance	0.2484	-0.0121	0.2139	-0.0135	-0.2018	0.0499	1	
Trade cost	-0.2942	-0.1387	-0.2769	-0.142	-0.196	-0.1154	-0.0025	1

Table 4. Trade cost and readymade garments trade flow

Variables	POLS	PPML
Trade cost	-1.887*** (0.217)	-3.151*** (0.480)
GDP exporter	1.145 (1.325)	0.845 (0.108)
GDP importer	0.585*** (0.128)	0.505*** (0.142)
Common language	3.208*** (0.736)	0.385 (0.748)
Distance	-0.143 (0.189)	-0.154* (0.069)
SAFTA	1.127* (0.559)	0.314 (0.245)
AFTA	0.770 (0.547)	1.111*** (0.161)
D-8	2.675*** (0.580)	0.724*** (0.0796)
BIMSTEC	-0.307 (0.328)	-2.649*** (0.138)
Constant	-27.01 (35.87)	-8.264 (6.029)
R-squared	0.9211	.9870

Note: ***, **, * indicate significance at the level 1%, 5% and 10% level respectively.

On the other hand, the common language between exporter and importer countries increases the trade flow. Therefore, the coefficient of common language is significant and positive. This result is consistent with [23] where they found a similar impact of trade cost on Vietnam's export. The result is also consistent with another study conducted by [14] where they found the trade cost has a significant negative impact on the export of Ethiopia.

In Table 4, however, shows the effect of different free trade agreements on the export of garment products. SAFTA, AFTA, BIMSTEC, and D-8 are active free trade agreements (FTA). These are dummy variable whether the export country and import country is a common member of any agreement or not. The result shows that apart from BIMSTEC, the result of the other three (SAFTA, AFTA, D-8) free trade agreements are positive and statistically significant to the trade flow. The result indicates that among the countries with common trading agreements will help to increase the trade. Hence the PPML is the more robust estimator, therefore, we consider the PPML result as final. However, the BIMSTEC agreement does not influence positively Bangladesh's readymade exports. However, other free trade agreements have shown positives and significant coefficients which

means they have a significant positive impact on Bangladesh's garment exports.

5. CONCLUSION

Trade costs are a major factor in influencing the amount of trade that takes place between nations. Despite its significance, the influence on exports in Bangladesh has received little attention in the literature. The current study is being conducted in this context to precisely address this gap. Using panel data from 2007 to 2015, the influence of trade expenses on Bangladeshi RMG exports was examined. The econometric aspect utilizes the augmented gravity model of trade to explain the effects of trade cost on bilateral trade flows, which is estimated using Panel Ordinary Least Squares, Poisson Pseudo-maximum Likelihood. The empirical result of trade cost on RMG export shows that in both models the increase in trade costs negatively affects the RMG exports.

The empirical findings show that importing nations' GDP is statistically significant and has a positive impact on Bangladesh's exports, but Bangladesh's GDP is statistically negligible in explaining its exports. In both models, the distance variable has a negative impact on Bangladesh's RMG exports. All the free trade agreements gave expected to sign and results

except BIMSTEC. The research conducted in this study has revealed that trade expenses have a major impact on Bangladesh's RMG exports. The distance component of trade expenses has a considerable negative impact on Bangladesh's exports. This might be because the majority of Bangladesh's trading partners are nations in Europe and America, both of which are rather far away. As a result, it is in Bangladesh's best interests to lessen the negative effects of transportation and other associated obstacles. Furthermore, the country should participate in regional interconnections with its neighbours to transition from a landlocked to a land-connected economy and facilitate the movement of products. Bangladesh will be better off if it joins more regional trade unions and sells its products to those unions since the goal of regional trade agreements is to cut tariffs and trade costs among its members.

Furthermore, it is necessary to concentrate on the most essential trade facilitation measures that assist lower trade costs, such as the availability of trade information, document harmonization, and simplicity. Improving the infrastructure required to carry goods internationally may help lower trade costs. Finally, trade policies should be clear in terms of their rules and processes, as well as consistent, predictable, and non-discriminatory in their implementation. Above all, excellent governance and impartiality aid in the reduction of trade costs. The limitation of this study is the unavailability of RMG bilateral export data in recent years. The data is only available until 2015. Future studies could expand the scope by employing different trade cost measures like higher transportation cost issues could be analyzed further for the RMG industry in Bangladesh.

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. Arvis JF, Shepherd B. Measuring connectivity in a globally networked industry: The case of air transport. *The World Economy*. 2016;39(3):369-385.
2. Portugal-Perez A, Wilson JS. Why trade facilitation matters to Africa. *World Trade Rev*. 2009;8:379.
3. Shepherd B. Trade costs and facilitation in APEC and ASEAN: Delivering the Goods?; 2010.
4. Anderson JE, Van Wincoop E. Trade costs. *Journal of Economic Literature*. 2004;42(3):691-751.
5. Njinkeu D, Lohi J, Djiofack CZ. Trade Facilitation and African Industrialization in the New Global Order: An Agenda for Action for Textile and Apparel Industry. In *The Industrial Policy Revolution II*. Palgrave Macmillan, London. 2013;412-454.
6. BGMEA. About garment industry of Bangladesh; 2019. Available:<https://www.bgmea.com.bd/home/about/aboutgarmentindustry>
7. Ozekhome H. International trade costs and trade flows: Evidence from the West African Monetary Zone (WAMZ). *Finance & Economics Review*. 2020;2(1): 63-76.
8. Arvis JF, Duval Y, Shepherd B, Utoktham C. Trade costs in the developing world: 1995–2010. *The World Bank*; 2013.
9. De P. Why is trade at borders a costly affair in South Asia? An empirical investigation. *Contemporary South Asia*. 2011;19(4):441-464.
10. De Melo J, Tsikata Y. Regional integration in Africa: Challenges and Prospects; 2015.
11. Krugman PR, Obstfeld M. *International economics: Theory and policy*. Pearson Education; 2009.
12. Obstfeld M, Rogoff K. The six major puzzles in international macroeconomics: is there a common cause?. *NBER Macroeconomics Annual*. 2000;15:339-390.
13. World Bank. Trade and growth indicators. World Bank, Washington DC, World Bank; 2017.
14. World Bank Trade and growth indicators. World Bank, Washington DC, World Bank; 2015.
15. Roberts M, Janson M. Why trade costs matter: The 5th global review of aid for trade. In *International Trade Forum*. International Trade Centre. 2014; 4:36.
16. Hoekman B, Nicita A. EU–US Regulatory Cooperation and Developing Country

- Trade. World Scientific Publishing Co. Pte. Ltd. 2011;131-163.
17. Suresh KG, Aswal N. Determinants of India's Manufactured Exports to South and North: A Gravity Model Analysis. *International Journal of Economics and Financial Issues*. 2014;4(1):144.
 18. Khan IU, Kalirajan K. The impact of trade costs on exports: An empirical modeling. *Economic Modelling*. 2011;28(3):1341-1347.
 19. Tebekew W. A panel data analysis for bilateral trade of Ethiopia and East African Community countries: The Gravity Model Approach. Addis Ababa; 2014.
 20. Ozekhome H. International trade costs and trade flows: Evidence from the West African Monetary Zone (WAMZ). *Finance & Economics Review*. 2020; 2(1):63-76.
 21. Hummels D, Schaur G. Time as a trade barrier (No. w17758). National Bureau of Economic Research; 2012.
 22. Behar A, Venables AJ. Transport costs and international trade. In *A handbook of transport economics*. Edward Elgar Publishing; 2011.
 23. Tu Y, Shangguan JZ. Cross-border e-commerce: A new driver of global trade. In *Emerging Issues in Global Marketing*. Springer, Cham. 2018;93-117.
 24. Novy D. Gravity redux: Measuring international trade costs with panel data. *Economic Inquiry*. 2013;51(1): 101-121.
 25. De Sousa J. The currency union effect on trade is decreasing over time. *Economics Letters*. 2012;117(3):917-920.
 26. Tinbergen J. *Shaping the world economy; Suggestions for an International Economic Policy*; 1962.
 27. Noguera G. Trade costs and gravity for gross and value added trade. Job Market Paper, Columbia University. 2012;4.
 28. Waugh ME. International trade and income differences. *American Economic Review*. 2010;100(5):2093-2124.
 29. Milner C, McGowan D. Trade costs and trade composition. *Economic Inquiry*. 2013;51(3):1886-1902.
 30. Jouanjean MA, Gachassin M, Tel-Velde DWT. Regional infrastructure for trade facilitation- on growth and poverty. Department for International Development, UK; 2015.
 31. Jacks DS, Meissner CM, Novy D. Trade booms, trade busts, and trade costs. *Journal of International Economics*. 2011;83(2):185-201.
 32. Duan S, Grant JH. *Agricultural Trade Costs:1965-2010*. The Agricultural & Applied Economics Association's 2012 AAEA Annual Meeting, Seattle, Washington; 2012.
 33. Anderson JE. A theoretical foundation for the gravity equation. *The American Economic Review*. 1979;69(1):106-116.
 34. Bayoumi T, Eichengreen B. Is Regionalism Simply a Diversion? Evidence from the Evolution of the EC and EFTA. In *Regionalism versus multilateral trade arrangements*. University of Chicago Press. 1997;141-168.
 35. Kalirajan K. Regional cooperation and bilateral trade flows: An empirical measurement of resistance. *The International Trade Journal*. 2007;21(2):85-107.
 36. Kalirajan K. Regional cooperation and bilateral trade flows: An empirical measurement of resistance. *The International Trade Journal*. 2007;21(2):85-107.
 37. Silva JS, Tenreyro S. The log of gravity. *The Review of Economics and Statistics*. 2006;88(4):641-658.
 38. Gourieroux C, Monfort A, Trognon A. Pseudo maximum likelihood methods: Theory. *Econometrica: Journal of the Econometric Society*. 1984;681-700.
 39. Duval Y, Utoktham C. Intraregional trade costs in Asia: A primer. *Asia Pacific Development Journal*. 2011;18(2):1.
 40. Eaton B, Kortum S. Technology, geography, and trade. *Econometrica*. 2002;70(5):1741-1779.
 41. Chaney T. Distorted gravity: The intensive and extensive margins of international trade. *American Economic Review*. 2008; 98(4):1707-21.
 42. Chen N, Novy D. Gravity, trade integration, and heterogeneity across industries. *Journal of International Economics*. 2011; 85(2):206-221.

43. Chen N, Novy D. On the measurement of trade costs: Direct vs. indirect approaches to quantifying standards and technical regulations. *World Trade Rev.* 2012; 11:401.
44. Frankel JA, Stein E, Wei SJ. Regional trading arrangements: Natural or supernatural? (Vol. 5431). National Bureau of Economic Research; 1996.

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