Master Thesis

A gravity model approach incorporate with Bangladesh textile and clothing industries

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The Graduate School of Hansung University

Major in International Market Analysis

Dept. of International Trade and Economics

Rahman Md Mahabub

Master Thesis
Advisor Professor Jaewhak Roh

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- 중력 모델 접근법 통합 방글라데시 섬유 및 의류 산업 -

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Abstract

A gravity model approach incorporate with Bangladesh textile and clothing industries

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This study's goal is to identify the factors and problems that affect Bangladeshi textile and garment import and export. Over a period of 15 years, from 2005 to 2015, a special data set was created and use the panel gravity model of Bangladeshi import and export flows to a total of its 27 trading partners.The findings demonstrate that Bangladesh's textile export trade appears to be significantly influenced by the real exchange rate, per capita GDP, and gross domestic product (GDP) of the importers. Four-fifths of Bangladesh's total export earnings come from textile and apparel, the nation's largest and most significant export categories. The international economy has still been negatively impacted by the 2007-2008 financial crisis.The export growth of the majority of countries worldwide has been severely impacted by the recession. The United States, the largest economy in the world, had a sharp fall, which reduced worldwide demand for RMG (ready-made garments) products. Therefore, the study has attempted to illustrate how Bangladesh might

boost its economic growth by importing garments to suit market demands. Through the use of panel data analysis, which involves the collection of both dependent and independent variables as well as unit root testing of the data, the study will be explained. The study has attempted to demonstrate crucial factors that can drive Bangladesh's economic growth through the export and import of garment items on the international market.

[Keywords] Gravity model, panel data, economic growth, trade, financial crisis.

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Chapter 1 Introduction

1.1 Bangladesh Textile Industry

Early in the 1970s saw the beginning of the globalization of denim production, which has since extended to several nations. The garment companies have moved their low-cost production activities from high-wage regions to industrializing countries with low production costs. This expansion has been significantly influenced by networking and the improvement of the communication infrastructure. Bangladesh's garment industry is regarded as one of the most promising in the nation. The sector has flourished and performed well in terms of exporting thanks to the use of locally created clothing in the production of clothes. (2018) Von Broembsen.

Exports of textile goods to America and Europe, primarily, bring in about $7 billion yearly for Bangladesh. In Bangladesh, there are roughly 4,000 ready-made garment (RMG) factories that employ 2.5 million people, 90% of whom are women from low-income families and backgrounds. Bangladesh's apparel sector today controls secondary economic impact, employment production, and export revenues. 2013 (Hobson)

With the help of foreign investors, the number of garment industries doubled in the middle of the 1980s. In 1996, there were 2,600 garment manufacturing facilities, employing around one million people (Zaman, 2001). The industry is now the largest non-agricultural sector that offers work chances to the labor force's lowest group. In Bangladesh, there are close to 4,500 active textile mills. The RMG sector in Bangladesh today generates approximately $9 billion in revenue annually and employs 3.5 million people, more than 80% of whom are women (Muhammad, 2011).

It is obvious that Bangladesh has a competitive edge in the production of textiles and apparel. By 2010, Bangladesh's overall merchandise exports made up a staggering 82 percent of its approximately $16 billion in garment exports (Ahmed, Greenleaf, &Sacks, 2014).

After China, Bangladesh is currently the world's second-largest exporter of RMGs. In 2017, the industry contributed more than US$28 billion to exports, or more than 80% of exports, according to a recent book-length research by Quibria (2019, p. 57). Over 4 million people are employed by the industry's roughly 5,000 domestic garment enterprises, with 80% of them being women.

1.2 Background of the study

The RMG sector is the backbone of Bangladesh's economy and serves as a catalyst for the growth of the nation since it has increased foreign exchange earnings, export values, GDP, and women's economic empowerment. Currently, 75% to 78% of Bangladesh's foreign currency earnings come from the garment industry, which is a major contributor to the country's economy (Bala et al., 2019). About 80% of Bangladesh's entire export revenue comes from the RMG sector, a $25 billion US business (Khan & Milne, 2019). Bangladesh has been the most prosperous GSP (generalized system of preferences) exporter in the T&C industry since 2012 (Ritzel, Kohler, Mann, & Beciu, 2018).

However, there are certain concerns and problems with the RMG sector in Bangladesh. For instance, the most recent sad incident was at Rana Plaza. 1,134 people died and more than 2,500 were hurt when Rana Plaza collapsed on April 24, 2013, as a result of violations in the building's design and occupancy. It is one of the world's greatest industrial catastrophes and the deadliest industrial tragedy in the history of Bangladesh's RMG industry (Barua & Ansary, 2017). As a result, earlier research highlighted the problems and challenges of governance, ethics, labor union management, and factory safety in the context of rapid industrial development (As-Saber, 2018; Ashraf & Prentice, 2019; Rubya, 2015). Additionally, scholarly attention and emphasis were given to the connections between the physical health, job security, promotions, social standing, working conditions, sexual harassment, and pay of the RMG employees (Nasrin, Rasiah, Baskaran, & Khan, 2018; Rahman, 2014; Ramesh Kurpad, 2014). In order to improve

the prospects of the industry and overcome the difficulties of global competition, it is crucial for policymakers, experts in the garment industry, and practitioners to have the proper knowledge and approaches. This essay seeks to pinpoint the key factors that affected and complicated Bangladeshi T&C exports to its top 40 trade partners from 1990 to 2017. The rest of the article is divided into the following sections. The second section gives background information on the global textile trade. The literature on the gravity model and the textile industry is reviewed in the third section. The fourth part provides an explanation of the data, methodology, and models.

The promotion of economic growth through international commerce is acknowledged on a worldwide scale (Feenstra, 2004; Helpman, 2011; Krugman & Obstfeld, 2002). The export revenue contributes significantly to a nation's economic development. As a result, the export-led growth theory has received a lot of scholarly attention (Amiti & Freund, 2010; Awokuse, 2008; Chandra Parida & Sahoo, 2007; Choi, 2010; Eaton, Kortum, & Hramarz, 2011; Giles & Williams, 2000a, 2000b; Herrerias & Orts, 2010; Siliverstovs & Herzer, 2006). South Asian nations include Bangladesh. In 2017, Bangladesh's textile exports to the rest of the world were roughly US$32.8 billion, or about 6.5 percent of the global market. Since 2004, Bangladesh has consistently had a GDP growth rate of 6.5%, a nation where ready-made clothing (RMG) has made a significant contribution. Due to the benefit of national treatment and most-favorable treatment on par with other WTO members, Bangladesh's 1995 accession to the WTO has greatly increased its opportunities for development, notably in international commerce. Additionally, accession to the global market and the expansion of export markets assist Bangladesh in increasing the value of exports of commodities. Despite the recent downturn in the global economy, this sector's export value has continued to rise, surpassing US$32.8 billion in 2017 and growing by 24% over the previous year. Bangladesh quickly grew its exports of clothing by utilizing export quotas, privileged access to the major markets (the United States and the European Union [EU]), and an availability of cheap female labor (Mahmud, 2008). In 1976－1977, Dhaka (the capital of Bangladesh), saw the emergence of the garment

manufacturing sector as a legitimate export-oriented business on a small scale. Only 47 clothing manufacturing facilities existed in 1983.

1.3 Overview of the World Textile Trade

The size of the global textile market was estimated at USD 993.6 billion in 2021, and it is predicted that it would increase at a CAGR of 4.0 percent from 2022 to 2030. Over the course of the forecast period, the market is anticipated to increase as a result of rising demand for clothing from the fashion sector and the expansion of e-commerce platforms. The three main tenets of the sector are creating, producing, and distributing various flexible materials like yarn and garments. A variety of completed and semi-finished products in bedding, clothing, apparel, medical, and other items are produced primarily using a number of methods, including knitting, crocheting, weaving, and others.

The greatest market for textiles in North America is expected to be the United States. It is one of the biggest producers, top exporters of raw cotton, and top importers of raw textiles. Due to the rapidly shifting fashion trends brought on by an increase in online quick fashion enterprises, fashion is the most popular application area in the region. Smart textiles, which employ optical fibers, metals, and different conductive polymers to interact with the environment, are becoming more and more popular. These aid in detecting and responding to a wide range of physical stimuli, including mechanical, thermal, chemical, and electric sources. During the time of forecasting, this is anticipated to fuel the technical application sector of the market's expansion. Major corporations are being forced to concentrate on company reorganization and investing in production techniques that target sustainable products as a result of rising customer demand for sustainable goods.

For instance, during the course of the projection period, new development opportunities are anticipated to be created by DuPont's plant-based fake fur for performance fashion clothes and Eastman's use of waste carpet to create new material. The recent coronavirus illness epidemic had restricted the size

of the world market. The market has also been badly impacted by global trade restrictions brought on by supply chain disruptions and a reduction in textile product demand during the shutdown. Due to government backing and growing public awareness of sensible precautions, the market is anticipated to see a robust rebound throughout the projected period.

1.4 Research objectives

According to the gravity model of international commerce, the amount of trade between two nations is inversely related to their economic mass and serves as a gauge of how much friction there is in their respective trade relations. Distance and economic size affect trade between two nations. Due to the high cost of transportation, commerce will suffer from high GDP and high distance. The gravity model is a well-liked way of modeling international economic flows.

To anticipate or estimate the volume of spatial interaction between or among locations, whether they cities, counties, or regions, the gravity model employs two variables. These are (1) the total populations of the locations and (2) the distance between the locations, or the time or expense required to go across distance. In other words, when two places have large populations, we anticipate that there will be a large volume of commuters or migrants, whereas when places are spread out widely, we anticipate that the effect of distance, as mediated by distance, cost, or travel time, will have a smaller impact on the level of interaction. As a result, distance has an inverse association with population size, which has a positive correlation (the volume of spatial interaction decreases as distance separation increases).

Theories that may integrate the model were developed as a result of the gravity equation's stability and capacity to explain bilateral trade flows. In terms of predicting the effects of changes in trade policy on trade costs, the gravity model is currently regarded as the workhorse of trade theory. The concept is adaptable in that "distance" between countries can take a variety of pertinent factors into account, such as cultural and political distinctions between trade nations.

Theories that may integrate the model were developed as a result of the gravity equation's stability and capacity to explain bilateral trade flows. In terms of predicting the effects of changes in trade policy on trade costs, the gravity model is currently regarded as the workhorse of trade theory. The concept is adaptable in that "distance" between countries can take a variety of pertinent factors into account, such as cultural and political distinctions between trade nations. . Additionally, they noted that distance had a detrimental impact on Bangladesh's total commerce while partner nations' income and level of openness increased Bangladesh's imports. Although the majority of the results were in line with predictions made by gravity, their estimating approach had econometric restrictions. First off, they incorrectly failed to account for multilateral resistance conditions and simply took into account one-way trade flow from Bangladesh. Second, they made use of the variable "openness," which was calculated as the country's trade to GDP ratio. Such estimate obviously has a serious endogeneity problem because trade is also the dependent variable in the regression. Finally, they did nothing to address the problem of zero trade flows, which might provide inaccurate estimates. Rahman and Ara (2010) employed a dynamic technique to gauge Bangladesh's trade potential using the gravity model. According to their research, a sizable chunk of Bangladesh's commerce is yet unrealized, and the country trades more frequently with economies with larger GDP than it does with emerging nations. From 1995 to 2007, they examined panel data from Bangladesh's 80 trading partners. But there are other problems with the study that are typical of gravity studies. Many of the nations that made up their dataset should have had no trade flows. The results are probably skewed and deceptive since they used the OLS fixed effects approach without taking into account the problem of zero trade flow.

Using a gravity model technique, Roy and Rayhan (2012) looked at Bangladesh import flows. The OLS fixed effects estimator technique was employed with panel data covering the years 1991 to 2007. According to their research, Bangladesh's import flows mainly followed what the gravity

model predicted. They noted that while the distance variable was small, the GDP and currency rates of domestic and international nations had a considerable impact on Bangladesh's imports. Only 17 nations were included in the analysis, and it did not take into account important variables like tariffs and the degree of development in the regression. Other studies, such as (Alam, Uddin, & Taufique, 2009; Iqbal & Islam, 2014; Oh & Rahman, 2013; Roy & Rayhan, 2011), have also attempted to evaluate Bangladesh's foreign commerce with the gravity model, but none of these have been able to get past the previously mentioned common problems. In order to overcome the frequent omitted variable bias seen in the majority of bilateral trade analyses, an alternative methodology has been used in this study. The majority of earlier analyses of Bangladesh's trade, such as those by Rahman and Dutta (2012) and Roy and Rayhan (2011), solely performed regressions using Bangladesh's trade as the dependent variable rather than taking into account the total trade by all the nations included in the research. The impacts of multilateral resistance are still not taken into account by this strategy, and it does not take into account the two-way flow of commerce. But in the regression, this work took into consideration all of the commerce between each partner nation. The model contained a dummy variable representing Bangladesh and its interaction terms with other independent variables to estimate the impacts that are related with Bangladesh after first estimating the variables that are typically applied to all the nations of the research. To the best of our knowledge, no study looking at bilateral trade between Bangladesh and other countries has employed the PPML fixed effects estimator to concurrently take into consideration multilateral resistance terms and zero trade flows. The dataset utilized in this study does not contain any trade flows that are zero since the top 10 nations were added to the remaining 42 countries to account for country-pair fixed effects. However, the OLS fixed effect estimator can produce inaccurate results in regard to heteroscedasticity even in the absence of zero trade flows (Silva & Tenreyro, 2006).

1.5 Research contents

This study examines the gravity theory for Bangladesh's textile and apparel sectors to determine the effects of domestic GDP, GDP of partner countries, domestic population, and population of partner countries on Bangladesh's trade.

Bangladesh's textile trade seemed to be significantly influenced by the gross domestic product (GDP), real exchange rate, land, labor, and per capita GDP of Bangladesh and partner nations.

The Gravity model technique on trade with Bangladesh is included in the study proposal. Applying the generalized gravity model to analyze the trade in textile products between Bangladesh and its main trading partners using panel data estimates. utilizing the gravity model in the analysis of bilateral trade. We shall calculate the gravity models of commerce (exports plus imports as a total), exports only, and imports only. Using the panel data estimate approach, this study aims to give a summary of the trade in Bangladesh's textile sector. For the analysis, we used an extended gravity model.

As a reminiscence of Isaac New-ton's law of gravity, the trade version of the latter represents a reduced form which comprise supply and demand factors, like Gross Domestic Product (GDP), as well as trade resistance, land, labor, exchange rate.

Questions

How exports of textile products from Bangladesh to partner country can improve the economic growth of Bangladesh?

What types of economic growth Bangladesh would get from exporting garment products to the partner country?

1.6 Research significance

In order to understand what is happening in Bangladesh's textile industry by exporting garment items to other markets and how it might help to

economic growth, the research looked at the international trade relations between partner nations. This new study can explore some new opportunities for economic development from exporting items in the global market since it has defined how past studies were unable to uncover some outcomes. Whereas past research hadn't specified the study for these eras, this study utilized a new model using fresh data for the previous 15 years. The trading potential of Bangladesh with the partner nation and how it might support economic growth have been identified with the use of the time series model. When examining the global commerce, the time series approach is particularly common.

Chapter 2: Literature Review

International commerce is frequently explained using the gravity model. It was originally derived from Isaac Newton's gravity equation for physics. Recently, several places have analyzed the trade gravity model's theoretical aspects (Anderson, 1979; Anderson, 2011; Shahriar, Qian, Kea, & Abdullahi, 2019).

Cardinale and Scazzieri (2019) have recently claimed that issues of market regulation, industrial development, and international commerce have been framed in terms of national welfare from the early 17th century. In other words, the population of a nation is impacted by the welfare of international commerce.

According to Tinbergen (1962), who advocated the creation of the fundamental gravity model, the amount of commerce with any given country's trading partners is directly correlated with that country's national income and vice versa. According to the theory (Dell'Ariccia, 1999), nations with larger economies favor trading more in absolute terms, but distance (a proximate indicator of transportation costs) would reduce bilateral commerce. Recently, Cardinale and Scazzieri (2019) have claimed that issues of market regulation, industrial development, and international commerce have been framed in terms of national welfare since the early 17th century. In other words, the population of a nation is impacted by the welfare of international commerce.

Since Anderson (1979) published his groundbreaking study, other research have been conducted to provide the gravity model with a theoretical underpinning and support its application in international trade studies. The Heckscher-Ohlin (H-O) model, the Ricardian model, and the intra-industry trade model are the three main categories of theoretical models in international trade. According to research, these theoretical theories and the gravity model are compatible (Evenett & Keller, 2002). From trade models with item separation and growing returns to scale, Bergstrand (1989) derived the gravity conditions. An explanatory framework

for understanding the gravitation condition that is consistent with cutting-edge hypotheses of inter- and intra-industry trade was put out by Helpman (1987) and Bergstrand (1989). The theoretical modifications of the Ricardian and H-O models are consistent with gravity, as shown by Deardorff (1998).

We chose papers that have a tenuous connection to Bangladesh's textile sector. Basically, the majority of academics discussed national factors that are connected to Bangladesh's garment industry, such as difficulties with women workers' safety, pay, or the environment. For instance, Absar (2002) wrote about Bangladeshi women who labor in the garment industry. In their article from 2012, Yunus and Yamagata explored the potential strengths of the clothing industry as a whole. In a 2013 paper on Bangladesh's textile industries, Islam, Khan, and Islam identified the main issues as the rise in electricity prices, the rise in interest rates, the energy crisis, the devaluation of the Bangladeshi Taka, rising input costs, political unrest, the removal of subsidies, and internal strife. . Some of them discussed neoliberalism, global governance, and national responses: Khan and Milne illustrate the case of Bangladesh's RMG industry (2018). Some of them, including Islam, Mahmud, Faruk, and Billah, wrote on the textile industry's service sector (2011). The growth of Bangladesh's RMG garment sector has been called a "economic miracle" (Islam & Quddus, 2008, 2011). In order to prevent factory owners in Bangladesh's garment sector from taking lethal risks to satisfy customers' expectations, it is first necessary, according to a new book published by Saxena (2019), to address wider problems in the global supply chain.

Rather than being grounded in traditional economic theory, a broad critique that surfaced was just based on intuition. The Ricardian and Heckscher Ohlin (H-O) models, which outlined comparative advantage and differences in the availability of production inputs across trading nations, were the most widely recognized theories of international commerce at the time. It remained outside the mainstream of trade economics until (Trefler, 1995) first convincingly described the existence of gravity. None of these conventional models were theoretically capable of describing the gravity

equation (Bacchetta et al., 2012). (Head & Mayer, 2014). Later academics created a variety of explanations for the gravity model using economic ideas, and it has now become a crucial part of trade economics (Head & Mayer, 2014). Anderson (1979) was the first to effectively obtain the gravity equation using models that took into account product differentiation, despite attempts by other academics (Deardorff, 1998).

His study provided the gravity equation with its theoretical underpinnings. According to Anderson (1979), who distinguished the items according to their country of origin, customers in a given nation would favor certain of the distinct products over others. In order to get the equation, he combined Cobb-Douglas preferences with constant-elasticity-of-substitution (CES) preferences. He reasoned that regardless of price discrepancies, people in one nation would purchase some of each commodity from each country. Therefore, in comparison to their smaller counterparts, the larger economies would import and export more. However, Anderson's (1979) research had significant limitations since he presupposed price uniformity, the same structure of preferences for traded items, and equivalent tariff and transit costs between trading nations.

The factors that influence exports of particular products or commodities have been the subject of numerous studies, including those on Pakistan's agricultural and chemical products (Atif, Haiyun, and Mahmood, 2017; Atif, Mahmood, Haiyun, and Mao, 2019), China's animal meats (Shahriar, Qian, and Kea, 2019), honey (Wei, Huang, and Yang, 2012), and US film (Holloway, 2013).

Ahmed (2009) also examines the national and international Multi-Fiber Agreement (MFA) quotas, which did give Bangladeshi clothing access to secure international markets. Ahmed et al. (2014) reported on the exports and concentrated on the internal national elements at the time. Numerous book chapters have been written about Bangladesh's clothing industry. For instance, Islam and Quddus (1996) made an effort to examine the political policy developments and historical growth pattern of the Bangladeshi clothing sector. They discovered that the output in allied industries as well as the country's exports, GDP, foreign export profits, and domestic

employment were all significantly impacted by the apparel industry. Exports from the RMG sector to international markets total almost $9 billion (Islam & Quddus, 2011).

The studies of Rahman (2006, 2010) and Kundu (2015) are pertinent in this context since they estimated Bangladesh's bilateral commerce with other nations using the gravity model. To illustrate the commercial links with Brazil, Russia, India, China, and South Africa, Kundu (2015) employed the gravity model (BRICS). Because China, Vietnam, and Laos are also major players and have a comparative advantage in the T&C business on the global market, the current writers have analyzed various related works addressing the case study of these three countries. This research resembles Chan and Au's (2007) investigation on the factors influencing China's textile exports. The garment sector in Bangladesh has a high rate of reported workplace violence, which has an effect on the health and wellbeing of female employees (Gibbsa et al., 2019; Naveda et al., 2018).

Using the framework of the trade gravity model, it is demonstrated in light of the literature study that there is no research on the analysis of the factors influencing exports for Bangladesh's T&C business. The gravity model would be used in this study to identify the variables influencing Bangladesh's T&C exports. So, this essay aims to close the knowledge gap.

Approximately 5000 garment makers employ more than 12 million people in Bangladesh's RMG industry, with women making up 85% of the workforce, according to the BGMEA (2021) study. There are, according to the Bangladesh Garment Manufacturers and Exporters Association, about 4000 garment businesses in Bangladesh. The ready-made garment sector is currently the top export earner in the nation, with exports totalling over 24.49 billion US dollars in the most recent fiscal year. This is fantastic news for us because Bangladesh is well ahead of many other South Asian suppliers and manufacturers in terms of ready-made clothing capacity.

It is impossible to exaggerate the contribution of the garment industry to Bangladesh's GDP. Since the previous period, the ready-made clothing sector has significantly boosted the country's economy. Approximately 76 percent of all export earnings come from the RMG

sector. According to statistics, the RMG sector in Bangladesh generated revenue totaling $5,686.06 million in the fiscal years 2003－2004, $6,417.67 million in the fiscal years 2004－2005, $7900 million in the fiscal years 2005－2006, $9,211 million in the fiscal years 2006－2007, $10,699.80 million in the fiscal years 2007－2008, $12.35 billion in the fiscal years 2008－2009, and finally $24.49 billion in the fiscal year 2013－2014.

Bangladesh's garment industry is crucial to the country's economic development, but there are few empirical studies on this industry and even less on the economic progress brought on by trade between Bangladesh and the US. Rhely (2017) examined a few key factors that lead to Bangladesh's garment industry's exceptional performance. He talked about some of the key advantages of importing goods from Bangladesh, where American and European consumers may purchase clothing at reduced costs because to Bangladesh's low labor costs for the country's garment sector. Joarder (2016) outlined Bangladesh's greatest achievements in the garment sector since the liberation war and discussed how the country may further its economic growth by exporting goods made of ready-made clothing.

According to Robbani (2016), the RMG sector had a significant role in the economic sector by generating the majority of foreign currency income. Rehman and Hundker (2011) state that the RMG business started out as a small, non-traditional commerce in the early 1970s with a value of only $69 thousand dollars, and by the fiscal year 2002, exports had grown to $4.5 billion US Dollars. In the upcoming years, the industry develops into a 15 percent annual increase. According to Rock, Bangladesh started exporting clothing in 1976. (2001). The first strategic partnership garment factory in Bangladesh was called Desh Garment, a joint venture between Daewoo of South Korea and Bangladesh. Rahman (2002) asserts that the increase of RMG sales has undeniably positive effects on fiscal balances.

Despite being a neighbor, Mexico cannot sell goods to the US market at low rates like Bangladesh, according to a report by Joarder (2016). Mexico lost market share in the US market. Due to their inability to export goods at reduced rates, Turkey and other European nations also

lost market share in the garment sector in other European markets. China and Vietnam started to lose market share in the worldwide market for apparel as a result of the global pandemic and economic downturn.
Despite being a neighbor, Mexico cannot sell goods to the US market at low rates like Bangladesh, according to a report by Joarder (2016). Mexico lost market share in the US market. Due to their inability to export goods at reduced rates, Turkey and other European nations also lost market share in the garment sector in other European markets. China and Vietnam started to lose market share in the worldwide market for apparel as a result of the global pandemic and economic downturn. However, his research indicated that Bangladesh has improved its performance by deepening its ties to international markets including the US, UK, and other European nations following the post-recession and pandemic periods, in addition to being able to obtain market shares in the US clothing industry.

Bangladesh had a closed economy in the 1970s and was solely reliant on its agricultural sector, which depended on exporting jute, tea, and tobacco. However, since the 1980s, the garment industry and the export of garment items have taken the lead in the country's exports, accounting for 80% of all exports. Europe is Bangladesh's top export destination for clothing, followed by the US and Asia. Whereas the US alone places Bangladesh in second place in terms of garment exports, 50% of the total number of garment items are sold to Europe. After the tragedies at Rana Plaza and the Holi Artizan Terrorist Attack, exports to the US market have recently increased while they have decreased to the European market.

Hossain (2017) investigated how sales of knitted clothing only started in the late decade of the 1980s, when the country's garment exports were largely limited to cotton fabric. Since the late 1970s, Bangladesh has had extraordinary success in the trading of goods, leading to substantial changes in the nation's economy. The growth of this business has expanded the market's supply of processed products and given the economy a new viewpoint. He concluded that a number of factors, including corporate restructuring and positioning, rising global demand, safeguarding policies regarding China, favorable access to developed country markets, and

growing cooperation, have contributed to Bangladesh's current success in the garment export industry.

Rahman (2018) said that after quotas were eliminated in 2005, Bangladesh's ready-to-wear industry has seen fierce competition on the global clothes export market. Additionally, the rivalry from adjacent countries like Pakistan, India, Thailand, and China, from whom Bangladesh obtains textiles to meet the fabric needs of its RMG sector, has increased. Due to its low labor costs, Bangladesh has been one of the world's greatest growing markets for export exports, claim Hossain and Brar (2015). The attitudes of employees regarding unionization are examined in this article, as well as the variables affecting the pay of garment workers. The majority of employees said joining a union would improve their chances of getting greater pay, improved safety, and better working conditions. The most significant factors influencing remuneration in the garment industry were found to be education and knowledge.

Azad (2016) asserts that Bangladesh's RMG exports have outperformed hoped-for expectations with their spectacular success over the past 20 years. The nation's multibillion-dollar manufacturing and export industry is the export of clothing today. On the other hand, the impact of Bangladesh's garment industry much surpasses its tremendous financial and economic success. The impact of the textile and clothing export industry is one of the truly important socioeconomic transformations in Bangladesh. According to Haider's (2017) analysis, Bangladesh's RMG industry started in the 1970s and expanded swiftly to become an important component in the country's economy. The company has profited from export earnings, income generation, job creation, poverty alleviation, and female empowerment. The majority of Bangladesh's ready-made clothing exports go to the US. These two regions account for more than 90% of the country's overall garment export earnings.

Mohiuddin (2018) intended to identify the potential of Bangladesh's RMG business in the post-MFA age by assessing the current state, strengths and weaknesses of the country's RMG, and anticipated competitiveness in the global market in the near future. Thanks to investments in backward

links, access to new markets, government incentives, enhanced administration and logistics, preferential access to markets, and most significantly, developing local spirit, Bangladesh's ready-made garment industry has continued to operate in the post-MFA period. Bangladesh has established itself as a significant worldwide supplier of premium ready-to-wear apparel.

The RMG business in Bangladesh has expanded quickly over the past 30 years, and the worldwide market has paid close attention to this sector. However, the US market is the sector's main source of revenue. The US and Bangladesh have an ongoing trading structure, therefore these two countries account for the majority of the garment industry's trade flow. The illustration below demonstrates that Bangladesh uses a distribution system when exporting goods to the US market. Bangladesh is a developing nation that is regarded as one of the least developed in the world, yet the country has improved its economy by opening up new markets abroad by exporting clothing.

However, Bangladesh also depends on importing bottoms, wool, and other clothing accessories from the US, China, and South Korea. Alternatively, Bangladesh is regarded as the third-largest exporter of apparel. As a result, there is a trade imbalance between Bangladesh and the US, with Bangladesh exporting more to and importing less from the latter country. Bangladesh has trade deficits with China, South Korea, and India, but trade surpluses with the United States and other European nations. Bangladesh's economy has to be built from scratch because of the absence of trade diversity in the nation.

According to Textile Today (2021), the ready-made garment (RMG) and allied textile industries are Bangladesh's main employer. Out of the 6.08 million individuals employed nationwide, it is estimated that the RMG and textile sectors employ close to 45 lakh people. The specific number of jobs in the industry has not yet been the subject of a thorough investigation. The BGMEA's statistics were derived entirely on the preliminary data that its members first gave, which was inaccurate.

According to a recent CPD survey, there are 3,596 RMG businesses operating in Bangladesh that employ 35 lakh individuals, 60.8 percent of

them are women and 39.2 percent are males. It is acknowledged that overall employment has not expanded much in the previous five years as Textile Today (2022) is already monitoring the industry. The sector's entry and departure rates of workers seem to be very similar. Despite the fact that exports had grown significantly at this time, employment had not.

Chapter 3: Research Framework

3.1 Variables

Dependent Variable:

Textile products trade from Bangladesh to the partner countries

Independent variable:

1. Distance
2. Bangladesh GDP per capital and Partner country GDP per Capital
4. Population of Bangladesh and partner country (Scale)
5. Exchange rate
6. Land
7. Labor

3.2 Hypothesis

H1: Dependent Textile products trade from Bangladesh to the partner countries has a positive significant relationship with independent variable of the Distance.

H2: Dependent variable Textile products trade from Bangladesh to the partner countries
has a positive significant relationship with independent variable of Bangladesh GDP per capital and Partner country GDP per Capital.

H3: Dependent variable Textile products trade from Bangladesh to the partner countries has a positive significant relationship with independent variable Population of Bangladesh and partner country (Scale).

H4: Dependent variable Textile products trade from Bangladesh to the partner countries has a positive significant relationship with independent variable exchange rate.

H5: Dependent variable Textile products trade from Bangladesh to the partner countries has a positive significant relationship with independent

variable land

H6: Dependent variable Textile products trade from Bangladesh to the partner countries has a positive significant relationship with independent variable Labour

Chapter 4: Overseas trade overview of Bangladesh

4.1 Bangladesh's export performance

Bangladesh's economy was relatively closed in the 1970s, and all of the export's exports were smallholder farmers' agricultural products (agricultural commodities such as jute, tea, tobacco). However, since the 1980s, Bangladesh's export of textiles has grown to be its largest sector, accounting for more than 80% of all exports now. Europe, America, and Asia are the top three destinations for RMG exports.

Export and import for RMG The adventure of Bangladesh's clothing industry began in the late 1970s, made feasible by the investment of South Korea and Hong Kong, which seized the chance by using Bangladesh's export quotas in the constrained market and a surplus of inexpensive labor. By the late 1980s, Bangladesh's primary export sector had changed to clothing. It quickly became the primary source of foreign exchange revenues and made a sizable contribution to the GDP. . Bangladesh's exports have changed during the past 20 years, moving away from a reliance on raw materials and toward a focus on export processes and finished goods. Bangladesh's exports increased in the 1990s as a result of the RMG-centric export structure, and in 2011-2012, this industry's exports totaled $19 billion. The majority of Bangladesh's exports of RMGs go to five large nations: the United States, Germany, France, Spain, and the United Kingdom. This may indicate that the country has concentrated its exports heavily on a small number of countries. the UK has shown an oscillatory tendency as the second-biggest importer, which has been growing since the beginning, while the USA has seized the first greatest chunk as a dominating importer of Bangladesh's RMG. The RMG commerce in Bangladesh as a whole exhibits an expanding tendency in a relatively short period of time. Demonstrates that China, India, Singapore, Korea, and Malaysia are the top five Asian nations from which Bangladesh buys RMG. Two nations in particular—China and India—receive a lot of attention. As a result, China, a

major supplier to Bangladesh, has gotten the lion's share. It maintained the same position across the years, from 2009 to 2015. As the second-largest exporter to Bangladesh, India showed a fluctuating pattern. It has steadily increased from 2009 to 2015. Illustrates how Bangladesh's RMG has experienced a sharp increase in trend since 2009 in comparison to its performance the year before. Due to ongoing assistance from the government, foreign investors, export quotas in the limited market, the lowest wage rate, and Bangladesh's GSP status, the RMG industry has experienced an unexpected boom.

As a result, the amount of manufacturing led to a sharp increase in RMG's export income. Two fatal events in Bangladesh's apparel sector occurred between 2012 and 2013 (Tazrin Fashion fire and Rana Plaza collapse). This tragedy brought Bangladesh's breaches of worker safety and labor laws to the attention of the whole globe. Following that, major multinational clothing companies applied pressure on Bangladesh to raise industry standards to international levels. As a result, from 2012 to 2013, Bangladesh's RMG export trend dropped. Figure 3 illustrates the strong correlation between woven and knit clothing from 1994 to 2004 and their upward tendency from 2005 to 2015. After China, Bangladesh is the second-largest exporter of clothing worldwide. ready-made clothing (RMG) accounted for 80% of all exports from the nation between 2013 and 2014. From the year 1986 to the 1990s, Bangladesh's RMG export rose rapidly, making up a significant share of the nation's overall exports. In recent years, the proportion appears to have risen gradually.

Bangladesh was the third-largest textile exporter in the world in 2020 with $37.3 billion in textile exports. In the same year, textiles were Bangladesh's top-exported product. Germany ($6.27 billion), the United States ($5.57 billion), the United Kingdom ($2.87 billion), Spain ($2.81 billion), and Poland ($2.11 billion) are Bangladesh's top export markets for textiles.

Between 2019 and 2020, Poland ($296M), Switzerland ($108M), and Belgium ($48.9M) saw Bangladesh's export exports expand at the quickest rates.

4.2 Bangladesh's Import performance

Bangladesh became the 18th-largest textile importer in the world in 2020, bringing in $10.7 billion in textile imports. Textiles were Bangladesh's top-importing product in the same year. Pakistan ($439M), China ($5.46B), Hong Kong ($410M), India ($2.08B), Pakistan ($439M), and the United States ($338M) are the main sources of textile imports for Bangladesh.

Benin ($94.7M), Singapore ($32.5M), and India ($20M) had Bangladesh's textile imports rise at the highest rates between 2019 and 2020.
Between 2019 and 2020, Poland ($296M), Switzerland ($108M), and Belgium ($48.9M) saw Bangladesh's export exports expand at the quickest rates.

4.3 International Trade structure of Bangladesh's RMG

Over the past three decades, the RMG business in Bangladesh has expanded quickly and drawn a lot of attention from across the world. However, it has been heavily reliant on the US and EU markets. India, China, Korea, the US, the EU, and Singapore are Bangladesh's top trading partners for RMG. Figure 6 demonstrates how Bangladesh's clothing sector is connected into the world's processing and distribution networks. This processing industry deals with ready-to-wear, intermediate items, and primary commodities (RMG). The majority of clothing, accessories, and raw materials including textiles, wool, bottoms, and zippers are imported from Bangladesh. Particularly, it imports those products from Singapore, the USA, the EU, China, Korea, and India. However, Bangladesh has overtaken China as the world's second-largest exporter of clothing. It exports mostly to markets in the USA and the EU. Bangladesh's bilateral trade deficit is a strong indication of this. Bangladesh has a significant trade imbalance with Korea, China, and India but a surplus with the United States and the European Union.

Despite having the advantage of being one of the least developed nations and experiencing consistent economic growth as a result of the expansion of exports in the past, Bangladesh's trade composition suggests significant constraints, problems, and challenges that prevent the country from further development. The state of Bangladesh's commerce appears to be becoming worse as a result of these barriers. The government was obliged to be in a constrained economic situation and suffer in the escalating rivalry with its neighboring countries due to the lack of export diversification and heavy reliance on the RMG industry. Due to a lack of raw materials, the country had to rely more and more on imports, which negatively impacted its terms of trade and currency value. Due to this reliance on imports, cotton demand rises, causing commodities prices to vary over time. According to several analyses, Bangladesh could encourage commercial opening by reducing import tariff protection (World Bank 2007). However, significantly accelerating the import of raw materials might hurt Bangladesh's domestic industries. To lessen the aforementioned difficulties, a suitable trade strategy that boosts productivity and encourages export diversification should be put into place.

4.4 Partner country Import Export Relationship with Bangladesh

Australia:

Australia is a tempting export and investment location for Bangladesh. The bilateral commerce between Bangladesh and Australia has increased by 600% in the previous ten years, reaching US$2.6 billion last year – a rate that is far higher than that of practically any other major trading partner. The main factors for this trade surge are agriculture, food, ready-made clothing (RMG), and educational services. Bangladesh is now Australia's 32nd-largest trading partner. By utilizing the TIFA, which would increase trade volume to $5 billion, Dhaka hopes to rank among the top 20 in the following ten years.

Australia is a particularly appealing trading partner for Dhaka due

to its close proximity to Bangladesh and its standing as a trustworthy partner. Australia has made investments worth more than $1.3 trillion abroad, but its investments in Bangladesh have been subpar. The amount of Australian investment in Bangladesh up to June 2021 was $845 million, the majority of which went to the gas and petroleum industries. Other high-priority industries in Bangladesh, such as those in manufacturing, energy, education, and textiles, however, call for investment. Another significant point is that Australia, which will be the world's top supplier of liquefied natural gas in 2020, has not yet benefited from Bangladesh's rising energy needs.

Due to its rising geopolitical animosity with China, Australia is currently expanding its attention beyond its traditional markets of East Asia. As a gateway to South Asian markets, Bangladesh may play a significant role in the Australian strategy. In addition to its thriving economy, Bangladesh's sizable, youthful, and urbanizing population as well as its expanding middle class should be of interest to a variety of Australian exporters and investors.

European Union:

The main export market for Bangladesh is the European Union. Bangladesh has benefited from the Generalized Scheme of Preferences' (GSP) zero-duty advantage on export to the EU since 1971 since it is a least developed nation (LDC). Bangladesh's exports to the EU increased dramatically over time as a result of the EU's current zero-duty advantage. Bangladesh shipped garments worth US $ 21.13 billion to the EU in the 2018-19 fiscal year, up from US $ 19.62 billion and US $ 17.75 billion in the two prior fiscal years, according to figures from Bangladesh's Export Promotion Bureau (EPB).

However, trade and business are only one aspect of the relationship between the EU and Bangladesh. The union of 27 European countries has always stood with Bangladesh in good times and bad. As part of this, the European Union, the top export for Bangladesh's apparel exports, has chosen to award Bangladesh €113 million in order to cover the wages of

the 1 million workers who were laid off from the ready-made garment factories due to the coronavirus epidemic. A worker will get Taka 3,000 under the incentive each month in June, July, and August. Workers who lost their jobs as a result of factory closures when the government decided to shut down all enterprises in March and who haven't found new jobs yet are eligible for the financial assistance. In order to pay 1 million workers at the rate of Tk 3,000 per month, Tk 300 crore will be required. All parties, including labor leaders and trade unions, officials of the country's top garment makers' organizations, the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) and the Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA), among others, have confirmed and praised the EU's kind gesture to provide financial assistance to the industry in these trying times. "The EU consented to pay 1 million workers for a period of three months at a rate of Tk 3,000 per month.

Mobile financial services (MFSs) would be used to distribute this funding, according to Sammilito Garments Sramik Federation President Nazma Akhter. The EU is front-loading €93 million to boost the export industry, while the remaining money goes to the social safety net, according to Dr. Rubana Huq, president of the BGMEA. The EU and ERD are still negotiating the specifics of how this cash will be used at this time. After the Government completes the discussions and includes us, the private sector, the fund will be distributed through our database, so we'll keep everyone informed. It should be noted that approximately 400 RMG companies lay off employees as a result of cancellations of orders by major stores and fashion brands as well as a dearth of fresh orders from overseas clients in the wake of the COVID-19 outbreak, according to statistics from BGMEA and BKMEA. These factory owners are in financial trouble and have been forced to lay off employees as a result of global customers and retailers canceling work orders totaling more than US$ 3 billion so far. Over 1 million people, largely women, were purportedly employed by these factories collectively. According to the BGMEA, 46 manufacturers have laid off a total of 12,510 employees, and that figure is rising daily as businesses are beginning to cut expenses due to a lack of job orders. First Vice

President of BKMEA Mohammad Hatem emphasized that "many of them had no choice but to lay off factory workers as the buyers cancelled existing orders and there are no new orders," adding that "many global retailers have also held back orders and delayed payments for already shipped goods, which are aggravating the problems further." Numerous European nations, including Sweden, the Netherlands, and Germany stood with Bangladesh and offered their assistance during this difficult time even as the nation saw widespread order cancellations by purchasers. It should be noted that the Swedish Prime Minister promised that, as far as Stockholm is concerned, the situation would not change a day after it was revealed that high street merchants in the UK alone had canceled large work orders in Bangladesh worth £2.5 billion. Stefan Lofven contacted Sheikh Hasina to ensure that orders would not be canceled and that his nation will continue to purchase clothing from Bangladesh. The Swedish Premier told Sheikh Hasina over the phone, for around 15 minutes, that "We would continue buying RMG items from Bangladesh." Soon after, the Netherlands assured Bangladesh that its customers would continue placing orders with its local ready-made clothing (RMG) facilities. Foreign Minister AK Abdul Momen was informed of this by Minister for Foreign Trade and Development Cooperation Sigrid Kaag, who also mentioned that the Dutch Government would make sure the RMG value chain wouldn't be affected. Gerd Muller, Germany's Federal Minister for Economic Cooperation and Development, reaffirmed that his nation will do all possible to help Bangladesh's garment industry deal with the effects of the coronavirus. In response to Rubana Huq's letter to the minister asking him to ask German merchants not to cancel their work orders with Bangladeshi firms, Muller issued this warning. Muller wrote in a letter, "I strongly hope that we can find a solution that will guarantee the viability of the textile industry in both Bangladesh and Germany as millions of people work in that sector. I also hope that for the interim, Bangladesh will get orders. I completely understand your worries because Bangladesh is one of the German textile industry's most significant partners. "Let me tell you that I share your concerns on the social suffering and the threat to textile factories and their employees in Bangladesh," he

continued to reassure Rubana. In response to your letter, I'm writing to let you know that I'll be relaying your urgent request to the German textile industry's representatives. Industry insiders allegedly insisted that the duration of the compensation might be increased from 3 months to 6 months in relation to the EU's award of €113 million. The EU is already tackling numerous issues critical to the COVID-19 response and the nation's economic recovery in Bangladesh as part of its continuing development cooperation programs. A statement from the EU's Bangladesh mission on May 20 said that the EU was happy to announce that €334 million had been provided to assist battle the pandemic and that further money may be raised soon. A total of €263 million will be used to lessen the pandemic's effects on the economy and society. Along with a €20 million grant from Germany, the government will use the allocation of €93 million to aid employees in export-oriented companies who have been negatively impacted by the coronavirus. This will also help strengthen the national social protection system, it was stated. The EU has given assistance in areas other than ready-to-wear clothing and other sectors. As part of its assistance for educational reform, it gave Bangladesh Taka 428 crore (€46.12 million). This funding was made available under the European Union's "Human Capital Development Program-2021." With this money, Bangladesh's educational system will be enhanced, with a focus on elementary and technical education and skill development. . The EU has provided this assistance as part of the implementation of the Government of Bangladesh's commitment to human development, poverty and inequality eradication in order to achieve sustainable development. The bloc of the European nations is also helping and aiding Bangladesh in many other areas, more so in view of the COVID-19 outbreak, which is taking a tremendous toll on the economy and the lives lost, which if at all, proves beyond doubt that the European Union-Bangladesh mutual relation has moved beyond the realms of just trade and commerce over the years.

United State Of America:

With around 19–20% of its exports going to the United States, Bangladesh counts the United States as one of its most significant economic partners. Over $10 billion in commerce was conducted between the United States and Bangladesh in 2021. However, Bangladesh is only a minor commercial relationship from the standpoint of the United States; in 2020, Bangladesh was the country's 46th-largest trading partner.

The main products that Bangladesh exports are woven clothing, knit clothing, miscellaneous textile items, footwear, tobacco, snacks foods, furniture, ceramic ware, toys, plastic items, artificial flowers, etc. The main products that Bangladesh imports are raw cotton, chemicals, machinery and equipment, pharmaceuticals, aircraft, electrical equipment, iron and steel, and so on.

Despite the hefty import taxes in the USA, Bangladeshi items centered on clothing have been quite popular there recently. Ready-made clothing makes up around 87–88% of Bangladesh's exports to the US.

In 2010, Bangladesh's overall exports of garments to the USA were valued $4.29 billion, and by 2021, they were estimated to be worth $7.30 billion (Source: BGMEA). Bangladesh is the third-largest supplier of clothing to the US.

The Leadership in Energy and Environmental Design (LEED) accreditation, the highest in the world, is presently held by 155 green companies in Bangladesh's readymade garment (RMG) industry. Bangladesh is home to seven of the top ten LEED-certified factories in the world.

Buyers' confidence in Bangladeshi garments has increased as a result of recent safety improvements in the RMG industry and salary increases in China. As a result, US consumers are increasingly turning to Bangladesh as a source for goods. Brands and importers headquartered in the US may take advantage of Bangladesh's low prices on high-quality clothes.

Bangladesh Exports and Imports to the United States over the recent years are furnished below

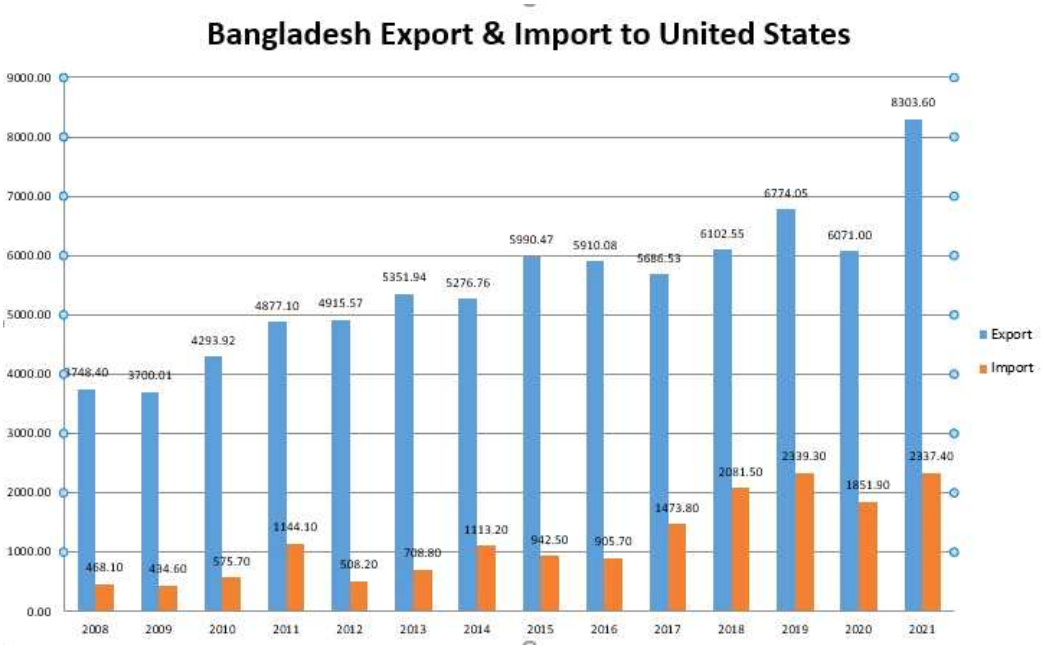

Figure1: Bangladesh export &import to United state
(Source: bdembassyusa.org)

The apparel industry still accounts for the majority of the nation's export earnings, but other industries are gradually developing as well, including pharmaceuticals, ceramics, plastics, leather, footwear, agroproducts, software & IT solutions, electrical appliances, ships & vessels, and light engineering products. "Bangladesh is a dependable supplier of ready-to-wear clothing, thus export has been rising via all channels despite the Covid-19 epidemic. Muhammad Hatem, Executive President of Bangladesh Knitwear Manufacturers and Exporters Association, claimed that the campaign to brand products as "Made in Bangladesh" was successful (BKMEA).

"Bangladesh has significantly upgraded its infrastructure. As long as the nation keeps doing business with international partners, it has been highly successful, according to Asif Ashraf, general director of Urmi Group. The USA purchased clothing from Bangladesh worth $7.4 billion in 2021 (CY). According to the Office of Textiles and Apparel (OTEXA), a subsidiary of the US Department of Commerce, the nation has overtaken all other denim exporters to the US with shipments of $798.42 million worth

of blue jeans, accounting for 21.69 percent of the US market.

Bangladesh earned $27.49 billion from the foreign market during the final eight months of the current fiscal year by exporting mostly trousers, T-shirts, sweaters, blouses, undergarments, etc.

United Kingdom:

Bangladesh's third-largest export market is the UK, and traditionally, commerce between the two countries has been favorable. The export of products exported to the UK for 2017-2018 was US$ 3,989.12 million, or 9.74 percent of overall exports. The main products that may be exported include ready-made clothing, frozen food, IT engineering, leather and jute products, bicycles, etc., with knitwear and woven clothing making up 80% of these products.

The export market of the United Kingdom (UK), which includes Bangladesh, is essential for emerging and small island developing states (SIDS). And among them, the export of some of the nations is heavily reliant on the UK market. ITC Trade Map indicates that between 2012 and 2016, Belize (24%), Mauritius (15%), Sri Lanka (10%), St. Lucia (10%), Bangladesh (9%) and Fiji had the highest average export shares to this market (8 per cent). In terms of exporting their goods to the UK under the European Union (EUEverything)'s But Arms (EBA) program, all of these nations continue to benefit from Duty-Free, Quota-Free (DFQF) market access. Therefore, the least developed countries (LDCs), including Bangladesh, were extremely concerned about the Brexit and what would happen to their current DFQF facilities to the UK market when the latter will ultimately leave the EU. But when the UK government announced in June 2017 that it will grant market access to the UK market for the 48 poorest nations worldwide, it was welcome news for these nations. In fact, this choice will benefit the economies of Bangladesh and the other 47 LDCs overall, especially in terms of exports. UK'S ECONOMY AFTER THE BREXIT VOTE: With a GDP of US$2.565 trillion, the UK is now the sixth-largest economy in the world. However, the Global Competitiveness Report, 2017-18 placed the UK eighth among the top ten most competitive economies. But in November

2017, France's economy overtook the UK's, which dropped from fifth to sixth place as a result of the UK's economic decline. And in response, the UK's Centre for Economics and Business Research (Cebr) asserted that the impacts of Brexit on the British economy would be less severe than anticipated and that the economy will return to its pre-Brexit state within a couple of years. . The UK's GDP increased 1.7% from July to September 2017 as compared to the same quarter the previous year, and the consumer price index (CPI) also increased, while the unemployment rate continued to decline and now stands at 4.3%, a 42-year low. Additionally, according to Reuters, on January 22, 2018, sterling increased by 0.5 percent against the euro and the USD, approaching $1.40 and achieving its best level since the Brexit vote in June 2016. Therefore, it is clear that the UK economy has not yet undergone the instant shock that was anticipated in the wake of the Brexit decision.

Bangladesh and UK bilateral trade scenario

Next to the US and Germany, the UK is Bangladesh's third-largest export export. It is also the third-largest market for Bangladeshi RMG in particular. Bangladesh exported 3.57 billion dollars worth of goods to the UK in fiscal year 2016-17, or 10.25% of its total exports. However, compared to the prior fiscal year (FY 2015-16), its export to the UK market fell by 6.31% in FY 2016-17. This may be due to the quick decline of the British pound versus the US dollar and the euro after the Brexit vote. Knitwear, woven clothing, seafood, other made-textile products, etc. were the top five exports from Bangladesh to the UK in FY-2016-17, accounting for 98.02 percent of the country's total exports. And ready-made clothing represented 92.64 percent of the entire export (knitwear, HS 61 and woven wear, HS 62). Optimistically, Bangladesh's exports to the UK climbed by almost 19% to US$1981.66 million in the first six months of FY 2017-18 from US$1665.81 million in the corresponding period of FY 2016-17. This denotes an export in Bangladesh's exports to the UK market. In terms of imports from the UK, Bangladesh brought in US$ 279.75 million in 2016 compared to US$ 287.42 million the year before, a 3% decrease in import

value. Cotton, machinery, mechanical appliances, nuclear reactors, boilers, electrical machinery and equipment and their parts, sound recorders and reproducers, iron and steel, and optical, photographic, cinematographic, medical, or surgical equipment were the most common imported goods in 2016.

Turkey:

Bangladesh has been observing a steady fall in RMG export revenues from Turkey, which was formerly one of the main non-traditional markets for the nation. Bangladesh exported clothing worth US $ 260.16 million in FY 2017-18, a significant decrease of 31.78 percent from US $ 381.37 million in the previous year. Knitwear exports decreased from US$367.80 million to US$192.71 million in the year that ended on June 30, 2018. However, from US$108.92 million in FY 2016-17 to US$77.91 million in FY 2017-18, woven garment exports plunged. The decrease can be ascribed to Turkey's safeguard tariff of 17% on imported clothing from Bangladesh and other least developed nations. Following the imposition of the safeguard duty, RMG exports fell to US $ 488.08 million in FY 2014-15 from US $ 622.37 million in FY 2013-14 and further declined to US $ 460.29 million in FY 2015-16. Another factor contributing to the sharp decline is that Turkey used to import basic products from Bangladesh more frequently, which it then re-exported in other parts of the world. The duty was first imposed in 2011 and since then, the apparel exports from Bangladesh to Turkey have. But over the past several years, Bangladesh has focused on developing fashion diversity and improving the quality of RMG items to solidify its position in the global fashion industry.

Furthermore, as Turkey places more of an emphasis on luxury apparel to meet local demand, it has chosen the EU as its preferred trading partner since it offers duty-free access to Turkey and is situated nearby; Bangladesh is therefore avoided for obvious reasons.

Experts in Bangladesh's export sector, however, feel that if a bilateral FTA with Turkey is not struck, Bangladesh would lose the last of its market share in Turkey and that signing the deal should be the government's top

priority in order to obtain preferential market access.

India:

The potential for bilateral commerce between Bangladesh and India is put at $16.4 billion by the World Bank. For the 2019 fiscal year, actual trade was $9.85 billion USD. This gap illustrates the current economic connection between the two nations and indicates what would be possible if the underlying difficulties were properly resolved.

On the Dhubri district of the northeastern Indian state of Assam, a man is seated in a boat on the waters of the Brahmaputra river close to the international boundary between India and Bangladesh. 2018 August 4. (Image via Reuters/Adnan Abidi) Numerous observers are concerned about Bangladesh's significant $7.35 billion bilateral trade imbalance with India in the 2019 fiscal year. The deficit has been steadily increasing. When exporting to India, Bangladeshi businessmen frequently lament the existence of NTBs. On Bangladeshi exports, India has implemented anti-dumping and countervailing charges. Bangladesh's exports to India have suffered as a result of this. The most significant NTB for operators on both sides is a lack of appropriate trade facilitation. The majority of Bangladesh's imports from India come in the form of raw materials for the export's export-focused industries, notably the ready-made garment (RMG) industry. Notably, RMG products account for 87% of Bangladesh's exports to the US market and are mostly made of cotton, yarn, and textiles that are supplied from India. As a result, Bangladesh had a sizable trade surplus with the United States in 2018 of US$6.1 billion. However, Bangladeshi policy circles and the general public continue to disagree strongly about how to reduce the bilateral trade imbalance with India.

Pakistan:

By supplying the raw materials needed by Bangladeshi clothing makers, Pakistanis helped Bangladesh's RMG sector grow. Pakistan has the potential to export an additional $721.34 million worth of textile items to Bangladesh in 2020, according to data from the ITC trade map. Pakistan's

textile exports to Bangladesh have been rising and have the potential to continue growing despite incurring tariffs of up to 25%. Advanced Chemical Industries (ACI), one of the biggest Bangladeshi conglomerates, indicated interest in importing grey textiles and yarn from Pakistani businesses, allowing Pakistani businesses to increase their part of Bangladesh's textile industry.

Russia:

Bangladesh sold garments worth $687.81 million to Russia in 2021, according to statistics from the Export Promotion Bureau (EPB). which grew by 45.25 percent in 2021 over the previous year.

It will be difficult to continue the transaction with Russia if it is shut off from SWIFT. Additionally, Bangladesh's export of RMG to the nation will face challenges.

While Bangladesh exported clothing to Russia in FY 2020 for $593.66 million. The Russian market has been expanding rather quickly since since the government began providing an additional 4% cash incentive on non-traditional markets in FY 2009-2010. The EPB statistics also revealed that the export of clothing to the Russian market has been increasing consistently over the past five years.

On the other hand, the western governments, primarily those of the USA, EU, UK, and Canada, have started a number of rounds of sanctions against Russia. They have threatened to oust some Russian banks from the global financial messaging service SWIFT and to "immobilize" the assets of the Russian central bank. The sanctions hit the heart of the Russian banking system, which is problematic for Bangladesh's bilateral commerce, particularly the export of ready-made clothing (RMG) to Russia. It will be difficult to continue the transaction with Russia if SWIFT is cut off. Additionally, Bangladesh's export of RMG to the nation may face challenges.

In addition, the battle has already driven up global gasoline costs, with a barrel of oil costing more over $100. Similar to how gas prices would rise quickly, Russia is a significant gas provider.

As diesel and heavy fuel oil are used more and more in the production of power, the cost of producing energy rises. This will raise the cost of transportation overall. experts claim that this will worsen the local economy.

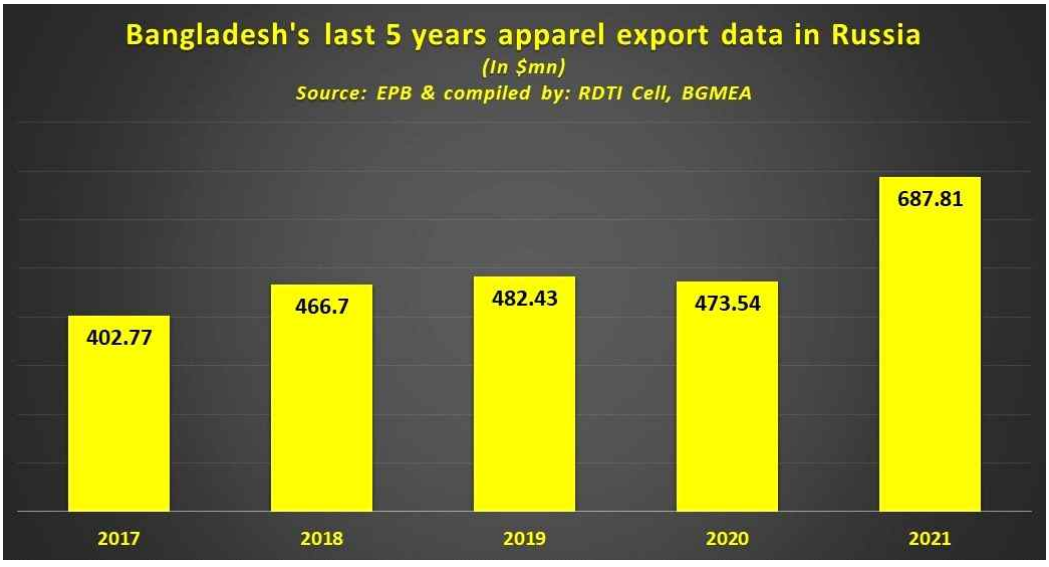

Figure2: Bangladesh's last 5 years apparel export data in Russia

On the other hand, according to EPB statistics, Bangladesh exported textile and apparel products worth $31.78 million to the Ukrainian market between July and January of FY 2021-22.

"We have already ordered our members to cease shipments of textile products to Russia while the conflict there is ongoing and due to the prospective prohibition on the use of SWIFT," said Faruque Hassan, president of the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), in a statement to the media.

"We are concerned about the markets in Russia and Ukraine. Following the start of the war, there is uncertainty around payments and shipments, Faruque Hassan continued.

To prevent any difficulties with payments, the BGMEA has urged its members not to accept any new work orders from Russia.

In order to avoid any confusion during COVID-19, Hassan advised Russian purchasers to complete payments as quickly as possible.

The ambiguity surrounding the usage of SWIFT in Russia, according to Mohammad Hatem, Executive President of the Bangladesh Knitwear Manufacturers and Exporters Association, has them concerned about the payment issue.

Since the western country agreed to forbid select Russian banks from utilizing the SWIFT system, we are no longer receiving work orders from Russian clients. We will have a significant obstacle in the Russian markets because of it, Hatem continued.

If SWIFT shuts down the whole Russian financial system, the UAE won't be able to conduct business with Russia, according to Fazlee Shamim Ehsan, vice president of the Bangladesh Knitwear Manufacturers and Exporters Association. Our payment will be questionable in that scenario.

"As we all know, the UAE agreed to use a different channel to conduct business with Russia. Although it is our glimmer of optimism, we are not at ease. Therefore, I advise exporters to postpone making any shipments until payment is certain, said Ehsan.

Despite Ukraine's relatively minor export of textiles and clothing, it will be severely hit.

Iran:

The mission has pushed for holding the sixth joint economic commission meeting in order to put Bangladesh and Iran's 2006 preferential trade agreement (PTA) into force and reap more commercial benefits from Iran.

The Ports and Maritime Organization (PMO) of Iran has reportedly indicated interest in a memorandum of understanding (MoU) that will be inked between the Chittagong Port Authority and Iran's Shahid Rajaee Port, according to the embassy report. The trade and foreign ministries have already received the proposal.

Despite sanctions put in place on Iran by the United States and other international organizations, there remains a significant opportunity to improve Bangladesh's export revenues from the Iranian market.

The Iranian market is now seeing demand for RMG, seasonal fruits, tea,

paper and cardboard, jute items, wet-blue, and crushed leather. Since there are no restrictions on raw leather, the Iranian organization for leather and footwear is interested in importing leather from Bangladesh.
The mission has previously informed the trade ministry and the Bangladesh Tanners Association of this problem.

An Iranian business has suggested purchasing six ro-ro ships and renting a cruise ship from Bangladesh, according to the mission's letter. This is to note that after US economic sanctions, the Iranian government has since 2018 enforced an import restriction on 2,500 'non essential' items in an effort to promote homegrown products.
As a result, it is not possible to export a significant number of Bangladeshi commodities, such as leather goods and RMG, directly to the Iranian market. However, since the sanctions are ineffective in Iran, the study stated, it is feasible to export all goods from Bangladesh through the country's nine free zones.

Despite the economic boycott, Bangladesh is still conducting commerce with the Muslim nation, and there is a significant chance ahead. According to the Trade Promotion Organization of Iran and the Iranian Customs Administration, Iran bought goods from Bangladesh worth US$40.14 million in the Iranian fiscal year 2020-21.
RMG goods worth $1.8 billion entered Iran through unofficial means in the 2020-21 fiscal year. According to data from the Iranian RMG exporters and producers group, one-third of the RMG goods are produced in Bangladesh.

China:

Only $0.60 billion of Bangladesh's $12.09 billion worth of bilateral commerce was exported to China in FY20, while the export's imports were a staggering $11.49 billion. A comprehensive bilateral Free Trade Agreement (FTA) between Bangladesh and China should be signed shortly in order to increase exports to the Chinese market.

Chapter 5: METHODOLOGY

5.1 Gravity model

We recommend several studies that employed an approach similar to this one as we used the gravity equation for the regression analysis. In order to explore global bilateral trade patterns and assess trade blocks and exchange rate stability in Europe, Frankel (1993) employed the gravity model. In order to examine the effects of trade blocs globally, Frankel (1995) computed transportation costs using statistics and a gravity model. His results imply that the EC's command to form commercial blocs is indeed supernatural. Rahman (2003) uses a generalized gravity model and panel data estimate to analyze Bangladesh's bilateral commerce with 35 partner nations from 1972 to 1999. According to the study, Bangladesh's export is favorably impacted by economic size, per capita GNP, and openness. In order to evaluate India's potential for international commerce using the OLS technique and panel data approach for the year 2000, Batra (2006) developed an enhanced gravity model. Pakistan has the most potential, according to the report. China, however, also has a huge potential as a market. By lowering trade restrictions, commerce between China and India may more than treble. Thai Tri Do (2006) uses a gravity model and a panel data estimate approach to look at Vietnam's trade activity and the potential for trade between Vietnam and 23 European nations from 1993 to 2004. This research highlights key elements and makes use of trade opportunities to boost Vietnamese commerce. From 10 OECD members to other economies (both OECD and non-OECD member nations) over the years 1999 to 2000, Kimura and Lee (2004) used the gravity model to investigate the numerous factors affecting bilateral service and products trade. Regarding the elasticity of explanatory factors, the result demonstrates that there are some differences between service trade and products trade. The study also shows that transportation expenses for services are more expensive than those for commodities. Even if both the trade in products

and the trade in services are positively impacted by economic freedom, the author discovered that belonging to the same region has a major influence. The effect of the service trade is also more pronounced than that of the trade in commodities. The study contends that nations progress toward liberalization. The global economy will depend heavily on the growth of the service sector. In their study from 2006, Antonucci and Manzocchi used a gravity model to look at the flow of commerce between Turkey and EU member states from 1967 to 2001. In this study, it is examined if the amount of goods exchanged between two parties goes above what the gravity approach predicts. India's export potential to SAARC nations is examined by Kaur (2010). The report concludes that India is a key market for the product from the other SAARC countries as well as a source of prospective investment and technology. Additionally, we can locate hundreds of articles that employ the same regression analysis formulae.

In the following ways, this study varies from earlier research on Bangladesh's international commerce. The gravity model has been employed in the majority of research to quantify the benefits of trade, but relatively few of them have focused on trade in the global textile sector. The report explains the impact of several factors on the import and export of textiles and identifies the nations that Bangladesh's textile sector will find to be most promising.

5.2 Research method

Only secondary data would be used for the study's analysis because it would be based on the secondary research approach. The study will also use panel data analysis to demonstrate the link between the independent and dependent variables. A time series analysis is the serial sequencing of data to reflect a variable's condition or value at various periods in time. A range of statistical techniques for analyzing and modeling time series data are referred to as panel analysis. In a wide sense, the term "panel data" can refer to any statistical method used to analyze data with numerous regressions across time, including the Ols Model, Fixed Effect Model, and Random Effect

Model.

In a linear series, each data point Xt may be seen of as a linear equation of past data, predicting data, or difference data. Time-varying variation, uneven cycles, higher-moment structures, thresholds, and breakdowns are all properties of nonlinear time series that are produced by nonlinear dynamic equations but not by linear processes. With time series data, which has a suitable temporal order, the order in which the data was gathered is important. The key difference between panel data and regular data is that you continuously ask questions about it throughout time. An simple method to determine if the dataset you're working with is Panel data or not is to look at whether of the dimensions is Panel.

5.3 Research technique

Regression analysis will be done to the secondary data in this study using a quantitative method (Chowdhury, 2019). Quantitative approaches are those that give the decision-maker a powerful, rigorous way to analyze descriptive quantitative data. Management uses this scientific method to address issues and make choices. The decision-maker can research policies for reaching the set goals using quantitative methodologies.

In conclusion, it is impossible to avoid using quantitative tools while making decisions. A sort of multi-dimensional data that comprises measurements conducted over time is called panel quantitative data, sometimes referred to as longitudinal data. Panel data is a collection of samples from various events that were gathered throughout a variety of time periods for the same businesses or individuals. A research effort that uses panel data is known as a longitudinal or panel study. The inductive methodology would be used so that the study may analyze an earlier study by using a fresh approach and including new data.

5.4 Data collection method

The study would apply the time series method where the researcher will collect data on the last 11 years of export and import textile products from Bangladesh to 27 countries.

In order to assess trade impacts and trade linkages for a certain period of time, such as one year, classical gravity models often employ cross-section data. In actuality, however, the panel data approach (eight cross-section data seen over various periods) yields more insightful results than cross-section data alone. There are a few benefits to using this approach. In the beginning, panels can record the important relationships between variables throughout time. Panels can also keep track of the individual consequences of unobservable trade partner pairings. OLS estimations that ignore individual effects will be inaccurate if individual effects are associated with the repressors. In order to evaluate empirical gravity, the article employed panel data methods.

With a trade liberalization strategy enacted in the 1990s, data on Bangladesh's top 27 trading partners as well as a panel data set spanning 11 years, from 2005 to 2015, are used to assess the country's most recent trade trends. During the research period, Bangladesh's top 10 trading partners were responsible for 56.83 percent of its total imports and 69.24 percent of its exports. This study organized the dataset so that the regression successfully captures the country-specific fixed effects by aggregating the remaining 27 nations as the "rest of the world" (ROW) (Anderson & Van Wincoop, 2003).

The World Bank's dissertation will be used to gather data for the study, which will cover the years 1991 to 2016, on Bangladesh's exports of apparel to partner nations in terms of billions of dollars. Data on the GDP growth would be gathered for the study from a Bangladesh Bank dissertation. The UNCTAD dissertation will be used to compile the trade advantages gained by exporting apparel to partner nations. From Bangladesh's ILO dissertation, information on employment prospects resulting from the export of clothing to partner nations (Hasan, 2021).

With a trade liberalization strategy enacted in the 1990s, data on Bangladesh's top 27 trading partners as well as a panel data set spanning 11 years, from 2005 to 2015, are used to assess the country's most recent trade trends. During the research period, Bangladesh's top 10 trading partners were responsible for 56.83 percent of its total imports and 69.24 percent of its exports. This study organized the dataset so that the regression successfully captures the country-specific fixed effects by aggregating the remaining 27 nations as the "rest of the world" (ROW) (Anderson & Van Wincoop, 2003).In order to assess trade impacts and trade linkages for a certain period of time, such as one year, classical gravity models often employ cross-section data. In actuality, however, the panel data approach (eight cross-section data seen over various periods) yields more insightful results than cross-section data alone. There are a few benefits to using this approach. In the beginning, panels can record the important relationships between variables throughout time. Panels can also keep track of the individual consequences of unobservable trade partner pairings. OLS estimates that omit individual effects will be biased if individual effects and the regressors are correlated. In order to evaluate empirical gravity, the article employed panel data methods.

We used the World Development Indicators Database from the World Bank, the Direction of Trade Statistics (DOTS) database from the International Monetary Fund (IMF), and data from CEPII, a French research institute. For simplicity, we have converted the GDP to millions and the per capita GDP to thousands. From these data, we created four variables.

5.5 Data equation

The collection of data an equation would be applied based on dependent and independent variables which can prove the relationship between variables.

TT= i0 + i1 bdg+ i2 Dis + i3 sc + i4 Cit μi+ i5pg+i6 L+i7 Lo

Where,
i= intercept slop
μi = Error term
TT =Total Textile products trade from Bangladesh to the partner countries
Dis = Distance
bdg= Bangladesh GDP per capital
pg= partner country GdP per capital
sc= scale
Cit = Currency exchange rate between Bangladesh and partner
L=land
Lo=labor

5.6 Data analysis method

All observations are annual. Data on GNP, GDP, GNP per capita, GDP per capita, population, inflation rates, total exports, total imports and CPI were obtained from the World Development Indicators (WDI) database of the World Bank. Data on the exchange rates were collected from the International Financial Statistics (IFS). The distance (in kilometre) between Dhaka (capital of Bangladesh) and other capital cities of country j were obtained from the website of TimeDates.com. The GNP, GDP, GNP per capita, GDP per capita are in constant 1995 US dollars. GNP, GDP and total Bangladesh's T&C exports are measured in million US dollars. Population of all countries are considered in million. Data on the exchange rates are available in national currency per US dollar for all countries.

To analyse mean, median and standard error of all variables, descriptive statistics have been used for analysing variables. For differentiating between stationary and non-stationary data of variables, ADF method has been applied for analysing data stationary and Philips Peron method was used. After collecting data on dependent and independent variables, the study would take help from STATA software to find correlation between variables, and applying descriptive statistics to show coefficients of each variable (Lenz, 2017). The findings and analysis would

show that each variable has positive or negative relationship with the dependent variable. For analysing significant values of relationship between variables which can help to prove selected hypotheses of the study, OLS regression method has been applied where multiple regression method was used. Newey-west method has been applied to play as supporting role for the OLS method to identify that results are significant.

5.7 Data measurements:

Table1: Data measurement

Name of variable	Interpretation		Expected result	Unit of variables	Descriptive outcomes	Sources of data
TT	Total Textile products trade from Bangladesh to the partner countries			The TT has been showed in US million dollars	Increase of import and exports can increase economic growth	UNCTAD
Dis	Distance		+	The Dis has been showed in ratings out of 50 points	Increase of rating points of Trade can increase exports of garment products	World Bank

cit	Currency exchange rate between Bangladesh and partner		+	The variable has cit been showed in exchange rate per dollar to Taka	Currency exchange rate can create an impact on bilateral exports between Bangladesh and the USA	Bangladesh Bank and world bank
sc	Scale		+	The sc has been described in total population in millions	The increase in the total population of the partner country can increase demand of garment products	Census report and world bank
B d g and pg	Bangladesh GDP per capital and partner country GdP per capital		+	The bdg and pg has been showed in GDP percentage per year	The employment can increase production of products to lead increase in total exports	World bank
L	Land		+	The land has been showed t	Land increase trade will increa	World bank

				he arable land of Bangladesh and partner country	se	
Lo	Labor		+	The labor hase showed the total labor power of Bangladesh and partner country's	Labor increase that mean low cost of labour	World bank

Chapter 6: Data analysis and Discussion

6.1: Descriptive statistics of variables

To know the basic information of a data set, descriptive statistics can be used in a research to identify the measurement of tendency and measurement of variability of different variables used in a study. The measurement of tendency in descriptive statistics means the mean and median value of a variable where the measurement of variability will identify standard deviation and maximum and minimum value of a variable.

6.2 Regression model

6.2.1 OLS regression method

Table2: OLS regression

	Estimate	Std.error	t-value	Pr(>|t|)
Intercept(TT)	-4.712e-01	2.078e-01	-2.267	0.02427
Distance(dis)	-7.574e-06	1.151e-06	-6.578	2.96e-10
Bd GDP per cap(bdg)	1.905e-01	2.266e-02	8.406	3.78e-15
Partner GDP per cap(pg)	4.343e-02	4.460e-03	9.738	< 2e-16
Scale(sc)	4.713e-02	3.375e-03	13.965	< 2e-16
Exchange rate(cit)	1.481e-02	2.640e-03	5.609	5.58e-08
Land(L)	-5.899e-03	1.775e-03	-3.324	0.00103
Labor(Lo)	9.835e-01	2.444e-01	4.024	7.66e-05

Residual standard error: 0.05158 on 240 degrees of freedom
(27 observations deleted due to missingness)

Multiple R-squared: 0.5668,
Adjusted R-squared: 0.5542
F-statistic: 44.87 on 7 and 240 DF,
p-value: < 2.2e-16

OLS regression analysis is used to determine the value of R square and it can also identify coefficients, standard error, t stat, p value and confidence interval level at 95%. The value of multiple R is 0.5668 and the value of R square is 0.5542 which means that variable used in the study was able to determine 55.42% of result and it could be said the result has significance when the R square is more than 50% value. The adjusted R square is showing that the value is 0.5668 which means the goodness of fit or model accuracy which shows that the model has been 56% fit. Standard error of the regression model was 0.05158 and the standard error suggests the distance between actual values and variables and 27 observations have been used in the model by taking 7 different variables.

TT is the dependent variable of the study where the coefficient of the value is -4.712e-01which is negative and it means that dependent variable and other independent variables are going to opposite direction. dis and L variable was independent variable in the study and the coefficient of the variable was also negative and it shows that this variable is going to the wrong direction from the dependent variable. Other variables such as bdg, pg,sc,cit and Lo positive coefficients and it show that they are going to the right direction with the dependent variable. All independent variables are positively significant with the dependent variable as their results are at significance level at less than 0.05.

6.2.2 Fixed Effect Model

Unbalanced Panel: n = 25, T = 9-10, N = 248

Table3: Fixed effect

	Estimate	Std.error	t-value	Pr(>|t|)
Bd GDP per cap(bdg)	0.2041621	0.0404145	5.0517	9.279e-07
Partner GDP per cap(pg)	0.0582413	0.0237421	2.4531	0.01495
Scale(sc)	0.0045250	0.0917294	0.0493	0.96070
Exchange rate (cit)	0.0060354	0.0057026	1.0584	0.29107
Land(L)	0.1085985	0.2721040	0.3991	0.69021
Labor(Lo)	-27.6645117	17.4638186	-1.5841	0.11463

Total Sum of Squares: 0.39496
Residual Sum of Squares: 0.13849
R-Squared: 0.64936
Adj. R-Squared: 0.60088
F-statistic: 66.9775 on 6 and 217 DF, p-value: < 2.22e-16

6.2.3 Random Model

Table4: Random model

	Estimate	Std.error	t-value	Pr(>|t|)
Intercept(TT)	-4.2665e-01	3.9454e-01	-1.0814	0.2795341
Distance(dis)	-7.3343e-06	3.4913e-06	-2.1007	0.0356631
Bd GDP per cap(bdg)	1.8766e-01	1.2821e-02	14.6368	< 2.2e-16
Partner GDP per cap(pg)	4.7037e-02	1.2123e-02	3.8801	0.0001044
Scale(sc)	4.5898e-02	9.6305e-03	4.7659	1.88e-06

Exchange rate(cit)	8.7192e-03	4.7230e-03	1.8461	0.0648732
Land(L)	-5.0444e-03	5.5283e-03	-0.9125	0.3615269
Labor(Lo)	9.1924e-01	7.6980e-01	1.1941	0.2324317

Total Sum of Squares: 0.41984
Residual Sum of Squares: 0.15358
R-Squared: 0.63426
Adj. R-Squared: 0.62359
Chisq: 418.464 on 7 DF, p-value: < 2.22e-16

Hausman test

data: basemodel
chisq = 4.624, df = 6, p-value = 0.5929
alternative hypothesis: one model is inconsistent

In the panel analysis it is very significant to use the random and fixed effect model. Both the random effect and fixed effect model are significant. But land, labor is insignificant According to the F-test we find the model significance. The probability value of F test is lower than the 1% level of significance. But choosing the appropriate mode between random and fixed effect model, we perform the Hausman specification test. According to the Hausman specification test, the null hypothesis is random effect model is appropriate. And the alternative hypothesis is random effect model is appropriate.

6.3 Discussion and findings

H1: Dependent Textile products trade from Bangladesh to the partner countries has a positive significant relationship with independent variable of the Distance.

While finding the relationship between independent variable Distance of the USA and dependent variable total trade of garment products, the OLS regression model has been used which showed that the dependent variable TT has a positive significant relationship with the independent variable dis as the significance value of TT is −7.574e−06 which is less than the significance level of 0.05 and it means that there is a positive relationship between those variables. Therefore, another model such as random effect method has been applied which also showed a positive significant relationship between variables TT and dis as the p value of the dis variable is 0.03 which is within the significance level of less than 0.05. Positive relationship between these variables means that the increase the population of the USA would create more opportunities for exporting garment products in the USA.
Therefore, the hypothesis testing of H1 is significant.

H2: Dependent variable Textile products trade from Bangladesh to the partner countries has a positive significant relationship with independent variable of Bangladesh GDP per capital and Partner country GDP per Capital.

During using OLS regression method for exploring the significant relationship between the dependent variable trade of textile products and the independent variable GDP of Bangladesh and partner country textile products, it could be seen that the variable bdg and pg has a positive significant relationship with the independent variable TT. The independent variable bdg and pg has the p value of 3.78e−15 and 2e−16 which is significant as the value is within 0.05 to 0.01 and it proves the significance level of the variable. Fixed effect and random effect model also showed that there is a positive significant relationship with the dependent variable TT and the independent variable bgd and pg as the p value of bgd and pg is which is 9.279e−07 and 0.01495 for fixed effect model and 2.2e−16 and 0.0001044 for random effect model within the significance level. Therefore, this hypothesis proved that the increasing GDP performance of textile products can improve the number of trade textile products from Bangladesh

to the partner country in leading economic growth of the nation.
Therefore, the hypothesis testing of H2 is significant.

H3: Dependent variable Textile products trade from Bangladesh to the partner countries has a positive significant relationship with independent variable Population of Bangladesh and partner country (Scale).

During using OLS regression method for exploring the significant relationship between the dependent variable trade of textile products and the independent variable scale and partner country textile products, it could be seen that the variable sc has a positive significant relationship with the independent variable TT. The independent variable sc has the p value of 2e-16 which is significant as the value is within 0.05 and it proves the significance level of the variable. Fixed effect and random effect model also showed that there is a positive significant relationship with the dependent variable TT and the independent variable sc as the p value of sc is which is 1.88e-06 for random effect model within the significance level. Therefore, this hypothesis proved that the increasing scale performance of textile products can improve the number of trade textile products from Bangladesh to the partner country in leading economic growth of the nation.
Therefore, the hypothesis testing of H3 is significant

H4: Dependent variable Textile products trade from Bangladesh to the partner countries has a positive significant relationship with independent variable exchange rate.

During using OLS regression method for exploring the significant relationship between the dependent variable trade of textile products and the independent variable exchange rate and partner country textile products, it could be seen that the variable cit has a positive significant relationship with the independent variable TT. The independent variable cit has the p value of 5.58e-08 which is significant as the value is within 0.05 and it proves the significance level of the variable. Fixed effect and random effect model also showed that there is a positive significant relationship with the dependent variable TT and the independent variable cit as the p value of cit is which is 0.0648732 for random effect model within the significance level.

Therefore, this hypothesis proved that the increasing exchange rate performance of textile products can improve the number of trade textile products from Bangladesh to the partner country in leading economic growth of the nation.
Therefore, the hypothesis testing of H4 is significant

H5: Dependent variable Textile products trade from Bangladesh to the partner countries has a positive significant relationship with independent variable land.

During using OLS regression method for exploring the significant relationship between the dependent variable trade of textile products and the independent variable land and partner country textile products, it could be seen that the variable L has a positive significant relationship with the independent variable TT. The independent variable L has the p value of 0.00103 which is significant as the value is within 0.05 and it proves the significance level of the variable. Therefore, this hypothesis proved that the increasing exchange rate performance of textile products can improve the number of trade textile products from Bangladesh to the partner country in leading economic growth of the nation.
Therefore, the hypothesis testing of H5 is significant

H6: Dependent variable Textile products trade from Bangladesh to the partner countries has a positive significant relationship with independent variable Labor

During using OLS regression method for exploring the significant relationship between the dependent variable trade of textile products and the independent variable labor and partner country textile products, it could be seen that the variable Lo has a positive significant relationship with the independent variable TT. The independent variable Lo has the p value of 7.66e-05 which is significant as the value is within 0.05 and it proves the significance level of the variable. Therefore, this hypothesis proved that the increasing exchange rate performance of textile products can improve the number of trade textile products from Bangladesh to the partner country in

leading economic growth of the nation.
Therefore, the hypothesis testing of H6 is significant.

Chapter 7: Conclusion

7.1: Conclusion

This article's goal was to identify the factors and problems that influence the Bangladeshi textile industry. The trade gravity model was used to study the country-specific elements of textile trades between Bangladesh and its top 27 trading partners from 2005 to 2015 in order to understand the main drivers of Bangladeshi garment import and export. First, we discover that GDP and distance are important predictors showing that wealthier nations do trade more with Bangladesh. The ln scale is important, too. Third, as commerce with Bangladesh is likely to be conducted in US dollars, the empirical results of the current study revealed that textile exports declined anytime the value of the taka (Bangladeshi currency) relative to the US dollar increased. Fourth, Land and labor have an OLS regression significance.

The RMG sector has grown to be Bangladesh's largest and most significant source of employment, income, and foreign revenues. However, a number of issues have prevented the RMG sector from achieving its full potential, including inadequate infrastructure, a lack of resources and supportive policies, incompetent management, and a lack of industrial integration. By tackling these factors via collaborative efforts, Bangladesh's economy may achieve its growth aspirations and go closer to being a middle-income economy. Over the past ten years, Bangladesh's RMG industry has overcome several growth-related challenges, notably by diversifying its customers and product offerings, improving supplier and employee performance, and strengthening compliance and sustainability. It's vital to take a closer look at the crucial components in each of these areas and think about what's needed to grow on it while managing the extra problems of the crisis and the significant power of the apparel-sourcing industry.

Over the past ten years, the sector's growth has been primarily driven by diversifying the client base and shifting to more complex items

and significant services. Numerous source authorities from whom the study obtained information for this research noted the success that Bangladesh's RMG business is having in expanding and modernizing its product lines. For instance, there are now more resources available to produce clothing made of synthetic fibers, along with more complex goods like outerwear, tailored clothing, and lingerie, as well as new colors, patterns, and laser-clean lines. Changes to the origin requirements for preferential trade with the USA have facilitated entry into such new markets and made it possible to use imported textiles. Additionally, there has been a rise in supply chain vertical integration, which has enabled more suppliers to offer project durations shorter than the typical 90 days.

The RMG sector in Bangladesh has made progress in both investing and responding to the fluctuating demand in the international clothing market. Nevertheless, despite a decreased reliance on the US, Europe (62 percent of total export) and the US (18 percent of total export) continue to be Bangladesh's two primary client markets for RMG products. There is room to increase exporting to unorthodox markets, particularly as clothing retail sales in traditional countries are dropping.

The overall ranking of Bangladesh dropped from 100 in 2018 to 100 in 2010 on the World Bank's Logistics Performance Index. While Vietnam increased from 53 to 39 within the same period. Several big infrastructure projects now under construction might significantly improve Bangladesh's position. The only deep sea harbor in Bangladesh, the Matabari project, which is scheduled to complete in 2025 and will include a new container terminal, and the Padma bridge, which is scheduled to open in 2021, are two examples. Employee empowerment and the gender gap appear to have been the second major challenge for the sector. Digitization of wage payments has increased, and employment rights have greatly improved. The gender gap is still an issue when it comes to opportunities for progression after entry level. Today, there is a bigger focus on female representation, as well as more opportunities for career growth. The horrible condition faced by many Bangladeshi textile workers has received more attention thanks to COVID-19, and things may even have become worse.

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국 문 초 록

- 중력 모델 접근법 통합 방글라데시 섬유 및 의류 산업 -

한 성 대 학 교 대 학 원
국 제 무 역 경 제 학 과
국 제 무 역 시 장 전 공
라 만 마 하 법

본 연구의 목적은 방글라데시 섬유 및 의류의 수출입에 영향을 미치는 요인과 문제점을 규명하는 것입니다. 2005년부터 2015년까지 15년에 걸쳐 특수 데이터 세트가 생성되었으며 총 27개의 무역 파트너에 대한 방글라데시 수입 및 수출 흐름의 패널 중력 모델을 사용했습니다. 연구 결과는 방글라데시의 섬유 수출 무역이 실질환율, 1인당 GDP, 수입국의 국내총생산(GDP)의 영향을 크게 크게 받는 것으로 보인다는 것을 보여줍니다. 방글라데시 총 수출 수입의 4/5는 방글라데시에서 가장 크고 중요한 수출 품목인 섬유 및 의류에서 나옵니다. 국제 경제는 2007-2008년 금융 위기로 여전히 부정적인 영향을 받았습니다. 전 세계 대다수 국가의 수출 성장은 경기 침체로 심각한 영향을 받았습니다. 세계 최대 경제대국인 미국이 급락하면서 RMG(기성복) 제품에 대한 전 세계 수요가 감소했습니다. 따라서 이 연구는 방글라데시가 시장 수요에 맞게 의류를 수입함으로써 경제 성장을 촉진할 수 있는 지를 설명하려고 시도했습니다. 종속변수와 독립변수를 모두 수집하는 패널 데이터 분석과 데이터의 단위 루트 테스트를 통해 연구를 설명합니다. 이 연구는 국제 시장에서 의류 품목의 수출입을 통해 방글라데시의 경제 성장을 주도할 수 있는 중요한 요소를 보여주려고 시도했습니다.

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