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The Impact of International Trade on Poverty in Least Developed Countries: With Empirical Study on Bangladesh and Somalia

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Abstract:

While an expected rippling ramification of international trade and globalization is poverty alleviation, several other equally important factors affect poverty levels in a country. Unfortunately, poverty levels across the world continue to surge especially in least developed countries. This research paper therefore sets to analyze the impact of international trade on poverty levels and inequality in least developed countries; Bangladesh and Somalia. Using a multi-case study research strategy, the standard cross-country regression analysis model and collecting data from secondary sources, it was revealed that in Bangladesh, trade openness and GDP Per Capita international trade parameters tested have significant influence on poverty gap but inflation rates do not. In addition, trade openness and inflation rates do not also have significant statistical relation with poverty incidence except for GDP Per Capita. On the flipside, trade openness and GDP Per Capita international trade parameters do not have any significant influence on poverty gap in Somalia but inflation rates do have real influence. With regards to the impact on poverty incidence, again trade openness, GDP Per Capita and inflation rates do not reflect appreciable statistical relation with poverty incidence. The study further shows that trade openness and GDP Per Capita in Bangladesh significantly explains the observed variations in GINI indices, unlike inflation rates which does not show significant relations. However, in Somalia trade openness, GDP Per Capita and inflation do not account for the observed variations in GINI indices; implying a negative correlation between GDP Per Capita and inequality in Somalia. It is recommended that Bangladesh must continually measure and closely monitor its trade openness and GDP Per Capita indicators in their quest to reduce poverty gap, and also check their GDP Per Capita to reduce poverty incidence. Somalia on the other hand must develop and implement inflation reduction strategies in order to minimize poverty gap. In general, least developed nations should explore their available natural resources to their comparative advantage, empower local producers and limit the competition from foreign products. Moreover, they should adopt trade and poverty analysis models that would help in monitoring critical indicators in real time. Future works should also consider expanding the dynamics of cause and effect in international trade practice, poverty levels and income distribution across any geographical jurisdiction.

Keywords: International trade, poverty, impact and least developed countries

1. General Introduction and Background

1.1. Introduction

International trade strategies and regulations in various countries across the world have over the years emphasized the need to continually gain comparative advantage and remain competitive. To this end, individual households and local business operations are empowered to compete successfully with their international competitors. Entrepreneurs therefore take advantage of prevailing technological innovations to integrate with the world's economy, thus enhancing productivity and nurturing global competitiveness (Vijayasri, 2013).

While an expected rippling ramification of the above is poverty alleviation, several other equally important factors affect poverty levels in a country. However, international trade presents a holistic platform to address poverty issues for socioeconomic development. In India for instance, it was confirmed as early as the 1960s that international trade and globalization was positively related with poverty level. This relationship is described as a pull up rather than a trickledown effect. In that, the proceeds of international trade may be used to offset core poverty indicators such as education and health facilities development (Vijayasri, 2013). Moreover, Ravallion (2007) estimated that, a one per cent increase in income levels could generate a 4.3 per cent decline in poverty in equally balanced countries and as low as 0.6 per cent decline in poverty in highly uneven countries.

Unfortunately, international trade and poverty reduction strategies have not been closely analyzed and managed optimally. Worst still, most countries fail to appreciate key international trade indicators that have direct and indirect repercussions for poverty levels. Especially in least developed countries, accurate techniques and methods are either not applied to assess the impact of international trade on poverty or virtually lacking. The dynamics of economic growth activities coupled with the resource capacities of various countries have varying repercussions on poverty; especially for employment flexibility and human development prospects (Adams, 2002).

It has therefore become pertinent for international organizations and local government authorities to direct their poverty reduction policies toward adopting comprehensive models to meticulously analyze how international trade practices and outcomes can influence poverty. To achieve a successful poverty reduction strategy implementation, policies must encapsulate growth-activities that creates opportunities for the poor contribute substantially; such as labour markets improvement policies, ensuring gender equalities and increasing financial inclusion (Adams, 2002).

This paper is aimed therefore at analyzing the impact of international trade on poverty levels in least developed countries, in order to make recommendations for poverty reduction and competitive advantage on the international market.

1.2. The Research Problem

Despite the widely acclaimed success of international trade and globalization, poverty levels across the world continue to surge especially in least developed countries. Notwithstanding the multi-faceted factors that influence poverty levels in least developed countries, international trade performance parameters have tremendous consequences for key poverty indicators. Cali et al. (2015) stressed that while the application of a standard trade theory in developing countries should imply benefits of technical expertise development, increased productivity and poverty reduction, these can be significantly impeded as a result of inappropriate allocation of resources in critical growth sectors. For instance, greater import penetration will inhibit the market share expansion of some domestic firms. Again, unskilled labour may go extinct when trade practices ignore deficient growth sectors.

Mitra (2016) further examined the possible implication of international trade on poverty by identifying critical areas it may affect; including consumption, production, wages and employment. It was explained that, analyzing the net welfare impact is associated with individual's net consumption and net production of importable or exportable goods, while the net impact through the labor market channel depends on an individual's occupation and industry. This reaffirms the complexity attached with which the international trade and poverty level relationship analysis.

Cali et al. (2015) therefore advised the need for a harmonized categorization and identification of core performance criteria, especially on cross country and cross industry platforms analyses. This forms the crux of this study, where the standard cross-country regression analysis model coupled with variant Gini coefficient variations would assist in synthesizing the varied levels at which trade affects poverty in Bangladesh and Somalia. This presents a better analytical tool to rectify the menace and direct international trade and poverty reduction policies.

1.3. Research Aim and Objectives

The aim of this paper is to analyze the impact of international trade on poverty levels in least developed countries in order to make recommendations for poverty reduction and gain competitive advantage on the international market, using the standard cross-country regression analysis model and the Gini coefficient.

The specific objectives therefore are;

- Assess the trend of international trade performance indicators in two least developed countries,
- Assess the trend of poverty level indicators in two least developed countries,
- Formulate, solve and analyze the impact of international trade on poverty levels in the two identified least developed countries using the cross-country regression analysis model and the Gini coefficient.

1.4. Research Questions

Consequently, the project would find answers to the following;

- What trend are international trade performance indicators showing in the two least developed countries?
- What trend are poverty level indicators showing in the two least developed countries?
- What is the impact of international trade on poverty levels in the two identified least developed countries as calculated using the cross-country regression analysis and the Gini coefficient?

1.5. Scientific Significance and Application of the Study

The study is scientifically significant because it explores an array of scientific methodologies applied in previous works and adopts the cross-country regression analysis and general simulator to put into perspective the data collected. This is scientifically significant as it sets a basis for similar works to be done in for example most developed countries. A model is also developed as a recommendation to be used and applied by countries that fall in this category to enjoy the fruits of international trade.

1.6. Scope and Limitation of Project

This study is focused on analyzing the impacts of international trade on poverty in least developed countries. International trade in selected countries will be extensively analyzed in terms of what impacts it has had on reducing the number of people living below the poverty belt in order to make recommendations for these countries to enjoy the

benefits of international trade like improved livelihood and competitive advantage in the international market as evident in Latin America, Mexico, Argentina, and Poland among others in the literature.

In spite of its scope and obvious scientific relevance, the study is limited by time and finance. This is to say that, the time allotted for the conduct of this research is rather limited and makes it impossible to consider more least developed countries which would have made results more replicable. The study relies heavily on secondary data, but certain sensitive and important documents are either unavailable for public consumption or too expensive for the researcher to buy online.

1.7. Structure of Study Report

The study report would be presented in six chapters: chapter one provides a general introduction and background to the main issues highlighted in the study. This includes the research objectives, problem statement, and significance and scientific application of the study. Chapter two provides an in-depth review of literature regarding the trends in global international trade and poverty reduction policies, as well as the methodologies deployed in assessing the impact of international trade on economic and social growth. Chapter three spells out the methodology for carrying out the study, clearly indicating the source of data, the research strategy, data modeling and analysis tools. Chapter four present data that would be collected from the two selected least developed countries for the purposes of this study. This would align strictly with international trade performance, poverty and economic growth indicators. The cross-country regression model and the Gini coefficient analysis formulation and solution would be presented in chapter five. Chapter six finally presents the summary of findings, general conclusion and recommendations.

2. Literature Review

2.1. Introduction

The rate at which international trade and reductions of barriers like tariffs have raised several views on the impact of international trade on poverty. While some researchers agree that international trade creates opportunities and liberates least developed countries from poverty, another school of thought subscribe to the view that there are complexities in the procedures in making international trade reduce poverty: hence it is not a sure way out of poverty (United nations, 2013). Globalization is defined as the increasing integration and interdependence among different countries because of the contemporary flow of people, trade, finance, and ideas from nation to nation (Bishop et al., 2011). In the words of Al-Rodhan (2006), globalization includes spreading and influencing 'world view, products, ideas and other aspects of culture'. The world describes globalization as 'the growing integration of economies and societies around the world'. It is evident that globalization has transformed business across the world so much that, on daily basis shares are traded between citizens from different countries. It is critical for a business person to know and understand the nitty gritty of globalization because different businesses are affected in different ways by globalization and this important for deciding on going international with a business. Hence, it is laudable to conclude that, globalization has fostered international trade. This study presents a thorough review of global trends and performance indicators in international trade and poverty reduction. It further espouses the various approaches that previous studies have clung to, for analyzing the impact of international trade on poverty level in particular political jurisdictions.

2.2. Review of Key Concepts of the Study

International Trade: International trade is the exchange of capital, goods, and services across international borders or territories (Samuelson, 2001). However, international trade is operationalized in this study mean the exchange of goods and services between a least developed country and another country or jurisdictions for economic and financial purposes.

- **Poverty:** Poverty has been variously defined as it is measured from different angles and hence is multidimensional (Salmen, 1999). In some cases, poverty is measured by comparing to the affluent in society but in other cases it describes whether or not people can afford a three-square meal and decent housing. In this study, poverty is a description of people who are deficient of the four important facets of human development namely empowerment, productivity, equity, and sustainability.
- **Least developed country:** This is a country with the relatively lowest international socioeconomic development indicators as stipulated by the UN. This study emphasizes on countries who still need donor funds to run their economy and pay workers salary.
- **Impact:** The Oxford dictionary defines impact as 'marked effect or influence'. In this study, impact represents all the changes that occur (positive or negative) in a least developed country as a result of engaging in international trade.

2.3. Empirical Review of Related Studies on International Trade and Its Impact on Poverty

According to Mitra (2016), the growth of a country's economy is critically essential but not sufficient in poverty reduction especially in developing countries. However, a plethora of studies conducted with varying methods from cross-country and intra-country perspectives have found that, international trade has the tendency of fostering economic growth which can translate into poverty reduction if the domestic environment is kept enabling enough to foster more international trade. By necessary implication, a good international trade environment is one that has domestic laws and the needed institutions to enhance sufficient financial development, good public infrastructure, and a mobile labor force (Mitra, 2016). International trade is the exchange of goods or services across national jurisdictions (Economy Watch, 2010).

This sub section explores studies in the areas of international trade and poverty, detailing methods, results, type of analysis and as well an intellectual critique.

Mitra (2016) explored trade liberalization and poverty reduction with an emphasis on 'trade can reduce poverty when accompanied by appropriate policies and institutions'. The study followed a case study approach by studying the high rates of growth and unprecedented reduction of poverty in China and India. It also uses evidence from direct and indirect cross-country trade and direct intra-country trade evidence. At the end of the study, several interesting revelations about international trade were made. Findings show that, poverty reduced drastically in China and India as international trade increased, intra-country trade reduces poverty, and also evidence the effects of international trade on large sets of developing countries come from contemporary cross-country studies. These results are represented on regression graphs and analyzed with the general equilibrium welfare method as it is suitable for analyzing changes in relationships. In the study, it is used mainly to investigate the level of income and exact impact of trade agreements. A clear strength of this study is that, it uses very appropriate methods to vividly provide answers to the research questions. However, in the case of India and China there seem to be no clear indication of causality on international trade and poverty reduction. Also, the effects of time lapse on the is not considered: with time, regression results for positive relationship between international trade could become insignificant.

In contrast to the above view, a study conducted in Columbia found a significant positive relationship between poverty and critical market variables like unemployment rate and informal sector employment. By implication, as poverty falls unemployment rate and informal sector employment falls too (Goldberg and Pavcnik, 2006). It is in this sense that Mitra (2016) finds it surprising that, a poor sector has a significant positive relation with the number competing imports while exports show no significant effects. Goh and Javorcik (2006) also postulates that the liberalization of trade in Poland in the 1990's brought up an increment in wages across all industries when variables like geography, industry and time effects, and demographics of workers were controlled for. In the same vein, poverty was reduced in Mexican states with relatively higher foreign direct investment (Mitra, 2010).

Some researchers, Giordano and Li (2012) gave an update on the trade and poverty nexus in Latin America with an aim of filling the existing gap on knowledge on the impacts of trade integration. The study surveys recent contributions to mainstream literature on trade economics, focuses on some specifically available quantitative empirical evidence, and also assesses relevance of economic trade for Latin America. They conclude based on findings that, even though it is impossible to unabatedly and certainly postulate that international trade leads to poverty reduction and economic growth, excessive data supports this assertion. Giordano and Li (2012) further emphasizes the need to arduously proof beyond ambivalence that protecting trade has positive impacts on the poor.

In a study conducted by Cicowiez et al. (2010) the effect of both world and domestic trade reforms on poverty and income inequality in Argentina are explored by juxtaposing results from national GCE model, global economy-wide model, and micro-simulations. The results intimate a reduction in poverty and disparities in income birthed from International trade liberalization. However, when taxes on exports and all goods are eliminated, poverty increases.

The United nations (2013) took a different twist of studying international trade and poverty. That is, instead of holistically finding out the net impact of international trade on poverty, it focused on how the poor are directly impacted by international trade. This framework was achieved by tracing how international trade affects empowerment, productivity, equity, and sustainability which are the four distinct faces of human development. The study goes on to explore the nitty-gritty of how these issues are connected to how international trade improves the standards of living and livelihood of the poor by using trade in India from 1990 to 2008 as a case for the empirical approach. At the end of the study, it is found that India's integration into economic trade has not only reduced tariffs from 80% in 1990 to 18% in 2008 but GDP also increased from 16% in 1990 to 51% in 2008. More significantly, people below the poverty line declined from 36% in 1994 to 27.5% in 2005. This trend is still evident in contemporary India's economy.

The scope of international trade is further elucidated international trade liberalization by McCulloch and McKay (2004) who submitted that, there are many reasons to believe in the efficacy of trade liberalization in reducing poverty but it is difficult to make a generalization that international trade will alleviate poverty in all cases. This has therefore made it necessary to examine the impacts international trade has on poverty in least developed countries.

A study conducted in 2006 by Goldberg revealed that whiles labor market parameters including unemployment rate and informal sector employment decreased, poverty levels also decreased in Colombia. Although, the trend in trade did not commensurate with these labor market variables, poverty in various sectors had significant positive relations with the volume of competing imports. Meanwhile, exports did not have such significant effect (Goldberg and Pavcnik, 2006).

Similar studies conducted far back in Poland in the 1990s, showed that trade liberalization led to higher wages across all industries, given an assumed constant variables of individual worker characteristics, geographic variables, and industry and time effects. For instance, industries using intense unskilled labor forces that enjoyed significant tax exemptions had huge margins of wage increments. Generally, therefore, poverty levels were expected to reduce in Poland, given their huge labor force, the poverty rate was expected to decline as a result (Goh and Javorcik, 2006). A more recent studies conducted by Nissanke and Thorbecke (2010) scrutinized nine case studies in Latin America and found that, there were extremely complex and context specific impacts of globalization on inequality and poverty. The study further applied broad macroeconomic regional analyses models. Later on, Gasparini et al. (2011) reviewed the survey data from the Socioeconomic Database for Latin America and the Caribbean for the period between 1992 and 2006 and uncovered that, income distribution among different countries was unequal.

2.4. Global International Trade Practices and Performance

According to the World Bank (2019), China and India accounted for more than half the world's population in extreme poverty in the 1980s. Trade reforms started slowly in China in the late 1970s before gathering momentum in the 1980s and 1990s. Trade as a proportion of GDP rose from roughly 18% in 1984 to 70% in 2005, but then dropped back to 62% in 2008 and to 49% in 2009 as a result of the global financial crisis. Average tariff rates fell from roughly 32% in 1992 to about 4% in 2009. From 1992 to 2009, the proportion of the population living on less than US\$1.25 a day, the international measure of extreme poverty, fell from 69% to 12%, while GDP grew at an extremely rapid rate of more than 8% a year, often hitting double digits. During this time, some 700 million people were pulled out of poverty (see figure 1.1).

Figure 1: China's Trade and Poverty
Source: Mitra (2016)

In India, trade as a share of GDP rose from roughly 13% in 1988 to 48% in 2010. During that time, the average tariff plummeted from 80% to 10% (Figure 1). The proportion of the population living in extreme poverty dropped from 53% to 32%, with the most rapid decline occurring during 2005–2010 (from 42% to 33%). Economic growth was also very rapid during this period, in the range of 8–10% a year, with the exception of the recession year of 2008 (World Bank, 2019). Thus, the world's two largest countries experienced high rates of growth and dramatic reductions in poverty following large drops in tariff rates. While these trends do not imply causation, they do strongly suggest a poverty-reducing impact of trade reforms (figure 1.2).

Figure 2: India's Trade and Poverty
Source: Mitra (2016)

Lahti (2013) postulates at the center of promoting trade openness in international trade is a comparative advantage which can be found in the accumulation of meritorious factors where a country has relatively lesser costs. The focus of the EU trade policy over the past 50 years has been promoting free trade: The European union is the biggest global actor in international trade as it controls 17% of global imports and exports. This strategy of opening up markets for free trade has had significant benefits for rich and poor countries in like manner and hence trade remains pivotal in the EU's 2020 agenda for growth (European Commission, 2019). As an active member of the world trade organization (WTO) that promotes free trade, the European Union has been actively involved in the Doha development since 2001. Since 2007, the EU has engaged in new bilateral trade agreements with countries like Canada, Ukraine and India and as well sealing

negotiations with Columbia, Peru and other countries in central America (European Commission, 2019). In 2010, a new trade policy was launched with an aim of ensuring the creation of jobs in the EU.

According to Jean-Baptiste (2017), irrespective of the rise in the Euro, France's export competitiveness has steadily increased since 2014 as result of the decision to reduce employer's contribution. Also, despite the solid growth of export (+4.5%) in France, trade deficit deepened: that is deficit on goods and services reached €38.3 billion. France's market share has been stable since 2012 as the export of vehicles, Agri-products, and chemicals have performed well but have been impacted by higher energy bills. The report further indicates that as of 2017, France account balance which a measure of its net borrowing with the rest of the world revealed a larger deficit but still remained close to equilibrium (€-26.6 billion, -1.2%). The number export partners also remained stable at 124,057. A Société Générale report on the trade risk of France intimates that, France is the world's 8th exporter and 6th importer of merchandise making it a giant in global trade. The country mainly exports vehicles, food products (wine), electronics, pharmaceuticals, aircrafts, and hydrocarbons among others and also imports many consumer goods, pharmaceutical products, hydrocarbons, and vehicles. This is estimated by World Bank (2018) as 60% of the country's GDP.

France's main partners are the EU, United states, and China. According to a WTO data in 2018, France goods exports reached a total of USD 581,872 million and imported goods at a total value of USD 672,549 million. In the same year, it exported services equaling USD 290,989 million and imported services worth USD 256,762 million. This trend has left the balance of goods and services excluding energy on a negative point since 2015 because deficit continues to widen on manufactured goods. France's trade openness (import plus export as a percentage of GDP) as of 2019 stood at %64.52 (The global economy report,2020).

Year	Value
2015	61.75
2016	61.1
2017	62.96
2018	64.48
2019	64.52

Table 1: Trade Openness in France from 2015 to 2019

Source: *Www.Theglobaleconomy.Com*

According to a report by Nordea Trade (2020) increasing exports, domestic consumption, and revenue from tourism continued to support the Greek economy in 2019 but growth has been quite below expectations as a result of little private investment and poor execution of public investment. GDP in Greece was expected to be +1.9% in 2019 and higher foreign investment inflows are expected to boost growth in the short term. The IMF's forecast from 14th April 2020 indicates that GDP growth in Greece is expected to drop to -10% in 2020 and go up in 2021 at 5.1% (subject to global economic recovery) as a result of the outbreak of coronavirus. The average GINI Coefficient index for Greece between 2003 to 2015 was 34.64 points with a minimum of 32.8 in 2003 and a maximum of 36.2 points in 2012. As of 2015, the GINI index stood at 36 points. According to a global economy report in 2017, the poverty ration of people living on less than \$1.90 a day in Greece averaged 0.89 percent between 1995 and 2017. The minimum value was 0.3% in 2005 and the maximum 1.7 % 1995. As of 2017, 0.9% of Greek people lived on less than \$1.9 a day. Trade openness (imports plus exports as a percentage of GDP) in Greece has increased over time. Between 1960 and 2019, the average value of trade openness was, 42.35%: the highest value, 74.34% was recorded in 2019 while the lowest, 23.11% was recorded in 1960. This indicates that international trade practices have steadily increased in Greece over the last three decades. Surprisingly, Greek exports have been on a decline. For example, in 2008, exports USD 82.81 billion but as 2019, exports totaled USD 78.04 billion. The story is not different for imports as the highest amounts of import were made at USD 127.49 billion but only USD 78.06 billion in 2019. With regards to foreign direct investments (FDI) Greece has invested an average of 168.91 million Euros between January 2002 and July 2020. The minimum for this period was -532.31 million Euros in 2005 and a maximum of 2608.91 million Euros in 2008 (Bank of Greece, 2020).

In the United States of America, trade openness has been controlled over a long period of time such that the sum of imports and exports does not take a huge percentage of its GDP. Dating as far back from 1970 to 2018, trade openness in the US averaged 21.48% with a minimum 10.76% in 1970 and a maximum of 30.79% in 2011. As at 2018, trade openness value in the US was at 27.56%. The exports of goods and services from the United states of America averaged \$933.32 billion between 1970 to 2018. In 2018, the value of exports was \$2510.25 billion. The US has trade relations with many countries but Europe and Asia are its main trade partners. It exports wheat, corn, soyabeans, paper, computers, cars, machines, and airplanes. In 2016, the US current account balance was \$469,400,000,000 (Central Intelligence Agency, 2017)

Africa's share of world exports has dropped by nearly 60 percent-from 3.5 percent in 1970 to 1.5 percent in 1999. This dramatic decline in Africa's export market share represents a staggering income loss of \$70 billion annually, an amount equivalent to 21 percent of the region's GDP and to more than five times the \$13 billion in annual aid flows to Africa. Poor export and trade performance have been closely linked to the low growth of per capita incomes in the region (The World Bank, 2019). Import and export volumes however started surging from 2000 (Figure 3).

Figure 3: Volume of Export and Imports, and Trade Terms in Africa (2000 - 2016)
Source: UNCTAD, 2019

The United Nations Conference on Trade and Development (UNCTAD) (2019) further provides a comprehensive analysis of international trade and economic growth performance in Africa. With one of the largest domestic market of about 1.2 billion people, the continent still experiences low trade facilitation performance, widespread poverty levels encapsulating 32 out of a total of 48 Least-Developed Countries (LDCs) world-wide and the uneven distribution of income among various countries. According to UNCTAD (2019) however, the Continental Free Trade Area (CFTA) framework agreement signed in 2018 by 44 African countries has revamped the continent with regards to trade facilitation and harmonization which has also caused gradual geographical shift in Africa's main trading partners. Trade has also been highly dependent on natural resource exports particularly fuel (Figure 4). In essence, export of goods in Africa rose from \$319 billion in 2005 to \$625 billion in 2012 and decreased to \$361 billion in 2016. Whiles, the export of Services increased from \$62 billion in 2005 to \$106 billion in 2014 but later dwindled to \$96 billion in 2016 (UNCTAD, 2019) (Figure 5)

Figure 4: Product Category Share of Export in Africa (2016)
Source: UNCTAD, 2019

Figure 5: Goods and Service Trade Growth Rates and Values in Africa
Source: UNCTAD, 2019

For instance, Ghana's main exports are gold, cocoa beans and timber products. Others include tuna, aluminum, manganese ore, diamonds and horticulture. Its main exports partners are Netherlands, Burkina Faso, South Africa and United Kingdom (Trading Economics, 2019). In 2019, a trade surplus of \$310.10 million was recorded, ending with an average balance of trade reaching \$504.46 million in April. Exports in Ghana decreased from \$782.33million in 2004 to \$1433.93million in 2018 (Trading Economics, 2019).

2.5. Models and Theories for International Trade and Poverty Analysis

Rafael et al., (2014) postulated that international trade and poverty reduction has played a critical in the economic transformation in many developing and even developed countries the world over. Reimer (2002) held not an entirely contrary view but found no clear effects or links between poverty and trade. Meanwhile, advocates of trade openness identified economic growth and resource allocation as important benefits of international trade that translates into poverty reduction (Dollar and Kraay, 2004). There have been numerous objections to this idea but there is still a standing widespread acceptance that an open economy performs better in the long run than a closed one. Some analysts also argue that running an open trade policy in a country exposes the economy to shocks that breeds uncertainty that implies operating higher levels of poverty than having a closed trade policy: in the long run, policy measures designed to control and alleviate poverty and fairly distribute revenue is undermined (Winters, 2002).

Empirical data suggests trade liberalization as a strong influencer of productivity which most often results in poverty reduction in the long term (Winters, 2004): he also emphasizes that a channel link between trade and poverty is specific to that situation hence, the best thing to do is to examine episodes of trade liberalization by country independently and then observe its effects on growth and poverty. In line with this, some models have been postulated to analyze trade and poverty as variable especially observing the effects international trade has on poverty. Two main approaches that cannot be overlooked are the bottom-up, which reiterates that individuals are heterogeneous and the top-down approach which focuses on the ability of a representative of a bigger group; furthermore, cross-country regression analysis, general equilibrium, partial equilibrium or cost of living, macro-micro synthesis or general equilibrium simulation with post-simulation analysis, and the computable general equilibrium models.

Computable General Equilibrium (CGE) Models. The last two decades have seen a proliferation of general equilibrium models designed for both developing and developed countries. Iqbal and Siddiqui (2001) described the GCE model as a modern version of the Walras model of competitive economy. The main reason for developing the CGE model is birthed from the general understanding of negative impact of adjustment programs meant to evenly distribute income and reduce poverty. Most especially, the maquette financial CGE model designed by Bourguignon and his colleagues in 1989 and its extension in 1990 by Fargeix and Sadoulet were an indication of significant improvements in modeling the impact of structural adjustment policies on trade economic performance and revenue distribution. In 1991, De Janvry, Fargeix and Sadoulet developed a GCE model to critically observe the choice mix and instruments of adjustment as applied in Ecuador: welfare of the poor, political responses and economic growth are examined while a financial portfolio model is included to control inflation and interest rates. At the end of this study it was found that cutting down on current fiscal expenditure have a significant positive relationship with long-term growth: however, controlling inflation from monetary restraint impacts investment positively and has different effects on poverty in different sectors. When there is a fiscal cut in current expenditure, rural poverty is impacted positively but the reverse is the case for urban poverty as a result of the devaluation of exchange rate, loss of public good benefits and demand for contraction. The results further intimates that the rural poor and the state (growth) support current fiscal cuts while the urban poor and politically dominant rich prefer no structural adjustments whatsoever in the short term. These findings in fact reveals the major advantages of the CGE model: this model generally presents assumptions about market structure, investment and dynamics, social welfare, and sustainability of domestic and foreign goods among others.

Advantages of the CGE Model includes; a general equilibrium setting is preferable when the policy experiment to be modelled affects simultaneously many countries and many sectors, the GEF allows considering consumption of all goods by the rest of the world hence preventing non-reciprocal preferential treatment, and also GCE model disciplines analysis of how economies actually work, and that is critical for sound policy making. The 'general equilibrium' character of CGE's endorses interdependency of economic variable (every change affects a myriad of other elements in an economy. A CGE simulation will also show that, among other things, the reduced domestic price will lower the incomes of producers of the raw material (perhaps a low-income segment of society) and probably reduce supply as well. Irrespective of these marvelous advantages, the CGE model is plagued with some disadvantages as outlined below. Results from CGE models are sensitive to the elasticity that was used suggesting that they are restricted to the particular situation which has a powerful implication for the estimate trade creation or diversion. According to the Armington assumption, imported and exported commodities are imperfect substitutes of domestically produced and used ones. The problem with this assumption is that, an unrealistically high degree of specialization is avoided because it is necessary to consider two-way trade. It is also assumed that factors are stagnant across borders meanwhile the fact that capital mobility is a core accelerator of globalization and international seem to be overlooked. In essence, cross-border capital movement is ignored especially if it happens in response to an increase in market opportunities: this is considered a major shortfall of the CGE model.

The Generalized Autoregressive Conditionally Heteroscedastic (GARCH) Model. The GARCH model was developed by Tim Bollersley, a doctoral student in 1986. The aim of GARCH is to provide data on volatility measures for heteroscedastic time series data analysis quite in similar fashion as how standard deviations are interpreted in less complex models. This model is applied in variable and enormous ways for analyzing time series data in finance and economics: they are known to be especially useful when there is volatility. For instance, it has been used to efficiently model the volatility of financial assets prices like market indices, bonds, and stocks (Francq and Zakoian, 2011). However, this is not to in anyway say that the GARCH model is limited to financial applications as Kim et al. (2014) used the model to undertake a comparative analysis of different time series forecasting approaches to predict the volume of patients in hospitals. The term 'Heteroscedastic' as used in GARCH represents the irregular differences of error terms in any time series model. With this, observations will usually cluster rather than follow the orderly line of a linear model and hence making the analysis of heteroscedastic data a daunting task. Also, in a conventional least squares model, heteroscedasticity may lead to too narrow confidence intervals and standard errors giving rise to false precision. An advantage of using

GARCH in such situations is that it treats heteroscedasticity as a modellable variance and the compute predictions variance of each error term (Engle, 2001). That is to say, the model follows the steps of first estimating the best fit autoregressive model, calculating autocorrelation of the error terms, and then finally testing for statistical significance.

Mohammed (2011) conducted a study on the impacts of trade liberalization on developing countries and various levels of poverty. The expected impacts of international trade on income levels and an eventual reduction in poverty were explored hence he visualized empirical Auto-regressions to come up with new sets of strategies to ensure that the poor experience real benefits from international trade. It was concluded at the end of the study that GARCH models takes the weighted averages of unconditional variances, the squared residual from first observations, and then the starting variances and estimates the variance of the second observation. Same process is repeated for the third and fourth variances and subsequent ones if any. A time series of variance was also developed which shows large residuals when variances are large and small residual when variances are small. The likelihood function provides a systematic way to adjust the parameters to give the best fit. This helps detect any differences from recommendations made by econometricians. A plethora of research have been carried out to either support the effectiveness of the GARCH method or criticize its shortcomings. Nikolic-Djoric and Djoric (2011) examined the performance of the risk metrics methods and GARCH model in VaR forecasting stock exchange market in Serbia's financial market. It was found that if GARCH models are combined with extreme value theory (the peaks-over-threshold method), there is a decrease in the VaR value making them better than the GARCH or Risk metrics used in abstraction. In like manner, Mladenovic et al. (2012) concluded that the method of extreme value theory is quite better than the GARCH model with regards to the calculation of VaR from their assessment and analysis of stock exchange indices in central and Easter Europe. However, these researchers recommend the use of both methods for a more accurate market risk assessment. Bucevska (2012) also believed that the best among the GARCH family models is the one for volatility estimation as it was successfully applied in Macedonia's stock market.

The New Growth Theory was deployed in the work of Onakoya et al. (2019) to explain how government policies in lowering trade barriers can promote product and service development innovation, and the consequential enhancement of consumer welfare. The model guides countries on the possible negative and positive implications of opening up the economy to international trade (Figure 6).

Figure 6: The New Growth Theory Model
Source: Onakoya et al. (2019)

For instance, the devaluation of the domestic currency may cause citizens to purchase more foreign goods, which worsens the terms of trade (Onakoya et al., 2019). Again, reducing import tariffs and the subsequent sale prices of imported goods will increase patronage by several households, thus improving their standard of living. However, it throws local firms out of competition as a result of the infiltration of cheap imported goods. Meanwhile, the Adam Smith's theory of absolute advantage posits that the underlying causes of international trade is similar to any kind of trade. In that people seek their own interest in trade activities, seeking to benefit immensely from it before it translates into societal growth (Asir et al., 2019).

The Growth Model Specification is another theoretical model for analyzing the causal relationship between international trade and economic growth. It considers trade parameters such as trade openness, GDP per capita, foreign direct investment, the workforce (population aged 15 to 64 as a percentage of total population), human capital development, initial conditions and gross capital formation (Mbogela, 2019). The growth model specification is presented as follows;

$$\gamma_{i,t} = \beta_0 + \beta_1 E_{i,t} + \beta_2 TO_{i,t} + \beta_3 X_i + \epsilon_{i,t}$$

Where;

γ = economic growth

E = econometric variables that affect economic growth in country i and at time t

TO = level of trade openness

X_i = country fixed effects

$\epsilon_{i,t}$ = an error term

The main problems identified with this model are inconsistency, the omitted variable bias and the issue of endogeneity. In that, inconsistencies in result estimations may come up when some country specific variables are omitted, thus causing measurement error in the explanatory variables.

Furthermore, Bannister and Thugge (2001) sought to theorize the relationship between multilateral trade and poverty reduction. They itemized a number of ways by which trade liberalization can influence welfare of poor people;

- Reducing the prices of new tradable goods and enhancing access to them
- Varies the prices of skilled and unskilled labor which in turn affect the income and employability of the poor.
- Affecting government's revenue capacity to finance programs for the poor
- Affects the level of incentives economic growth investment.
- Affect show vulnerable an economy is to negative external shocks that impacts the poor.

It is however appreciated that the link between trade liberalization and poverty is convoluted and intertwined with the influence of the varied policy implications (Bannister and Thugge, 2001).

Dodd and Cattaneo (2006) reviewed a cluster of trade theories including the Stolper-Samuelson Theorem, Specific Factors Model and the New Trade Theory. Stolper-Samuelson Theorem holds the idea that trading in a country where labour is highly available, the price of export goods is more likely to increase, thus causing an increase in income and capital gains. This theory has been mainly criticized by its restrictive assumptions, as well as the underestimation of type of labour skills involved and how wages relates to the poverty line. The specific factors model enhances the Stolper-Samuelson Theorem by clarifying that trade increases the real income of capital specific to the expanding sector. The New trade theory finally, incorporates imperfect markets features including strategic business plans and political influence (Dodd and Cattaneo, 2006).

3. Research Methodology

3.1. Introduction

This paper adopts a comprehensive two-way approach to gather relevant data for analysis. The first part of the methodology is based on a systematic and rigorous literature review themed under the definitions of international trade, least developed country, poverty and impact; global impacts and effects of international trade on economic growth, debates on its efficacy, a global overview of poverty trends, practices of international trade and its performance among other crucial areas. The key areas of focus are on the methods used in these papers and their findings which provide a solid ground for critical analysis and conclusion. The second part of the methodology relies on data from documented cases of poverty and international trade like the United Nations (UN), African Union (AU), and the economic community of West African states (ECOWAS). This data is analyzed using cross country regression analysis and GINI Coefficient to identify the main impact international trade has on poverty in least developed countries.

3.2. Research Strategy

This study applied a multi-case study research strategy by basing its mathematical formulations and analysis on two least developed countries; Bangladesh and Somalia. These two countries are reviewed enough to obtain credible data regarding their international trade policies and practices, trade performance outcome. Case study research strategies allow researchers the framework to examine the empirical background of the critical part of life situation through diverse means (Robson, 2002). Consequently, the study explores international trade and poverty patterns, and conducts an impact analysis. This is in line with Kumar (2014), where it was discussed that explanatory research exemplifies the relationship between two situations or phenomenon in an explicit manner. While exploratory research delves profoundly into areas for finer details.

Thematically, the study begins by identifying key international trade parameters and variables that affect the crucial aspect of human development. Next is to collect data on various performance indices for both trade and poverty. The entire data collated is formulated and solved using the proposed regression analysis and the Gini coefficient. The result establishes the effectiveness of international trade and poverty reduction policies. See Figure 7.

Figure 7: Research Strategy for Analyzing International Trade Impact on Poverty
Source: Researcher's Own Construct, 2019

3.3. Source of Data and Data Collection Techniques

The study relies heavily on data from secondary sources for its analysis. It combines data on international trade and poverty available in literature from past research with official reports from credible sources including the United Nations (UN), African Union (AU), and the Economic Community of West African States (ECOWAS).

3.4. Data Analysis and Presentation Techniques

The impact of international trade and its characteristics on poverty levels is assessed using a standard cross-country regression analysis model. The generic regression specification is formulated as follows:

$$\text{Poverty}_{i,t} = \beta_1 y_{i,t} + \beta_2 CV_{i,t} + \beta_3 OP_{i,t} + \mu_t + \gamma_i + \epsilon_{i,t} \dots \dots \dots \text{equ (1)}$$

Where;

$\text{Poverty}_{i,t}$ = the log of Poverty indicator for country i at time t ;

CV = a set of control variables;

OP = trade openness;

γ_i = the effects of time

μ_t = unobserved timespecific effects; γ_i = unobserved countryspecific effects;

$\epsilon_{i,t}$ = the error term.

The set of control variables is standard and include measures of human and physical capital such as education level, GDP per capita, foreign direct investment as a share of GDP, consumer price growth index such as inflation, the quality of law and order, and the terms of international trade in order to control variations in economic development, macroeconomic instability and governance across various countries. The regression specification can be extended to assess how the characteristics of trade integration influence growth outcomes. De la Torre et al. (2015), formulates the extended regression model as follows:

$$\text{Poverty}_{i,t} = \beta_1 y_{i,t} + \beta_2 CV_{i,t} + \beta_3 OP_{i,t} + \beta_3 OP_{i,t} \times T_{i,t} + \mu_t + \gamma_i + \epsilon_{i,t} \dots \dots \dots \text{equ (2)}$$

where $T_{i,t}$ reflects the varying levels of the above specified control variables in various countries under study.

Thus, in order to find the specific ramification of different trade characteristics on poverty levels, the dependent variable is set as poverty headcount and the poverty gap with \$1.25 poverty line benchmark. On the other hand, the independent variable is effective trade openness; which encompass the sum of exports and imports as a share of GDP.

Dollar and Kraay (2001) conducted a study using the cross-country regression analysis model and the time-series Gini coefficients models. In this survey, developing countries were grouped according to the volume of trade and tariff rates involved: globalizers or non-globalizers. Using specific case studies, the statistical analysis of income growth rates for average households relative to the poorest quintile revealed no significant trend in inequality among countries classified as globalizers. There were also higher rates of growth in globalizers than non-globalizers. In essence, no systematic relationship exists between changes in trade volumes and changes in the income share of the poorest. Additionally, no statistical relationship between changes in trade volumes and changes in income inequality could be found (Dollar and Kraay, 2001). The approach for this study was however, criticized on grounds of inaccurate data, difficulty with differentiating correlation and causation in cross-country regression analysis, as well as the volatility of results to specific changes.

Furthermore, the impact of international trade on inequality is also assessed by linking movements in countries' Ginicoefficients, measured on both a market and net basis, with a set of explanatory variables as follows;

$$GINI_{i,t} = \beta_1 + \beta_2 CV_{i,t} + \beta_3 OP_{i,t} + \mu_t + \gamma_i + \epsilon_{i,t} \dots \dots \dots equ (3)$$

where $GINI_{i,t}$ is either the market or net Gini coefficient, both are considered in all specifications. This approach draws significantly from Dabla-Norris et al. (2015). Control variables CV, include variables to capture the impact of other aspects of globalization such as government policy on education. Again, financial openness, may have either a positive or negative effect on inequality it may disproportionately benefit higher income households with greater access, particularly in the early stages of financial policies (Dabla-Norris et al., 2015).

To investigate the impact of trade openness on inequality of different economic development levels or location, the inequality regression is expanded to have interaction terms as follows;

$$GINI_{i,t} = \beta_1 + \beta_2 CV_{i,t} + \beta_3 OP_{i,t} + \beta_4 X_{i,t} + \beta_5 X_{i,t} OP_{i,t} + \mu_t + \gamma_i + \epsilon_{i,t} \dots \dots \dots equ (4)$$

where $X_{i,t}$ is either a dummy variable for advanced economies or for LAC depending on the specification. The coefficient β_5 on the interaction terms denotes the marginal impact of trade openness on inequality at a particular level of economic development or location (Dabla-Norris et al., 2015).

4. Presentation and Analysis of Data on International Trade Performance and Poverty Level Parameters for Bangladesh and Somalia

4.1. Introduction

Even though a plethora of research predicts and as well shows that international trade essentially translates into economic growth and poverty reduction, there are still some theoretical controversies as more recent data has proven that international trade does not always bring growth. In further elucidations, there is growth only when it is coupled with technological advancements (Antumes, 2012). This presupposes that there must be some strategies, techniques, practices, and conditions in place for the needed impact of international trade to be felt in any jurisdiction. This chapter is therefore dedicated to analyzing the practices, strategies and performances in Bangladesh and Somalia by collecting data on international trade and poverty indicators that enables cross-country regression and GINI coefficient analysis. This analysis is based is developed around poverty headcount index, poverty gap, trade openness, inflation, GDP per capita, private credit/ GDP, education and law and order as the key indicators for international trade.

4.2. International Trade Practices, Strategies and Performance in Bangladesh and Somalia

4.2.1. International Trade in Bangladesh

According to a report by the World Bank Group in 2017, Bangladesh's economy has performed remarkably well: since 2010, annual GDP has averaged 6.4% and GNI per capita appreciated from \$100 in 1972 to \$1,480 in 2017. This marked a rise beyond the World Bank's threshold for lower-middle income countries status in 2014. In terms of international trade, Bangladesh ranks second after China as the largest exporter of already-made garments in the world. The country's Poverty Rate % (\$1.90/day 2011PPP) as of 2017 stood at 8.5 while it's GINI Coefficient was 32.1. The world bank further reports in 2018, that 38.2% of Bangladeshi GDP came from international trade which came mainly from exporting leather, fish, clothes and frozen seafood among others and also the import of cement, machinery and products derived from oil (OEC). The European union, China and the US are Bangladesh's main export partners while it imports mainly from Singapore, Thailand, and Indonesia. Comparing custom duties in Bangladesh to other low-middle income countries shows relatively higher charges: hence as a strategy, the government is continually implementing a myriad of policies to cut down trade barriers like customs duty recovery system, concessional tariffs, export processing and high-level negotiation with key partners. International trade gains made in 2018 from both imports and exports in Bangladesh reached a total of USD 99.8 billion: exports reached USD 39.3 billion from higher garment sales while imports equaled USD 60.5 billion. A critical examination of this data shows that Bangladesh still has a long way to go in bridging the gap between imports and exports: in fact, Bangladesh has had a negative trade balance since independence and its deficits are financed by expatriate transfers and international aid. Bangladesh's trade balance is estimated to be USD -16.9 billion with an overall trade balance (imports (USD10.4 billion) + exports (USD2.9 billion)) of USD -21.3 billion. This trade deficit increased by 5.4% in the first half the 2019-2020 fiscal year (Central Bank of Bangladesh, 2019). Based on a global economy report in early 2020, the average value of GINI coefficient for Bangladesh between 1983 to 2016 was 30.36 index points recording a minimum of 25.9 index points in 1983 and a maximum of 33.4 index points in the year 2000. The GINI value for Bangladesh in 2016 was 32.4 index points. Gini index is a measure of the extent of income distribution (sometimes, consumption expenditure) among individuals or households within an economy and how it deviates from a perfectly equal distribution. A GINI index of 0 represents perfect equality why an index of 100 implies perfect inequality. Hence the values of Bangladesh show an inequality index below average.

Based on the international poverty line of \$1.90 per person per day, Bangladesh experienced an impressive reduction in poverty from 44.2% in 1991 to 13.8% in 2017. As a result of this progress, literacy rates, life expectancy, per capita food production and other economic indicators have grown significantly: over 6% growth rate for about ten years in a row reaching 7.3% in 2017. This growth also translated into moving Bangladesh to a lower middle-income country status in 2015 and also meeting the united nations criteria for graduation from least developed countries in 2018. To enhance its international trade fortunes, the country must improve infrastructure and most importantly, provide an enabling business environment (World Bank Group, 2018).

Trade openness in Bangladesh which accounts for a sum of exports and imports as a percentage of GDP is a critical indicator of consideration: hence the values of trade openness in Bangladesh from 2010 to 2019 are presented to allow to more accuracy in cross country regression and GINI analysis. Data on trade openness in Bangladesh between the stipulated period of time under consideration shows a maximum value of 48.11 in 2012 and a minimum of 35.3 in 2017: between 2010 and 2019, the average value of openness stood at about 40%. This supposes that, Bangladesh not benefitted that much from its trade openness as the percentage it has got from the sum of its imports and exports has not reached 50% over the past decade but is deemed great progress as compared to other low-middle income countries. See Figure 8 and Table 2 below for details of trade openness.

Figure 8: Trade Openness in Bangladesh (2009 – 2019)

Source: www.theglobaleconomy.com, 2020

Year	Value
2010	37.8
2011	47.42
2012	48.11
2013	46.3
2014	44.51
2015	42.09
2016	37.95
2017	35.3
2018	38.24
2019	36.76

Table 2: Trade Openness Statistics of Bangladesh from 2010-2019

Source: www.theglobaleconomy.com, 2020

Foreign Trade Values	2014	2015	2016	2017	2018
Imports of Goods (million USD)	42,268	39,460	41,490	52,836	60,495
Exports of Goods (million USD)	30,405	32,379	34,956	35,851	39,252
Imports of Services (million USD)	7,195	8,745	8,519	9,011	10,437
Exports of Services (million USD)	1,627	1,684	3,585	2,262	2,981

Table 3: Critical International Trade Values in Bangladesh from 2014 to 2018

Source: World Trade Organization (WTO), 2018

Foreign Trade Indicators	2014	2015	2016	2017	2018
Foreign Trade (in % of GDP)	44.5	42.1	38.0	35.3	38.2
Trade Balance (million USD)	-7,482	-6,120	-6,244	-12,966	-16,913
Trade Balance (Including Service) (million USD)	-12,119	-10,606	-10,505	-17,594	-21,356
Imports of Goods and Services (Annual % Change)	1.2	3.2	-7.1	2.9	27.0
Exports of Goods and Services (Annual % Change)	3.2	-2.8	2.2	-2.3	8.1
Imports of Goods and Services (in % of GDP)	25.5	24.7	21.3	20.3	23.4
Exports of Goods and Services (in % of GDP)	19.0	17.3	16.6	15.0	14.8

Table 4: Critical International Trade Indicators Bangladesh from 2014 to 2018

Source: World Bank, 2018

4.2.2. International Trade in Somalia

Quite extensively, data on Somalia's international trade practices, strategies and performance have been presented in a substantial number of studies conducted over the years. Meanwhile, it is evident that commendable politico-socio-economic headway actually began just about six (6) years ago. Hitherto, there were serious natural disaster occurrences and political blunders that led to a prolonged period (over thirty years) of civil unrest and economic despair. The International Trade Center (2014) clearly explained that Somalia's natural resources are highly scanty and worse still, not optimally utilized. Again, with the limited trade activities notable mainly in Mogadishu, the prolonged state of anarchy and administrative deficiencies stifled the progress of private sector firms especially in trade, commerce, telecommunication and infrastructure development, thus deepening poverty and its ramifications.

Notwithstanding the above, Somalia achieved very significant economic progress over the last six (6) to seven (7) years that resulted from meticulously crafted social and economic policies, guided and executed with dynamic international trade linkages, practices and strategies, thus have been highly commended by international organizations. As confirmed by the World Bank, International Monetary Fund (IMF) and Somalia's Ministry of Finance, the United States (US) Department of State (2020) reported a positive economic trend mainly contributed by the telecommunications, agriculture and construction industries; which encapsulated improvement in the IMF Staff Monitoring Programs (SMP), achieving debt relief Decision Point under the Highly Indebted Poor Countries (HIPC) program, improvement in the working condition of civil servants, digitized administrative processes, reduced corruption in public sector, dwindling inflation rates, narrowing trade deficit and increase in domestic revenue collection such as \$183 million in 2018 to about \$230 million in 2019.

The United States (US) Department of State (2020) further reported specific international trade policy practices and strategies that strengthened their international relations, enhanced trade and reduced poverty. In the quest to increase foreign direct investment (FDI), the Federal Government of Somalia (FGS) introduced tax exemptions to foreign investors through its Investment Law in 2015 to promote and secure foreign investments. This led to tremendous growth in the agriculture, livestock, fishing, mineral resources and industrial sectors of the economy. Somalia also joined the Common Market for Eastern and Southern Africa (COMESA) community in July 2018, which opened up the opportunity to enjoy free trade protocols and to trade with other member countries. Furthermore, the ease of doing business improved significantly although the business registration website launched in 2019 by the Ministry of Commerce and Industry was saddled with functional challenges. More so, the country has also committed to joining the World Trade Organization (WTO) or the Organization for Economic Cooperation and Development, and the East African Community (EAC) in 2020. This has also led to the increase in trade and the free movement of Somali citizens within other East African Countries. Having joined the Inter-Governmental Authority on Development (IGAD) in 2018, a total overhaul of Somalia's regulatory system has caused the formulation of contemporary investment and business legislation that conforms to global business environmental standards. Finally, in response to the 2020 survey report of the International Labor Organization (ILO) on Somalia's labor force skills being centered in the informal sector, the country finalized a modern labor code in 2019 and released a social safety net policy in February 2020. This provided an explicit guide for employers and investors, and also improve Somalia's labor practices to meet international standards (United States (US) Department of State, 2020).

A further analysis of some economic and trade performance indicators in Somalia; including Trade Openness, Gross Domestic Product (GDP) Per Capita, Inflation, Trade Competitiveness, Financial Flow Trend, Educational levels and legal systems, revealed interesting trends. Although, the data on these indicators were either not available or dispersed across various reports and studies for different periods, they were synthesized and analyzed for the period specified in this study.

With an estimated population of about 14.32 million the Federal Republic of Somalia has progressively and systematically nurtured trade openness especially over the last six years. The World Bank considers the sum of exports and imports values as percent of GDP, as the measure of trade openness in any country under consideration. A comprehensive evolution of trade openness was captured in the reports of the Global Country Economy (2020) for the period starting from 1960 to 1990. The maximum and minimum values for the trade openness indicator were achieved in 1985 and 1980 respectively at 25.64% and 121.67%, with an average of 52.36%. Refer to Figure9.

Figure 9: Trade Openness in Somalia (1960 – 1990)

Source: www.theglobaleconomy.com, 2020

Comparing these figures to the global values clearly demonstrate that trade activities across the country were virtually non-functional. This same period unfortunately coincided with the three to four-decade years of economic, social and political instability. From about 2010 however, when the country began to strengthen its governmental institutions and international trade relations, the country gradually grew into an industrial hub for business. According to the United Nations Conference on Trade and Development (UNCTAD STATS) (2020), in 2013, the country achieved 172% trade openness. This increased significantly through 2014 to 225% in 2016 and dropped to 217% and 213% in 2017 and 2018 respectively (Figure 10). Also see Table 5 derived from the available data.

Figure 10: Trade Openness in Somalia (2005 – 2018)

Source: UNCTAD STATS, 2020

Year	Value (%)	Year	Value (%)
1960	29.86	1978	81.95
1961	39.08	1979	99.83
1962	40.31	1980	121.67
1963	41.84	1981	93.19
1964	46.42	1982	94.02
1965	37.79	1983	96.31
1966	37.53	1984	75.67
1967	35.9	1985	25.64
1968	36.41	1986	36.36
1969	39.64	1987	37.91
1970	28.25	1988	27.01
1971	33.17	1989	52.58
1972	36.28	1990	47.53
1973	40.79	2013	172
1974	57.45	2014	201
1975	39.34	2015	222
1976	33.88	2016	225
1977	79.48	2017	217
		2018	213

Table 5: Trade Openness in Somalia from 1960 to 2018

Source: Derived From Available Data

Based on the GDP per capita of Somalia, many studies ranked the country as one of the poorest economies in the world. However, a critical analysis of the data presented by Country Economy (2020) for the last twenty-three years or so (Table 6), indicate an evidence of significant policy interventions and the consistent edge to reduce the poverty levels of its people. GDP per capita growth rate has fluctuated over the years with a few negative growth trends in the years 2000, 2001, 2002, 2009, 2010, 2014 and 2015. Again, some growth was achieved in 1996 to 1998, in 2003, 2004 and the highest bounce back from the -14.7% in 2010 to 211.6% in 2011. In 2017 and 2018, GDP per capita values were substantially high as compared to previous years since 1996; amounting to \$309 and \$315 respectively. This perhaps can be linked to the giant international linkages created by Somalia's Federal government to ensure effective governance, provide serene social environment, empower private sector industries and enhance international trade relations, as captured earlier in the report of the US Department of State, 2020.

Date	GDP Per Capita (\$)	GDP Per Capita Annual Growth (%)
2018	315	1.8
2017	309	4.4
2016	296	0.8
2015	293	-0.6
2014	295	-0.9
2013	298	4.9
2012	284	0.5
2011	283	211.6
2010	91	-14.7
2009	106	-53.4
2008	228	1.8
2007	224	0.9
2006	222	0.2
2005	222	13.2
2004	196	26.8
2003	155	20.4
2002	128	-9.5
2001	142	-38.7
2000	231	-1.9
1999	236	0.8
1998	234	25.2
1997	187	13.9
1996	164	9.5

Table 6: The Evolution of Gross Domestic Product (GDP) Per Capita in Somalia
Source: Country Economy (2020)

Moreover, a longitudinal analysis of inflation rates in Somali were also conducted to better appreciate the effect of trade openness enhancement on the growth rate of prices of consumer goods. The data available with STATISTA (2020) show that the average inflation rate in Somalia amounted to about 1.3% in 2014 and rose to about 6.09% in 2017 and dropped to about 3% in 2020. Refer to Figure 11. This can be explained by the turbulent nature of trade activities in period where the country was signing more international trade deals and subjecting itself to the market forces of demand and supply.

Figure 11: Inflation Rate in Somalia from 2014 – 2022
Source: STATISTA (2020)

Furthermore, Somalia's major exports were in livestock and fruits; including goats, camel, cattle and banana to their partner countries in Saudi Arabia, the United Arab Emirates, Oman, Yemen, and Brazil. Main imports are fuel, food, manufactured goods and construction materials from the United Arab Emirates (Ali et al., 2018). An assessment of the trade competitiveness and financial flow trend in Somalia indicates that notwithstanding the consistency in economic growth, the country is yet to fully penetrate its international markets due to the associated challenges of ineffective governance, inefficient banking and financial sector, inadequate infrastructure, and inappropriate international commercial terms (Ali et al., 2018). This affected export and import performance over the last three decades. See Figure 12 and Figure 13.

Figure 12: Export Values in Somalia from 1970 To 2012

Source: Ali Et Al. (2018)

Figure 13: Export Values in Somalia from 1970 to 2012

Source: Ali Et Al. (2018)

The International Trade Center (2014) further calibrates the performance of total export values in Somalia for the period between 2008 and 2014, and presented the results as shown in Table 7. Meanwhile, an increasing financial flow trend (Table 8) over similar period is observed by the UNCTAD STATS (2020).

Marginal Growth Due to	US\$ change	% change
Growth due to world trade's growth	39,769.2	48.8
Growth due to product specialisation	-6,482.9	-8.0
Growth due to geographic specialisation	30,405.0	37.3
Growth due to competitiveness	43,185.7	53.0
Sum of the marginal growths	106,877.0	131.1

Table 7: The Value of Total Export in Somalia (2009 - 2013)

Source: International Trade Center (2014)

Table 8: Financial Flow Trend in Millions of US Dollars (2000 - 2018)

Source: STATISTA (2020)

Another preliminary requirement to realize a positive impact of international trade on poverty reduction in a country, is to have good educational system with high literacy and enrolment level that is evenly distributed among the population and geographical regions, as well as an effective legal system that ensures all public and private institutions work within the specifications of their constitution. This is necessary to reduce poverty among citizens as they harness the opportunities presented through trade openness. Unfortunately, Pape (2017) noticed that only 52.9 percent of Somali children are enrolled in school with about 45% of them living in poor households. Again, relatively high disparities exist across regions than between gender, with regards to enrollment and educational expenditures. Refer to figures 4.8 to Figure 18 for details. These education disparities in major regions in Somalia were also demonstrated by the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2020) as shown in Figure 19 and Figure 20.

Figure 15: Literacy Distribution across Regions in Somalia
Source: Pape (2017)

Figure 16: Primary Educational Attainment in Somalia
Source: Pape (2017)

Figure 17: Net Primary School Enrolment In Somalia

Figure 18: Net Primary School Enrolment, By Gender In Somalia
Source: Pape (2017)

Figure 19: Regional Disparities in Primary Completion Rate in Somalia
Source: UNESCO, 2020

Figure 20: Regional Disparities in Out-Of-School Children in Somalia
Source: UNESCO, 2020

Finally, Somalia's legal system is currently not operating at optimal levels due to a few hitches with regards to bribery and corruption, political interference in the judiciary, lack of transparency in governance, and the misappropriation of state funds (Proelium Law LLP, 2020). However, some improvement is evident as analyzed over the years. Somalia's law encapsulates civil, Sharia and customary law; with the Somaliland following the British common law system whiles Somalia follows the Italian civil law system (Norton, 2010). More so, Somalia is involved in a couple of international treaties such as the Borama in 1993, the Transitional Federal Charter in 2004, Geneva Conventions, the Climate Change Kyoto Protocol, Paris Agreements, Arab League, the African Union, World Health Organization and International Monetary Fund. Norton (2010) further outlined aspects of the current Somaliland constitution which was adopted in 1997 to include; Article 8 which seeks to discrimination on the grounds of ethnicity, clan affiliation, birth and residence, and Article 28 which strives to empower citizens by providing free legal defense in matters which are determined by the law and court.

4.3. Poverty levels in Bangladesh and Somalia

Poverty has been variously measured and defined; however, the poverty headcount index and gap seem the most popular and credible indicator as headcount allows for measuring the percentage of the population living below the stipulated poverty line while poverty gap measures the mean distance below the poverty line. Poverty is a broad concept that encapsulates income levels, food security, quality of life, asset bases, human capabilities, and vulnerabilities and gender inequalities among others. For the purpose of this study, poverty headcount and gap are used with the \$1.90 line as a yardstick.

4.3.1. Poverty in Bangladesh

The world bank reports that number of people living below the poverty line in Bangladesh dropped to 21.8% in 2018 from 24.3% in 2016; also, the proportion of the employed population below \$1.90 purchasing power parity per day dropped from 14.6% in 2016 to 9.2% in 2018.

	Poverty			Extreme Poverty		
	2000	2005	2010	2000	2005	2010
National	48.9	40.0	31.5	34.3	25.1	17.6
Urban	35.2	28.4	21.3	19.9	14.6	7.7
Rural	52.3	43.8	35.2	37.9	28.6	21.1

Table 9: Poverty Headcount Rates in Bangladesh (2000 – 2010)

Source: Official Poverty Lines Estimated for HIES (2000, 2005, And 2010)

According to an assessment of Bangladesh by the World Bank (2013) the country has performed economically well enough to translate into the orderly and steady decline in consumption-based poverty rates between the period of 2000 and 2010. The implication is that many people are now able to afford feeding on daily basis: that is to say, poverty rates improved drastically during this period with an average of 1.74% annually. Between 2000 to 2005, poverty rates in Bangladesh declined by 1.78% and 1.70% between 2005 to 2010. This is the view of (Abdallah, Wahid and Sharif, 2012) means that the vicious cycles of shock in 2007 and 2008 did not have a significantly negative impact on the agenda to reduce poverty. The World Bank (2013) further states that, the number of poor people in Bangladesh reduced from 63million to nearly 47million between 2000-2010: that is 55million by 2005 and 47million in 2010. Table 4 above details how poverty rates have reduced at the national, urban, and rural levels by headcount and shows a clear improvement in the number of poor people in Bangladesh.

Figure 21: Poverty Headcount across Regions in Bangladesh

Source: HIES 2000, 2005 and 2010

The first part of this decade saw massive improvements in the lives of many poor households across regions in Bangladesh in terms of the materials they used in building their homes (that is, more homes were built with cement and roofed with steel) and access to basic services (electricity, latrines and potable drinking water). As households continued to improve the quality of their homes between 2005 to 2010, the most significant improvements were seen in the amenities owned by these households like mobile phones and television sets.

Figure 22: Poverty Trend in Bangladesh

Source: HIES 2000, 2005 And 2010

A careful examination of the above data reveals the fact that even though poverty head count has reduced drastically over the decade under consideration, the urban areas of Bangladesh continue to have the lowest ratio of poverty at the end of 2010. In fact, all three categories maintained their positions right from 2000 to 2010. It Suggests that perhaps more work should be done in the rural areas to put them nearly at par with the urban cities in terms of quality of life: this will to a large extent control rural urban migration as locals will feel comfortable enough in their indigenous places. This will also ensure that the resources in the urban areas are sufficient to serve its inhabitants.

Year	Poverty Gap
2000	27.6
2005	22.5
2010	18.8
2016	15.4

Table 10: Poverty Gap at \$3.20 A Day (2011 PPP) (%) in Bangladesh

Source: HIES 2000, 2005 and 2010

Table 10 above traces the poverty gap in Bangladesh from 2000 to 2016 and it is remarkable to see the figures have dropped through-out this period. These have not only enhanced economic growth but has also changed the livelihood realities of the poor and gradually lifting them from below the poverty line and placing them above it with more improved quality and standards of living. Generally, the presented data on poverty headcount and gap in Bangladesh demonstrates that the first half (2000 to 2005) was characterized by uneven reduction of poverty rate and improvements of standards of

living as rural regions continued to lag. The second half however gave the rural regions the opportunity to be at par with the urban areas and national levels in a holistic manner.

The above results point to some very critical indicators of international trade and poverty: trade openness in Bangladesh has enhanced its sum of imports and exports as a percentage of GDP over the years as a result of sustained growth. Specific data and computation of these figures from 2010 to recent times has been provided to be juxtaposed with data on poverty headcount and gap to make room for a credible cross-country regression and GINI coefficient analysis

4.3.2. Poverty in Somalia

Again, quite a considerable level of disparity is evident across the various regions in Somalia and among its people, in terms of poverty incidence, poverty gap, poverty severity and inequality. Generally, a chunk of the population in Somalia are poor and the percentage of the few non-poor people are progressively being plunged into severe poverty.

In a World Bank report compiled by Pape (2017), disparities in regions exceed those of rural and urban areas as well as across the population. Poverty in the Somali population ranges from 26% to 70%, while overall poverty gap in Somalia is 22% of the poverty line using \$3.20 a day (2011/\$ PPP). In 2013 the poverty gap was 20% in urban areas and 29% in urban areas, while 19% and 24% in 2016 for urban and rural areas respectively. In addition, the severity of poverty is estimated at 11.4%, which further confirms the gross disparities in consumption among the poor population. Again, a Gini index of 37% also indicative a low inequality is not resilient enough to protect non-poor Somalis adverse consumption shocks (Pape, 2017).

Figure 23: Regional Distribution of Poverty Incidence in Somalia
Source: Pape (2017)

Figure 24: Poverty Incidence in Somalia from 2013 to 2016
Source: Pape (2017)

In Mogadishu, close to 57% of the population are below the poverty line and 26% of people living below the poverty line in the North East region. In the North West region poverty gap decrease significantly at rate of 5% in the rural areas but 1% in the urban areas between 2013 and 2016. Moreover, welfare gains are moderately sustained between 2013 and 2016, with poverty incidence decreasing from 69 % to 64% in rural areas, and from 57% to 52% in urban areas, but at a rather low annual poverty reduction rate of 1.8% and 1.5% respectively. See figures 4.18 and 4.19, and table

Figure 25: Regional Distribution of Poverty Gap in Somalia
Source: Pape (2017)

Figure 26: Poverty Gap in Somalia from 2013 to 2016
Source: Pape (2017)

	Poverty incidence (% of population)	Poverty Gap (% of poverty line)	Poverty Severity Index	Total Gap (per year, current million US\$)
North East	27.2***	7.9	3.5	49.2
Urban	26	7.5	3.4	40.4
Rural	34	10.1	4.1	8.8
North West	50.0***	19.2	9.3	229.8
Urban	47.9	18.2	8.9	179.7
Rural	61.1	24.2	11.4	50.1
Mogadishu	57.0***	23.8	11.9	163.5
Urban	45.0*	17.1	8.4	476.3
Rural	52.5*	19.7	9.1	627.5
IDP Settlements	70.5***	36.5	22.2	214.6
Overall average	51.4	21.7	11.5	1,318.4

Table 11: Distribution of Selected Poverty Indicators across Various Regions in Somalia with Significance at 10%, 5%, and 1% Level Respectively

Source: Pape (2017)

The World Bank Group (2018) added that the situation is exacerbated by the most recent droughts that have resulted in a rapid decline in consumption, thus causing more regions to become vulnerable to extreme poverty. An obvious ramification as added, is food and water insecurity, low education levels and poor information management. See Figure 27 and 4.21.

Figure 27: Regional Distribution of Poverty Severity in Somalia

Source: Pape (2017)

Figure 28: Regional Distribution of Extreme Poverty in Somalia
Source: Pape (2017)

5. Cross-Country Regression Analysis of the Impact of International Trade on Poverty Levels and Gini Index in Bangladesh and Somalia

5.1. Introduction

This chapter presents a regression analysis of the dynamics of international trade performance and poverty levels in Bangladesh and Somalia. It also explores a GINI Coefficient analysis in each country in order to assess how international trade parameters have affected levels of inequality. Key parameters tested include trade openness, GDP Per Capita, Inflation rates, Poverty gap, Poverty Incidence and GINI Coefficient. The aim is to analyze the extent to which each of these international trade performance variables cause change in the poverty level variables. Consequently, our Null Hypothesis (H0) = There is no significant relationship between each international trade parameter and, first on poverty gap, second on poverty incidence and third on income inequality in Bangladesh and Somalia. In other words, international trade does not influence poverty levels in both countries. While our Alternative Hypothesis (H1) = There is a significant relationship between the specified dependent variable and independent variables. To this end, the data derived from the study's secondary data survey would be used for the regression tests as shown in Table 12 and 5.2 below.

Year	Poverty Gap	Poverty Incidence	Trade Openness	GDP Per Capita	Inflation Rate
2010	19.4	60.2	37.8	781.2	9.37
2011	16.6	58.4	47.42	822.2	11.46
2012	13.85	55.3	48.11	865.7	6.23
2013	12.5	53.1	46.3	907.3	7.54
2014	11.5	52	44.51	951.3	7.01
2015	13.2	52.3	42.09	1002.4	6.16
2016	14.5	52.5	37.95	1062	5.68
2017	14	49.1	35.3	1127.3	5.61
2018	12.5	48.6	38.24	1203.2	5.63
2019	10.3	47.5	36.76	1287.8	5.69

Table 12: Derived Data on International Trade, Poverty Gap and Poverty Incidence Variables in Bangladesh (2010 – 2019)
Source: Field Survey, 2020

Year	Poverty Gap	Poverty Incidence	Trade Openness	GDP Per Capita	Inflation Rate
2010	32.2	72.1	145	91	0.5
2011	28.2	69.2	162	283	0.4
2012	25.5	65	168	284	0.3
2013	24.5	63	172	298	1
2014	23	60	201	295	1.3
2015	22	57	222	293	0.29
2016	21.5	58	225	296	1.21
2017	21.7	51.4	217	309	6.09
2018	21	45.2	213	315	3.22
2019	20	40.1	209	320	4

Table 13: Derived Data on International Trade, Poverty Gap, Poverty Incidence Variables In Somalia (2010 – 2019)
Source: Field Survey, 2020

5.2. Regression Analysis of International Trade and Poverty in Bangladesh

The regression analysis results of international trade and poverty in Bangladesh show that trade openness and GDP Per Capita international trade parameters tested have significant influence on poverty gap but inflation rates do not. Consequently, we can reject the Null hypothesis (H_0) for trade openness and GDP Per Capita variables and fail to reject the Null hypothesis (H_0) for the effect of inflation rate variables on poverty gap. Conversely, trade openness and inflation rates do not have significant statistical relation with poverty incidence except for GDP Per Capita. Therefore, we fail to reject the Null hypothesis (H_0) for trade openness and inflation rate variables, and accept the Null hypothesis (H_0) for the effect of GDP Per Capita on poverty incidence.

From the result summary output for the effect of international trade on poverty gap illustrated in Table 14 below, the P-Values for trade openness (0.0066) and GDP Per Capita (0.0086) are way below the common Alpha (α) level of (< 0.05). However, the P-Value for inflation rates (0.20) is higher than the alpha value. Moreover, it is also observed from the coefficient values that a unit change in trade openness and GDP Per Capita significantly decreases poverty gap, unlike inflation rate that shows positive relationship with poverty gap in Bangladesh. See figures 5.1 to 5.3. An assessment of the residual values and plot also indicate a random nature; thus, the predictions of the regression model are correct and consistent (Table 15).

SUMMARY OUTPUT						
<i>Regression Statistics</i>						
Multiple R	0.935348644					
R Square	0.874877087					
Adjusted R Square	0.81231563					
Standard Error	1.127868861					
Observations	10					
ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	53.367721	17.78924033	13.98428254	0.004078703	
Residual	6	7.632529	1.272088167			
Total	9	61.00025				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	43.39766242	8.182552568	5.303682691	0.001823386	23.37567757	63.41964727
Trade Openness	-0.419695889	0.103341778	-4.061241213	0.006641182	-0.672564111	-0.166827667
GDP Per Capita	-0.01504937	0.003921461	-3.837694759	0.008581914	-0.02464484	-0.005453901
Inflation Rate	0.411752533	0.285747235	1.440967691	0.1996719	-0.287445762	1.110950828

Table 14: Regression Analysis of International Trade and Poverty Gap in Bangladesh
Source: Field Survey, 2020

RESIDUAL OUTPUT			
<i>Observation</i>	<i>Predicted Poverty Gap</i>	<i>Residuals</i>	<i>Standard Residuals</i>
1	19.63471105	-0.234711055	-0.254871085
2	15.84077522	0.759224781	0.824436855
3	12.7430717	1.106928296	1.202005659
4	13.41606328	-0.916063281	-0.994746681
5	13.28691779	-1.786917791	-1.940401474
6	13.18356937	0.016430628	0.017841904
7	13.82652667	0.673473328	0.731319955
8	13.92717423	0.072825773	0.079080996
9	11.55925617	0.940743835	1.02154712
10	10.93193451	-0.631934514	-0.686213249

Table 15: Residual Output Analysis of International Trade and Poverty Gap in Bangladesh
Source: Field Survey, 2020

Figure 29: Line Fit Plot for Trade Openness and Poverty Gap in Bangladesh
Source: Field Survey, 2020

Figure 30: Line Fit Plot for GDP Per Capita and Poverty Gap in Bangladesh
Source: Field Survey, 2020

Figure 31: Line Fit Plot for Inflation Rate and Poverty Gap in Bangladesh
Source: Field Survey, 2020

With regards to the impact of international trade on poverty incidence in Bangladesh, the activities of import and export, as well as the changes in consumer prices did not relate much with the poverty headcount values presented. However, the nominal GDP values as distributed among the population show a non-negligible relationship. The regression analysis output (Table 16) shows that the P-Values for trade openness (0.1161) and inflation rates (0.1117) are above the common Alpha (α) level (< 0.05). However, the P-Value for GDP Per Capita (0.0019) is lower than the alpha value. Meanwhile, the negative coefficient values of trade openness and GDP Per Capita is indicative of a corresponding decrease in poverty incidence as a result of increases in trade openness and gross domestic product per capita values, which implies

that these two variables are crucial for reducing poverty incidence in Bangladesh relative to emphasizing on inflation rates. See figures 5.4 to 5.6. Again, the residual values signify a strong predictive capacity (Table 17).

SUMMARY OUTPUT						
<i>Regression Statistics</i>						
Multiple R	0.971139347					
R Square	0.943111632					
Adjusted R Square	0.914667448					
Standard Error	1.20348571					
Observations	10					
ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	144.0697329	48.02324429	33.1566	0.000394042	
Residual	6	8.690267128	1.448377855			
Total	9	152.76				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	79.22824285	8.731143692	9.074211311	0.0001	57.86390388	100.5925818
Trade Openness	-0.202401315	0.110270225	-1.83550287	0.1161	-0.472222836	0.067420206
GDP Per Capita	-0.021914939	0.004184371	-5.23733116	0.00194	-0.032153727	-0.01167615
Inflation Rate	0.568146812	0.304904875	1.863357587	0.1117	-0.17792854	1.314222164

Table 16: Regression Analysis of International Trade and Poverty Incidence in Bangladesh
Source: Field Survey, 2020

RESIDUAL OUTPUT			
<i>Observation</i>	<i>Predicted Poverty Incidence</i>	<i>Residuals</i>	<i>Standard Residuals</i>
1	59.78105853	0.418941475	0.426341932
2	58.12287222	0.277127783	0.28202315
3	54.05850764	1.241492358	1.263422894
4	54.25746489	-1.157464889	-1.177911108
5	53.35438812	-1.354388122	-1.378312923
6	52.24142114	0.058578862	0.059613638
7	51.50052176	0.999478244	1.017133684
8	50.56606946	-1.466069455	-1.491967068
9	48.31902866	0.280971335	0.285934597
10	46.79866759	0.701332409	0.713721205

Table 17: Residual and Probability Output Analysis of International Trade and Poverty Incidence in Bangladesh
Source: Field Survey, 2020

Figure 32: Line Fit Plot for GDP Per Capita and Poverty Incidence in Bangladesh
Source: Field Survey, 2020

Figure 33: Line Fit Plot for Trade Openness and Poverty Incidence in Bangladesh
Source: Field Survey, 2020

Figure 34: Line Fit Plot for Inflation Rate and Poverty Incidence in Bangladesh
Source: Field Survey, 2020

5.3. Regression Analysis of International Trade and Poverty in Somalia

In Somalia, the impact of international trade on poverty levels is not as dynamic as in Bangladesh. Inflation rates prove to have very crucial explanations to the status of poverty gap and poverty incidence. Per the results of the regression analysis of international trade and poverty in Somalia, trade openness and GDP Per Capita international trade parameters do not have any significant influence on poverty gap but inflation rates do have real influence on poverty gap. We therefore fail to reject the Null hypothesis (H_0) for trade openness and GDP Per Capita variables and reject the Null hypothesis (H_0) for the effect of inflation rate variables on poverty gap. With regards to the impact on poverty incidence on the other hand, again trade openness, GDP Per Capita and inflation rates do not reflect appreciable statistical relation with poverty incidence. However, inflation rates exhibit relatively slight responsiveness with poverty incidence as the P-

Value is only slightly above the alpha value. Thus, we absolutely fail to reject the Null hypothesis (H0) for all three variables on their effects on poverty incidence.

SUMMARY OUTPUT						
Regression Statistics						
Multiple R	0.985325771					
R Square	0.970866875					
Adjusted R Square	0.956300312					
Standard Error	0.791135934					
Observations	10					
ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	125.1486236	41.71620787	66.65037554	5.34946E-05	
Residual	6	3.755376398	0.625896066			
Total	9	128.904				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	35.8418004	4.516408113	7.935908248	0.000212746	24.79054786	46.89305294
Trade Openness	-0.04527085	0.01866472	-2.425477006	0.051478115	-0.090941775	0.000400075
GDP Per Capita	-0.012577615	0.006984241	-1.800856225	0.121807898	-0.029667438	0.004512208
Inflation Rate	-0.280201576	0.107723421	-2.601120291	0.040601187	-0.543791292	-0.016611861

Table 18: Regression Analysis of International Trade and Poverty Gap in Somalia

Source: Field Survey, 2020

As shown in the summary output for the effect of international trade on poverty gap (Table 18) above, the P-Values for trade openness (0.051) and GDP Per Capita (0.12) are respectively equal to and above the common Alpha (α) level (< 0.05). However, the P-Value for inflation rates (0.041) is below the alpha value. A closer look at the coefficient values clearly show that whiles there exist a negative relationship between the specified international trade parameters and poverty gap, inflation rate variables seem to better explain variations that may occur in poverty gap variables. In that, a unit change in inflation rate translates into a highest decrease in poverty gap levels in Somalia, as compared to decreases in poverty gap levels that result from unit changes in trade openness and GDP Per Capita. See figures 5.7 to 5.9. The appropriateness and accuracy of the model is also tested as shown in residual values and plot in Table 19.

RESIDUAL OUTPUT			
<i>Observation</i>	<i>Predicted Poverty Gap</i>	<i>Residuals</i>	<i>Standard Residuals</i>
1	32.33598786	-0.13598786	-0.210520629
2	27.75047352	0.449526483	0.69590475
3	25.36475898	0.135241021	0.209364459
4	24.86748819	-0.367488186	-0.568902576
5	22.66770118	0.332298823	0.514426487
6	22.02517215	-0.025172148	-0.038968599
7	21.5938413	-0.093841303	-0.145274219
8	20.42511542	1.27488458	1.973628404
9	21.33491166	-0.334911657	-0.518471373
10	21.23454975	-1.234549754	-1.911186706

Table 19: Residual and Probability Output Analysis of International Trade and Poverty Gap in Somalia

Source: Field Survey, 2020

Figure 35: Line Fit Plot for Trade Openness and Poverty Gap in Somalia
Source: Field Survey, 2020

Figure 36: Line Fit Plot for GDP Per Capita and Poverty Gap in Somalia
Source: Field Survey, 2020

Figure 37: Line Fit Plot for Inflation and Poverty Gap in Somalia
Source: Field Survey, 2020

As highlighted earlier, the impact of international trade on poverty incidence in Somalia is virtually non-existent. Unlike that of Bangladesh, import and export operations as well as changes in consumer prices did not explain the level of poverty headcount in Somalia. As revealed by that the P-Values for trade openness (0.200), GDP Per Capita (0.510) and inflation rates (0.083) in the regression analysis output (Table 20) there were no significant relationships between trade variables and poverty incident variables for the period under study. These values are above the common Alpha (α) level (< 0.05).

SUMMARY OUTPUT						
<i>Regression Statistics</i>						
Multiple R	0.879484837					
R Square	0.773493579					
Adjusted R Square	0.660240369					
Standard Error	5.928299609					
Observations	10					
<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	720.0915825	240.0305275	6.829771768	0.023153229	
Residual	6	210.8684175	35.14473626			
Total	9	930.96				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	97.75386789	14.55368892	6.716775961	0.00052938	62.14227399	133.3654618
Trade Openness	-0.142065177	0.09882651	-1.437520933	0.200606317	-0.383884936	0.099754582
GDP Per Capita	-0.027695631	0.039557641	-0.700133535	0.510065725	-0.124489691	0.069098429
Inflation Rate	-2.440196067	1.172640312	-2.080941652	0.082627086	-5.309543544	0.429151409

Table 20: Regression Analysis of International Trade and Poverty Incidence in Somalia

Source: Field Survey, 2020

In a further analysis of the coefficient values trade openness, GDP Per Capita and inflation rates have negative values, which indicates corresponding decreases in poverty incidence as a result of increases in the values of all mentioned trade variables. However, changes in inflation rates result in relatively higher decreases in poverty incidences in Somalia. This is followed by the effects of changes in trade openness. See figures 5.10 to 5.12.

Figure 38: Line Fit Plot for Trade Openness and Poverty Incidence in Somalia

Source: Field Survey, 2020

Figure 39: Line Fit Plot for GDP per Capita and Poverty Incidence in Somalia
Source: Field Survey, 2020

Figure 40: Line Fit Plot for Inflation Rate and Poverty Incidence in Somalia
Source: Field Survey, 2020

The internal validity of the results is evident in the residual plots obtained for the various independent trade variables. The residual plot for inflation rate and trade openness is shown in Figure 41 below.

Figure 41: Residual Plot for Inflation Rate and Trade Openness Incidence in Somalia
Source: Field Survey, 2020

5.4. Regression Analysis of the Impact of International Trade on GINI Coefficient in Bangladesh and Somalia

The Gini index, or Gini coefficient was developed by an Italian statistician; Corrado Gini in 1912 to measure how income is distributed. Ranging from 0% (0) to 100% (1) among the population of a nation. A perfect inequality is scored one (1), while a perfect equality is scored zero (0). This section is focused on analyzing the impact of international trade on income inequality, which is derived from the Gini coefficient data presented for both Bangladesh (left) and Somalia (right) (Table 21).

Year	GINI Index		Year	GINI Index
2005	33.20		2005	90.72
2010	32.10		2010	60.50
2011	32.00		2011	55.30
2012	30.50		2012	38.50
2013	31.00		2013	53.20
2014	33.20		2014	40.00
2015	32.50		2015	44.50
2016	32.40		2016	33.00

Table 21: Derived Data on GINI Coefficient Variables in Bangladesh (Left) and Somalia (Right) (2005 – 2016)
Source: Field Survey, 2020

5.4.1. The Impact of International Trade on Income inequality in Bangladesh

The GINI Coefficient data generally show that income inequality in Bangladesh has been decreasing at an average rate of about 1.5% over the last 15 years. A further test of how international trade has influenced these values has been revealed in the regression analysis output put forth in Table 22 below. It is explicit from the result that trade openness and GDP Per Capita in Bangladesh significantly explains the observed variations in GINI indices, unlike inflation rates which does not show significant relations. This is reflected in the P-Values for trade openness (0.049) and GDP Per Capita (0.041), which are slightly below the common Alpha (α) level (< 0.05), but a P-Value of (0.838) for inflation, which is way above the common alpha level.

SUMMARY OUTPUT						
Regression Statistics						
Multiple R	0.950622815					
R Square	0.903683736					
Adjusted R Square	0.807367472					
Standard Error	7.843608785					
Observations	7					
ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	1731.689175	577.229725	9.3824625	0.049253088	
Residual	3	184.5665963	61.52219878			
Total	6	1916.255771				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	328.0928541	76.07405117	4.31280902	0.0229577	85.99127099	570.194437
Trade Openness	-2.495155078	0.780345709	-3.197499582	0.0494263	-4.9785634	-0.0117468
GDP Per Capita	-0.176206128	0.051519501	-3.420183132	0.0418373	-0.34016417	-0.0122481
Inflation Rate	-0.535575556	2.404517181	-0.222737255	0.8380434	-8.18782237	7.11667126

Table 22: Regression Analysis of International Trade and Inequality in Bangladesh
Source: Field Survey, 2020

The coefficient analysis also indicate that trade openness has a greater influence on income inequality levels in Bangladesh, than GDP Per Capita and inflation, meaning that the greatest decreases observed in inequality is mainly as a result of the expansion in trade openness. See Figure 42 to 5.16.

Figure 42: Line Fit Plot for Trade Openness and GINI Index in Bangladesh
Source: Field Survey, 2020

Figure 43: Line Fit Plot for GDP Per Capita and GINI Index in Bangladesh
Source: Field Survey, 2020

Figure 44: Line Fit Plot for Inflation and Gini Index in Bangladesh
Source: Field Survey, 2020

5.4.2. The Impact of International Trade on Income inequality in Somalia

In Somalia, it is observed that none of the international trade variables tested show any significant influence on income inequality. With the GINI Coefficient data generally showing a year on year fluctuating average rate decrease of about 15% over the last 15 years. The regression analysis results shown in Table 23 explains that, trade openness, GDP

Per Capita and inflation in Somalia do not account for the observed variations in GINI indices. The P-Values for trade openness (0.254), GDP Per Capita (0.347) and inflation (0.584), are all above the common Alpha (α) level (< 0.05).

SUMMARY OUTPUT						
Regression Statistics						
Multiple R	0.717384364					
R Square	0.514640326					
Adjusted R Square	0.029280652					
Standard Error	0.908101976					
Observations	7					
ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	2.623195261	0.87439842	1.060327739	0.481362022	
Residual	3	2.473947596	0.824649199			
Total	6	5.097142857				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	29.26795352	2.250347529	13.00597048	0.000981468	22.10634334	36.4295637
Trade Openness	0.022050014	0.015665021	1.40759549	0.25397346	-0.027803076	0.071903103
GDP Per Capita	-0.006809507	0.006116117	-1.113370954	0.346726935	-0.026273722	0.012654708
Inflation Rate	0.559810276	0.916473667	0.610830727	0.584478773	-2.356817958	3.47643851

Table 23: Regression Analysis of International Trade and Inequality In Somalia
Source: Field Survey, 2020

However, a closer look at the coefficient analysis indicate that there is a negative correlation between GDP Per Capita and inequality in Somalia. Implying that whiles GDP Per Capita increases, inequality levels increase, thus it has some level of influence on bridging the gap in income levels in the country. See Figure 45 to 47.

Figure 45: Line Fit Plot for Trade Openness and GINI Index in Somalia
Source: Field Survey, 2020

Figure 46: Line Fit Plot for GDP Per Capita and GINI Index in Somalia
Source: Field Survey, 2020

Figure 47: Line Fit Plot for Inflation and GINI Index in Somalia
Source: Field Survey, 2020

6. Discussion, Conclusion and Recommendations

6.1. Introduction

According to Saunders et. al (2009), it is critical to extract and synthesize the results analysis of a research survey in manner that explains the research objectives vividly. Chapter six of this project report is dedicated to discussing the research findings towards understanding the performance international trade activities and poverty situations in Bangladesh in order to unravel and explain the real underlying issues of international trade activities and policies affect poverty in both countries. Some recommendations are also put forth to optimize trade practices as well as to direct scholars on future research implications.

6.2. International Trade Performance in Bangladesh and Somalia

In the results section of this research, a dynamic regression analysis of international trade performance and poverty levels in Bangladesh and Somalia are presented while exploring the impact of trade on GINI Coefficient values. Key parameters tested include trade openness, GDP Per Capita, Inflation rates, Poverty gap and Poverty Incidence. The overarching aim was to understand the impact these variables of trade openness have on poverty levels. With a working a null hypothesis stating that: There is no significant relationship between each international trade parameter and, first on poverty gap and second on poverty incidence in Bangladesh and Somalia, the results are summarized and discussed as follows.

Regression results on Bangladesh indicated quite a different trend from the null hypothesis of this research: specifically, trade openness (0.0066) and GDP per capita (0.0086) but not inflation were found to significantly influence poverty gap. The findings of this study are inconsistent with the findings of Agusalim (2017) who used export and import value, gross domestic product, income per capita, open unemployment rate (OUR), and poverty rate (POVR) in Indonesia during 1978-2015, based on the vector error correction model and found that, trade openness has no significant impact on poverty gap unless applied over a long period of time. The implication here is that; the element of time lapse is critical if trade openness must have any significant reductions in poverty levels. On the other hand, several researchers have presented findings that are consistent with the current one. For example, Ozcan and kar (2016), Okungbowa and Eburajolo (2014), Oyewale and Amusat (2013), and Fischer (2003) found that enhances economic growth and transformation which in turn decrease poverty and hence poverty gap. The logic here is that as trade is made more open in Bangladesh, GDP per capita gets better and significantly impacts poverty gap. The current study further reveals that, trade openness and

inflation rates in Bangladesh has no significant on poverty incidence except for GDP per capita. This finding is thought provoking as it denounces the general notion that good inflation rates and trade should translate into prosperity for citizens and of course reduce poverty headcount. It is possible that an extraneous variable and not inflation can impact poverty incidence. This confirmed by Wanka (2014) who found a strong relationship between lower level of education and higher prevalence of household poverty. By implication, the lower the level of education, the higher the values of poverty incidence. This is further supported by the findings of Goff and Singh (2014) who opined that, trade openness can only reduce poverty gap and incidence under the conditions that educational levels are high, institutions are strong (law and order appropriately enforced), and financial institutions strong.

As we have seen in Bangladesh, trade openness and GDP per capita significantly impacts poverty gap but the reverse seems the case for results on Somalia as inflation rate is found to rather have a significant influence on poverty. Inflation rates prove to have very crucial explanations to the status of poverty gap and poverty incidence. Per the results of the regression analysis of international trade and poverty in Somalia, trade openness and GDP Per Capita international trade parameters do not have any significant influence on poverty gap but inflation rates do have real influence on poverty gap. This finding is congruent with that of Easterly and Fischer (2001) who found that inflation affects the poor more than the rich in any economy hence the poor are more likely than the rich to complain of inflation as a national problem. They further emphatically state that inflation reduces the real income of poor people. With regards to the impact on poverty incidence on the other hand, again trade openness, GDP Per Capita and inflation rates do not reflect appreciable statistical relation with poverty incidence. This therefore implies therefore that Somalia has very weak trade and economic parameters which is causing this trend of inflation adversely impacting poverty gap and incidence. The Null hypothesis is strongly retained as none of the three variables measured had any real effects on poverty incidence. It must be mentioned that while there exist a negative relationship between the specified international trade parameters and poverty gap, inflation rate variables seem to better explain variations that may occur in poverty gap variables. These variations are observed from inflation rates are attributable to trade laws, education levels, and other extraneous factors (Goff and Singh, 2014). The analysis therefore means that, a unit change in inflation rate implies highest decrease in poverty gap levels in Somalia, as compared to decreases in poverty gap levels that results from unit changes in trade openness and GDP Per Capita. In conclusion, the impact of international trade on poverty incidence or head count is almost non-existent: this is to say, imports and export operations in Somalia did not provide an explanation for changes in poverty headcount. The reverse is the case in Bangladesh

6.3. Poverty situation in Bangladesh and Somalia

As a concept in international trade and economics, poverty has been extensively researched on in relation with other important variables. Poverty is not a phenomenon for only least developed countries as according to literature, every country has a poverty headcount rate. Bangladesh and Somalia which are the focus of this research are both classified as least developed or lower-middle income countries. The following paragraphs provides a discussion and synopsis of the levels of poverty in these countries with a focus on poverty gap and headcount as well as inequality of income distribution.

The World Bank (2013) admits that Bangladesh has performed extremely well economically which resulted in the decline of consumption-based poverty rates between the year 2000 and 2010. In more details, poverty rates improved drastically during this period with an average of 1.74% annually. Between 2000 to 2005, poverty rates in Bangladesh declined by 1.78% and 1.70%. The implication is that many people are now able to afford feeding on daily basis. It is therefore clear that, the vicious cycles of shock in 2007 and 2008 did not have a significantly negative impact on the agenda to reduce poverty (Abdallah, Wahid and Sharif, 2012). Data from the world bank as displayed in chapter 4 also shows that, the number of poor people in Bangladesh reduced from 63million to nearly 47million between 2000-2010: that is 55million by 2005 and 47million in 2010. The world bank further reports that number of people living below the poverty line in Bangladesh dropped to 21.8% in 2018 from 24.3% in 2016; also, the proportion of the employed population below \$1.90 purchasing power parity per day dropped from 14.6% in 2016 to 9.2% in 2018. Bangladesh is still a developing nation: in fact, a lower middle-income country but at this rate of steady economic growth and poverty reduction through international trade, one can justifiably project that Bangladesh will reach middle-income nation status in a few years. A noticeable and quite worrying trend in poverty levels in Bangladesh is that as the country continues to grow steadily and poverty situation improves, rural areas experience a slower pace of improvements as compared to the urban areas. This could be attributed to inequitable distribution of national resources.

In Somalia which is also a middle-lower income country, similar and varying poverty trends to Bangladesh and also discovered. Generally, a chunk of the population in Somalia are poor and the percentage of the few non-poor people are progressively being plunged into severe poverty. A world bank report compiled by Pape (2017) intimates that poverty in the Somali population ranges from 26% to 70% with the overall poverty gap itself standing at 22% at \$3.20 a day (2011/\$ PPP) poverty line. Between 2013 and 2016, poverty gap in urban and rural areas reduced from 20% and 29% to 19% and 24% respectively. There is gross disparity in consumption among the poor in Somalia as the severity of poverty is estimated at 11.4%. More than half of the population (57%) in a region like Mogadishu and 26% of those in the North East region live below the poverty line while reduction of poverty rate has been very slow over the years. The recent droughts in Somalia has worsened the situation by pushing many already poor people into extreme poverty as reported by the world bank (2018). A clear consequence of this situation will be insecurity in food and water and low education levels among others.

Comparing the poverty data of Bangladesh to Somalia clearly shows some similarities. First, rural areas in both countries continue to lag in any forms of improvements in poverty rates experienced. Also, there is inequality in the distribution of resources in both countries. Unlike Bangladesh, there is a relatively wider spread of poverty in Somalia coupled with a moderate poverty gap which makes the goal of overcoming poverty in Somalia even more difficult. Bangladesh on the hand is still growing steadily despite the economic blows in 2007/2008 and has gradually reduced poverty since 2000 in a steady manner. It is also noticeable that, institutions in Bangladesh are relatively stronger than those in Somalia and also literacy rate in Somalia is lower than in Bangladesh. These are other indicators that can adequately explain the different levels of poverty in both countries and how they are faring. From the displayed data, Bangladesh is more open to trade than Somalia and this could be another reason for better GDP per capita and steadily reducing poverty incidence when inflation and other variables are controlled for.

6.4. Impact of International Trade on Poverty Levels in Least Developed Countries with Emphasis on Bangladesh and Somalia

The impact of international trade on poverty levels in this research is measured based on poverty gap, poverty incidence, and inequality in both Bangladesh and Somalia through a cross-country regression and GINI analysis. In Bangladesh, the impact of international trade on poverty gap as shown in the regression analysis results shows trade openness and GDP per capita values way below the common Alpha level while inflation values were higher. It was therefore concluded that a unit change in trade openness and GDP per capita in Bangladesh significantly decreases poverty gap unlike inflation that demonstrated a positive relationship with poverty gap. To elucidate further, the higher the value of inflation in Bangladesh, the higher the poverty gap: on the other hand, more trade openness leads to reduction in poverty gap. The activities of import and export including changes in consumer prices in Bangladesh did not determine poverty headcount: in essence, international trade does not necessarily impact poverty incidence in Bangladesh. However, the nominal GDP values as distributed among the population show a non-negligible relationship. It must be mentioned that negative coefficient values of trade openness and GDP per capita were recorded while the actual values of these variable were way above Alpha. What means is that, with increases in trade openness and GDP in Bangladesh, poverty incidence decreases. By implication, these two variables are crucial for reducing poverty incidence in Bangladesh relative to emphasizing on inflation rates. GINI Coefficient values in Bangladesh shows a decreasing income inequality at a 1.5% average over the past 15 years: the steady growth of international growth parameters like trade openness and GDP per capita is gradually fixing the issues of inequality in Bangladesh. In conclusion, trade openness in Bangladesh is a sure predictor of improved income inequality rates in Bangladesh.

In Somalia, international trade (trade openness and GDP Per Capita) parameters do not have any significant influence on poverty gap but inflation rates do have real influence on poverty gap. Also trade openness, GDP per capita, do not have significant impact on poverty headcount in Somalia. A critically important observation on trade and poverty in Somalia is that a unit change in inflation rate translates into a highest decrease in poverty gap levels while a decrease in poverty gap results from unit changes in trade openness and GDP Per Capita. From findings, analysis and observations, it is safe to say the impact of international trade on poverty incidence in Somalia is virtually non-existent: that is to say import and export operations and changes in consumer prices did not explain the level of poverty headcount in Somalia. Perhaps other factors like poor education, natural disasters like the drought in Somalia including inequalities can account fully for the poverty levels in the country. GINI results on Somalia shows no real impact of trade openness, GDP per capita or inflation on income inequality. Even though there are fluctuating differences of about 15% decrease over the last 15 years, it is concluded that, trade openness, GDP per capita, and inflation do not account for income inequality in Somalia.

6.5. Recommendations for International Trade Efficiency, Economic Growth and Poverty Reduction

Based on the study findings, the following are recommended as measures to facilitate trade efficiency, economic growth and reduce poverty in Bangladesh and Somalia especially, but for least developed countries in general. First, it is important for Bangladesh to continually measure and closely monitor its trade openness and GDP Per Capita indicators in their quest to reduce poverty gap, and more on GDP Per Capita to reduce poverty incidence. Their trade balances should be improved by expanding export related activities and operations whiles reducing import activities to the import of production input materials instead of finished products. To reduce inequality in Bangladesh, strategies should focus on improving GDP Per Capita. The government must support local, small, medium and large enterprises to expand their trade activities especially with input resources like funds.

Somalia on the other hand must develop and implement inflation reduction strategies in order to minimize poverty gap. It is important for the Federal government of Somalia to develop temporary monetary policies that sees an increase in interest rate and reduction in demand. The government should also control money supply into the economy. Finally, wages control coupled with higher income tax could reduce spending and inflationary pressures in the economy. All of these can assist in bringing poverty gap under control. Again, it is also necessary for Somalia to concentrate on improving their GDP per capita in order to reflect reductions in poverty incidence and income inequality. To achieve this, the government should focus on developing the educational levels and skills of its populace to enable them produce new products, develop their entrepreneurial abilities and earn higher income. In addition, the government should expand infrastructural facilities and create new ones including transportation, technology and telecommunication systems, which would help facilitate trade activities.

In general, for least developed countries to penetrate and become competitive on the international market, there is a need to achieve favorable trade balances. Least developed nations should explore their available natural resources to their comparative advantage by first producing to meet domestic market needs. The import of finished goods should be discouraged in order to empower local producers and limit the competition from foreign products. This would then build

their capacities to export to other countries for foreign income. Another crucial requirement is access to funding. Governments in least developed countries should focus on empowering their local banking firms through favorable licensing and operational policies in order to limit the reliance on foreign credit facilities. These local banks should be dedicated to providing loan facilities for small and medium scale enterprises. Furthermore, it is important for least developed nations to also leverage the immense benefits that technology and management information system has to offer international trade processes. To this end, e-commerce systems cannot be overemphasized in facilitating order processing and delivery of goods and services.

Finally, it is also recommended that least developed countries should adopt trade and poverty analysis models that would help in monitoring critical indicators in real time, in order to measure policy impact on key variables, measure performance and inform further policy direction. In so doing, they can develop and implement appropriate measures to ensure economic growth and reduce poverty levels. The following international trade and poverty analysis model is proposed for least developed countries (Figure 48). The model captures the critical aspects of international trade performance and overall poverty reduction.

Figure 48: Proposed International Trade and Poverty Analysis Model for Least Developed Countries
Source: Author, 2020

6.6. General Conclusion

International trade has been globally accepted as a tool to grow economies and promote equitable development in nations being it developed or developing: in fact, a plethora of research have emphasized the critical role of international trade in poverty reduction. There are however several other equally important factors that affect poverty levels in a country but international trade presents a holistic platform to address poverty issues for socioeconomic development. This research sought to understand the impact of international trade on poverty levels in Bangladesh and Somalia. Poverty gaps and poverty incidence were the main measured parameters of poverty used for the cross-country regression analysis. The impact of trade openness and GDP per capita on poverty levels in both countries were checked. The trade performance of Bangladesh and Somalia were also analyzed and discussed extensively. It was therefore concluded that a unit change in trade openness and GDP per capita in Bangladesh significantly decreases poverty gap unlike inflation that demonstrated a positive relationship with poverty gap but in Somalia, international trade does not have any significant influence on poverty gap but inflation rates do have real influence on poverty gap. In light of using trade for sustained economic growth, developing countries like Bangladesh and Somalia must engage in mutually beneficial trade agreements. Also, important areas where further trade openness may have some significant impact on the agenda of poverty reduction should be mainly in agriculture, services, and textiles. Bangladesh is on track to further reduce poverty gap and poverty incidence but must ensure that the rural areas are equally alleviated. Somalia on the other hand has a lot to do in its

agenda of alleviating poverty through international trade considering the widespread rates of poverty headcount and average poverty gap.

6.7. Recommendations for Future Study

Whiles this research focused on assessing the impact of international trade on poverty levels and inequality in least developed countries using Bangladesh and Somalia as a form of case studies, using the standard cross-country regression analysis model, it is implicitly implied that future research should specifically account for the possible reasons for the observed relationships between the variables. Future works should also consider expanding the dynamics of cause and effect in international trade practice, poverty levels and income distribution across any geographical jurisdiction.

7. Dedication

I dedicate this project to my late father Elmi Yusuf Omiwhom, to this day, I miss so very much. I wouldn't have been able to do this without you. I also dedicate this dissertation to my many friends and sisters who have supported me throughout the process. I will always appreciate all they have done.

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