Research Article

Effects Of The World Trade Organization's Initiatives On Trade Facilitation: A Case Of Malawi's Agricultural Sector

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ABSTRACT

Trade facilitation (TF) in the present unprecedented global pandemic disruptive business environment plays a key role in reviving the regional economy. In developing countries, particularly in Southeast Africa, regional trade strategies are essential to restore and revive their economies. TF requires periodic market intelligence information and stakeholder coordination to overcome an unprecedented turbulent business environment. TF measures are the prime rationale for the World Trade Organization (WTO) deliberations and agreements with member countries to expedite movement and clearance check across the borders. This article examines WTO initiatives for TF, particularly in the case of the Malawi agricultural sector. The target respondents are managers and officers involved in the trade development of the Malawi agricultural sector. The designed questionnaire is pre-tested with practitioners, consultants and academicians, and the respondents' ideas and views (data) have been captured through a survey method using Likert scale type questions. The valid sample for the study is 120, and correlation and regression are conducted to test the statistical significance and their effects on TF in the region.

Keywords: Malawi agricultural sector, global pandemic, WTO initiatives, trade facilitation

1. INTRODUCTION

The World Trade Organization (WTO) as an international trade regulation and facilitation institution has taken several trade initiatives during the last two decades (2000–2019). Implementation of the trade facilitation (TF) has taken shape in the right direction with unstinted determination from 2017, and it is a milestone achievement for the member countries that signed the TF accord and agreement. Out of the total 193 member countries in WTO, the trade facilitation agreement (TFA) has been signed and ratified by 141 member countries. The TFA involves various trade provisions, trade strategies, aid and external assistance to support the member countries in the process of implementing TF measures and strategies. During the recent OECD-WTO's monitoring and evaluation mechanism, around 62 developing member countries had ratified TF as an essential trade tool and priority in building trade capacity mechanism (OECD, 2019). The TF support program of the World Bank is classified as one of the prime vehicles for TF implementation through which the member developing countries and least-developed countries (LDCs) are provided continuous support to achieve the laid-down trade objectives. The elements of customs clearance (CC) and border-check (BC) play a pivotal role in implementing the TF measures in the region. The TF negotiations held during WTO's Fourth Ministerial Conference in Doha, Qatar (also known as Doha Development Agenda), in November 2001, was a major

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remarkable trade initiative. Much emphasis was laid on the role of governments of developing countries to formulate and implement trade policies to achieve TF in the region.

In Malawi, from time immemorial, the agricultural sector has been a part of the cultural fabric of the masses. Notwithstanding, agriculture has been the bedrock of livelihood for the majority of Malawians to meet their food security needs and used for trading purposes stretching back to the last century. For all intents and purposes, international trade is a manifestation of the global economy. Nonetheless, a case in point (Hoekman et al., 2017) demonstrated the effectiveness of the benefits of agricultural trade with the application of the machinations of regional facilitation in the sector. Therefore, the agricultural sector is and continues to be critically important to the development agenda for Malawi, now and for many generations to come. Agriculture has accounted for between 39% in the 1970s to around 26% in 2019 of the economy's gross domestic product (GDP) and 80% of export earnings (World Bank, 2017).

Malawi is a member of the Common Market for Eastern and Southern Africa (COMESA), the largest regional economic institution comprising member states mostly from eastern and southern Africa. COMESA is a free-trade area (FTA) with 19 member states and has launched a customs union in 2009 to foster regional trade and economic integration. The COMESA FTA allows participating nations access to the larger regional expansive market that includes the East African Community (EAC) and the Southern African Development Community (SADC) through what is known as the COMESA–EAC–SADC tripartite arrangement. This mechanism of tripartite FTA propagates the removal of non-trade barriers and the overall reduction of tariffs along and across the borders of the member countries. COMESA also has recently implemented a simplified trade tool that encompasses numerous TF measures. The COMESA FTA was an outcome of the African Union's development agenda plan 2063. This action plan called for expediting the harmonization of the several regional economic communities on the continent. It also promoted the establishment of three pillars, namely, market integration, infrastructure development and industrial development. Therefore, the vision here was to realign trade and transport facilitation measures and policies among and within these regional trade blocs.

The disruption of international trade supply chains due to the COVID-19 pandemic cannot be overemphasized, due to global trade's dependence on it to drive economic growth. It accounted for about 53% of LDCs' GDP in 2018 (World Bank, 2018). Notable, 33 of the World's 47 LDCs are found in Africa, and the catastrophic effects of trade-restrictive practices have had a dampening effect on economic growth, productivity, job losses, and reduction of national tax revenues and closure of many small-scale businesses. To this end, given that a majority of the member states of the regional groupings (SADC and COMESA) depend predominantly on the export of unprocessed commodities, Malawi has experienced a disastrous effect on export revenue receipts (Jayaram et al., 2020). Most of these nations in the eastern and southern regions of Africa rely on critical inputs from developed economies to generate domestic production.

The present article examines the country Republic of Malawi, the extent of TF implementation and its influence on regional development with a focus on the agriculture sector. The aid for trade component is also an important capacity-building mechanism that supports the trade challenges in the region. It is also an instrument to ensure that particularly LDCs are assisted to build supply-side capacity and required trade-associated infrastructure to implement WTO agreements for their beneficiation.

2. LITERATURE REVIEW

TF as an emerging trend in international trade is all set to ensure strict monitoring, vigilance, BC and clearance of goods between the origin and destination ports of the member countries. Many trade researchers and consultants have contributed to the area of TF and its role in facilitating the hassle-free movement of goods across borders of the regions (Wilson et al., 2003; Portugal-Perez & Wilson, 2009; Mbekeani, 2010; Portugal-

Perez & Wilson, 2012; Hoekman et al., 2017). TF in the continent of Africa now emerges as the focus point of trade strategy in view of coordination delays in product delivery and asymmetry in supply chain partners' collaboration (Yakop & van Bergeijk, 2011). The BC and clearance delays are sure to affect the south-south regional trade severely, and TF by all the stakeholders and governments is duty-bound to resolve the trade clearance issues within the stipulated period (Afesorgbor, 2018). The complexities involved in border control checks and CC further dissuades organizations and member countries involved in international trade. To resolve the complexities, it is inevitable for governments and policymakers to incorporate TF parameters in their long-term policy formulation and implementation at various levels in the regions. The WTO's (2013) TF measures are primarily aimed to facilitate and expedite the BC, clearance and movement of goods within the stipulated period across the member countries border regions.

In a broader sense, various facilitation measures and mechanisms are involved in goods transit, intermodal transport, BC, clearance, insurance and legal procedural documentation in compliance with WTO's TF norms (Buyonge & Kireeva, 2008; Portugal-Perez & Wilson, 2009; Freund & Rocha, 2011; Moïsé et al., 2011; Rippel, 2011; Narayanan et al., 2016; Sakyi et al., 2018). World Bank (2016) revealed that Malawi exporters are generally competitive in the regional market in comparison to other players from member states. The portfolio of its exportable agro-products is relatively diversified compared with other countries in the SADC region. However, it is afflicted with low levels of diversification of products when compared with other developing nations outside the region. This is attributed to the fact that it has been focused on the production and export of a few major products, for instance, tobacco, tea and sugar to the markets in the United States, Europe, Asia and some key trading partners on the African continent.

The WTO's TFA entered into force after ratification by two-thirds of the membership, which included the Southern Africa region, Botswana, Lesotho, Madagascar, Mauritius, Mozambique, Seychelles, Swaziland and Zambia. Malawi was in a category of countries that notified the WTO of its intention to ratify the agreement. The report noted that TF was considered critical in the realm of regional integration efforts by the SADC and COMESA as outlined by the commissioning of the SADC Trade Facilitation Programme. The SADC TFP blueprint had called for a harmonized approach to meeting the recommendations of the WTO TFA for use by SADC member states (USAID, 2017).

Malawi has implemented key trade policy reforms over the last decade power with the sole purpose of assisting the country to improve its macroeconomic status and exponentially grow in its export base. This has included promoting foreign direct investment, addressing imbalances and market distortions while providing a stable government tax revenue base and promoting inclusive growth. However, the country's economy still continues to be narrowly based on agriculture and tobacco the mainstays of the economy, accounting for 60% of export earnings, highlighting the need for diversification (African Development Bank, 2013, 2012).

Malawi has been a member of the WTO since 1995. The economy is relatively open to trade and investment and imposes no restrictions on foreign ownership, size of the investment, source of funds or the destination of the final product. The average MFN applied tariff in 2014 was 12.7% with agricultural imports facing a higher average rate (18%) and non-agricultural imports facing a slightly lower average rate (12%). Malawi as a member of the regional trade agreements, including the COMESA and SADC, has aligned its common external tariffs with COMESA requirements and generally applies no customs duties to imports from COMESA countries. This is also partly applicable to other preferential trade arrangements, such as the African Growth and Opportunity Act, which permits Malawian textiles and apparel for duty- and quota-free market access to the United States, and the Everything-But-Arms Initiative, which is especially beneficial to Malawian exports of tobacco, followed by sugar and tea, for duty- and quota-free market access to the European Union (WEF,

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2014).

In the aftermath of the pandemic, many advanced and emerging economies have reacted by implementing what can be termed as "knee-jerk" measures or inward-looking nationalist policies to boost and promote national domestic production in strategic industries and essence shutting out LDCs, with African nations particularly being affected. Big economic players like the United States and Japan and maybe India to some extent have doubled efforts to reduce dependency on Chinese supply chains (Chadha, 2020). This scenario was also exacerbated by many nations deploying differential sustenance measures towards the origination of imports hampered by the COVID-19 in the context of health and sanitary standards in the afflicted countries.

In the present article, the analysis is limited to the impact of WTO's initiatives on TF in the region. The country Republic of Malawi is taken to examine the BC, transportation system, timeliness in the movement of goods and documentation required for clearance of consignments across the frontier borders. The World Bank's Doing Business focuses on the TF parameters implemented by the member countries during the course of goods transit within the stipulated period across the frontiers.

2.1 Hypothesis formulation

Ha: There is a significant positive effect of supply chain responsiveness on regional TF.

Ha1:   There is a significant positive effect of supply chain planning on regional TF.

H01:   There is no significant positive effect of supply chain responsiveness on regional TF.

Hb: There is a significant positive effect of infrastructure development on regional TF.

Hb1:   There is a significant positive effect of transportation development on regional TF.

H02:   There is no significant positive effect of infrastructure development on regional TF.

Hc: There is a significant positive effect of agriculture Infrastructure on regional TF.

Hc1:   There is a significant positive effect of agriculture storage on regional TF.

H03:   There is no significant positive effect of agriculture infrastructure on regional TF.

The present article examines the role of supply chain responsiveness in facilitating the agriculture sector in the Republic of Malawi. The pivotal role of supply chain partners is examined during the course of information sharing and collaboration across the agriculture value chain in the region. The region consists of the total area of the Republic of Malawi and the various sub-regions within the country. Supply chain planning involved in the process of facilitating the agriculture farm produce from the fields to the trading centres is essential for timely documentation processing and clearance at the frontier borders. Infrastructure development plays a significant role in facilitating the transit of the agriculture farm produce from the fields to the agriculture market yards. The agriculture storage and warehousing facilities play a pivotal role in the day-to-day activities and functions of the farmers in the region. There is an immense requirement for cold storage facilities in the vicinity of the farming region for effectively storing, grading, labeling and marketing the farm produce to the target customers. Transportation development is inherent in the movement of farm produce from agriculture fields to the destination point of sale spread across various regions of the country. Effective transportation facilities and connectivity in the region will save time, sustain the freshness of the quality of farm produce, enhance minimum support price and deliver products in the stipulated time to the customers.

The hypothesis is formulated taking the key variables, such as supply chain responsiveness, supply chain planning, infrastructure development, transportation development and agriculture storage, into consideration to analyze the influence and effects on the dependent variable TF in the region.

Figure 1 *Research Framework*
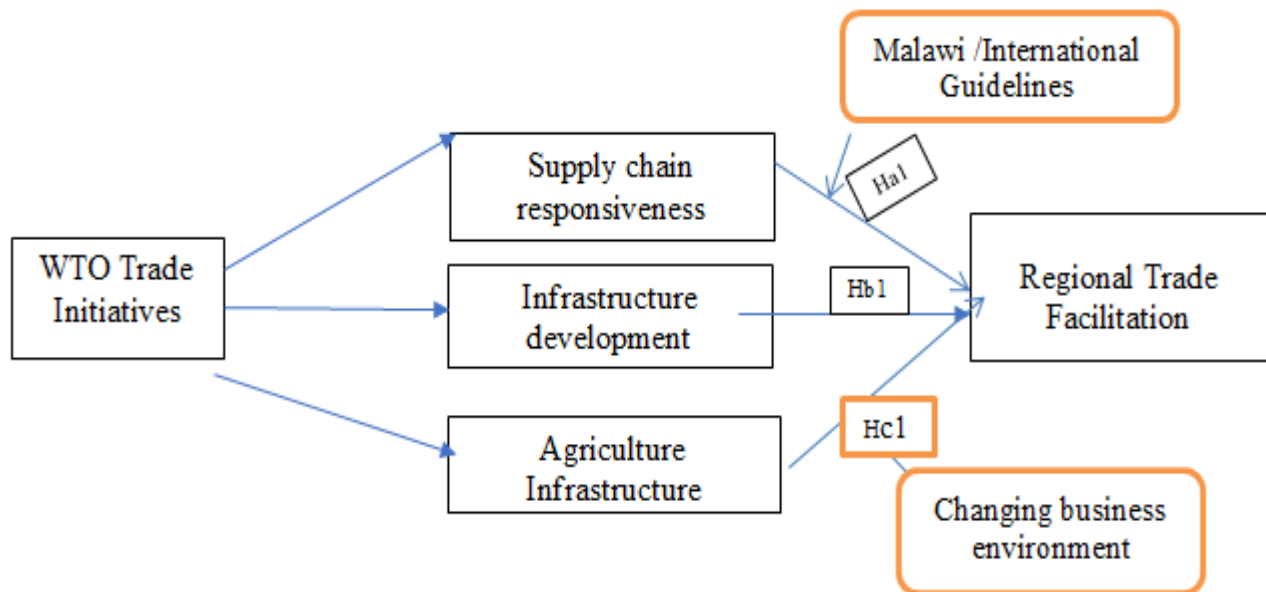
Source: Author

The above research framework exhibits the role of 15 factors grouped into 3 independent variables, such as supply chain responsiveness, infrastructure development and agriculture infrastructure. The intervening variables are taken as government and international institutions' compliance norms and disruptive innovations in the market place. All the research questions related to independent variables are grouped into respective constructs and dependent variable taken as regional TF. International institutions, namely, World Bank, WTO, United Nations' Conferences on Trade and Development (UNCTAD), government of Malawi compliance procedures and Norms in the proposed research framework. The changing international business environment characterized by the present COVID-19 pandemic, disruptive product innovations and infrastructure operations restrictions are taken into consideration as intervening and influencing variables on dependent variable regional TF. The trade guidelines and regulations set by Malawi for TF in the region are also taken as intervening variables as exhibited in the research framework.

3. RESEARCH METHODOLOGY

Independent variables identified for the study are supply chain responsiveness, infrastructure development and agriculture infrastructure and dependent variable as regional TF. The intervening variables are the changing business environment regulations and government/international guidelines, namely, WTO guidelines.

The respondents for the present research study are select logistics companies operating in Delhi NCR. The chief executives and managers who are in charge of logistics and supply chain operations are interviewed by means of a structured questionnaire pre-tested by consultants, academicians and industry practitioners. All the identified 18 factors are grouped into 6 clusters, namely, e-procurement, circular economy, supplier coordination, systems innovation, information sharing and digital logistics. Supply chain performance is taken as the ultimate dependent variable to measure all the factors (18) influenced through their respective clusters (6) in organizations. The contents identification and formulation into a well-structured questionnaire play a pivotal role in the thorough examination of the essential influencing factors, framed in a particular sequence to finally achieve the objectives of the study through a well-designed questionnaire (Nunally, 1978). The data is collected by the survey method, and finally, the valid sample for the study is taken as 120. The Likert scale

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based model has been used to capture the data from the target respondents, and further data validity and reliability analysis have been conducted with the final valid sample of 120 valid questionnaires.

Table 1 *Reliability Analysis, Mean and Standard Deviation (SD; N = 120)*

S. No.	Variables	Mean	SD	1	2	3	4	5	6	7
1	Supply chain responsiveness	4.2	0.62	(0.65)						
2	Supply chain planning	3.8	0.60	0.42	(0.70)					
3	Infrastructure development	4.0	0.64	0.62	0.40	(0.65)				
4	Transport development	4.0	0.60	0.52	0.55	0.60	(0.62)			
5	Agriculture infrastructure	3.5	0.60	0.55	0.60	0.65	0.60	(0.62)		
6	Agriculture storage	4.0	0.62	0.65	0.60	0.55	0.60	0.65	(0.60)	
7	Regional TF	4.0	0.62	0.50	.46	.45	0.60	0.62	0.55	(.68)

The above table exhibits the values of mean, standard deviation (SD) and reliability of the independent variables and dependent variable regional TF. All the independent variables are found to be intercorrelated with $P < 0.01$, and Cronbach's alpha values are mentioned in the parenthesis.

Table 2 *Mean, SD, Correlation and Chi-square Values (N = 120)*

S. No.	Variables	Mean	SD	r	Chi-square
1	Supply chain responsiveness	40	30.254	0.42	2.546
2	Service quality	25	7.449	0.35	1.765
3	Timely delivery	18	13.716	0.40	2.612
4	Collaborative planning	21.25	13.615	0.35	1.834
5	Information sharing	19	15.781	0.60	2.142
6	Infrastructure development	17	5.964	0.70	2.113
7	Connectivity	18	8.380	0.32	1.614
8	Quality roads	20	7.041	0.50	1.724
9.	Market information systems	21.50	8.052	0.60	1.856
10.	International norms and compliance	20.65	7.586	0.52	2.305
11	Agriculture infrastructure	40.5	6.363	0.50	1.812
12	Cold storage infrastructure	19.50	32.50	0.40	1.60
13	Agriculture market yards/places	18.50	11.50	0.36	1.625
14	Product grading and labelling	15.60	12.50	0.40	1.625
15	Training and Information centres	16.50	13.50	0.45	1.75

The above table exhibits the mean, SD, correlation r and Chi-square values for the 15 select variables as part of the analysis. All the identified variables are categorical in nature and relationship; hence, Chi-square analysis is performed to observe the degree of independence and its effects on the dependent variable regional TF. Infrastructure development (0.70), information sharing (0.60) and market information systems (0.60) exhibit a

good degree of correlation followed by international norms and compliance (0.52). The Chi-square values for supply chain responsiveness (2.546), infrastructure development (2.113) and international norms and compliance (2.305) exhibit the importance of these variables in contribution to regional TF.

Table 3 *Independent Variables and Chi-square Values*

a (constant)	Mean	SD	r	p-value	Chi-square values	Results
Supply chain responsiveness	40	30.254	0.42	0.028	2.546	Null hypothesis – Rejected
Supply chain planning	21.50	6.80	0.50	0.035	1.765	Null hypothesis – Rejected
Infrastructure development	17.50	5.96	0.70	0.025	2.612	Null hypothesis – Rejected
Transport development	22.50	7.50	0.55	0.012	1.834	Null hypothesis – Rejected
Agriculture infrastructure	40.5	6.36	0.50	0.019	2.142	Null hypothesis – Rejected
Cold Storage infrastructure	19.50	6.50	0.40	0.029	2.113	Null hypothesis – Rejected

Level of significance $p < 0.05$

Chi-square is often used as a statistical tool to test the fit of the model and to check the stated hypothesis. In the process of calculation of Chi-square values, the degrees of freedom (df) play a vital role in the interpretation of the final outcome. In the process, if the observed Chi-square values are greater than the critical value, the stated null hypothesis may be rejected. Always a small Chi-square statistic value signifies that the observed data fits the expected data relatively well and may be interpreted as a significant relationship exists as per the stated hypothesis. Relatively, a large Chi-square test statistic means that the analyzed data do not fit very well in the model.

When the p-value is less than or equal to the significance level, it exhibits that there is sufficient evidence to interpret that the observed data distribution is not similar to the nature of the expected distribution. It may be interpreted as there exists a significant relationship between the categorical variables.

Table 4 *Regression Analysis Between Independent Variables and Dependent Variables*

Model	Unstandardized		Standardized	R^2	t	Sigma	Results
	B	Std. Error	Beta				
a (constant)	1.406	0.302			4.053	0.000	
Supply chain responsiveness	0.552	0.056	0.16	0.553	3.224	0.000	supported
Supply chain planning	0.526	0.055	0.25	0.421	2.662	0.000	supported
Infrastructure development	0.452	0.058	0.22	0.512	3.556	0.000	supported
Transport development	0.552	0.045	0.20	0.525	2.296	0.000	supported
Agriculture infrastructure	0.482	0.045	0.26	0.452	2.562	0.000	supported
Storage infrastructure	0.453	0.035	0.24	0.482	2.425	0.000	supported
Regional Trade facilitation	0.402	0.052	0.26	0.462	2.362	0.000	supported

Dependent variable: Regional Trade facilitation

Regression analysis is conducted to analyze the effects of independent variables such as supply chain responsiveness, supply chain planning, infrastructure development, transport development, agriculture infrastructure and storage infrastructure on dependent variable regional TF.

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Multiple regression analysis is often used as a statistical tool to determine the level, degree strength and direction of linear relationship among the Independent variables with the dependent variable (Shukla, 2016). All the 6 independent variables are regressed against the dependent variable regional TF, and the extent of variance for $R^2(0.553)$, $R^2(0.421)$, $R^2(0.512)$, $R^2(0.525)$, $R^2(0.452)$ and $R^2(0.482)$ may be interpreted as (55%) of supply chain responsiveness, (42%) of supply chain planning, (51%) of infrastructure development, (52%) of transport development, (45%) of agriculture infrastructure and (48%) of storage infrastructure shall enhance the TF in the region. From the above table, the stated hypothesis may be interpreted as Ha, Ha1, Hb, Hb1, Hc, and Hc1 are having a substantial, significant positive effect and relationship on the dependent variable TF in the region, and hence, the hypothesis are supported and accepted.

4.   RESULTS AND DISCUSSION

As per the statistical evidence, the stated hypothesis Ha, Ha1, Hb, Hb1, Hc, and Hc1 have a significant positive relationship with the dependent variable TF in the region. Noted is the challenging role of supply chain responsiveness, supply chain planning, infrastructure development particularly agriculture infrastructure for storage of agriculture and allied produce and transportation to the market yards within the stipulated period. The findings are in tune with the study and contribution of Sakyi et al. (2017), whereby much focus was on economic development in the region due to TF strategies. The study lays emphasis on supply chain responsiveness, infrastructure development in allied areas related to agriculture produce, storage, grading, labeling and transit to the customers spread across various regions. This further highlights the TF policies of the Republic of Malawi in compliance with WTO's trade initiatives particularly with effect from the year WTO trade deliberations, 2017 (Sakyi et al., 2015).

5.   CONCLUSION

During the last two decades, after several trade deliberations and world conferences, TF has become the focus point of discussion among the member countries of the United Nations. The impact of the pandemic brought about by global external measures led to many Africa countries having to institute lockdown measures that have led to damaging effects on the regional economies. For instance, lockdown restrictions imposed by the South African government led to a negative impact on vital regional trade corridors and supply chains across eastern and southern Africa, being a critical driver of intra-Africa exports. Additional cross border trade has been particularly hampered as it is estimated that 30%–40% of total trade in the SADC and COMESA region is informal cross-border commerce.

Therefore, it is incumbent on TF measures and activities that are critically bound to help developing countries embark with extensive support from international institutions and partners to achieve the objectives and the challenges brought about by the pandemic. The present article highlights the role of WTO in facilitating trade particularly in the country of Malawi. Agriculture is the prime occupation of the people, and the economy is driven by the contribution of agriculture and allied occupations in the region (Shepherd, 2017). The article lays emphasis on the challenging role of infrastructure development in facilitating agriculture development in the region. Supply chain responsiveness among the stakeholders is the key to achieving competitiveness in the dynamic unprecedented business environment. In view of the pace of globalization and technological advancements, customers have become more focused on product quality and timely delivery of their respective work orders and consignments. In the present financial year 2020–2021, with the COVID-19 pandemic, the international trade and business environment have witnessed severe travel restrictions with periodic guidelines released by the governments. This is the major cause of hindrance and delay in product delivery to the end customer (Eric Buatois &Carlos Cordon, 2020). The present unprecedented COVID-19 pandemic has completely changed the international trade business environment scenario characterized by enormous logistics challenges, movement and clearance of goods across borders. At this point in time, customer's role and

decision-making are key factors that determine the organization's growth and survival in the dynamic business environment (Maestrini et al., 2018).

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