Effects of Non-Tariff Barriers on Maize Trade in East Africa: Evidence on Tanzanian Exports to Kenya between 2011 and 2020

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Abstract

Regional Economic Integrations (REIs) drive economic growth within partner states but face hurdles from significant trade barriers, including tariffs and non-tariff obstacles. This study assesses the impact of Non-Tariff Barriers (NTBs) on maize trade in the East African Community (EAC) from 2011 to 2020, using Tanzanian exporters to Kenya. It examines Tanzanian maize export volumes, identifies NTBs faced by exporters to Kenya, and assesses measures taken by Tanzanian and Kenyan governments to address NTBs. Utilizing secondary data, the study employs gravity models and content analysis. The findings show that delays of six to seven hours that raise transportation costs are the key NTBs impact in the study area. Although NTBs exist for Tanzanian maize exports within the EAC, their impact on trade volume is limited. NTBs contribute to increased business costs due to roadblock delays, but weigh-in-motion technology and infrastructure enhancements help mitigate costs. Initiatives like One-Stop Border Posts (OSBPs) and the Electronic Cargo Tracking System (ETS) reduce transit time. Between 2011 and 2020, 232 NTBs were reported, with 199 resolved and a few in the final resolution stages. Recommendations emphasize eliminating non-tariff barriers, with a call for further research on trade dynamics among other East African Community countries.

Subject Areas

Agricultural Trade

Keywords

Exports, Non-Tariff Barriers (NTBs), Maize, Trade Cost, Tanzania, Kenya

1. Introduction

Many global economies have adopted regional integration as a strategy to expedite economic development, a key agenda for many states, and a commitment made to their electorates [1]. Economic growth through free trade is acknowledged to facilitate global economic integration. Nations are turning to regional trading blocs to enhance their global competitiveness [2]. In Africa, there are eight Regional Economic Integrations (REIs) considered as the building blocks of the African Union. These include the East African Community (EAC), Southern African Development Community (SADC), Common Market for Eastern and Southern Africa (COMESA), Economic Community of West African States (ECOWAS), Economic Community of Central African States (ECCAS), Arab Maghreb Union (AMU), the Community of Sahel Saharan States (CEN-SAD), and the Intergovernmental Authority on Development (IGAD).

Regional Economic Integrations (REIs) are deemed crucial in fostering economic growth and development [3]. The East African Community stands out as one of the rapidly growing REIs in Africa, aiming to broaden and deepen economic cooperation among Partner States [4]. The EAC currently comprises seven partner members: the United Republic of Tanzania, Kenya, Uganda, Burundi, Rwanda, South Sudan, and the Democratic Republic of the Congo (DRC). However, trade barriers, encompassing both tariff and non-tariff barriers, have been identified as significant hindrances to achieving the EAC's overall objectives [5]. Despite a decline in tariff barriers due to various trade agreements within the EAC, many member states have introduced alternative protectionist mechanisms—Non-Tariff Barriers (NTBs)—which are dynamic and pose a threat to the free international flow of goods and services [6]. As tariff barriers diminish through multilateral, regional, and bilateral trade negotiations, the importance of non-tariff measures, such as NTBs, becomes more prominent in market access [7].

NTBs encompass market-specific trade and domestic policies, including import quotas, voluntary export restraints, state-trading interventions, export subsidies, countervailing duties, technical barriers to trade, Sanitary and Phytosanitary (SPS) policies, rules of origin, and domestic content requirements. Extended taxonomies also cover macro-policies affecting trade [7]. Most economists agree that Non-Tariff Barriers (NTBs) are detrimental to Regional Economic Integrations (REIs) and trade performance. NTBs are viewed as the primary obstacles to trade performance, diminishing the potential benefits of trade within REIs [8]. According to Mkuna [9], NTBs are considered key impediments to intra-EAC trade, which currently stands below 20%. In the East African Community (EAC), Tanzania and Kenya engage in trade across various sectors, including agricultural goods. Tanzanian exports to Kenya face numerous barriers, including NTBs.

While tariffs within the East African Community (EAC) have largely been addressed, Non-Tariff Barriers (NTBs) persist as Partner States continue to impose them on regional goods and services despite commitments made under various protocols [10]. NTBs, such as non-tariff-related restrictions arising from quo-

tas, import licensing systems, prohibitions, regulations, conditions, or specific market requirements, pose challenges by making the importation or exportation of products difficult and costly [5]. According to Oiro [11], NTBs pose significant obstacles to achieving the common market objectives within the EAC. Business analysts agree that NTBs pose a genuine threat to territorial trade and are particularly detrimental to intraregional trade advantages [12].

Studies by Chebon [13], Okute [14], Kahenu [15], and Mkuna [9] reveal the continued existence of NTBs in the EAC. Baya [6] emphasizes the widespread use of both tariffs and non-tariff barriers by EAC countries, which, when limiting trade among member states, transform into barriers. Maziku [16] indicates that NTBs constrain farmers in Tanzania from accessing markets, with temporary export bans negatively affecting the welfare of producers in rural areas. Despite the EAC Customs Union advocating for the elimination of NTBs, these barriers have significantly impacted East African regional trade, especially during the COVID-19 pandemic, with increased business costs due to border delays and time wastage caused by delays in test result certificates being notable NTBs faced by Tanzanian exporters to Kenya.

While studies like those by Ntara [17], Okute [14], Mkuna [9], and Kahenu [15] have extensively discussed the existence of NTBs in the EAC and their broader effects on trade among partner members, limited attention has been given to how NTBs specifically influence trade volume, especially in the case of maize trade one of the major agricultural products traded between Tanzania and Kenya. Therefore, this study aims to evaluate the impact of NTBs on trade within the EAC between 2011 and 2020, focusing on Tanzanian exporters to Kenya as a case study. Specifically, the study examines Tanzanian maize export volumes, identifies NTBs faced by exporters to Kenya, and assesses measures taken by Tanzanian and Kenyan governments to address NTBs.

2. Data and Methods

2.1. Data

This study adopted a case study design. The research exclusively utilized secondary data obtained from various sources, including published and unpublished documents such as trade imports and exports reports from the National Bureau of Statistics [18] and the East African Community website (https://www.eac.int/eac-partner-states), the Treaty for the Establishment of the East African Community (https://www.eac.int/eac-history), the East African Community Customs Union Protocol [19], the East African Community Elimination of Non-Tariff Barriers Act (https://www.eac.int/trade/internal-trade/elimination-of-non-tariff-barriers), the Current Status on Elimination of NTBs in the East African Community (EAC/ExSTIFI/36/2020), and the 28th EAC Regional Forum on the Elimination of Non-Tariff Barriers. Additionally, data were derived from the Joint Communiqué of bilateral meetings between Tanzania and Kenya, which took place in

various periods and locations: from 28th to 31st January 2018 in Mombasa, Kenya (http://www.foreign.go.tz/), from 3rd to 5th July 2018 in Dar es Salaam, Tanzania (https://www.foreign.go.tz/), and from 23rd to 27th April 2019 in Arusha, Tanzania (https://www.foreign.go.tz/).

The study area selection was based on the significance of maize as the primary food crop in both countries, serving domestic and commercial purposes. The choice was further justified by the substantial maize exports from Tanzania to Kenya and the persistent issues related to non-tariff barriers between the two nations [20].

2.2. Methods

The gravity model was used to assess the performance of Tanzanian maize exports within the East African Community (EAC). The choice of the gravity model was based on its robust explanatory capabilities and simplicity in estimating the effects of economic integration. The East African Community Customs Union implemented a combination of policies simultaneously influencing changes in trade patterns among EAC members and their trading partners. These policies encompassed Common External Tariffs, a gradual reduction of internal tariffs, and the elimination Non-Tariff Barriers (NTBs). The use of the gravity model with dummy variables on membership status was deemed appropriate due to the combined implementation of multiple policy instruments, as opposed to using a trade variation model.

The gravity model posits that the volume of bilateral trade between countries T and K is positively correlated with the size of their economies (X_{TK}) and inversely correlated with the resistance or trade barriers between them (Y_{TK}). The national income (GDP) of T or K, the population size, and sometimes GDP per capita serve as proxies for the size and wealth of the economies (X_{TK}). Variables such as distance between countries, commonality of official languages, and sharing a common border are considered either facilitators or hindrances to trade (Y_{TK}). The distance between markets is often used as a proxy for transportation and transaction costs that influence the costs associated with imports and exports [21].

Following the approaches of Karemera [22], Musila [23], and Sarker and Jayasinghe [24] [25], a reduced traditional gravity model was employed to capture key factors. In this instance, the value of maize exports and GDP were used as proxies for the size of trading partners' economies. Additionally, a dummy variable for sharing a common border and trade costs (distance) between trading partners were considered as resistance variables to capture, respectively, the ease and effects of transport costs on bilateral trade. The empirical commodity-specific gravity model of bilateral trade, fitted into the data, was specified as:

$$X_{tk} = C \frac{Y_t Y_k}{T_{tk}} \tag{1}$$

where X_{tk} is the maize export from Tanzania to Kenya, C is the Constant Pa-

rameter, Y_t is the economic Mass (GDP) of Tanzania, Y_k is the economic Mass (GDP) of Kenya, and T is the Trade Cost between the two countries. The Assumption of the model is that larger countries trade more than smaller ones and trade costs between two trade partners reduce trade between them.

An empirical equation for the basic gravity model

The Empirical equation for basic gravity model is denoted as:

$$\ln X_{tk} = \beta_0 + \beta_1 \ln(Y_t) + \beta_2 \ln(Y_k) + \beta_3 \ln(T_{tk}) + \varepsilon_{tk} \qquad (2)$$

$$\text{Whereas; } \beta_0, \beta_1 > 0; \beta_3 < 0$$

where $\ln X_{tk}$ is the dependent variable, i stands for the i-cross-section unit and T_{tk} for time period for maize export from country i, which is Tanzania, to country j which is Kenya; Y_t, Y_k and T_{tk} are explanatory variables, ε the error term and β is the coefficient to be estimated.

On the other hand, a descriptive analysis was employed, utilizing frequencies and percentages to assess the impact of Non-Tariff Barriers (NTBs) on maize exports. This analytical approach was chosen due to its ability to reveal the magnitude of effects on traders' perspectives. An extensive review and analysis of the literature on NTBs were conducted to examine the actions taken by the governments of Tanzania and Kenya to address NTBs. The primary official source of information was obtained from the EAC Secretariat, supplemented by reports from the Ministry of Foreign Affairs and East African Cooperation, among others.

3. Results

3.1. Tanzanian Maize Export Volumes

3.1.1. Diagnostic Tests for the Econometric Model

Based on the results of the correlation matrix, it was observed that all correlation coefficients were below 0.80. Following Studenmund [26] perspective, it is considered safe to proceed with estimations when the correlation is below this threshold, as there is no concern about multicollinearity. Additionally, given the prevalent issue of non-stationarity in most macroeconomic data, conducting a diagnostic test becomes crucial to ensuring the reliability of the estimation results and subsequent policy recommendations. Therefore, the present study utilized an IPS unit root test for panel data. The outcomes of the panel unit root or Im-Pesaran-Shin (IPS) test were derived from the data encompassing the GDP of Tanzania and Kenya (GDPTK), Trade Cost (Distance) between Tanzania and Kenya (TCTK), and Maize Export between Tanzania and Kenya (TTK). Based on these findings, all variables exhibited significance at various confidence levels (**Table 1**).

3.1.2. Breusch-Pagan Test

Table 2 presents the results of the Breusch-Pagan test, indicating $\text{chi}^2(1) = 0.00$, which was robust; prob > $\text{chi}^2 = 1.0000$. This test was conducted to ascertain the presence of heteroscedasticity in a linear regression model. The Breusch-Pagan test employs a chi-squared statistic with K degrees of freedom. If the P-value falls

below a specified threshold, such as five percent, it leads to the rejection of the null hypothesis, signifying the presence of heteroscedasticity [27]. In adherence to the Ordinary Least Squares (OLSs) assumption that variance should be constant, the identification of heteroscedasticity suggests that the Random Effects Model is preferable. The Breusch-Pagan test results indicate a P-value of 1.0 percent, leading to the rejection of the null hypothesis of homoscedasticity, and thus, heteroscedasticity is presumed. Consequently, based on this analysis, the Random Effect (RE) Model is deemed to be the appropriate diagnostic result.

Table 1. The panel unit root test/the Im-Pesaran-Shin (IPS) test results.

In TTK	Robust			
	Coef.	Std. Err	z	p > [z]
GDPTK	0.6992912	0.2165779	3.23	0.001
TCTK	0			
_cons	9.833991	1.568536	6.27	0.000
Sigma_u	0			
Sigma_e	2.6192616			
Rho	0 (fraction of variance due to u_i)			

Note: TTK—Maize export to Kenya; GDPTK—Economic Mass (GDP); TCTK—Trade Cost (distance) to capital city of two countries.

Table 2. Breusch and Pagan Lagrangian multiplier test for random effects.

	Var		sd = sqrt(var)	
In TTK	6.833921	2.614177	6.860531	2.619262
eu	0		0	

Note: Test: var(u) = 0; $\text{Chibar}^2(01) = 0.00$; Prob. > $\text{chibar}^2 = 1.0000$.

3.1.3. Hausman Test

Table 3 presents the results of the Hausman test, where the obtained p-value of 0.6992912 indicates the acceptance of the null hypothesis that the Random Effects model is preferred. However, it is essential to acknowledge that the utilization of Random Effects was dismissed because it was deemed unlikely that individual-specific effects are uncorrelated with the relevant covariates [28]. Consequently, the Fixed Effect (FE) estimator becomes more appealing, although it should be noted that Fixed Effect is not an ideal model since it does not allow for the estimation of time-invariant variables.

To address this, the researcher followed Hausman and Taylor's recommendation and conducted the "second Hausman test" under the null hypothesis that the preferred model is the Hausman test. The resulting p-value from this test was 0.6951273, which fell below a 10 percent level of significance. This outcome im-

plies the acceptance of the null hypothesis that the preferred model is the Hausman test. Therefore, the estimation for the analysis of the influence of Non-Tariff Barriers (NTBs) on maize trade performance in the EAC for this study is based on the Hausman test. The data utilized in this analysis include variables collected from the GDP of Tanzania and Kenya (GDPTK), Trade Cost (Distance) to the capital city of Tanzania and Kenya (TCTK), and Maize Export to Kenya (TTK).

Table 3. Hausman fixed random test estimate.

	(b)	(B)	(b-B)	sqrt (diag(V_b-V_B))
	Fixed	Random	Difference	S_E
GDPTK	0.1891941	0.6992912	−0.5100971	0.6951273

Note: GDPTK—Gross Domestic Product of Tanzania and Kenya; Test: Ho: Difference in coefficients not systematic; $Chi^2(1) = (b − B)' ((V\_b\text{-}V\_B) (−1)) (b − B) = 0.54$; Prob. > $chi^2 = 0.4631$; Where: b—Constant under Ho, and Ha, obtained from xtrag; B—Inconsistent under Ha, effect Ho, obtained from xtreg; SE—Standard Error adjusted for two cluster in country.

3.1.4. Value of Maize Export

Table 4 and Figure 1 illustrate the volume of Tanzania's maize exports within the East African Community over a decade. Kenya emerged as the primary recipient, accounting for the largest share for the entire ten-year period. Kenya's import share amounted to 163,964,930 USD, equivalent to 76.1 percent of the total EAC imports, which stood at 215,456,905 USD from 2011 to 2020. Following Kenya, Uganda held a 9 percent share, while Burundi, South Sudan, and Rwanda contributed 8.1 percent, 3.6 percent, and 3.2 percent, respectively.

Table 4. Tanzania maize export production to EAC countries (in USD).

| Year	Burundi	Kenya	Rwanda	South Sudan	Uganda
2011	-	321,135	1,810,306	-	429
2012	812,589	21,624,426	594,120	812,589	14,935,806
2013	447,295	5,205,938	1,691,839	477,295	4,720
2014	1,568,447	94,541,204	221,064	1,568,447	1,527,683
2015	878,647	7,265,999	1,405	878,647	125,031
2016	1,266,683	7,254,642	653,315	1,037,864	14,655
2017	221,321	2,015,041	834,546	935,754	-
2018	1,335,894	189,351	97,633	-	-
2019	6,842,780	15,229,219	548,470	616,000	1,460,753
2020	4,100,502	10,507,007	432,865	1,945,602	1,430,692
TOTAL	**17,474,158**	**164,153,962**	**6,885,563**	**8,272,198**	**19,499,769**

Source: http://nbs.go.tz/ (January 2023).
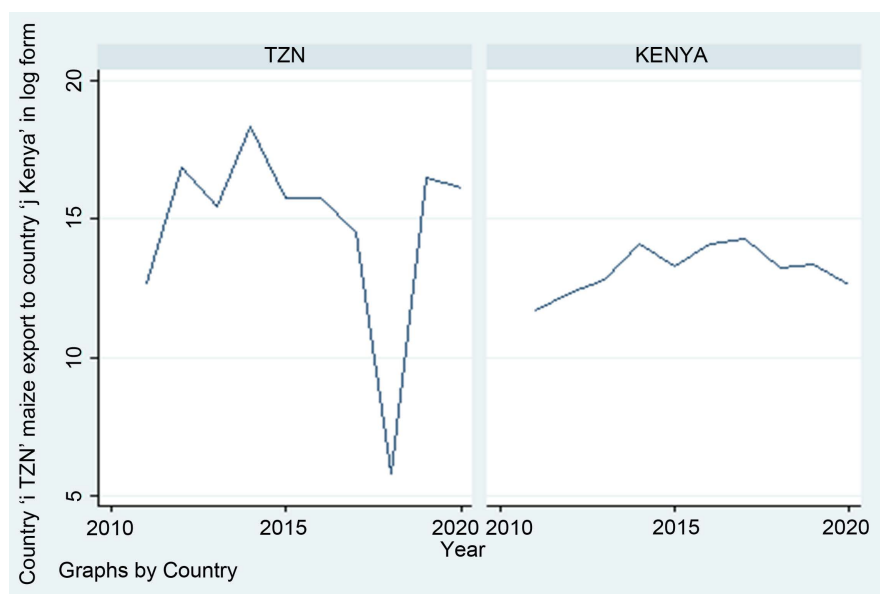
Figure 1. Trend timeline for exports from Tanzania to Kenya.

In 2011, Tanzania experienced a decline in maize export volume to the East African Community, reaching 2,131,870 USD. This reduction was attributed to export bans imposed during the year, driven by poor production. Policy instruments aimed at regulating maize availability and prices, along with significant trade barriers, particularly. Non-Tariff Barriers, posed considerable challenges during this period. This situation resulted in traders being hesitant to engage in substantial export contracts, leading to increased instances of bribery, illegal trade, and a rise in the use of alternative routes, such as the bush "Panya" routes [29].

The year 2014 saw a notable increase in Tanzania's maize export volume to the East African Community, reaching 100,158,255 USD. This upswing was attributed to enhanced maize production owing to favorable weather conditions. Simultaneously, challenges related to weather, specifically drought, in other East African countries increased the demand for maize imports from Tanzania.

In 2018, Tanzania's maize export volume to the East African Community dropped to 1,622,867 USD, reflecting a decline in maize production, heightened trade barriers, especially Non-Tariff Barriers, and adverse weather conditions (drought). These factors resulted in an increased demand for maize within the country, increasing the demand in the foreign market, particularly within the East African Community. Notably, Kenya's import share was 189,351 USD in 2018.

In 2019, Tanzanian maize exports rebounded to 24,697,221 USD due to heightened demand within the East African Partner States, triggered by the lockdowns imposed as a response to the COVID-19 pandemic. This situation led to a decrease in production across the EAC partner states. Kenya's import share in 2019 was 15,229,219 USD, representing 61.6 percent of the total imports by EAC countries.

The overall findings underscore Kenya as the primary importer of maize from Tanzania over the ten-year period, importing a total of 164,153,962 USD, constituting 76.1 percent of the 215,645,937 USD imported by EAC countries from 2011 to 2020. This suggests that, despite the Non-Tariff Barriers faced by Tanzania's maize exports in EAC countries, particularly in Kenya, the impact was relatively modest in terms of the overall trade volume. These findings are in line with Amponsah *et al*. [30] who found that, import and export of maize positively impact maize productivity in the trading partners, hence growth in the maize industry development in the long run.

The diagnostic tests conducted to validate the findings from the gravity model and interpret the econometric model results, particularly the Hausman model and Breusch-Pagan test, were crucial before proceeding with the analysis in SPSS. The outcomes revealed a p-value of 0.6992912, suggesting the acceptance of the null hypothesis that the Random Effects Model was preferable. However, it was important to acknowledge that the use of Random Effects was ruled out, as it was deemed unlikely that individual-specific effects were uncorrelated with the relevant covariates [28]. Consequently, there was a preference for the Fixed Effect (FE) estimator over Random Effects. It is important to note that Fixed Effect is not an ideal model since it does not allow for the estimation of time-invariant variables. Following Hausman and Taylor's recommendation, the "second Hausman test" was employed under the null hypothesis that the preferred model is the Hausman test, resulting in a p-value of 0.6951273, which was below a 10 percent level of significance, leading to the acceptance of the null hypothesis.

The findings indicate that Tanzania is a beneficiary country in the East African Region for maize products, with Kenya being a significant importer. From 2011 to 2020, Kenya imported a total of 163,964,930 USD, equivalent to 76.1 percent of total EAC imports. This suggests that the impact of Non-Tariff Barriers (NTBs) between Tanzania and Kenya has a relatively small effect, given their shared membership in the East African Community, common borders (Namanga, Sirari, Holili, and Horohoro), a shared official language, and similar economies characterized by small-scale farming. Maize, being the primary food crop in both countries, is not only consumed locally but also used for commercial purposes. This implies that trade between Tanzania and Kenya is essential, and resolving the remaining NTBs and enhancing services at border checkpoints will further strengthen this trade relationship.

3.2. NTBs Facing Maize Exports from Tanzania to Kenya

The study also analyzed the impact of Non-Tariff Barriers (NTBs) on maize export traders from Tanzania to Kenya, considering variables such as roadblocks, time wastage, and increased cost of doing business. The results of this examination were as follows.

3.2.1. Roadblocks
The major challenge encountered in the transportation of goods by road was at-

tributed to the presence of police roadblocks. At these roadblocks, commercial vehicles were routinely stopped by police officers at various inter-country points and border crossings, even in the absence of sufficient evidence indicating any suspicious nature of the transported goods. According to data obtained from various reports, the route from Kibaigwa town to Nairobi Markets, including Thika, Marikiti, and Nyamakima, experienced an average of 15 police roadblocks in Tanzania, in contrast to the four observed in Kenya. Additionally, at each police checkpoint, trucks spent approximately twenty minutes undergoing inspections. Along the route from Kibaigwa to Nairobi, there were 19 roadblocks, causing trucks to experience delays of six to seven hours during a single trip.

The findings highlight that trucks traveling from Kibaigwa (Tanzania) to Nairobi (Kenya) encountered delays of six to seven hours beyond the normal travel time due to roadblocks. This delay contributes to increased transportation costs for maize trades and results in time wastage. Other studies have corroborated these findings, indicating that the wastage of time and the associated rise in costs due to delays at police roadblocks and weighbridges add to the overall cost of doing business. This, in turn, impacts the country's competitiveness and its ability to actively participate in East African Community (EAC) regional trade [31].

3.2.2. Time Waste

Weighbridges posed a significant challenge, leading to time wastage. According to an analysis conducted by the Northern Corridor Transit Transportation Facilitation Agency (TTFA) in collaboration with Trademark East Africa (TMEA), it was revealed that before 2015, trucks spent an average of three hours and 42 minutes at weighbridges between Dumila and the Namanga border. Following changes made in 2016, trucks and buses now make stops at Vigwaza (Coast Region), Dumila (Morogoro), Mikese (Morogoro), Makuyuni (Arusha), and Kimokouwa between Longido and the introduction of Brand-New Weighbridge Scales and Weigh-in Motion at Vigwaza, Dumila, and the improvement of the Kimokouwa Weighbridge between Longido and Namanga in Arusha. Currently, buses and trucks spend a total of 20 to 48 minutes to cross one weighbridge. In contrast, before 2016, it took trucks and buses between 1 hour and 15 minutes to 3 hours and 42 minutes to cross a single weighbridge. The calculation of weighbridge crossing time was based on GPS survey data, subtracting the arrival time from the departure time of a truck or bus at the weighbridge. This improvement allows trucks and buses to stop at only three weighbridges, providing a more efficient process [32].

3.2.3. Cost of Doing Business

Border delays are a common concern among transporters in the Region, leading to increased business costs. One key factor identified by the EAC NTBs Regional Monitoring Committee is the lack of coordination in border crossing operations. Previously, the presence of two checkpoints at Namanga, Horohoro, Holili, and Sirari borders between Tanzania and Kenya, particularly during customs clear-

ance, posed a significant challenge. Maize traders had to go through Tanzanian Immigration and then repeat the process on the Kenyan side. Prior to the implementation of One Stop Border Posts (OSBPs), buses spent around 1 hour and 15 minutes, while trucks took almost 1 to 2 days to cross the border, involving two checkpoints on both the Tanzanian and Kenyan sides.

The introduction of the OSBP at the Namanga border in November 2018 aimed to facilitate trade, enhance the movement of goods and people in the Region, simplify procedures, and notably reduce crossing times. Now, regardless of the side they approach from, maize traders and transporters encounter a single checkpoint that handles all administrative tasks, allowing for a seamless border crossing experience. Buses and trucks now spend a maximum of 15 to 30 minutes to cross the border.

The operationalization of OSBPs, including the implementation of the Electronic Cargo Trucking System (ETS), has enabled the Tanzania Revenue Authority to monitor trucks transporting transit cargo without requiring them to report at established checkpoints. This has significantly decreased the time spent by traders and trucks at the borders. OSBPs have effectively streamlined processes, contributing to a general reduction in transit times, thereby facilitating faster and smoother movement of people and services between the two countries. This reduction in transit times ultimately leads to a decrease in the overall cost of doing business [33].

3.3. Measures Taken by Tanzania and Kenya Governments to Address NTBs

The study assessed the measures implemented by the governments of Tanzania and Kenya to address Non-Tariff Barriers (NTBs). This evaluation considered variables such as the number of treaties, protocols, and Acts signed, along with the status of NTBs and the number of Joint Permanent Commission (JPC) agreements. The results of this analysis are outlined as follows.

3.3.1. Number of Treaties, Protocols, and Acts Signed
The major treaties signed to facilitate trade among EAC countries, including Tanzania and Kenya, within the study period, were the *East African Community Customs Union Protocol* and the *East African Community Elimination of Non-Tariff Barriers Act*. These protocols and Acts aimed to liberalize trade between Partner States and form a single customs area with a Common External Tariff (CET). Article 13 of the Customs Union Protocol explicitly recognizes the negative impact of NTBs and seeks to eradicate them in order to promote intra-EAC EAC Trade. The Article stipulates that "Except as may be provided for or permitted by this Protocol, each of the Partner States agrees to remove, with immediate effect, all the existing non-tariff barriers to the importation into their respective territories of goods originating in the other Partner States and, thereafter, not to impose any new". With this mandate, the EAC Secretariat works with the National Focal Points in Partner States to resolve NTBs through the available me-

chanisms in the Region. Accordingly, the EAC has launched several initiatives to monitor and reduce NTBs in the Region. These include the EAC NTB Time Bound Programme (TBP), participation in the Tripartite Free Trade Areas (TFTA), and the development of the EAC NTB Act 2017, amended 2019. These initiatives have resulted in significant progress in monitoring and reducing the number of NTBs in the EAC.

3.3.2. Establishment of the East African Community Time-Bond Programme

Since the launch of the East African Community Time-Bond Programme aimed at addressing and eliminating reported Non-Tariff Barriers (NTBs) to enhance intra-community trade, spanning from 2009 to 2020, a total of 232 NTBs were reported. Remarkably, 199 of these, constituting 85.8 percent, have been collectively resolved. The distribution of resolved NTBs includes 92 in Tanzania, 49 in Kenya, 32 in Uganda, 4 in Burundi, 5 in Rwanda, 1 in South Sudan, and 16 at the EAC level [34].

Out of the newly reported NTBs (3 in Tanzania, 5 in Kenya, 1 in Uganda, 1 in Burundi, and 1 in Rwanda), 11 were addressed during the meeting, and 11 remained unresolved or outstanding (6 in Tanzania, 1 in Kenya, 2 in Uganda, and 2 at the EAC level). The finding in Table 5 indicates that Tanzania is forefront in resolving NTBs, having eliminated 46% of all addressed NTBs from 2009 to 2020, with Kenya following at 24.6%.

Table 5. The East African Community and non-tariff barriers status from 2011 to 2020.

	NTBs resolved	New NTBs reported	NTBS remained unresolved	NTBs resolved during the meeting 2020
EAC	16 (8.1)	0 (0)	2 (18.2)	0 (0.0)
Burundi	4 (2.0)	1 (9.1)	0 (0.0)	2 (18.2)
Kenya	49 (24.6)	5 (45.5)	1 (9.1)	6 (54.5)
Rwanda	5 (2.5)	1 (9.1)	0 (0.0)	1 (9.1)
South Sudan	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)
Tanzania	92 (46.2)	3 (27.3)	6 (54.5)	0 (0.0)
Uganda	32 (16.1)	1 (9.1)	2 (18.2)	2 (18.2)
Total	**199**	**11**	**11**	**11**

Note: The figures in brackets are in percentage. Source: EAC time-bound tables and (EAC/ExSTIFI/37/2020) and the 28th EAC Regional; Forum on NTBs, Nov. 2020.

3.3.3. Number of Joint Permanent Commission (JPC) Meetings

The Republic of Kenya and the United Republic of Tanzania have engaged in bilateral discussions to address unresolved trade barriers. From 2011 to 2020, the Presidents of both countries and their respective Ministers visited each other, issuing directives to their Ministries and Government agencies to conduct a se-

ries of bilateral meetings. In this context, these nations have convened three Joint Communiqués from these Bilateral Meetings, focusing on addressing trade-related issues and enhancing trade relations between them as follows.

Joint Communiqué of the bilateral meeting between Tanzania and Kenya from 28ᵗʰ to 31ˢᵗ January 2018 in Mombasa, Kenya

Following the decisions made during the bilateral trade meeting between the Republic of Kenya and the United Republic of Tanzania held in Dar es Salaam from 6ᵗʰ September to 8ᵗʰ, 2017, senior officials from both partner states (Kenya and Tanzania) convened in Mombasa from 28ᵗʰ January to 31ˢᵗ, 2018. The purpose was to assess the progress in implementing the decisions agreed upon during the September 2017 meeting in Dar es Salaam.

Recognizing each other as significant trading partners, the two states emphasized the importance of facilitating market access for each other's products and services. Various trade-related concerns were discussed during the meeting, including issues such as multiple charges and levies, lack of preferential treatments, delays, inspection fees, and non-payment of suppliers by Uchumi and Nakumatt Supermarkets, slow customs procedures, and the sluggish implementation of relevant East African Community directives. Both partner states called for the effective and timely implementation of agreements reached during bilateral meetings to facilitate the smooth flow of goods and services. The meeting addressed twelve reported issues from Kenya, with five successfully resolved. On the Tanzanian side, fifteen issues were reported, seven of which were resolved, and eight new issues from both Kenya and Tanzania were reported.

The Republic of Kenya and the United Republic of Tanzania have established a target timeframe for resolving most of the NTBs affecting cross-border trade. This decision was reached during a meeting of the Joint Commission on Cooperation (JCC), a bilateral body comprising officials from both countries, created to address issues affecting areas of cooperation.

Joint Communiqué of the bilateral meeting between Tanzania and Kenya from 3ʳᵈ to 5ᵗʰ July 2018 in Dar es salaam, Tanzania

Following the Bilateral Trade meeting between the United Republic of Tanzania and the Republic of Kenya held in Mombasa, Kenya, from 28ᵗʰ January to 31ˢᵗ, 2018, senior officials from both countries (Tanzania and Kenya) convened in Dar es Salaam from 3rd July to 5ᵗʰ, 2018. The purpose of this meeting was to assess the progress made in implementing decisions agreed upon during the Mombasa meeting in January 2018 and emphasize the importance of expediting implementation to facilitate trade and investment between the two nations. Acknowledging the positive outcomes of previous bilateral meetings in resolving various NTBs, the meeting highlighted the need for enduring solutions. Both partner states stressed the importance of the effective and timely implementation of agreements reached during bilateral meetings to facilitate the smooth flow of goods and services. During the meeting, five issues from Kenya and eight issues from Tanzania were reported, and collectively, all thirteen issues from both countries were successfully resolved.

Joint Communiqué of the bilateral meeting between Tanzania and of Kenya from 23ʳᵈ to 27ᵗʰ April 2019 in Arusha, Tanzania

The meeting assessed the advancements in carrying out decisions reached during the Bilateral Trade meeting held in Dar es Salaam from 3rd July to 5ᵗʰ, 2018. Emphasis was placed on the significance of ensuring adherence to the commitments made between the two countries. Out of the 37 Non-Tariff Barriers (NTBs) reported during the meeting, 19 have been successfully resolved, and specific decisions have been made for the remaining 18 on how to address them. Following the meeting, the following agreements were reached:

1) The bilateral meetings will be held quarterly at the senior Officials level and bi-annually at the ministerial level.

2) To fast track the process of harmonization of domestic taxes, levis, and fees.

3) To follow procedures stipulated in the EAC Customs Management Act 2004 and SQMT Act 2016 in the inspection and clearance of goods.

4) Compliance with the rules of origin to be upheld and preferential treatment to be accorded to products that qualify.

5) To enhance the process of clearance of goods, it was agreed that single Customs Territory to be fully implemented by both partners.

6) Regulatory Agencies to engage and address administrative issues whenever they arise before they are brought to bilateral meetings. Regulatory Agencies to meet ahead of quarterly bilateral meetings and Chiefs of Immigration from the two countries to convene a meeting to resolve the Immigration issues between the two partner states.

7) To come up with up with a monitoring and Evaluation framework to measure progress of implementation of issues upon.

Through the initiative led by East African Community (EAC) Leaders, taking into account their directives and decisions from various bilateral meetings, the East African Community Time-Bond Programme was launched. This program aims to eliminate identified and reported Non-Tariff Barriers (NTBs) to enhance trade within the East African Community. This initiative began in 2009, complementing the establishment of a Customs Union in 2005 and the enactment of the EAC Elimination of NTBs Act in 2017, further amended in 2019. The concerted efforts also include ongoing bilateral meetings aimed at addressing unresolved trade barriers.

From 2011 to 2020, a total of 232 NTBs were reported, with 199 of them successfully resolved. The remaining NTBs are currently in the final stages of resolution. This underscores the commitment and endeavors of EAC Leaders in addressing and resolving NTBs to facilitate smoother trade within the community.

3.4. Opinions from Maize Exporters regarding NTBs in Maize Trade

The analysis was based on in-depth interviews conducted through phone interviews, involving major maize traders and truck drivers in Tanzania. The inter-

viewees highlighted several Non-Tariff Barriers (NTBs) affecting their operations within the East African Community, particularly in Kenya.

The identified NTBs encompassed administrative requirements related to export permits for maize and other agricultural products, which are exclusively provided by the Ministry responsible for Agriculture rather than at border points. Additional challenges included unnecessary taxes, primarily excise duty, as well as roadblocks leading to delivery delays. Cumbersome inspection procedures at border points, variations in weighing systems (Tanzania using Axle load while other EAC Partner states use Gross Vehicle Mass), and political constraints where partner states restrict the importation of specific products were also mentioned. Language barriers were highlighted, as most documents are written in English, posing difficulties for some traders in understanding requirements before crossing borders.

The influence of these NTBs can be categorized into two main aspects: time wastage and increased cost of doing business. Cumbersome administrative requirements and additional costs imposed on traders and transporters affect profit margins. The findings indicated that Tanzanian maize traders and transporters face NTBs when conducting business within the East African Community, particularly in Kenya. Surprisingly, some respondents noted facing NTBs within Tanzania itself, including internal regulations and insufficient information on external trade requirements like export and import procedures.

4. Conclusion

The study evaluated the impact of Non-Tariff Barriers (NTBs) on Tanzanian maize trade to Kenya within the East African Community (EAC) from 2011 to 2020. Despite facing NTBs, Tanzania's maize exports to EAC countries, particularly Kenya, remained substantial. Kenya was the primary importer, constituting 76.1% of the total USD 215.6 million imported by EAC nations. The identified NTBs included border and roadblock delays, lack of coordination in border operations, and weighbridge inefficiencies, causing time wastage and increased business costs. Technological solutions like weigh-in-motion, infrastructure upgrades, One-Stop Border Posts (OSBPs), and the Electronic Cargo Tracking System (ETS) mitigated these challenges. Government efforts, exemplified by the EAC Time-Bond Programme, resolved 199 out of 232 reported NTBs from 2011 to 2020, demonstrating the commitment of EAC leaders to enhance smoother trade in the Region. Based on these findings, the researchers recommend that the East African Community (EAC) partner countries should collaborate to eliminate NTBs, particularly addressing police roadblocks and harmonizing weighbridge policies to enhance trade among them and discourage political restrictions on product import and export within the EAC. However, caution is necessary. Some NTBs, like weighbridges, serve other important policy purposes and cannot be eliminated outright. Additionally, the elimination of certain NTBs, such as border delays and harmonization of inspection processes, may require substantial policy commit-

ments, making it a challenging task. This suggests an in-depth analysis of the actual overall costs of these NTBs in the Region.

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Conflicts of Interest

The authors declare no conflicts of interest.

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