

Governance and Commitments of ECOWAS Countries within the Framework of the World Trade Organization's Agreement on Trade Facilitation

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ABSTRACT

In this paper, we assess the effects of governance quality on the implementation of Type A commitments made by ECOWAS countries regarding the World Trade Organization's Trade Facilitation Agreement (TFA). We utilized panel data from 14 ECOWAS countries spanning the period 2004-2021. Results obtained through negative binomial regression and the Poisson model with continuous endogenous covariates show that five out of six Kaufmann governance quality indicators positively impact the adoption of TFA commitments within ECOWAS. The Poisson model with continuous endogenous covariates revealed a higher level of significance for variables related to regulation quality, voice and accountability, and political stability compared to the negative binomial model. These results remain robust even when using an alternative measure to assess governance quality. ECOWAS countries have a vested interest in creating conducive conditions for improving governance quality to undertake an increased number of measures in favor of trade facilitation.

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INTRODUCTION

For the past two decades, there has been a significant increase in cross-border trade flow, resulting from the global integration of modern production systems (Sigué, 2017; CEA, 2015), the emergence of e-commerce, and the revolution brought about by container shipping in international product distribution (Frémont, 2022; Lisman, 2021; Chabel, 2020).

Trade facilitation has become a crucial element in stimulating trade and supporting economic development (Kumari and Bharti, 2021). According to Staples (2002), its relevance has been recognized at the multilateral, regional, bilateral, and national levels due to the increase in trade volumes, complexity of trade procedures, globalization of production, and outsourcing related to supply chain management. In regions historically faced with high internal transportation costs, such as sub-Saharan Africa and particularly ECOWAS countries, trade facilitation is of particular importance (de Melon and Wagner, 2018). In fact, freight costs as a proportion of import value are higher in these regions than in any other part of the world (Tighilt *et al.*, 2021), and they have

been increasing since the early 2000s (Bedossa and Letilly, 2011). These high costs hinder the economic competitiveness of ECOWAS countries (Raballand and Macchi, 2009), limit their participation in global production networks (Christ et Ferrantino, 2011; Nordas *et al.*, 2006), and compromise efforts for trade openness with neighboring countries.

The World Trade Organization's Trade Facilitation Agreement (TFA) is a legal instrument aimed at simplifying and harmonizing customs and administrative procedures related to international trade (Bouklata and Bensfia, 2020; Moïse and Sorescu, 2014). It encourages member countries to implement measures to reduce obstacles and excessive administrative formalities, promote transparency and predictability of customs procedures, and strengthen cooperation between customs authorities (Eliason, 2015; Cantens, 2011). The commitments made by member countries under this agreement are essential for ensuring effective and harmonized implementation of trade facilitation measures. These commitments often involve internal reforms at the national level, such as improving physical, logistical, and customs infrastructure, adopting simplified procedures,

and utilizing information technologies (Shepherd, 2016). Governance plays a crucial role in the implementation of these commitments, referring to the mechanisms and processes through which decisions are made, implemented, and controlled within an organization or economic system (Le Galès, 2019; Lacroix, and St-Arnaud, 2012). In the context of the WTO's TFA, governance is crucial in promoting international trade and creating a fair and transparent trading environment (Geourjon *et al.*, 2019). It involves coordination among various stakeholders, including governments, customs authorities, economic actors, and civil society. Good governance promotes transparency, accountability, and stakeholder participation, which contributes to the effective implementation of commitments under the Trade Facilitation Agreement (Mpoy Kadima, 2019). Good governance facilitates the effective implementation of trade facilitation measures and helps create a transparent, fair, and predictable international trading environment (WTO, 2015).

The objective of this article is to assess the effects of governance quality on the implementation of Type A commitments made by ECOWAS countries in relation to the WTO Trade Facilitation Agreement. In this study, we undertake an empirical approach to examine the relationship between governance quality and Type A commitments adopted by ECOWAS countries. We use the negative binomial model to analyze a panel of 14 ECOWAS countries over the period 2004-2021. The main results demonstrate that five out of six Kaufmann governance quality indicators have a favorable impact on the adoption of Trade Facilitation Agreement commitments within ECOWAS. These results remain robust even when using an alternative measure to assess governance quality.

This study has a dual significance. Firstly, it complements existing developments in the literature regarding the determinants of trade facilitation within ECOWAS. Strong governance is essential for establishing effective policies and institutions that promote economic development and integration of countries into the global trading system. Secondly, it examines how governance quality influences commitments made under the Trade Facilitation Agreement (TFA). Good governance enhances the credibility of these commitments, thereby encouraging international cooperation and facilitating the resolution of trade disputes. Overall, these elements contribute to building trust among members of the World Trade Organization (WTO) and promoting a stable and predictable trading environment.

The article is structured into three sections that comprehensively address different aspects. In the first section, we present relevant theoretical and empirical considerations. The second section focuses on the methodological approach, while the third section highlights the econometric results and discussions derived from our

empirical analysis on the effects of governance quality on Type A commitments made by ECOWAS countries.

1. Literature review

In this article, we correlate the literature on theoretical and empirical studies of determinants of trade facilitation, in relation to the commitments of the World Trade Organization's Trade Facilitation Agreement (TFA) and the governance implications. First, we present the theoretical findings, and then we address the empirical findings. In either case, it is important to understand that the difference in results observed in the literature depends either on the analysis method used, the applicability of methods, or simply on the analysis of the results obtained.

1.1 Trade facilitation and determinants of WTO commitments: Theoretical foundations

From a theoretical perspective, one can analyze the determinants of trade facilitation in general, and the measures of commitment to agreements in particular, through theories of international trade and new institutional economics.

In the framework of the Heckscher-Ohlin model (Bergeron, 1976), for example, the implementation of measures aimed at facilitating trade represents a global effort to improve trade procedures and reduce costs between countries (Kouty, 2013 and Takpara, 2020). This cost reduction promotes international trade. According to Shakoor and Ali (2020), improving trade facilitation leads to a reduction in trade costs and an increase in trade volumes (Beke, 2022; Korinek and Sourdin, 2009). That is why this strategy is considered an effective means of promoting economic development in both developing and developed countries (Zaki, 2010).

In the new neo-institutional theory of international trade, specifically in intra-industry trade approaches, Krugman (1979; 1980; 1981) and Lancaster (1980) have highlighted the consequences of an inefficient trading process, resulting in higher trade costs and higher prices for foreign products. According to Krugman (1980); Helpman and Krugman (1985), reducing these trade costs through trade facilitation measures encourages intra-industry trade. According to Sakyi *et al.* (2014), trade facilitation measures significantly contribute to increasing trade flows, making an economy more open in terms of trade and international business. Reduced transaction costs can stimulate GDP and exports (Samba, 2014). Open economies have performed better than closed or less open economies (Rodrik, 2002; Delgado, 1994). Due to systemic interdependence, trade facilitation leads to an increase in trade flow. This increase in trade flow stimulates demand for export products, resulting directly in an increase in domestic production and labor demand (Moïsé and Sorescu, 2014). Therefore, trade facilitation remains a top priority in economic development strategy. It promotes the openness of economies, intensifies trade (imports and exports), and contributes to achieving economic objectives (Moïsé, 2005; Helpman *et al.*, 2008).

According to the perspective of "institutional theory," institutions are designed to reduce transaction costs in order to increase economic efficiency (Williamson, 2000; North, 1990). This theory argues that although political actors have an interest in reducing these costs, their personal interests often take precedence over their concerns regarding transaction costs. Since the work of North (1990), it is widely accepted that the political environment plays a crucial role in promoting economic performance. Among the various aspects of the political environment, political instability has received particular attention. However, it should be noted that the concept of political instability itself is ambiguous, encompassing both legal changes at the head of state and government, as well as violent takeovers (Berthélemy et al., 2002).

In order to examine the influence of political instability, particularly political violence (Goswami and Haider, 2014), on business transactions and measures promoting trade, we rely on the theoretical argument put forth by Li (2006). This argument is based on several assumptions: firstly, investors consider political instability in the host country as a determining factor in choosing investment locations and determining the amount of investments. Secondly, forward-thinking investors constantly anticipate the impact of political violence in the host country. Thirdly, investors are not perfectly foresighted and must retrospectively manage the consequences of unforeseen political violence. Fourthly, political violence takes various forms (civil war, interstate war, and transnational terrorist attacks) and has varying effects on foreign direct investment (FDI). Research conducted by Rigobon and Rodrik (2005) demonstrates a positive correlation between trade liberalization and the rule of law, while it is negatively linked to democracy. The work of Lavallée (2007) establishes a link between trade openness and corruption, highlighting an increase in corruption resulting from active industrial policy or a low degree of openness. This corruption reduces investments and medium-term growth.

In the context of collective action theory and public goods, the question arises as to how a group of actors can participate in monitoring compliance with rules they have established themselves. The usual theoretical prediction is that they will not do so. According to Ostrom (2010, p. 62): "*Without monitoring, there can be no credible commitment; without credible commitment, there is no reason to propose new rules*". Thus, an effective institutional environment plays a significant role in improving a country's economic performance (Kouty, 2013). For example, robust systems and rules are necessary not only to facilitate trade between countries but also to ensure smooth transactions and compliance with agreements. Similarly, political instability, legal and physical insecurity, as well as corruption deteriorate

the business climate and lead to increased investment and commercial costs (Grigoryan and Manirabona, 2021).

1.2 Overview of some empirical studies on the determinants of governance in trade facilitation

Numerous studies have examined the relationship between economic performance and institutions. However, the impact of institutional quality on international or bilateral trade has been insufficiently explored. It would therefore be relevant to deepen our understanding of the consequences of institutions on international trade to determine whether institutional disparities between partner countries or economic communities give rise to comparative advantages for certain countries or communities over others.

Dupont (2022) conducts an analysis that highlights the use of five institutional indicators (government effectiveness, corruption control, political stability and absence of violence, regulatory quality, and citizen participation and accountability) integrated into the GMM model to study the impact of the institutional environment on trade between Haiti and the Dominican Republic. The results of this study reveal that the trade imbalance between the two countries is mainly caused by the inefficiency of anti-corruption efforts in Haiti (corr = -0.22), low government involvement in Haiti (eff = -0.81), as well as high political instability (+0.81). Additionally, regulatory quality is poor (reg = -0.60) and there is a high level of citizen irresponsibility (resp = -0.76). However, it is evident that the increasing trade deficit between Haiti and the Dominican Republic is primarily due to the inefficiency and lack of commitment from the Haitian government, as well as pronounced political instability.

Balaki and Mamba (2022) in their work examined the impact of Deep Regional Trade Agreements (DRTAs) on the Global Value Chains (GVCs) of 11 ECOWAS countries from 1996 to 2018. Using fractional logit regression, they found that the deepening of DRTAs had a significant impact on upstream Foreign Value Added (FVA), which increased, while downstream Domestic Value Added (DVA) decreased. However, these results were only significant at a 10% confidence level and became insignificant when controlling for variables such as institutional quality, including corruption control. Additionally, their results highlighted a complementary relationship between DRTA deepening and corruption control in the DVX model. Therefore, it is recommended for ECOWAS governments to continue their efforts to ratify protocols and conventions related to regional and international trade agreements, while intensifying the fight against corruption, in order to fully benefit from the advantages offered by deeper integration into global value chains.

Ziadi and Bhibah (2016), in their study, employed a panel data model encompassing eight nations to analyze the correlation between economic growth and various governance indicators from 1985 to 2009. The variables

considered were political rights, civil liberties, rule of law, political stability, and corruption. The results revealed that the corruption variable had a negative impact on economic growth, hindering optimal resource allocation. Additionally, political instability and violence also had a detrimental influence on economic growth.

The study conducted by Ahou *et al.* (2014) relied on a panel model including 129 countries to demonstrate the positive impact of good governance on economic growth during the period from 1996 to 2011. They conducted a regression analysis using various explanatory variables to assess governance, such as voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, control of corruption, public administration final consumption expenditure, trade openness, credit to the economy, gross enrollment rate, inflation rate, and GDP per capita. The results showed that among Kaufmann's six governance indicators, only three had a significant influence on economic growth. Furthermore, these results varied based on the income level of the countries studied. The variables "voice and accountability" and "government effectiveness" had a positive impact on economic growth, while the variable "rule of law" had a negative impact. The other variables did not show significance in this study.

The work carried out by Lavalée (2006) focuses on a comprehensive analysis of the impacts of institutions on trade, using a sample of 143 countries over the period from 1984 to 2002. The results of this study highlight an asymmetric effect of partner countries' institutional quality on bilateral trade. They demonstrate that the quality of a country's institutions positively influences its exports, while the quality of the importing country's institutions only has an impact on exports from Northern countries. Furthermore, the estimates obtained contradict theories suggesting that corruption can facilitate trade. In conclusion, these results encourage further understanding of the effects of institutional similarity on trade.

However, the work of De Sousa and Disdier (2006) focuses on analyzing the impact of legal frameworks' quality in Romania, Hungary, and Slovenia on their imports from the European Union (EU) and Central European Free Trade Agreement (CEFTA) member countries using the frontier effects method. These studies highlight that higher quality legal systems, evaluated through the Legal Indicator Survey by the European Bank for Reconstruction and Development, are a major determining factor for EU exports and to a lesser extent for CEFTA member countries' exports.

However, a recent study conducted by Berkowitz *et al.* (2006) addresses the issue of the impact of legal institutional quality

on bilateral imports, but the results obtained are more mixed. Using governance indicators from the International Country Risk Guide and based on a sample of 55 countries (including 21 high-income OECD countries), this study demonstrates that the legal institutional quality of a country has no effect on its imports when accounting for specific effects of importing countries, exporting countries, and time periods. However, it highlights the importance of the exporting country's institutional quality on trade, especially in the case of complex goods exchanges.

Furthermore, despite the growth of empirical literature analyzing the effect of governance on trade, empirical studies specifically focusing on the effect of governance on WTO TFA commitments remain relatively scarce.

2. METHODOLOGICAL APPROACH

It is important to emphasize that the objective of this chapter is to assess the effects of governance quality on the implementation of Type A commitments made by ECOWAS countries regarding the World Trade Organization's Trade Facilitation Agreement (TFA). More specifically, we focus on analyzing the impact of governance quality on the implementation of Type A commitments made by ECOWAS countries regarding the TFA. In this section, we provide a brief description of the variables before presenting the econometric strategy.

2.1 Description of Variables and Data Sources

2.1.1 Dependent Variable: Number of Type A Commitments under the Trade Facilitation Agreement (TFA)

Our dependent variable is measured by the total number of Type A commitments made by each ECOWAS member country in the context of their ratification process, as described by N. Neufeld (2014). These commitments refer to all measures that countries have committed to implementing within one year from the entry into force of the Agreement. Data on this variable comes from the World Trade Organization's (WTO) database on Trade Facilitation Agreements (WTO, 2022), providing a comprehensive breakdown of each member country's commitments at a given point in time, according to Hillberry and Zurita (2022). The year 2015 is considered the reference year, as it encompasses countries whose ratification process was delayed by a maximum of two years from the entry into force of the agreements. This period also allows for examining commitments as the data from this year reflects the choices made by countries when implementing the agreement¹. Our

¹ Commitments are made at the level of a subsection of an article in the agreements, with a subsection typically being a paragraph of text. This process generates data for 238 commitments across the 12

articles of Section I of the agreement. The TFA database indicates, for each subsection/paragraph, whether a Type A, Type B, or Type C commitment has been made by the member country (R. Hillberry and C. Zurita, 2022).

sample includes observations on commitments from 14 ECOWAS member countries².

2.1.2 Independent Variables: Governance Quality

The implementation of trade policy measures is significantly influenced by the quality of institutions, whether related to trade contexts, trade agreements, or tariff rates (Baldwin, 1989; Rodrik, 1995). Studies clearly demonstrate the impact of political factors on trade policy (Ehrlich, 2007). Moreover, these political factors are associated with trade liberalization policy (Milner, 1999), the signing of trade agreements (Mansfield and Milner, 2018), and processes of establishing trade standards (Swinnen and Vandemoortele, 2012). These hypotheses are supported by the argument that the Trade Facilitation Agreement encompasses political, economic, trade-related, administrative, technical, and technological aspects (Butterly, 2003). Therefore, we can expect that countries with better political and institutional performance are more likely to make Type A commitments. To measure governance quality, we will use the six indicators of D. Kaufmann et al. (2010), including voice and accountability of citizens, political stability and absence of violence and terrorism, government effectiveness, quality of regulation, rule of law, and control of corruption. The score for each of these dimensions ranges from -2.5 (weak governance) to +2.5 (strong governance). Finally, we construct the Composite Governance Quality Index (CGQI) using Principal Component Analysis (PCA). The Composite Governance Quality Index (CGQI) used in our study corresponds to the overall governance score after normalizing this variable.

2.1.3 Control Variables

The first set of control variables includes development indicators, demographics, and relevant geographical characteristics. According to Hillberry and Zhang (2017), one of the main factors influencing trade facilitation is likely the economic development level of the country, which can impact factors such as the education level of agency actors, the capabilities of businesses involved in international trade, and the quality of border infrastructure, among other possibilities. Indeed, this is used to establish a link between trade facilitation commitments and the average income of a country. We measure the level of development by GDP per capita. To this end, we include a logarithmic measure of GDP to account for variations in the total size of the economy.

The second set of control variables concerns trade-specific characteristics, including costs associated with trade and the time required for export (Hillberry and Zhang, 2017), as well as trade facilitation aid (Grainger, 2011).

2.1.4 Data Sources and Estimation Techniques

The data used come from various sources. The variable to be explained, i.e., the number of commitments by ECOWAS countries, comes from the World Trade Organization's database (WTO, 2021). Data on GDP per capita, country populations, and trade openness come from the World Bank's World Development Indicators (WDI, 2020). The variable related to trade facilitation, specifically import time, comes from the World Bank database. Data on institutional quality and trade facilitation aid come from the World Government Indicators (WGI, 2021) database and the Organisation for Economic Co-operation and Development (OECD, 2018), respectively. Finally, bilateral geographical data (landlocked status) is constructed by the author. The analysis covers the period 2015-2021 and includes ECOWAS countries. The sample and study horizon take into account data availability. Table 1.1A (appendix) shows descriptive statistics for Type A commitments made by ECOWAS countries.

2.2 Econometric Models

We employ the Ordinary Least Squares (OLS) method, known for its transparency and easily interpretable coefficients. This approach has been extensively discussed in the literature (Anderson, 1979; Belsley et al., 1980; Hillberry and Zhang, 2018; etc.). The choice of Type A commitment by countries is based on several factors. Among these criteria, authors Hillberry and Zurita (2022) have identified income level, country size, geographical location, and financial assistance from partners as major determinants in taking measures related to Type A commitment of the WTO's Trade Facilitation Agreement (TFA).

In its simplest form, the equation from Hillberry and Zurita (2022) is presented as follows:

$$A_i = \beta_0 + \beta_1 \log GDP_{ci} + \beta_2 Landlocked_i + \beta_3 Island_i + \beta_4 \log Pop_i + \beta_5 USFTA_i + \beta_6 Core_i + \beta_7 Colorado_i + \beta_8 AFTpc_i + \beta_9 Openness_i + \beta_{10} Control\ of\ Corruption_i + \beta_{11} Time\ to\ Import_i + \epsilon_i \quad (1.1)$$

Where A_i is the number of Type A commitments made by country i ; \log represents the natural logarithm; GDP_{pac} is the GDP per capita level (at market exchange rate); $Landlocked$ is a dummy variable taking the value of 1 when a country is landlocked and 0 otherwise; $Island$ is a dummy variable taking the value of 1 when a country is an island and 0 otherwise; $\log Pop_i$ is the logarithm of the population size of i ; $USFTA_i$ is a dummy variable indicating that country i has a preferential trade agreement with the United States; $EUFTA_i$ is a dummy variable indicating that country i has signed a free trade agreement with the EU; $Core_i$ is an indicator that country i belonged to the "Core Group" during

² The only missing member at the time of data collection was Guinea-Bissau, which (a) had not ratified the TFA and (b) had not made any type of commitment.

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TFA negotiations; *Colorado_i* is an indicator that country *i* belonged to the "Colorado Group" during TFA negotiations; *AFT_{pci}* is a measure of aid per capita received by country *i* to support trade facilitation; *Openness* and *Control of Corruption_i* take their standard form; *Time to Import_i* is measured in hours; and ϵ_i represents a normally distributed error term.

To assess the effect of governance quality on the adoption of Type A commitments under the TFA by ECOWAS countries, we estimate a model inspired by that used by Hillberry and Zurita (2022) using panel data. Our proposed specification is as follows:

$$A_i = \beta_0 + \beta_1 \ln GDP_i + \beta_2 \ln Pop_i + \beta_3 APCFE_i + \beta_4 Cost_Import_i + \beta_5 Stab_po_i + \beta_6 Eff_PP_i + \beta_7 Citizen_Perception_i + \beta_8 Quality_Reg_i + \beta_9 Rule_Law_i + \beta_{10} Hint_i + \beta_{11} Ext_Debts_i + \beta_{12} Time_Export_i + \beta_{13} Control_Corpt_i + \epsilon_i \quad (1.2)$$

Where A_i represents the number of Type A commitments by country *i*; $\ln GDP_i$ denotes the natural logarithm of the GDP per capita (GDP_{*i*} of the country); $\ln Pop_i$ denotes the natural logarithm of the population of the country; *APCFE_i* represents all Aid for Trade (AFT) received by the country under the Trade Facilitation Agreement; *Hint_i* is the dummy variable for a landlocked country, which equals 1 if the country is landlocked and 0 if the country has a coastline; *Cost_Import_i* represents the import cost of the country during the period; *Stab_po_i* is an institutional variable capturing political stability, non-violence, and absence of terrorism in each country; *Citizen_Perception_i* is an institutional variable capturing citizen perception, freedom of expression, association, and choice of leaders in each country; *Eff_PP_i* is an institutional variable capturing the effectiveness of public authorities in each country; *Quality_Reg_i* is an institutional variable capturing the quality of regulation in implementing policies and regulations

in each country; *Rule_Law_i* is an institutional variable capturing the rule of law in each country; *Inflation* is a percentage variable of the consumer price index in each country; *Time_Export_i* is a variable measuring the time associated with exporting goods. This variable helps control for existing levels of trade facilitation capacity in each country; *Control_Corpt_i* is an institutional variable capturing the control of corruption by the public authorities in each country; and ϵ_i is the error term.

2.2.2 Identification Strategy

It is possible to estimate equation 1.1 using different methods such as Ordinary Least Squares (OLS), the probit estimator, and the Pseudo-maximum Likelihood estimator for the negative binomial (Eaton and Tamura, 1994; Silva and Tenreyro, 2006; Lee and Yu, 2010, etc). Previous studies have highlighted various biases affecting the estimated coefficients when applying traditional estimation methods due to their inability to account for the specificities of each country. In the context of this study, although OLS provides a transparent specification and easily interpretable coefficients, it should be noted that the OLS model³ is more suitable for continuous outcome variables. On the other hand, the Negative Binomial (NB) model is more suitable for count data, as is the case in this chapter. The specification of the Negative Binomial (NB) model is as follows:

$$A_i = \text{Exp}(X_i \beta + v_i) \quad (1.3)$$

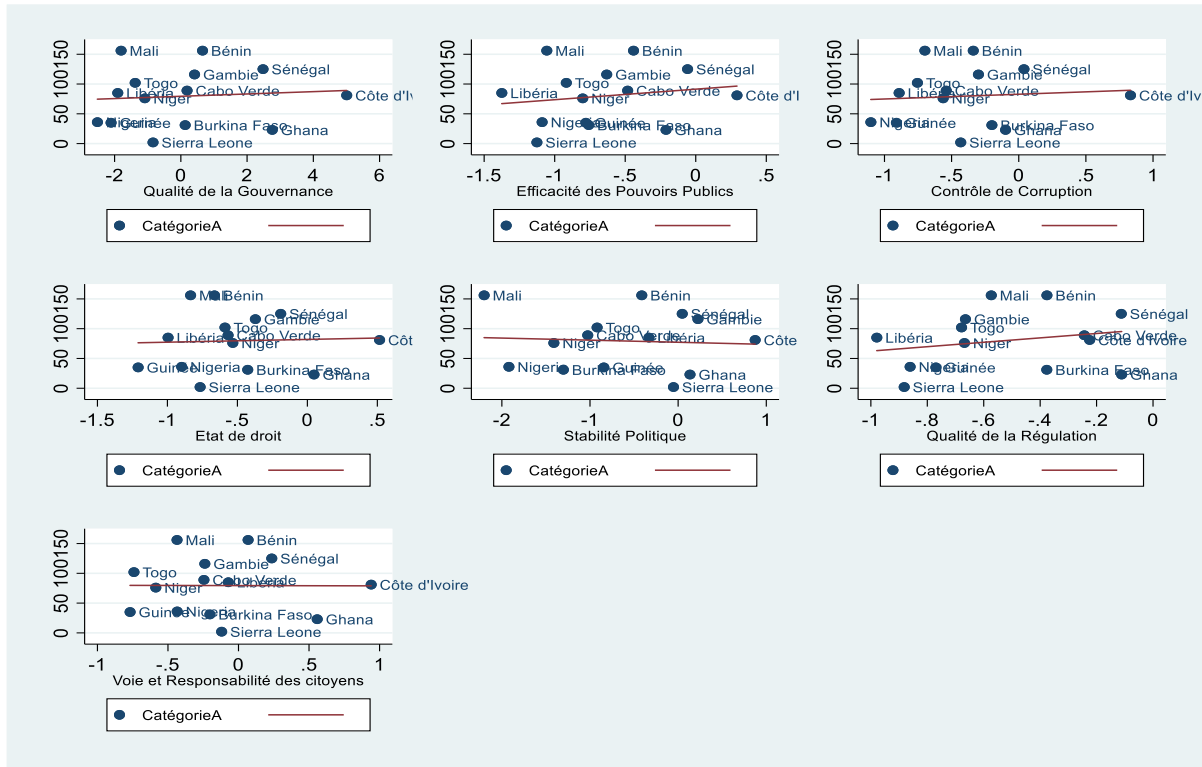
Where *Exp* denotes the exponential function; X_i is the same vector of independent variables as used in equation (1.1); β is the vector of coefficients; and v_i is a random term, such that *Exp* (v_i) follows a gamma distribution.

Figure 1.1 highlights a positive correlation between governance quality and the adoption of trade facilitation measures. Although correlation does not imply causation, this relationship will be tested empirically.

³ *The results of the Ordinary Least Squares (OLS) estimates are presented in Annex Table 1.2.A.*

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Figure 1.1: Correlation between governance quality and level of implementation of Category A commitments.



Source: Author based on data from the WTO (2021)

3. RESULTS AND DISCUSSIONS

In this section, we first present the basic results of the analyses on the effects of governance quality in undertaking type A commitment measures. Subsequently, sensitivity analyses will be conducted before testing the robustness of the results.

3.1 Descriptive Analysis

Table 1.1 presents descriptive statistics of the variables used in this study. The average type A commitments made by ECOWAS countries amounted to 80 units. The average GDP

per capita for ECOWAS countries was \$1,278 US dollars. The average import cost for ECOWAS countries was \$288 US dollars. The average export duration for ECOWAS countries was 67 hours. On average, ECOWAS countries received \$242 US dollars in trade facilitation aid. The average time required for importing goods from ECOWAS countries was 105 hours. The mean of each indicator of the six governance quality variables according to Kaufman was negative and less than or equal to 1, indicating the poor quality of institutions and government policies in ECOWAS countries.

Table 1.1: Descriptive Statistics of Type A Commitments made by ECOWAS Countries

Variables	Sources	Sign	Obs	Mean	Standard Deviation	Min.	Max.
Type A commitments	OMC	?	14	79.5	48.967	2	156
Citizen perception	WGI	+	14	-0.146	0.480	-0.768	0.941
Political stability	WGI	+	14	-0.653	0.876	-2.201	0.874
Effectiveness of public authorities	WGI	+	14	-0.674	0.458	-1.375	0.292
Quality of regulation	WGI	+	14	-0.537	0.294218	-0.979	-0.111
Rule of law	WGI	+	14	-0.534	0.444	-1.209	0.516
Control of corruption	WGI	+	14	-0.425	0.489	-1.101	0.833
Democracy	WGI	+	14	-0.209	1.413	-2.025	1.611
Inflation	WGI	-	14	-0.456	0.483	-1.079	0.823
GDP	WDI	+	14	1278.48	847.907	513.63	3225.8
Population	WDI	+	14	16.27704	1.344	13.19	19.067
Cost to importation	WDI	-	14	287.8571	161.241	90	564

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Time of exportation	WDI	-	14	67.286	39.47	11	144
Aid for Trade for Facilitation	OCDE	+	14	241.829	165.793	26.6	695.4
Time of importation	WDI	-	14	105.012	51.978	24	180
Trade liberalization	WDI	+	14	62.097	21.215	34.024	116.2

Source: Author, October 2022, based on panel data and literature

Table 1.1 reveals that the panel formed by our data is not truncated, with no missing data recorded. There is also significant volatility in the variable values, indicating heterogeneity among the ECOWAS countries, particularly concerning the adoption of trade facilitation agreements.

3.2 Basic Results

The results of the estimations of equation (1.1) regarding the impact of governance on type A commitment measures by ECOWAS countries, using the negative binomial method, are presented in Table 1.2. The coefficients represent the elasticities of type A commitments under the WTO Trade Facilitation Agreement concerning various explanatory variables in our model. To avoid multicollinearity biases, we start by analyzing the effects of overall governance quality (Column 1). Subsequently, we sequentially present the results of estimations of the effects of other governance quality indicators (Columns 2-7).

The analysis of the results recorded in Table 1.2 reveals that, in general, governance quality has a positive and significant impact on trade facilitation measures (the adoption of type A commitments). Thus, it can be affirmed that these measures are all determinants of the adoption of type A trade facilitation agreements. Nevertheless, it is important to delve

into the direction of their influence. Regarding the six (06) governance variables from D. Kaufmann et al. (2005; 2010), the regression estimation results (Columns 1-7) are mostly positive and significant. The positive sign indicates that the improvement of the institutional quality of ECOWAS countries enhances the performance of trade facilitation initiatives. The regression results in Table 1.2 clearly show that the institutional quality of countries has an impact on type A commitments made by ECOWAS countries. However, the voice and accountability variable have a positive effect on the number of commitments, although it is not significant despite its positive impact on the number of type A commitments. However, it should be noted that regulatory quality is significant at the 10% level (Column 5). This result is consistent with the work of Freund and Bolaky (2008), who identify regulations related to labor market flexibility, business creation, and insolvency. Their growth regression model demonstrates that trade stimulates growth in economies where regulation is of good quality. This suggests that poor governance in the formulation and implementation of policies and regulations by the state will lead to the underdevelopment of the private sector, the flight of foreign investors, and economic actors (Kumari et Bharti, 2021).

Table 1.2: Results of Estimations of the Effects of Governance Quality on Type A Commitments

VARIABLES	Dependent variable: Number of type A commitments under the Trade Facilitation Agreement.						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log_GDP_per_capit a	0.8533** (0.373)	0.8162* (0.426)	0.8964** (0.394)	0.8064** (0.343)	0.8131** (0.350)	0.9273** (0.376)	0.8993** (0.385)
Inflation	-1.6414*** (0.406)	- (0.381)	- (0.388)	- (0.436)	- (0.746)	- (0.422)	-1.5924*** (0.367)
Cost_import	-0.0035*** (0.001)	- (0.001)	- (0.001)	- (0.001)	- (0.001)	- (0.001)	-0.0034*** (0.001)
Time_export	-1.0350*** (0.177)	- (0.180)	- (0.172)	- (0.166)	- (0.174)	- (0.181)	-1.0317*** (0.173)
Aid for Trade_Facilitation	1.8219*** (0.365)	1.7218*** (0.424)	1.8475*** (0.367)	1.9306*** (0.377)	1.8012*** (0.401)	1.9070*** (0.384)	1.8085*** (0.364)
Population	-1.1267***	-	-	-	-	-	-1.1220***

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		1.0402***	1.0470***	1.2297***	1.2398***	1.1964***	
	(0.204)	(0.207)	(0.203)	(0.220)	(0.284)	(0.213)	(0.195)
CGQI	0.0916***						
	(0.019)						
Citizen perception		0.2557					
		(0.185)					
Political stability			0.1457*				
			(0.080)				
Effectiveness of public authorities				0.6410***			
				(0.194)			
Quality of regulation					1.3909*		
					(0.713)		
Rule of law						0.4701***	
						(0.135)	
Control of corruption							0.3058***
							(0.097)
Constant	11.4484***	10.9709**	10.0751**	13.1362**	13.8056**	11.8074**	11.2199**
	(1.345)	(1.874)	(1.505)	(0.893)	(1.177)	(1.351)	(1.668)
Observations	14	14	14	14	14	14	14

Note: Robust standard deviations are in parentheses, *** p<0.01, ** p<0.05, * p<0.10, These results are obtained using the negative binomial method.

Source: Author, data from WDI, WGI databases

The regression results regarding political stability and government effectiveness show a positive statistical significance, revealing their determining role in governance quality within ECOWAS. These factors exert a substantial influence on the adoption of Type A commitment measures. A 10% increase in the level of political stability in ECOWAS countries leads to a 0.15% increase in the adoption of type A commitment measures (Column 3). Indeed, political stability emerges as an indispensable prerequisite for trade facilitation, corroborating the findings of the African Development Bank (AfDB, 2019), highlighting that conflicts disrupt trade flows and impede the free movement of goods and services among nations. Companies operating within ECOWAS identify political instability as the main obstacle to their activities (U. Ayegba, 2015).

West Africa, and more specifically ECOWAS, is characterized by a high prevalence of political instability, with frequent terrorism and coups affecting countries either in situations of terrorist attacks (Burkina Faso, Mali, Niger, Nigeria), conflict (Burkina Faso, Mali), or post-conflict (Côte d'Ivoire, Liberia, Sierra Leone, Guinea). These recurring conflicts, fueled by political tensions, terrorism-related frictions, and control over natural resources, as well as institutional and political instability, have a negative impact on the adoption of trade facilitation measures, compromising

economic integration prospects and regional attractiveness for investments (Tar and Ayegba, 2021).

The estimation results for government effectiveness reveal a significant coefficient of 0.641%, positively impacting the initiative on commitments under the WTO Trade Facilitation Agreement. Politically, this study suggests that institutional reforms targeting government effectiveness are likely to be more effective in stimulating WTO Trade Facilitation Agreement commitments and improving trade facilitation performance than other governance measures. This conclusion aligns with previous works by Nguyen (2016), Ndiefouo (2011), and E. Moïsé (2004), highlighting the positive impact of political measures taken by governments to facilitate international trade.

Regarding the rule of law variable, the regression indicates a statistically and economically significant positive coefficient. This positive relationship suggests that a 1% improvement in the rule of law level leads to a 0.47% increase in Type A commitments made by countries. This underscores the importance of the legal system and enforceability of contracts in the quality of implemented policies. These results are consistent with the work of Iwanow and Kirkpatrick (2007) on trade facilitation and regulatory quality.

The estimated coefficient for the control of corruption variable is positive and statistically significant. A 1% increase

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in the level of corruption control by an ECOWAS country in trade facilitation leads to a 0.31% increase in the number of Type A commitments. Corruption control, as a governance indicator, plays a determining role in the effectiveness of trade policy implementation. These results align with the idea that a political system devoid of corruption is better equipped to implement and monitor trade facilitation measures, contributing to inclusive growth and the economic well-being of a country (Mansfield and Milner, 2018; Swinnen and Vandemoortele, 2012; Lavallée, 2007). ECOWAS countries with better corruption control seem better positioned to make significant commitments in trade facilitation within the WTO. Thus, the ability of countries to control corruption also appears to be linked to their ability to make significant commitments in trade facilitation (Nguyen, 2016).

Regarding control variables, the results align more with existing works. The wealth level of a country, captured by GDP per capita, emerges as a crucial determinant of the adoption of Type A commitments. Its effect is positive and significant at 5% in all estimations (Columns 1-7). This suggests that a high level of economic development is associated with greater ease in adopting type A commitments. These conclusions resonate with those of Hillberry and Zurita (2022), whose work on a set of developing countries (114 countries) indicates that an increase of one point in the logarithm of income leads to an increase of about 36 type A commitments.

As for inflation, it proves negative and significant in all regressions (Columns 1-7). For instance, a 1% increase in the inflation rate generally leads to a 1.64% decrease (Column 1) in the number of type A commitments. This indicates that inflation is an obstacle to the adoption of type A commitments by ECOWAS countries. Inflation in all its forms represents a major obstacle to improving trade facilitation, adopting, and implementing trade agreements in many developing countries. When trade barriers are reduced, it allows companies to access a greater choice of suppliers and markets. This promotes competition, encourages innovation, and stimulates economic efficiency. Companies can thus benefit from lower production costs and offer products at competitive prices.

The statistically significant and negative coefficient of the import cost variable is found in all regressions (Columns 1-

7). The negative effect suggests that a 1% increase in import costs leads to a decrease of 0.0035% (Column 1) and 0.0034% (Column 7) in the number of type A commitments. Thus, countries with high import costs will face difficulties in adopting type A commitment measures. This result is consistent with that of Rippel (2011), who found a negative impact of import costs on trade facilitation for African businesses and economic operators. Furthermore, Djam'angai and Elomo Zogo (2019) demonstrated that the cost of importing a container average \$1,100 and involves only 4 documents, remaining the highest in Sub-Saharan Africa.

Regarding the export duration variable, the regression results (columns 1-7) indicate its negative effect on the number of Type A commitments. It should be noted that the variable is potentially endogenous, as past improvements in trade facilitation would reduce export delays and increase the number of commitments made at the time of ratification (Hillberry and Zurita, 2022). These results align with those of de Melo and Wagner (2018), indicating that the total export time is a determining and essential factor for the competitiveness of African businesses, representing a significant barrier to trade development. Currently, export time only considers the duration spent on the territory of a country.

3.3 Sensitivity Analyses

Table 1.3 presents the results taking into account these additional control variables. Governance quality indicators remain positively and significantly correlated with Type A measures/commitments. Our results confirm those of Table 1.2, even after the inclusion of additional control variables. However, we observe a change in the level of significance regarding government effectiveness variables. Indeed, the results indicate that the significance of regulatory quality changes from 10% to 5%; the rule of law changes from 1% to 10%; and political stability changes from 10% to 1%. However, voice and accountability of citizens become significant at 10%.

Overall, the estimation results reveal that governance quality has positive and significant effects on Type A commitments under the WTO Trade Facilitation Agreement, as all six governance indicators are significant.

Table 1.3: Results of the estimations of the effects of governance quality on Type A commitments considering additional control variables

VARIABLES	Dependent variable: Number of type A commitments under the Trade Facilitation Agreement.						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log_GDP_per_capita	0.8616*** (0.125)	0.7382*** (0.149)	0.8876*** (0.155)	0.8806*** (0.164)	1.1933*** (0.265)	0.8989*** (0.172)	0.8330*** (0.113)
Inflation	-1.7133***	-1.5003**	-1.3874**	-1.8171***	-2.3001***	-1.9016**	-

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							1.6999***
Cost_import	(0.615) -0.0042***	(0.592) -	(0.564) -	(0.596) -0.0042***	(0.777) -0.0040***	(0.748) -0.0045**	(0.628) -
		0.0037***	0.0045***				0.0037***
Time_export	(0.001) -1.1346***	(0.001) -	(0.001) -	(0.001) -1.1062***	(0.001) -0.9203***	(0.002) -1.1650***	(0.001) -
		1.0941***	1.1453***				1.1291***
Aid for Trade_Facilitation	(0.318) 2.0112***	(0.307) 1.7027***	(0.299) 1.9829***	(0.293) 2.2772***	(0.235) 2.3171***	(0.369) 2.1448***	(0.319) 1.8657***
Population	(0.285) -1.1464***	(0.274) -	(0.265) -	(0.403) -1.3688***	(0.415) -1.7666***	(0.429) -1.1793***	(0.254) -
		0.9599***	1.0017***				1.0466***
Temps de l'importation	(0.173) 0.0022	(0.222) -0.0003	(0.213) 0.0013	(0.166) 0.0040	(0.227) 0.0079*	(0.174) 0.0017	(0.210) 0.0003
Ouverture Commerciale	(0.004) 0.0074	(0.005) 0.0049	(0.004) 0.0065	(0.004) 0.0065	(0.004) -0.0090	(0.004) 0.0133	(0.004) 0.0087
CGQI	(0.016) 0.1343*** (0.040)	(0.015)	(0.015)	(0.015)	(0.010)	(0.020)	(0.016)
Citizen perception		0.3172* (0.170)					
Political stability			0.2263*** (0.087)				
Effectiveness of public authorities				0.9095** (0.364)			
Quality of regulation					2.1462** (0.883)		
Rule of law						0.7854* (0.401)	
Control of corruption							0.4409*** (0.102)
Constant	10.5719*** (3.491)	10.2721** (3.849) *	8.7658** (3.764)	12.9875*** (2.721)	17.1477*** (1.929)	10.3775*** (3.493)	10.0637** (3.728) *
Observations	14	14	14	14	14	14	14

Note: Robust standard errors are in parentheses, *** p<0.01, ** p<0.05, * p<0.10

3.3.2 Consideration of Geographical Specificities of ECOWAS Countries

The second sensitivity analysis aims to highlight geographical specificities. Table 1.4 presents the results of the estimations of the effects of governance quality on Type A

commitments, taking into account geographical specificities. Thus, it appears that, except for regulatory quality, all measures of governance quality remain positive and significantly important for trade facilitation agreements within the ECOWAS.

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Table 1.4: Results of the estimations of the effects of governance quality on Type A commitments considering geographical specificities

VARIABLES	Dependent variable: Number of type A commitments under the Trade Facilitation Agreement.						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log_GDP_per_capita	1.2787*	1.0744	1.5172**	1.2774*	1.3427	1.1936*	1.2217*
	(0.732)	(0.664)	(0.771)	(0.707)	(0.857)	(0.675)	(0.664)
Inflation	-2.4108**	-1.9415**	-2.2891**	-2.7055**	-3.4448*	-2.1040**	-2.1121***
	(1.071)	(0.808)	(0.931)	(1.196)	(1.957)	(0.897)	(0.813)
Cost_import	-0.0025***	-	-	-0.0020**	-0.0016*	-	-0.0026***
	(0.001)	0.0028***	0.0028***	(0.001)	(0.001)	0.0031***	(0.001)
Time_export	-1.1277***	-	-	-	-	-	-1.0976***
	(0.275)	1.1183***	1.2293***	1.1047***	1.0477***	1.0653***	(0.248)
Aid for Trade_Facilitation	1.7752***	1.6191***	1.8017***	1.8984***	1.7477***	1.9025***	1.7745***
	(0.402)	(0.401)	(0.394)	(0.401)	(0.492)	(0.429)	(0.393)
Population	-1.3797***	-	-	-	-1.6411**	-	-1.2996***
	(0.393)	1.1746***	1.3041***	1.5713***	(0.667)	1.3450***	(0.327)
Hinterland	0.8236	0.5852	1.1881	1.0094	1.0593	0.4634	0.5769
	(0.845)	(0.676)	(0.894)	(0.920)	(1.196)	(0.670)	(0.664)
CGQI	0.1497**						
	(0.069)						
Citizen perception		0.4359***					
		(0.152)					
Political stability			0.4037***				
			(0.154)				
Effectiveness of public authorities				1.0118**			
				(0.509)			
Quality of regulation					2.2823		
					(1.400)		
Rule of law						0.5501**	
						(0.232)	
Control of corruption							0.4407***
							(0.114)
Constant	12.3866***	11.6724**	10.0925**	15.1030**	16.4393**	12.1804**	11.7749***
	(1.023)	*	*	*	*	*	
		(1.591)	(1.569)	(1.475)	(3.401)	(1.305)	(1.451)
Observations	11	11	11	11	11	11	14

Note: Robust standard errors are in parentheses, *** p < 0.01, ** p < 0.05, * p < 0.10. These results are obtained through the negative binomial method by incorporating the landlocked status of the countries in our sample (as ECOWAS has three landlocked countries: Burkina Faso, Niger, and Mali, our estimates exclude these three countries).

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Hinterland is positive but not statistically significant. Hinterland countries are more dependent on neighboring maritime countries for goods transit, requiring regional cooperation and effective coordination. Poor governance quality in neighboring countries can hinder this cooperation and complicate the implementation of the TFA. These results corroborate those of de Melo and Wagner (2018) and Moïsé (2004).

In contrast, the 11 coastal countries of ECOWAS may have a geographical advantage in terms of access to international markets by sea. However, poor governance quality can impede the efficiency of ports, customs, and transport infrastructure necessary to facilitate trade.

Governance quality played a crucial role in implementing Category A commitments by all ECOWAS countries; the geographical position of countries impacted specific aspects, such as regional cooperation for hinterland countries or the efficiency of port infrastructure for maritime countries.

3.4 Robustness Analysis of Results:

The regression estimates in Table 1.5 are based on Equation 1.3. The independent variables were added in the same order

as for negative binomial regressions (Table 1.2). The results of the Poisson model and the negative binomial (NB) model are consistent regarding the signs of the estimated coefficients. When the complete set of covariates is included, the coefficients of GDP per capita, inflation, import cost, export duration, APC for facilitation, and population are statistically significant in both models.

The Poisson model with continuous endogenous covariates generates a higher level of significance for the variables of regulation quality, voice and accountability, and political stability. Both models (Poisson and NB) produce fairly similar results in terms of quantitative implications of the coefficients.

ECOWAS countries demonstrating higher levels of public sector efficiency, strict adherence to the rule of law, rigorous regulation implementation, and active anti-corruption efforts are more committed to WTO TFA initiatives, especially in implementing Type A commitments compared to other countries. These commitments are conditional based on other specific characteristics of each country.

Table 1.5: Results of governance quality estimates on Type A commitments by the Poisson model with continuous endogenous covariates.

VARIABLES	Dependent variable: Number of type A commitments under the Trade Facilitation Agreement.						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log_GDP_per_c apita	0.7702*** (0.297)	0.6943** (0.299)	0.8202** (0.315)	0.7187*** (0.273)	0.7032** (0.288)	0.8405*** (0.285)	0.8284** (0.307)
Inflation	-1.5234** (0.406)	-1.3470* (0.387)	-1.3006 (0.385)	-1.6097** (0.391)	-1.9556 (0.620)	-1.5348** (0.377)	-1.5148 (0.400)
Cost_import	-0.0030*** (0.000)	-0.0029** (0.000)	-0.0033*** (0.000)	-0.0029*** (0.000)	- (0.000)	- (0.000)	- (0.000)
Time_export	-0.9696*** (0.148)	-0.9902** (0.159)	-0.9935*** (0.152)	-0.9345*** (0.128)	- (0.114)	-0.9696* (0.152)	- (0.152)
Aid for Trade_Facilitatio n	1.7207** (0.255)	1.5878*** (0.257)	1.7462*** (0.261)	1.7620*** (0.235)	1.5802* (0.231)	1.8405*** (0.286)	1.7274*** (0.262)
Population	-1.1028*** (0.204)	-1.0049** (0.192)	-1.0164** (0.196)	-1.1586** (0.198)	- (0.245)	- (0.208)	-1.1154** (0.205)
CGQI	0.0957*** (0.017)						
Citizen perception		0.3663** (0.127)					
Political stability			0.1679**				

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			(0.049)					
Effectiveness of public authorities								0.5581***
Quality of regulation							(0.104)	1.3209***
Rule of law								0.4710***
								(0.110)
Control of corruption								0.3559***
								(0.061)
Constant	11.8017***	11.6341***	10.3178***	13.0186***	13.7889**	12.1334**		11.7347**
	(0.614)	(0.915)	(0.825)	(0.627)	(1.259)	(0.815)		(0.692)
Observations	14	14	14	14	14	14		14

Note: Robust standard errors are in parentheses, *** p < 0.01, ** p < 0.05, * p < 0.10.

CONCLUSION

Motivated by the theoretical argument favoring trade liberalization as a driver of growth in developing countries, the WTO adopted the Doha Round for multilateral trade negotiations. Following the ratification of the WTO's Trade Facilitation Agreement (TFA), the issue of trade facilitation has garnered significant interest among ECOWAS countries. In this context, the objective of this chapter was to assess the effects of governance quality on the implementation of Type A commitments made by ECOWAS countries regarding the WTO's Trade Facilitation Agreement (TFA).

Using data from 14 ECOWAS countries, empirical results demonstrate that good governance quality has a positive influence on expediting the implementation of trade facilitation measures. These findings confirm the hypothesis that institutions have a positive impact on initiatives aimed at facilitating international trade. In other words, all else being equal, poor-quality institutions hinder the adoption of measures to facilitate trade.

It is evident that governance quality, as a whole, has positive and significant effects on Type A commitments of the WTO's TFA. This observation is based on the fact that all six Kaufmann governance indicators are significant, except for "voice and accountability." From a policy perspective, this study suggests that policies targeting reforms in the areas of regulation quality, public sector efficiency, rule of law, control of corruption, and political stability are likely to be more effective in improving trade facilitation performance than other measures related to governance quality. These results hold true whether within the framework of the negative binomial model or the Poisson model with continuous endogenous covariates.

To address legal and practical challenges and provide policy recommendations, this study highlights the following points:

- Strengthening governance quality emerges as a crucial condition for the adoption and effective implementation of the Trade Facilitation Agreement (TFA). Specifically, the results urge the governments of ECOWAS countries to intensify their efforts to enhance the efficiency of the public sector. This includes improving regulatory quality, promoting political stability, upholding the rule of law, and, ultimately, combating corruption.

- Enhancing transparency and coordination within the oversight bodies of various institutions within the community also stands out as a crucial recommendation.

- Working towards harmonizing legal frameworks at the regional level is essential to facilitate consistent TFA implementation. Collaboration among ECOWAS countries to align and streamline their respective legislations will help reduce legal barriers and promote uniform application of trade facilitation measures.

These recommendations aim to holistically address the identified challenges and create an environment conducive to the effective implementation of trade facilitation measures in the ECOWAS region.

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APPENDIX

Appendix 1 : Ratifications of the TFA and notifications from ECOWAS member states.

Name	Country Status	Date of Ratification	Category A %	Category B %	Category C %	Not ratified %
Benin	LDC	28-03-18	65.5	21.8	12.6	0
Burkina Faso	LDC	21-09-18	13	17.6	69.3	0
Cap-Vert	DC	06-02-20	37.4	16.8	45.8	0
Côte d'Ivoire	DC	08-12-15	34	5	60.9	0
Gambie	LDC	17-07-17	48.7	38.2	13	0
Ghana	LDC	04-01-17	9.7	17.2	73.1	0
Guinée	LDC	24-10-19	14.7	33.2	52.1	0
Guinée-Bissau	LDC	Not ratified	0	0	0	100
Liberia	LDC	29-04-21	35.7	31.9	32.4	0
Mali	LDC	20-01-16	65.5	17.2	17.2	0
Niger	LDC	06-08-15	31.9	6.7	61.3	0
Nigeria	DC	16-01-17	15.1	42.4	42.4	0
Senegal	LDC	24-08-16	52.5	10.5	37	0
Sierra Leone	LDC	05-05-17	0.8	19.7	79.4	0
Togo	LDC	01-10-15	42.9	32.8	24.4	0
ECOWAS Average	-	-	31.16	20.73	41.39	6.67

Source: Author, based on WTO data (<https://www.tfadatabase.org/>)⁴

⁴ En date du 27/05/2022 à 11h00

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Appendix 2 : Results of the estimations of the effects of governance quality on Category A commitments.

VARIABLES	Variable dépendante : Nombre d'engagements de type A en matière d'Accord de Facilitation des Échanges					
	(1)	(2)	(3)	(4)	(5)	(6)
Log_GDP_per_capit a	52,5644** (18,903)	59,7416** (18,280)	51,9990*** (12,091)	52,0450*** (13,227)	59,8628** (16,590)	59,8671** (18,321)
Inflation	- 95,9202*** (21,892)	-91,3502*** (22,003)	-109,6531*** (18,411)	-136,5147*** (25,044)	-105,2034*** (22,184)	- 102,4310*** (24,226)
Cost_import	-0,2569*** (0,049)	-0,2837*** (0,044)	-0,2417*** (0,032)	-0,2192*** (0,026)	-0,2581*** (0,048)	-0,2466*** (0,051)
Time_export	- 70,4398*** (11,066)	-71,6795*** (9,435)	-67,6155*** (6,254)	-64,3789*** (4,827)	-67,5194*** (10,817)	-69,1703*** (10,439)
Aid for Trade_Facilitation	122,1846** * (19,887)	133,4372*** (17,213)	135,5250*** (12,255)	127,8556*** (10,923)	133,9333*** (20,944)	129,7212*** (19,192)
LogPopulation	- 70,8397*** (11,438)	-71,5200*** (11,161)	-81,6838*** (9,176)	-83,9313*** (10,400)	-79,6876*** (12,521)	-76,6177*** (12,411)
Citizen perception	21,9702 (11,755)					
Political stability		12,4701** (4,565)				
Effectiveness of public authorities			37,7244** (10,671)			
Quality of regulation				86,6794*** (17,683)		
Rule of law					24,9599* (12,484)	
Control of corruption						19,3895* (9,244)
Constant	542,0081** * (111,618)	463,7698*** (91,433)	652,8072*** (58,384)	718,6442*** (47,385)	568,0875*** (103,735)	539,6358*** (111,445)
Observations	14	14	14	14	14	14
R-Carré	0,91	0,92	0,96	0,96	0,92	0,91

Note: Robust standard errors are in parentheses, *** p < 0.01, ** p < 0.05, * p < 0.10. These results are obtained using the Ordinary Least Squares (OLS) method.

Source: Author, data from the WDI database.