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Impact of trade facilitation, digitalization and sector-specific measures on agricultural trade

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Abstract

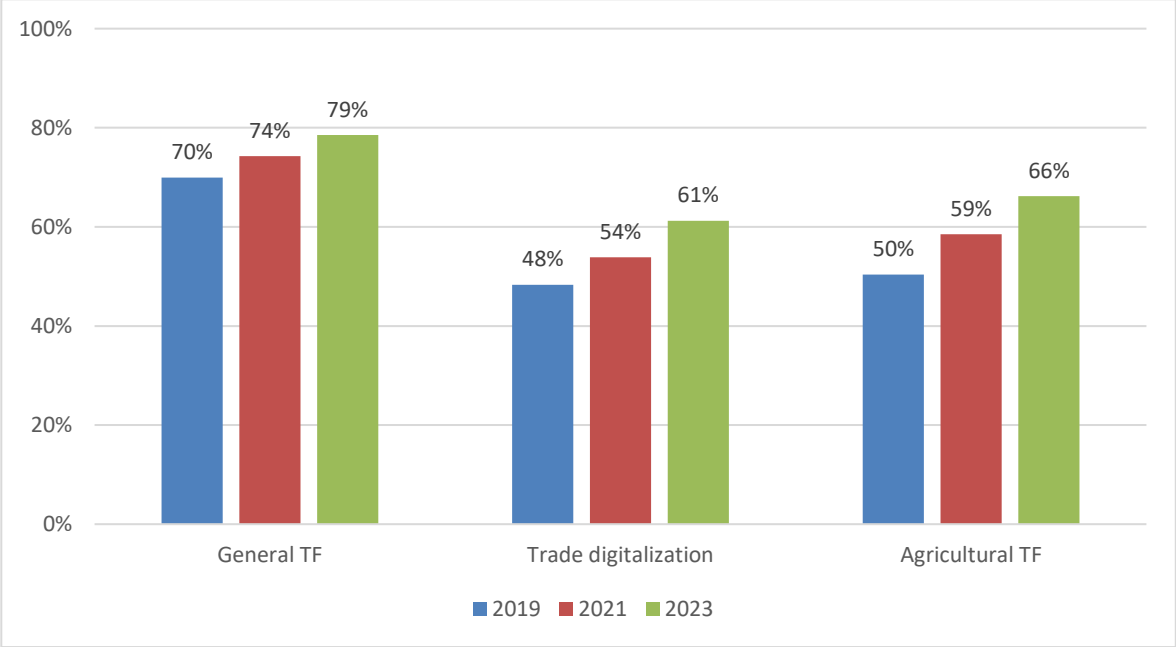
This study examines the impact of trade facilitation measures on agricultural trade flows at the global level. It does so by using data on implementation of measures from the UN Global Survey on Digital and Sustainable Trade Facilitation to estimate a structural gravity model of trade. The findings highlight a strong positive relationship between digitalization of trade procedures and trade in agricultural products. A statistically significant positive relationship is also found between agriculture-specific trade facilitation measures and agricultural trade. The results confirm the importance of sector-specific agricultural trade facilitation measures, including national standards and accreditation bodies to facilitate compliance with SPS, availability of testing and laboratory facilities for SPS compliance, use of electronic SPS certificates, and special handling provisions for perishable goods at borders. However, the effects vary significantly across country groups. Sector-specific measures result in trade gains nearly three times larger between developed and developing countries (North-South and South-North) than those in the case of North-North trade and twice as large as the global average. Overall, the results suggest the need to develop agricultural trade facilitation strategies that integrate ambitious trade digitalization initiatives and targeted agriculture-specific measures.

Keywords: agriculture, trade facilitation, agricultural trade facilitation, trade digitalization, trade digitalization index, TDI, structural gravity

I: Introduction

By cutting through red tape and promoting transparent trade procedures, trade facilitation reduces delays and uncertainty in shipments, improving predictability and minimizing disruptions in the supply chain. This also encourages greater participation in international trade, particularly for smaller enterprises who benefit from lower entry costs and easier access to global markets. Trade in agriculture and food products is often subject to more regulations and associated compliance procedures than other sectors, including sanitary and phytosanitary requirements. As such, implementation of trade facilitation measures is particularly pertinent for this sector.

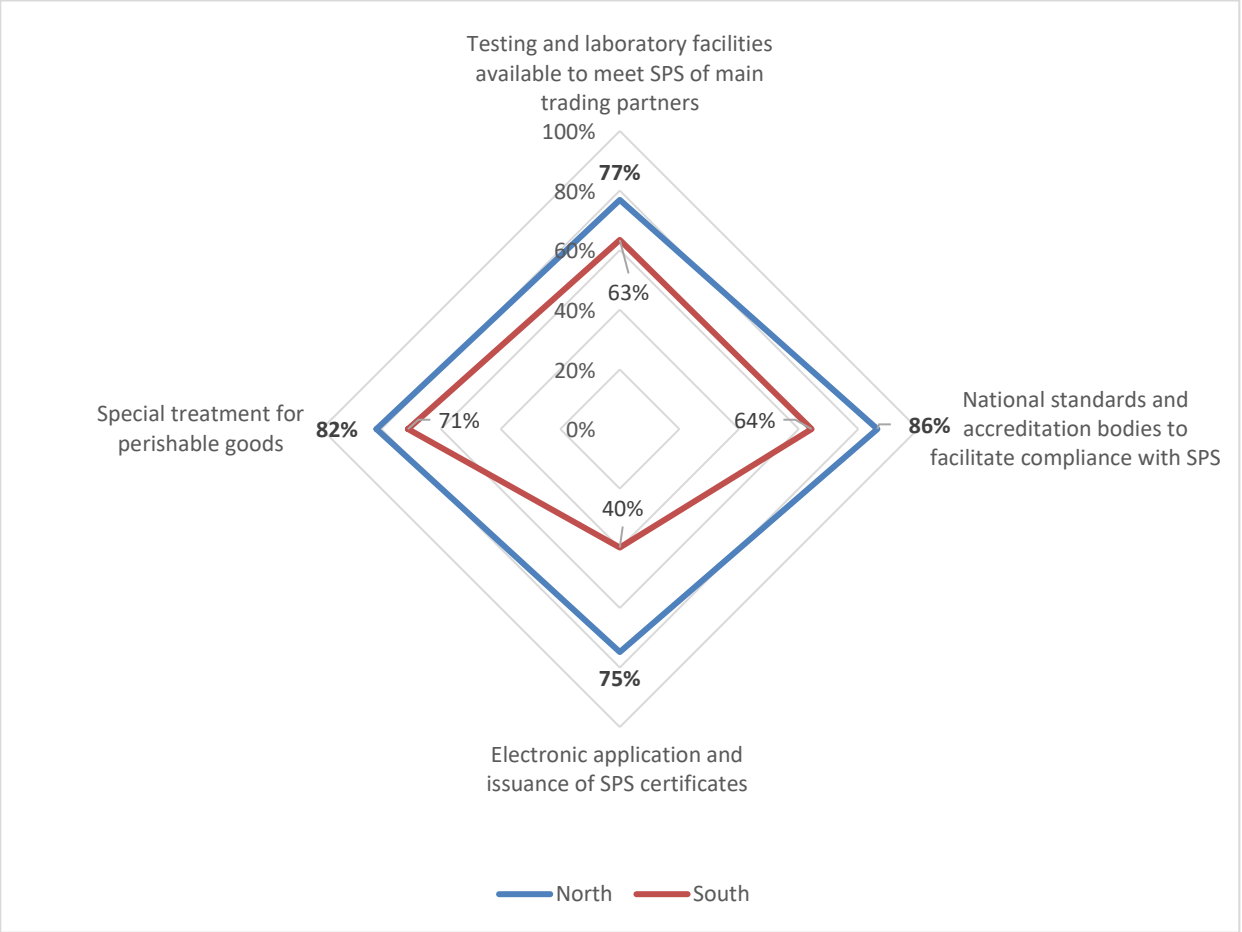
Figure 1 Implementation of trade facilitation measures globally (2019-2023)



Source: Author's calculation based on the United Nations (2023), www.untfsurvey.org
Note: The figure shows global average implementation rates for subgroups of trade facilitation measures (2019 to 2023). The comparison is based on common countries where data in 2019-2023 are consecutively available. See Annex 1 for classification of trade facilitation measures.

The UN Global Survey on Digital and Sustainable Trade Facilitation provides a unique repository of information on the implementation of over 60 different trade facilitation measures across over 130 countries, including general trade facilitation measures typically included in the WTO Trade Facilitation Agreement (WTO TFA) but also more specific digital or sector-specific measures. "Trade digitalization" incorporate paperless trade and cross-border paperless trade measures. However, "cross-border paperless trade" is not featured in the WTO Trade Facilitation Agreement (TFA). Similarly, agricultural trade facilitation measures are largely absent from the WTO TFA, except for the provision on "Testing and laboratory facilities available to meet the SPS requirements of major trading partners," as highlighted in this survey. As shown in Figure 1, implementation of digital and agricultural trade facilitation measures stand below the global average rate of implementation of general trade facilitation of 79% as of 2023.

Figure 2 Implementation of agricultural trade facilitation measures in developed and developing economies (2023)



Source: Author's calculation based on the United Nations (2023), www.untfsurvey.org
Note: See Annex 1 for classification of trade facilitation measures. Income groups are defined as in World Bank's World Development Indicators (2017) - see Annex 2 for more details.

A closer analysis of agricultural trade facilitation, as shown in Figure 2, indicates that high-income economies (referred to as the "North") exhibit higher implementation rates compared to lower-income economies (referred to as the "South"). Among agricultural-related measures, two widely implemented measures by both the North and South are "National standards and accreditation bodies to facilitate compliance with SPS" and "Special treatment for perishable goods". The least implemented measure is "Electronic application and issuance of SPS certificates".

There is a notable gap in the literature regarding the impact of digital and agricultural-specific trade facilitation measures on global agricultural trade flows. Many existing studies have relied on non-sectoral aggregate trade data as dependent variable and used generic traditional ex-post trade facilitation variables, such as time to trade, as independent variables. However, comprehensive analyses that consider the unique characteristics of agricultural trade and incorporate a diverse array of trade facilitation measures - particularly those tailored to agriculture - are notably limited.

To address this gap, the study employs a structural gravity model and utilizes data on implementation

of individual trade facilitation measures from the UN Global Survey on Digital and Sustainable Trade Facilitation. As such, it provides new evidence on the relationship between trade facilitation implementation —focusing on digitalization and agricultural-specific measures — and agricultural trade at the global level. The use of a structural gravity model also ensures robust, theory-consistent estimates, addressing potential issues of endogeneity and heteroskedasticity to enhance the reliability of findings on the impact of trade facilitation measures.

The remainder of the paper is organized as follows: Section 2 provides a summary of the existing literature, followed by an introduction of the data and methodology in Section 3. Section 4 presents the empirical results, and Section 5 concludes the study.

II: Literature review

Measuring the impact of trade facilitation measures on trade has long been a challenge, due to severe data limitations on implementation. Moïsé and Sorescu (2013) introduced the OECD Trade Facilitation Indicators (OECD-TFIs), creating the first framework for monitoring trade facilitation implementation, comprehensively covering the measures now included in the WTO Trade Facilitation Agreement (TFA), adopted in 2014. In 2015, the United Nations (UN) released its first global report on implementation of trade facilitation measures. It broadened the focus beyond the provisions of the WTO TFA to incorporate trade digitalization and sustainable trade facilitation into assessments, including agriculture-specific trade facilitation measures. To date, however, no peer-reviewed studies have been published on the impact of these sector-specific measures.

Much of the existing literature on trade facilitation is not sector-specific. The studies have ranged from examining the ex-post impact of trade facilitation measures (e.g., estimated transaction time and costs) to estimating the impact of being part of trade facilitation related agreements (e.g., the WTO TFA) or to evaluating the effects of implementation of trade facilitation measures, often through gravity models. However, Liapis (2015) emphasizes that trade facilitation is especially important for agricultural products, notably perishables, due to their sensitivity to time delays, which can impact product quality. While agricultural trade has grown significantly, especially from low and lower-middle-income countries, these regions still face barriers. High trade costs, effectively acting as tariffs, disproportionately affect agricultural goods. Improved trade facilitation would help these countries better align with global best practices, reducing costs and supporting agricultural export growth.

In line with the focus on ex-post impacts, Hendy and Zaki (2021) utilized a gravity model with PPML estimation to evaluate the effects of time delays on exports from multiple perspectives, including the aggregate level, sectoral level, and firm size, using Egyptian customs data. Their study reveals that time delays have a particularly sensitive and significant effect on agricultural trade flows. Mendes dos Reis et al. (2020) applied both Ordinary Least Squares (OLS) and Pseudo-Poisson Maximum Likelihood (PPML) estimation techniques in their gravity model analysis of soybean export facilitation between the United States, Brazil, Argentina, and their trading partners. Their findings indicate that different logistic-related components have a positive effect on soybean trade. The study further suggests that a more detailed investigation of the sub-indicators comprising the logistics performance index they used is necessary, as the impacts on trade vary depending on specific components.

Other notable contributions include Shepherd and Wilson (2013), who used a PPML model, examines the impact of EU agricultural standards on trade. Their findings suggest that most EU standards act as trade barriers, but when these standards are internationally harmonized, such as through the ISO, they can sometimes promote trade. Disdier et al. (2008) investigated the impact of sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT) on agricultural

trade from a cross-sectional perspective using a gravity model. Their OLS estimation, which included reporter and partner fixed effects, showed that SPS and TBT negatively affect agricultural trade, with a more pronounced impact on exports from developing countries.

Shepherd (2022) finds the positive effects of trade facilitation on trade flows across all sectors, except mining, by applying a structural gravity model with the OECD Trade Facilitation Indicators (OECD-TFI) and undertaking a counterfactual simulation of improvement in trade facilitation. However, in terms of GVC trade's share of total trade, the counterfactual analysis explains only 9.3% of the observed increase. This suggests that, while trade facilitation improvements were instrumental in supporting GVC trade growth during the period studied, other influential factors were also at play beyond the model's scope.

Beverelli et al. (2023) demonstrates that the implementation of the WTO TFA significantly enhances trade, particularly in the agricultural sector, among developing countries that have undertaken commitments. General equilibrium analysis indicates a 5% global increase in agricultural trade, with especially notable effects for Least Developed Countries (LDCs), where agricultural exports rise by 17%. Findings in de Castro and Kornher (2024) show that a one-standard deviation improvement in e-trade facilitation on the exporter side and digitalization related to cross-border non-tariff measures on the importer side increase agro-food exports by 9.7% and 1.3%, respectively, with stronger effects for processed products and countries in Sub-Saharan Africa and Asia.

Masood and Martinez-Zarzoso (2024) utilized a structural gravity model that accounts for both intra-national and international trade flows, drawing on UN-TFIs data up to 2019. Their findings show that the impact of trade facilitation varies depending on income levels and the types of goods traded. For agricultural goods, the effects of digital trade facilitation in non-OECD countries are comparable to those in OECD countries. Specifically, a unit increase in digital trade facilitation index results in an approximately 2 percent increase on average in agricultural trade. Interestingly, within the non-OECD group, digital trade facilitation has a greater effect on agricultural trade than general trade facilitation.

Significant progress has been made over the past decade in developing more robust and theoretically consistent gravity models, such as the structural gravity models proposed by Yotov et al. (2016) and Heid et al. (2021), which account for both international and intra-national trade flows. Building on these advancements, the literature highlights other vital applications in estimating these models, including the use of panel data and structured time intervals (Olivero and Yotov, 2012), the incorporation of country-pair fixed effects (Baier and Bergstrand, 2007; Anderson and Yotov, 2016), and the use of directional time-varying fixed effects (Olivero and Yotov, 2012; Fally, 2015). Moreover, to address heteroskedasticity in trade data and manage zero trade flows, Santos Silva and Tenreyro (2006) recommend using PPML estimation. Together, these methodological improvements, especially the inclusion of more complete fixed effects, allow for more accurate and unbiased estimates.

III: Methodology and data

The availability of sector-specific literature on trade facilitation remains limited. Most studies analyzing the impact of trade facilitation on trade rely on aggregate trade data, while traditional trade facilitation indicators, such as time or cost in cross-border trade, often serve as non-specific ex-post outcome variables rather than evaluating distinct trade facilitation measures. This approach leaves a gap in understanding the specific effects of trade facilitation on agricultural trade.

Given the unique characteristics of agricultural goods, a focused analysis is needed to capture their specific trade dynamics. To address this gap, the present study examines the effects of digital and agricultural trade facilitation measures, drawing on data from the UN Global Survey on Digital and Sustainable Trade Facilitation. This targeted approach allows for a more refined assessment of trade facilitation's impact on the agricultural sector, as opposed to a generalized perspective.

To assess these effects, the study utilizes a structural gravity model focused on agricultural trade flows globally. A noteworthy feature of this model is its use of a comprehensive set of fixed effects, including bilateral fixed effects, which account for time-invariant factors between country pairs—such as geographical distance (e.g., proximity, shared borders, landlocked status) and cultural distance (e.g., shared language, colonial ties, or a historical unity of a country and trading partner). This setup enables the model to control for these fixed factors, allowing a clearer focus on the impacts of trade facilitation measures.

The model also incorporates exporter-time and importer-time fixed effects to capture outward and inward multilateral resistance terms, enhancing the precision of the analysis by accounting for various unobserved factors that could affect trade flows. By following the methodology outlined by Yotov et al. (2016), this study presents a partial equilibrium specification of the structural gravity model, enabling an in-depth examination of trade dynamics specific to agricultural trade.

In addition, the model integrates exporter-time and importer-time fixed effects to capture the outward and inward multilateral resistance terms. This advanced framework allows for a more nuanced assessment of the impact of trade facilitation by controlling for various unobserved factors that could influence trade flows. By following the methodology of Yotov et al. (2016), the study presents a partial equilibrium specification of the structural gravity model, offering a precise impact of trade facilitation in the context of agricultural trade. To investigate the impact of the related trade facilitation measures in both reporter and trading partner countries, the study follows the model setup in Duval and Utoktham (2024) and estimate both individual and full spectrum of general trade facilitation, trade digitalization implementation indices, as well as specific impact of agricultural trade facilitation. The full specification of regressions is as follows:

$$m_{ji,t} = \exp\left[\alpha_{i,t} + \gamma_{j,t} + \delta_{ij} + \beta_1\left(\ln\left(\boldsymbol{GTF_{ij,t}}\right) \times INTER_{ij}\right) + \beta_2\left(\ln\left(\boldsymbol{TDI_{ij,t}}\right) \times INTER_{ij}\right) + \beta_3\left(\ln\left(\boldsymbol{ATF_{ij,t}}\right) \times INTER_{ij}\right) + \beta_4\left(\ln\left(gtariff_{ij,t}\right) + \beta_5(RTA_{ij,t})\right] \times \varepsilon_{ij,t} \quad (1)$$

This study investigates the impact of trade facilitation on goods exports across 85 economies over three years: 2017, 2019, and 2021. Bilateral trade data are obtained from the UN COMTRADE database via the World Bank's WITS platform. Originally reported in the 1988/1992 Harmonized System classification, the data are converted to the ISIC Rev. 3 classification using WITS's concordance feature. The study measures trade facilitation implementation using indicators for general, digital, and agricultural trade facilitation from the fifth Digital and Sustainable Trade Facilitation: Global Report 2023.

To analyze the impact of trade facilitation on agricultural trade, the research employs a pseudo Poisson maximum likelihood (PPML) model, incorporating exporter-year fixed effects ($\alpha_{i,t}$), importer-year fixed effects ($\gamma_{j,t}$), and country-pair fixed effect (δ_{ij}). Robust and clustered standard errors by country pair are included to address potential endogeneity in trade policies and cross-country data heterogeneity. Table 1 provides a summary of variable descriptions, data treatment, data sources, and the expected impacts of variables on trade.

Table 1 Data definition, treatment, source, and expected sign in partial equilibrium analysis

Variable	Definition	Data Treatment	Source	Expected Sign
$m_{ji,t}$	If i and j are different countries, the variable denotes agricultural trade i.e. imports of country j to destination i to represent exportation of i to j (as imports data are more completed) If i and j are the same country, the value denotes intra-national trade i.e. domestic production of country i less total exports	none	**International trade:** World Integrated Trade Solution (WITS) **Intra-national trade:** Retrieve production data from UN DataBank with application from Arvis et al. (2016) to obtain intra-national trade.	N/A
$INTER_{ij}$	Indicator variable value of 1 if i and j are different countries and zero otherwise	none	Author's calculation	N/A
GTF_{ij}	Geometric average of trade facilitation implementation rate of country i and j (generaltf_ij: (square root of generaltf_i times generaltf_j), which covers measures included in the WTO TFA	0.0001 replacement if implementation equals zero	Global Survey on Trade Facilitation and Paperless Trade Implementation 2023, United Nations	+
TDI_{ij}	Geometric average of trade digitalization implementation rate of country i and j (tdi_ij: (square root of tdi_i times tdi_j))	0.0001 replacement if implementation equals zero	Trade digitalization Index 2024, United Nations	+
ATF_{ij}	Geometric average of agricultural trade facilitation implementation rate of country i and j (atf_ij: (square root of atf_i times atf_j))	0.0001 replacement if implementation equals zero	Global Survey on Trade Facilitation and Paperless Trade Implementation 2023, United Nations	+
$gtariff_{ij}$	Geometric average tariff of country i and j.	Tariff is structured as 1+tariff rate. The study sets rate to zero if it is intra-national trade observation	World Integrated Trade Solution (WITS)	-
RTA_{ij}	Dummy variable equal to 1 if country i and j are members of the same regional trade agreement and zero otherwise.	The study sets value to zero if it is intra-national trade observation	Egger, P. H. and Larch, M. (2008)[1]	+

Abbreviation: TF = trade facilitation; TFI = trade facilitation implementation; N/A = not applicable
Note: For the trade facilitation components, zeros are replaced by 0.0001 to prevent omissions of observations.

[1] This dataset includes all RTA as notified to the World Trade Organization in 1950-2022. Details are available at: https://www.ewf.uni-bayreuth.de/en/research/RTA-data/index.html

IV: Empirical results

Table 2 presents the partial equilibrium results from the models, highlighting statistically significant explanatory variables with expected signs. Despite low impact of agricultural trade facilitation in Model 1, such effect remains statistically significant, with a 10 percent improvement leading to a 0.15 percent trade increase.

While impact of general trade facilitation becomes statistically insignificant, all models highlight the role of trade digitalization in enhancing agricultural trade, with a 10 percent improvement in trade digitalization leading to an increase in trade of up to 4 percent, which is more than 20 times higher than that of the specific measures for agriculture. This underscores the importance of cooperation between countries in trade digitalization, particularly in fostering interoperability among paperless/cross-border paperless systems, which can be especially beneficial to this sector.

The study further explores the impacts by categorizing countries into two income-based groups: developed economies ("North") and developing economies ("South"). It then evaluates the effects across three scenarios: (1) North-North, (2) North-South and South-North, and (3) South-South.

In the North-North scenario, the findings confirm that both trade digitalization and agricultural trade facilitation remain critical in boosting trade. A 10% improvement in trade digitalization leads to a 13% increase in trade, while a similar improvement in agricultural trade facilitation results in a 0.12% trade increase.

Shifting to the North-South/South-North scenario, the model reveals a slightly stronger positive trade-boosting effect from agricultural trade facilitation than in the North-North context. Specifically, a 10% improvement in agricultural trade facilitation increases trade by 0.4%. Conversely, the impact of trade digitalization in this scenario is lower, with a 10% improvement leading to a 6.6% increase in trade. Overall, while the effect of agricultural trade facilitation in North-South/South-North scenarios is nearly three times greater than in the North-North case, the impact of trade digitalization in the North-North model is almost twice as significant as in the North-South/South-North scenario.

Table 2 The impact of trade facilitation on agricultural trade

DEPENDENT VARIABLE: mji	(1) Global	(2) North-North	(3) North-South/ South-North	(4) South-South
ln_generaltf_ij_inter	-0.193	0.671	-0.674	0.278
	[-0.517]	[0.884]	[-0.990]	[0.593]
ln_digitaltf_ij_inter	0.415*	1.306***	0.656*	0.0892
	[1.728]	[3.598]	[1.919]	[0.265]
ln_agri_ij_inter	0.0153***	0.0122**	0.0385***	8.05e-05
	[2.796]	[2.036]	[4.995]	[0.0105]
ln_gtariff	-2.178	-4.521	-7.946***	-0.268
	[-1.362]	[-0.568]	[-3.464]	[-0.115]
rta	0.191**	0.463***	-0.0924	0.441**
	[2.179]	[3.143]	[-0.602]	[2.211]
Constant	26.29***	22.71***	26.56***	26.77***
	[397.6]	[74.04]	[660.1]	[697.9]
Observations	9,853	1,322	4,933	3,808
Reporter-year FE	Yes	Yes	Yes	Yes
Partner-year FE	Yes	Yes	Yes	Yes
Pair FE	Yes	Yes	Yes	Yes

*** p<0.01, ** p<0.05, * p<0.1
z-stat. in square brackets
Source: Author's calculation

Within the realm of South-South trade, the individual elements of the trade facilitation spectrum—encompassing general, digital, and agricultural trade facilitation measures—fail to demonstrate statistically significant impacts. This limited effectiveness may be attributed to the relatively low variability in the implementation of such measures across these countries. To address this, policymakers might consider adopting cohesive and comprehensive strategies that emphasize holistic, well-coordinated, and economically efficient approaches. These strategies should also tackle the distinct cross-border challenges in agriculture encountered by developing regions, while integrating targeted measures to address the specific needs of individual countries.

Finally, the study explores into the impact of individual agricultural trade facilitation measures, specifically measures 44 through 47, as outlined in the UN Global Survey on Digital and Sustainable Trade Facilitation 2023 (see Table 3). All four measures demonstrate positive and statistically significant effects on agricultural trade flows. Of these, testing and laboratory facilities (measure 44) emerge as the most impactful, indicating that robust testing infrastructure plays a critical role in facilitating trade by ensuring compliance with international standards.

Following closely are special treatment for perishable goods (measure 47), which help streamline regulatory processes and enhance trust in agricultural products, thus promoting smoother trade. Additionally, national standards and accreditation bodies (measure 45) and the electronic application and issuance of SPS (Sanitary and Phytosanitary) certificates (measure 46) are also

significant, emphasizing the importance of targeted measures to address the unique challenges faced by agricultural trade, such as the time sensitivity of perishables and the need for efficient certification processes.

These results highlight the critical need to address technical issues in agricultural sector, where specialized infrastructure and streamlined processes can have a profound impact. The findings suggest that targeted investments in specific areas of trade facilitation—such as improving laboratory facilities, strengthening accreditation bodies, and enhancing electronic certification systems—could yield substantial benefits by reducing delays, costs, and trade frictions in agricultural exports.

Table 3 The impact of individual agricultural trade facilitation measures on agricultural trade

Measure	Measure description	Coefficient	Standard error	Z score	P-value	Observation
44	Testing and laboratory facilities available to meet SPS of main trading partners.	0.0273	0.0058	4.7186	0.0000	9853
45	National standards and accreditation bodies to facilitate compliance with SPS.	0.0185	0.0061	3.0069	0.0026	9853
46	Electronic application and issuance of SPS certificates.	0.0175	0.0041	4.2213	0.0000	9853
47	Special treatment for perishable goods.	0.0188	0.0068	2.7621	0.0057	7150
Agricultural trade facilitation (ij)		0.0196	0.0043	4.6208	0.0000	9853

Source: Author's calculation
Note: See Annex 1 for classification of trade facilitation measures and its adjustment of implementation.

This section highlights key insights from an empirical study on trade facilitation measures and their impact on agricultural trade. It notes that trade facilitation has a demonstrably positive effect on the flow of agricultural goods between countries. Among these facilitation measures, specific trade facilitation for agricultural sector and trade digitalization stands out as particularly influential in boosting trade. This is likely due to the efficiency and transparency benefits, which can help reduce delays, lower transaction costs, and improve the predictability of trade procedures.

The study also uncovers significant differences in how these trade facilitation measures affect different groups of countries. This variation suggests that a one-size-fits-all approach to policy is unlikely to be effective; instead, policies must be adapted to the specific economic, geographic, and institutional conditions of each country or region.

The results highlight the critical need to develop comprehensive agricultural trade facilitation strategies. These strategies should not only prioritize ambitious trade digitalization initiatives to

streamline processes and enhance efficiency but also incorporate targeted, agriculture-specific measures designed to address the unique challenges and opportunities within the sector. By integrating these two components, policymakers can create a more cohesive and effective framework for supporting agricultural trade in an increasingly interconnected global market. By tailoring trade facilitation policies to address the unique needs of individual countries or regions, policymakers can better support trade growth, improve market access for farmers and exporters, and contribute to overall economic development in the agricultural sector. This nuanced approach maximizes the effectiveness of trade facilitation efforts and fosters sustainable growth in agricultural trade.

V: Conclusion

This study offers a comprehensive analysis of the impact of trade facilitation measures on global agricultural trade flows, utilizing a structural gravity model and unique data from the UN Global Survey on Digital and Sustainable Trade Facilitation. The results confirm the existence of a positive relationship between the implementation of various trade facilitation measures— general facilitation, trade digitalization, and agricultural-specific trade facilitation measures—and agricultural trade flows.

On average at the global level, 10% increases in the implementation of trade digitalization and agricultural trade facilitation measures are associated with a 4 percent and 0.2 percent increases in agricultural trade flows, respectively. However, the results reveal that trade facilitation measures yield notably larger gains for trade between countries at different development levels. For example, the average impact of agricultural trade facilitation measures on North-South and South-North trade (involving exchanges between developed and developing countries) is almost 3 times larger than that for North-North trade; and approximately 2 times larger than for global trade. This indicates that trade facilitation can play an important role in promoting more balanced and inclusive global trade patterns. Taken together, these findings emphasize the need for a holistic and nuanced approach to trade facilitation policy. Policymakers should prioritize a combination of broad digital initiatives and sector-specific measures while tailoring strategies to address the unique dynamics of different country groups.

Although the impact of these agricultural-specific measures is relatively smaller compared to broader initiatives, their statistically significant effect provides clear evidence of the relevance of tailored approaches. The analysis of specific agricultural trade facilitation measures reveals that “Testing and laboratory facilities available to meet SPS requirements of main trading partners” provide the most significant impact to trade among the sector-specific measures considered. This is followed by measures such as “Special treatment for perishable goods.”, “National standards and accreditation bodies to facilitate compliance with SPS”, and “Electronic application and issuance of SPS certificates”. These findings highlight the critical importance of addressing technical non-tariff measures in the agricultural sector. Streamlining these regulatory processes and aligning standards across countries appear to be particularly effective strategies for boosting agricultural trade flows, promoting efficiency, and fostering greater market integration.

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Annex 1 Classification of trade facilitation measures

General TF	Trade Digitalization	Agricultural trade facilitation
National Trade Facilitation Committee or similar body	Automated Customs System	Testing and laboratory facilities available to meet SPS of main trading partners.
Publication of existing import-export regulations on the internet	Internet connection available to Customs and other trade control agencies	National standards and accreditation bodies to facilitate compliance with SPS.
Stakeholders' consultation on new draft regulations (prior to their finalization)	Electronic Single Window System	Electronic application and issuance of SPS certificates.
Advance publication/notification of new trade-related regulations before their implementation	Electronic submission of Customs declarations	Special treatment for perishable goods.
Advance ruling on tariff classification and origin of imported goods	Electronic application and issuance of import and export permit	
Risk management	Electronic Submission of Air Cargo Manifests	
Pre-arrival processing	Electronic application and issuance of Preferential Certificate of Origin	
Post-clearance audits	E-Payment of Customs Duties and Fees	
Independent appeal mechanism and online lodging	Electronic Application for Customs Refunds	
Separation of release from final determination of customs duties, taxes, fees and charges	Laws and regulations for electronic transactions	
Establishment and publication of average release times	Recognised certification authority	
TF measures for authorized operators	Electronic exchange of Customs Declaration	
Expedited shipments	Electronic exchange of Certificate of Origin	
Acceptance of copies of original supporting documents required for import, export or transit formalities	Electronic exchange of Sanitary & Phyto-Sanitary Certificate	
National legislative framework and/or institutional arrangements for border agencies cooperation	Paperless collection of payment from a documentary letter of credit	
Government agencies delegating border controls to Customs authorities		

Source: United Nations (2023), www.untfsurvey.org

The study found that there are responses as "no implementation" or "don't know" in "National standards and accreditation bodies to facilitate compliance with SPS" in 15 European countries: Andorra, Austria, Bulgaria, Croatia, Cyprus, France, Germany, Greece, Latvia, Luxembourg, Malta, Portugal, Slovenia, Spain and Sweden. This paper adjusts the results to "full implementation" as SPS standards are set by the European Union.

Annex 2 Income group (2017)

North (High income group)		South (Other income groups)				
Andorra	Luxembourg	Afghanistan	Democratic Republic of Congo	Lao PDR	Papua New Guinea	Turkey
Antigua & Barbuda	Malta	Albania	Dominican Republic	Lebanon	Paraguay	Turkmenistan
Argentina	Netherlands	Armenia	Ecuador	Liberia	Peru	Tuvalu
Australia	New Zealand	Azerbaijan	Egypt	Madagascar	Philippines	Ukraine
Austria	Norway	Bangladesh	El Salvador	Malawi	Republic of North Macedonia	Uzbekistan
Bahrain	Oman	Belarus	Equatorial Guinea	Malaysia	Russian Federation	Vanuatu
Belgium	Palau	Belize	Ethiopia	Maldives	Rwanda	Viet Nam
Brunei Darussalam	Panama	Benin	Fiji	Mali	Saint Lucia	Yemen
Canada	Poland	Bhutan	Gabon	Mauritania	Saint Vincent and the Grenadines	Zambia
Chile	Portugal	Bolivia	Georgia	Mauritius	Samoa	Zimbabwe
Croatia	Qatar	Bosnia and Herzegovina	Ghana	Mexico	Senegal	
Cyprus	Republic of Korea	Botswana	Guatemala	Micronesia	Serbia	
Czech Republic	Saint Kitts and Nevis	Brazil	Guinea	Moldova	Sierra Leone	
Estonia	Saudi Arabia	Bulgaria	Guinea - Bissau	Mongolia	Solomon Islands	
Finland	Seychelles	Burkina Faso	Guyana	Montenegro	Somalia	
France	Singapore	Burundi	Honduras	Morocco	South Sudan	
Germany	Slovenia	Cabo Verde	India	Mozambique	Sri Lanka	
Greece	Spain	Cambodia	Indonesia	Myanmar	Sudan	
Hungary	Sweden	Cameroon	Iran	Namibia	Syria	
Iceland	Switzerland	China	Iraq	Nauru	Tajikistan	
Ireland	Trinidad and Tobago	Colombia	Jamaica	Nepal	Tanzania	
Italy	United Kingdom	Comoros	Jordan	Nicaragua	Thailand	
Japan	Uruguay	Congo	Kazakhstan	Niger	Timor Leste	
Kuwait		Costa Rica	Kenya	Nigeria	Togo	
Latvia		Cote d'Ivoire	Kiribati	Pakistan	Tonga	
Lithuania		Cuba	Kyrgyzstan	Palestine	Tunisia	



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