Women Inclusion for Exports Trade Integration in COMESA

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Abstract

This study analysed the effect of women inclusion on export trade integration in COMESA's 17 Member States between 2000 and 2022. The study employed the Pseudo Poisson Maximum Likelihood estimator (PPML) on panel data from COMESA's 17 Member States. The study findings showed that women inclusion affects export trade integration differently in COMESA based on the variable of interest. Women's political and economic inclusion dampen export trade integration in COMESA. On the other hand, the study findings showed that women's social inclusion boosts export trade integration in COMESA. From the findings, the study recommends improving women's social inclusion by improving their contribution to human capital and, ultimately, export trade participation, thus boosting trade integration in COMESA.

Key Words: COMESA; Gravity Model; trade integration; Pseudo Poisson Maximum Likelihood estimator

JEL Classification Codes : B27, C23, F11, F13, F15

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1.0 Introduction

Women inclusion is essential in the advancement of trade integration (United Nations, 2015). Women inclusion is defined in this study to mean women economic, political and economic empowerment. Women inclusion encompasses access to the market and control over resources, increased voice, agency and meaningful participation in economic and political decision-making at all levels. On the other hand, trade integration is taken as a share of intra-COMESA exports over Gross Domestic Product (GDP), which measures the value of goods that a member country has exported within the COMESA region as a percentage of the country's GDP (AU, AfDB and UNECA, 2019). This is referred to as export trade integration in this study. Researchers show that improvement in women educational attainment, increase in women in political seats, and provision of employment opportunities reduce gender inequality, thus increasing trade integration (Singh *et al*., 2022).

The proportion of women seats in parliament, female employment to population ratio, the ratio of female to male labour force participation and school enrolment have been used by researchers to capture women political, economic and social inclusion (Singh *et al*., 2022; Dugarova. 2018; Kazandjian *et al*., 2016). Women's inclusion relates to SDG 5, which is gender equality and empowering all women and girls (United Nations, 2015). On the other hand, trade integration is achieved by applying trade policy measures to eliminate discrimination between economic units belonging to different states (Balassa, 1991). COMESA secretariat (2018) states that trade integration is subject to full and equal participation of women in business, which is a dimension for measuring regional integration, the overarching objective of the Community.

As such, the nexus between women inclusion and export trade integration is that women empowerment has the potential to advance export trade integration in COMESA. Research by Buvinic *et al.* (2014) and Sen (2015) highlights the significance of gender mainstreaming, which ensures gender views in policy frameworks and trade integration programs to guarantee that women's demands and priorities are suitably met. A study by Grown *et al.* (2014) underscores the importance of addressing gender-based constraints on women's participation in cross-border trade and entrepreneurship, showing women's essential role in trade.

COMESA recognises women's role in trade integration in Article 154 of the COMESA treaty. The bloc recognises that women empowerment and gender equality are key to attaining trade integration. COMESA thus promotes women empowerment, gender equality and women participation in leadership (COMESA, 2023). As such, the COMESA Medium Term Strategic Plan (MTSP) for 2021-2025 aims at fostering gender equality to ultimately reduce gender inequality and strengthen women inclusion in social, political, and economic development. COMESA has made efforts to promote women participation in leadership through partnerships with the African Women's Development and Communication Network (FEMNET) on avenues of supporting improvement in women leadership and political participation to foster trade integration (COMESA, 2023).

Women economic, political and social inclusion is essential for advancing trade integration. Women inclusion is expected to increase the level of women participation in trade and thus boost trade integration in the region. However, while COMESA member states are implementing the threshold for female representation and programs to enhance female school enrolment and increase female employment, women inclusion and trade integration in COMESA remain low. On average, the share of COMESA 's intra-regional exports over GDP was 0.019, 0.02.0.02, 0.022 and 0.023 percent in 2018, 2019, 2020, 2021 and 2022 respectively

(COMESA, 2023. Furthermore, between 2020 and 2022, the proportion of women in parliament and the female employment to population ratio depicted a slight decline of 0.1 and 0.04 percent, respectively. During the same period, school enrolment was very low at 1 percent. Low levels of women inclusion in trade could explain the low levels of intra-COMESA trade. Although a few studies have focused on women inclusion, especially economic and political inclusion, these studies are done outside COMESA, and none has explored the effect of women inclusion on export trade integration. The paper thus contributes to the long-standing literature on the determinants of trade integration by detailing the impact of women's inclusion on trade integration. This study, therefore addresses the problem of women inclusion in export trade integration across the COMESA region. Thus, the specific questions explored in this paper include: how does women's political inclusion affect export trade integration in COMESA? how does women's economic inclusion affect export trade integration in COMESA? how does women's social inclusion affect export trade integration in COMESA?

This study contributes to the existing literature in several ways. First, it extends the application of the gravity model by incorporating women's political, economic, and social inclusion as key determinants of export trade integration within COMESA, offering a nuanced understanding of gender dimensions in regional trade. Second, while previous studies have focused mainly on traditional economic factors influencing trade, this study uniquely highlights the differential effects of various forms of women's inclusion, demonstrating that social inclusion enhances export trade integration. In contrast, political and economic inclusion may hinder it. This insight provides empirical evidence to support gender-responsive trade policies to foster regional integration. Third, by utilizing data from 17 COMESA Member States over a 22-year period, the study offers a long-term perspective on the role of gender inclusion in trade, strengthening the case for policy interventions that promote social inclusion as a catalyst for export trade growth. Finally, the study contributes to policy discourse by recommending targeted strategies—such as increasing female secondary education and promoting gender equality in secondary school enrolment to ensure women have access to the same education and training as men—to enhance women's participation in trade, thereby aligning with COMESA's broader objective of regional economic integration.

The remainder of this study is organized as follows. Section 2 discusses the literature related to women's inclusion and export trade integration in COMESA, highlighting key theoretical and empirical contributions. Section 3 focuses on the methodology, detailing the model used to estimate the study questions and the data sources employed. Section 4 presents and analyses the results, examining the impact of political, economic, and social inclusion on export trade integration in COMESA. Finally, Section 5 is the conclusion and policy implications, emphasizing the role of social inclusion in enhancing regional trade integration and proposing actionable recommendations for policymakers.

2.0 Literature Review

The study is rooted in the concepts of absolute advantage and comparative advantage, which are essential in explaining how women's empowerment influences export trade integration within COMESA. Absolute advantage, introduced by Adam Smith, looks at the ability of a country to produce more of a good or service with the same resources as other countries. Comparative advantage, developed by David Ricardo, suggests that even if one country is more efficient in producing all goods, trade can still be beneficial if countries specialise in producing goods with lower opportunity costs (Overharage, 2012).

This implies that women's active participation in the political, economic, and social sectors improves a nation's absolute and comparative advantage in trade by enhancing its production capacity. For example, increasing women's access to education (social empowerment) enhances their skills, enabling them to participate in manufacturing and service sectors, which are generally associated with high productivity and skills, thereby improving their country's comparative advantage. Women's participation in parliament strengthens women's voices in formulating trade policies, including the gender perspective essential for trade integration. Including women in GDP-contributing activities improves the country's use of resources, thus increasing their contribution towards trade activities, especially in cross-border trade.

Existing empirical evidence supports these theoretical implications. Kazandjian *et al*. (2016) explored the impact of female labour force participation and secondary school enrolment on export diversification, a key aspect of trade integration, between 1990 and 2010. The authors captured gender inequality using gaps in labour force participation, education and female seats in parliaments, while diversification was captured using exports. The findings showed that the gender inequality index negatively affects export diversification. At the same time, the female labour force participation rate, secondary enrolment ratio and women in parliament were positive and significant on exports. While Kazandjian *et al.* (2016) focused on the role of gender inequality in export diversification and emphasised the role of female labour force participation and education as drivers of export growth, this study takes a broader comprehensive approach by linking women's empowerment (political, economic, and social) to export trade integration within COMESA. The study expands on the work of Kazandjian *et al.* (2016) by applying the theoretical concepts of absolute and comparative advantage to close the gap between export diversification and export trade integration. It offers a more comprehensive perspective on women's inclusion that considers economic, social, and political aspects. It also provides context-specific policy ideas for a regional integration agenda and empirical support for COMESA. The study makes a compelling case for gender-responsive trade policies by showing how women's inclusion increases comparative advantage and enhances trade integration.

The theoretical underpinnings of absolute and comparative advantage strongly emphasise how women's inclusion can increase a nation's capacity for production and export competitiveness (Busse & Spielmann, 2005). Women's political, economic, and social inclusion improves an economy's human capital and production base, creating a competitive advantage. While most existing studies focus on economic growth, few have explored how women's inclusion affects trade integration in a regional setting like COMESA, including Kazandjian *et al.* (2016).

This study addresses this gap by analysing how different dimensions of women's inclusion—political (women in parliament), economic (female labour force participation and employment), and social (secondary education and gender parity in education)—influence comparative and absolute advantage, ultimately affecting export trade integration. The findings give insights into the most significant area of women's inclusion in regional trade, offering evidence to policymakers on where to direct resources for optimal impact. Given the dearth of empirical literature on the subject matter, we now analyse the trends among key indicators

2.1 Stylistic facts and trends: Women inclusion and exports trade integration

COMESA has partnered with the African Women's Development and Communication Network (FEMNET) to support women empowerment in leadership and political participation as a catalyst for improving women empowerment (COMESA, 2023). The effect of such partnerships and country-specific efforts are captured in different reports. Data from the gender

inequality index shows that among the three variables used to capture women empowerment in this paper, Egypt recorded the highest number of female populations with secondary level education at 85.9 per cent, Eswatini has the highest female labour force participation rate at 44.9 per cent, and Rwanda recorded 54.7 percent of seats in parliament held by women across COMESA (Data from Human Development Report, 2022).

As presented in Figure 1, data on Women representation in parliament, female employment to population ratio, the ratio of female to male labour force participation and school enrolment in COMESA between 2018 and 2022 show that the proportion of women in parliament and labour force participation have marginally improved across the five years remaining at an average of 25 percent and 71 percent respectively. Employment remains at 45 percent while school enrolment is very low at 1 percent, showing the low levels of social empowerment in COMESA

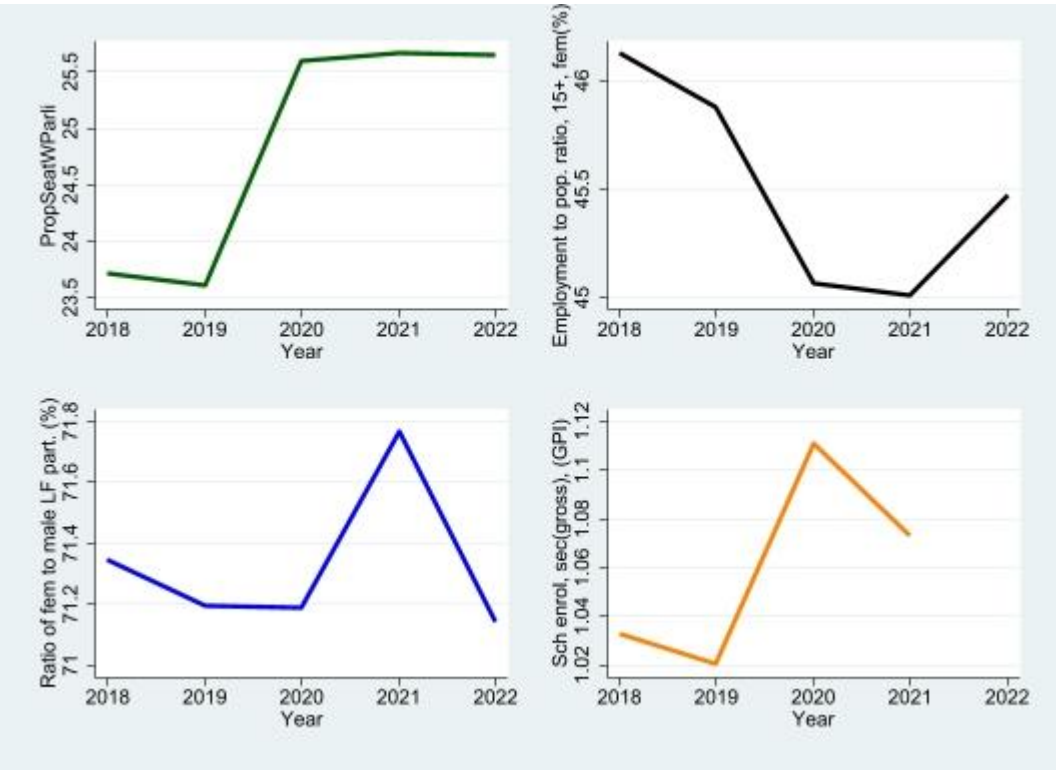

Figure 1: Women Performance in Political, Economic and Social Empowerment in COMESA
Source: Authors, 2024

On the other hand, the Global Gender Gap Report 2023 shows that in economic participation, Eswatini, Burundi, Zimbabwe, Madagascar and Kenya are among the top performers across 146 countries with 0.83. 0.81. 0.80 and 0.79, respectively, on a scale of 1. Although these countries represent COMESA's performance in economic participation, countries such as Egypt and Tunisia still rank in the last 20 performers, showing the need for improvement.

On educational attainment, none of COMESA countries are top performers, but the Democratic Republic of Congo, Ethiopia, Kenya, Malawi and Uganda rank among the 20 poor performers across 146 countries with 0.68, 0.85, 0.86,0.89 and 0.92 scores on a scale of 1 reflecting the poor performance of social empowerment in the region. On the other hand, Rwanda is the best

COMESA performer in political empowerment and among the top 20 of 146 performing countries, but none of the COMESA countries rank poorly (Women Economic Forum, 2023). Figure 2 shows the trends in intra-COMESA export trade and women inclusion variables using data available for this study. Intra-COMESA exports trade as a percent of GDP fluctuated over the study period. From 2001, intra-COMESA export trade increased at an increasing rate until 2004 before plummeting in 2005. Thereafter, it increased to about 20 percent of its GDP. On the other hand, the proportion of seats held by women in national parliament consistently improved in COMESA. On average, it increased by an astronomical value of about 537 percent between 2000 and 2022. In addition, it increases at an increasing rate, although minimal fluctuations are observed. This shows that more and more women, on average, are taking up decision-making positions in COMESA.

The female employment to population ratio shows an overall reduction in the percentage of women above 15 years employed when considering the total population. However, it improved between 2003 and 2008 before consistently declining until 2011. After 2011, it takes the shape of an elephant. On the contrary, the ratio of female to male labour force participation rate has increased in COMESA on average with limited oscillations. The education indicators capturing social empowerment, that is, gross secondary school enrolment measured at gender parity index and female secondary school enrolment as a percent of gross enrolment, highly fluctuated between 2003 and 2008, thereafter improving at an increasing rate until 2018 for the former and 2015 for the latter and decreasing thereafter

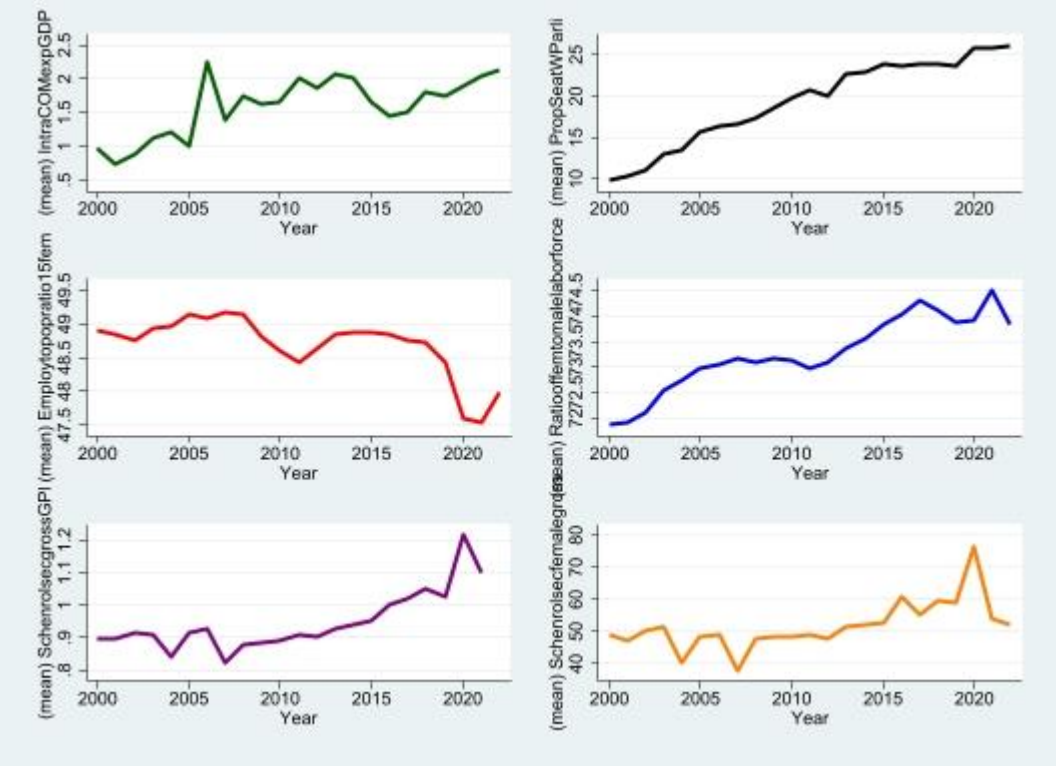

Figure 2: Trends in intra-COMESA export trade and women inclusion
Source: Authors, 2024.

3.0 Methodology

3.1 Scope

This study analyses the effect of women inclusion on export trade integration in COMESA from 2000 to 2022. The time coverage of this study was since significant efforts towards trade

integration in COMESA came with the launch of the COMESA FTA in 2000, while the ending period of 2022 largely depended on data availability. Specifically, this study had three objectives. First, to analyse the effect of women's political inclusion on export trade integration in COMESA. Second, to analyse the effect of women's economic inclusion on export trade integration in COMESA. Third, to analyse the effect of women's social inclusion on COMESA's export trade integration. The study included 17 of COMESA's 21 Member States. Due to data inconsistencies, Djibouti, Eritrea, Seychelles and Somalia are excluded from the analysis.

3.2 Model Specifications

This study uses a gravity model (Baier and Standaert, 2020; Elmslie, 2018; Anderson and Van Wincoop, 2003) to examine the effect of women inclusion on trade integration in COMESA. The gravity model is modified to account for trade integration, which is used as a dependent variable. The African Regional Integration Index (ARII) uses four indicators, among others share of intra-regional exports over GDP, to assess the extent to which a country trades with others in the region (trade integration dimension) (AU, AfDB and UNECA, 2019).

The share of intra-regional exports over GDP is adopted in this study to measure trade integration. Share of intra-regional exports over GDP is also known as exports trade integration in COMESA, referred to as the dependent variable in this study, computed from each country's exports trade to other Member States as a percentage of that country's GDP at time *t*. As such, this study specifies the gravity model similar to Anderson and Van Wincoop (2003), Baier and Standaert (2020) and Carrère (2006), except that the dependent variable is not a dyad. As a result, focusing on COMESA, the gravity equation is specified in equation 1.

$$Intra - COMESA\ EXPTRAD_{it} = \frac{Y_{j,t}}{P_{j,t}^{-\eta}} \frac{Y_{i,t}}{\pi_{i,t}^{-\eta}} \chi_{it}^{-\eta} \quad (1)$$

Where $Intra - COMESA\ EXPTRAD_{it}$ is a country's share of export trade in COMESA as a percentage of GDP, $Y_{i,t}$ represents the original country's Gross Domestic Product (GDP), $Y_{j,t}$ is the importer's (COMESA Member States' GDP except for the country concerned) Gross Domestic Product (GDP), which is subsequently not included. In addition, GDP indicates the stage of development of a country. Therefore, as a country's GDP increases, that country's trade in the region is expected to increase (Oshota and Wahab, 2022). Developed countries tend to be more open to trade and trade more (Frankel, 2010). χ_{it} is a vector of variables such as distance, language, landlocked, coloniser, and Free Trade Area (FTA), among others, that likely affect regional trade costs (see Frankel, 1997). The specification of χ_{it} enables the introduction of women inclusion variables, that is, political, economic and social inclusion. η is the elasticity of trade flows between a pair of countries. By assuming that trade barriers are symmetric, Anderson and Van Wincoop (2003) showed that $P_{j,t}$and $\pi_{i,t}$ (i.e. price indices of a good in importing and exporting country) are equal and are a function of trade barriers and income shares between two countries.

In specifying trade cost determinants, the introduced trade cost function between a country and COMESA region based on Carrère (2006) by adopting the following equation:

$$\chi_{it} = (D_i)^{\delta_1} \left[e^{\delta_2 L_i + \delta_3 C_i + \delta_4 LL_i + \delta_5 Cont_i + \delta_6 WI_{it} + \delta_7 FTA_i}\right] \quad (2)$$

Where χ_{it} is the vector of variables that affect country i's trade with other COMESA Member States, D_i is the average distance between the capital city of a country and those of all other COMESA Member States. L_i is a country's official language. For Language, dummy variables were used such that the study created Arabic, English, and French language dummies taking the values of 1 when a language is accounted for, and 0 otherwise.; C_i is coloniser. The study used dummies for former British (United Kingdom), French (France), Germany (German), Italian (Italy), and Belgian (Belgium) colonies. LL_i is a landlocked dummy taking the value of 1 if a country is landlocked and 0 otherwise; $Cont_i$ is contiguity taking the value of 1 if a country shares at least a border with another COMESA Member State and 0 if not; WI_{it} is women's political, economic and social inclusion indicators; FTA_i is equal to one if a country belongs to COMESA FTA; otherwise, it is zero. Our gravity model is finally estimated by applying logs to equation 1 as follows:

$$Intra - COMESA\ EXPTRAD_{it} = \beta_0 + \beta_1 lnGDP_{it} + \beta_2 lnD_i + \beta_3 L_i + \beta_4 C_i + \beta_5 LL_i + \beta_6 Cont_i + \beta_7 WI_{it} + \beta_8 FTA_i + \varepsilon_{it} \quad (3)$$

Where $Intra - COMESA\ EXPTRAD_{it}$ is the share of export trade in COMESA as a percentage of GDP, β_0 is a constant; $\beta_1 \ldots \beta_8$ are parameter coefficients, ε_{it} are error terms assumed to be normally distributed. β_1, β_3, β_4 , β_6 and β_7 are expected to be greater than zero, while β_2 and β_5 must be less than zero (Carrère, 2006).

3.3 Estimation Technique

The study employed the Pseudo Poisson Maximum Likelihood estimator (PPML) by Santos Silva and Tenreyro (2006) in analysing the effect of women inclusion on exports trade integration in COMESA from 2000 to 2022, which also accounts for heteroskedasticity and multiple fixed effects in the model (Santos Silva and Tenreyro, 2006; Motta, 2019). The estimator avoids sample selection bias by including zero observations in the analysis, a significant issue in this study data. The dependent variable had zero values, given that there were years in which a country did not export to any COMESA Member State. For instance, between 2000 and 2004, Comoros had zero exports to COMESA Member States. Stata 17 was used as an analytical package to run the robust PPML estimator.

3.4 Data type and sources

The study analysed the effect of women inclusion on export trade integration in COMESA between 2000 and 2022. Therefore, data on yearly observations from 2000 to 2022 were collected across 17 COMESA Member States from various secondary sources. The collected data was thus panel. Political, economic and social inclusion was used to capture women inclusion. In particular, the proportion of seats held by women in national parliaments captured political inclusion. Female share of employment and the ratio of female to male labour force participation rate proxied women's economic inclusion. Secondary school enrolment at gender parity and female gross secondary school enrolment proxied social inclusion. The political inclusion indicator is the percentage of parliamentary seats in a single or lower chamber held by women. Economic inclusion is the ratio of female to male labour force participation calculated by dividing the female labour force participation rate by the male labour force participation rate and multiplied by 100. In addition, economic inclusion is also measured as the percentage of females (15 years and above) employed to population ratio. Female secondary school enrolment as a percentage of gross and the ratio of girls to boys enrolled at the secondary school level in public and private school (gender parity index) were used to capture women education (social) inclusion. Data on economic and social inclusion was

obtained from the World Development Indicators, while data on political inclusion was sourced from the Inter-Parliamentary Union (IPU). Gross domestic product is the final market value of all goods and services produced in a period of one year, as determined by data obtained from the World Development Indicators.

The dependent variable exports trade integration in COMESA was computed as a share of a country's total exports trade to COMESA as a percentage of that country's GDP. Data on bilateral COMESA exports trade used to compute the dependent variable was obtained from the IMF Direction of Trade Statistics. Data on traditional gravity indicators was collected from the Centre d'Études Prospectives et d'Informations Internationales (CEPII) database.

Table 1: Definition and Measurement of variables

Variable	Definition	Measurement
Gross domestic product	The final market value of all goods and services produced in a calendar year.	Million United States Dollars.
Exports trade integration in COMESA integration	The total value of goods a country exports within COMESA divided by that country's GDP.	Percent of that country's GDP.
Women's political inclusion	1. Number of seats held by women in a single or lower chamber.	1. Percent of parliamentary seats.
Women's economic inclusion	1. The ratio of female to male labour force participation. 2. Female employment to population ratio	1. Percent (modelled ILO estimate) 2. 15+ percent (modelled ILO estimate)
Women's social inclusion	1. Female secondary school enrolment. 2. Gross secondary school enrolment.	1. Percent of gross secondary school enrolment. 2. Gender parity index.
Distance	Length of space between the capital cities of a country and COMESA Member States.	Average distance between the capital of a country and the capital cities of COMESA Member States in Kilometers.
Language	The official language of a country used in government, business and education.	Dummy: 1 if a particular official language is used, and 0 otherwise.
Colonizer	A country that settles in another country and controls it politically.	Dummy: 1 if colonised by a particular coloniser, and 0 otherwise.
Landlocked	The country concerned has no access to the coast.	Dummy: 1 if a country is landlocked; 0 otherwise.
Contiguity	Sharing of land border between two countries.	Dummy: 1 if a country at least shares a border with another COMESA Member State; and 0 otherwise.

Source: Authors, 2024.

4.0 Results and Discussion

4.1 Descriptive statistics

Table 2 provides descriptive statistics for the variables used in the study to analyse the effect of women inclusion on COMESA export trade integration. Exports trade integration in COMESA as a percent of GDP averaged 1.597 percent with an expected minimum value of 0 and a maximum value of 20.022 percent recorded between 2000 and 2022. GDP averaged USD 42,800 million, with the lowest and highest values of USD 645 million and USD 454,000 million, respectively. The mean distance between a country's capital city and those of other COMESA Member States averaged 3008.217 kilometres, with the shortest and longest distance on average being 2,107.574 kilometres and 5,094.735 kilometres in that order. The proportion of seats held by women in the national parliament averaged 19.571 percent, with a minimum value of zero percent and a maximum value of 63.75 percent. The female employment to population ratio averaged 48.691 percent, with 12.011 percent and 83.177 percent representing the lowest and highest values. The ratio of female to male labour force participation averaged 73.267 percent, with a minimum of 21.337 percent and a maximum of 104.004 percent. Female secondary school enrolment averaged 47.355 percent, with a minimum value of 9.151 percent and a maximum of 114.915 percent. On the other hand, secondary school enrolment at GPI averaged 0.922 percent with minimum and maximum values of 0.543 percent and 1.215 percent, respectively.

Table 2: descriptive statistics

Variable	Obs.	Mean	Std.dev.	Min	Max
Exports trade integration	391	1.597	1.783	0	20.022
GDP	391	42,800	71,000	645	454,000
Distance	391	3008.217	866.886	2107.574	5094.735
Proportion of seats held by women in parliament	391	19.571	13.392	0	63.75
Female employment to population ratio (15+ years)	391	48.691	21.195	12.011	83.177
Ratio of female to male labour force participation rate	391	73.267	21.899	21.337	104.004
Secondary school enrolment GPI	211	0.922	0.137	0.5343	1.215
Female secondary school enrolment	219	47.355	25.352	9.151	114.915

Source: Authors, 2024

4.2 Estimation Results

4.2.1 Women's political inclusion and exports trade integration in COMESA

Women's political inclusion was proxied by the proportion of seats held by women in a national parliament. Table 3 model 1 provides results for the effect of women's political inclusion on export trade integration in COMESA from 2000 to 2022. The study findings showed that women's political inclusion dampens COMESA's export trade integration such that a

percentage increase in the proportion of seats held by women in national parliaments reduces export trade integration in COMESA. This finding contradicts Kazandjian *et al.* (2016), who found that women in parliament significantly influence export diversification in low-income and developing countries.

Concerning other gravity model variables, a country's GDP is an important determinant of export trade integration in COMESA. A percentage increase in GDP increases export trade integration in COMESA by 0.7586 percent at one percent level of significance. This is because higher GDP reflects higher productivity to meet both domestic and international demand. Therefore, a higher GDP enables a country to export in the region, boosting intra-region export trade. This finding is similar to Baier and Standaert (2020). The average distance between a country and other COMESA Member States did not affect export trade integration at a significance level of five percent. However, at a ten percent level of significance, the average distance between COMESA Member States was found to improve trade integration by 0.6848 percent. This contradicts the findings by Baier and Standaert (2020) and Tandrayen *et al.* (2022), among others, who found a negative relationship between distance and trade. This finding could be explained by the fact that this study used the average distance between a country's capital city and the capital cities of all other COMESA member states.

The study used dummies for Arabic, English, French, and other official languages used in business, education and government. The study findings show that English and French consistently improve trade integration in COMESA by 2.0230 percent and 1.2597 percent in model 5. Arabic as an official language improves trade integration two-thirds of the time, while the other language (Ethiopia's official language) dampens trade integration in COMESA such that a percent increase in use of those languages reduces trade integration by 5.7591 percent. This is attributed to rising information costs to export trade, which increases trade costs, thereby reducing export trade volumes between Ethiopia and the COMESA Member States. In addition, these languages are only used in Ethiopia, making it difficult for exporters and importers to transact, thereby negatively affecting export trade integration in COMESA.

This finding is similar to Santos Silva and Tenreyro (2006) who found common language to boost trade between countries. Similar to languages, we employed dummies for colonisers. The study findings showed that the France dummy improves trade integration in COMESA regardless of the performance of women's inclusion variables. German and Italy dummies improved trade integration in COMESA 75 percent of the time. On the contrary, the dummy for Belgium dampened trade integration in COMESA.

Overall, coloniser was found to improve trade integration in COMESA. With respect to the effect of colonisers, the study findings are similar to those of Baier and Standaert (2020). COMESA FTA reduces export trade integration in COMESA by 3.3848 percent, contrary to Santos Silva and Tenreyro (2006) findings but similar to Baier and Standaert (2020). Concerning border sharing, the study showed that contiguity improves export trade integration in COMESA by 2.0408 percent. This finding is similar to Tandrayen *et al.* (2022).

Table 3: The effect of women inclusion on export trade integration in COMESA

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Log (Gross domestic product)	0.7586*** (0.1272)	0.6382*** (0.0780)	0.5909*** (0.0709)	0.3595*** (0.0892)	0.4237*** (0.0796)
Log (Average distance)	0.3087 (0.5417)	0.5234 (0.4030)	0.6848* (0.3873)	-0.6021 (0.5364)	-1.207 (0.8520)
Landlocked	1.0586*** (0.2709)	0.5117*** (0.1025)	0.4804*** (0.1054)	0.4243*** (0.1245)	0.6558*** (0.1665)
Contiguity	2.0408*** (0.1936)	2.8758*** (0.4093)	2.4202*** (0.2628)	1.781*** (0.1729)	1.9124*** (0.1582)
United Kingdom	-1.4267** (0.6642)	-0.0481 (0.2555)	0.2022 (0.2669)	-2.0839*** (0.3125)	2.9658*** (0.4313)
France	1.3933*** (0.3082)	2.3413*** (0.2488)	2.363*** (0.2521)	Omitted	5.3524*** (0.6509)
German	-0.0138 (0.3633)	0.5774*** (0.2064)	0.7771*** (0.2118)	-1.9492*** (0.3063)	3.327*** (0.4646)
Italy	-0.3500 (0.4712)	1.3089*** (0.3806)	1.0001*** (0.2961)	-1.4718*** (0.1796)	3.6140*** (0.6078)
Belgium	-4.1578*** (0.7278)	-4.3918*** (0.8424)	-3.2394*** (0.5088)	-3.8786*** (0.7139)	0.2130 (0.6494)
None	Omitted	Omitted	Omitted	-4.4918*** (0.7883)	Omitted
Arabic	-1.9480*** (0.4295)	1.7684*** (0.4395)	1.0865* (0.5789)	Omitted	Omitted
English	1.0400*** (0.1577)	6.1528*** (0.7247)	4.7387*** (0.4465)	2.1078*** (0.2962)	2.0230*** (0.3955)
French	Omitted	5.9244*** (0.9501)	4.3541*** (0.5175)	1.3018*** (0.3798)	1.2597*** (0.4136)
Other	-5.7591*** (0.8911)	Omitted	Omitted	Omitted	Omitted
COMESA FTA	-3.3848*** (0.2710)	-4.124*** (0.5565)	-3.2452*** (0.2847)	-3.0310*** (0.4091)	-3.3044*** (0.3681)
Proportion of seats held by women in parliament	-0.018** (0.0083)				
Ratio of female to male labour force participation rate		-0.0247*** (0.0092)			
Female employment to population ratio (15+)			-0.0153** (0.0063)		
School enrolment, secondary (gross), gender parity index (GPI)				1.6976*** (0.6085)	
Female secondary school enrolment (% gross)					0.0108* (0.0062)
Constant	-18.2929*** (4.4927)	-21.4804*** (3.9791)	-22.0665*** (3.8165)	-3.6407 (5.5412)	-4.3281 (7.5578)
Observations	366	391	391	207	219

Note: ***, **, and * shows significance at 1 percent, 5 percent and 10 percent respectively. Robust standard errors are in parentheses.
Source: Authors, 2024.

4.2.2 Women's economic inclusion and exports trade integration in COMESA

Women play a critical role in driving economic growth by participating in international trade as entrepreneurs, producers, and workers. Their involvement includes selling direct exports, supplying goods and services, and participating in the labour force of export-oriented industries (Korinek *et al*., 2021; World Bank and WTO, 2020). To capture women's economic inclusion, the study used the ratio of female to male labour force participation rate and female employment to population ratio, with results in models 2 and 3 of Table 3.

The study findings showed that women's economic inclusion dampens export trade integration in COMESA. That is, the ratio of female to male labour force participation rate and female employment have negative effects on COMESA's export trade integration. A percentage increase in the ratio of female to male labour force participation rate decreases export trade integration by 0.0247 percent. This finding is contrary to Kazandjian *et al.* (2016), who found that a higher female labour force participation rate is associated with higher export diversification levels in low-income and developing economies. Concerning the effect of female employment to population ratio, the study showed that a percentage increase in female employment reduces export trade integration by 0.0153 percent in COMESA. The effect of women's economic inclusion is through the human capital channel such that gender gaps in labour force participation shrink the pool from which employers can hire and limit the number of female entrepreneurs who could engage in economic production and trade (see Cuberes and Teignier, 2014a).

Therefore, this finding could be attributed to unequal economic opportunities in employment and the market evidenced in the region, as indicated in Figure 1. In addition, official estimates on female employment fail to capture women involved in cross-border trade whose effect on trade may not be accounted for. Equally, there could be a problem of underreporting data on women's participation rates that do not accurately reflect women's work (Verick, 2018). Also, women are disproportionally represented in service sectors such as health, education, tourism, accommodation and food in many developing countries (ILO, 2023), including COMESA Member States. In addition, women contribute to production and export trade through unpaid care work, which is not captured in Systems of National Accounts (SNA). Hence, the negative effect of women's economic inclusion on trade integration could be accounted for in this study as the authors employed merchandise exports trade in COMESA to capture trade integration, which does not capture the service sector to, where women mainly contribute to.

A country's GDP, landlocked, contiguity, coloniser and language improve export trade integration in COMESA as indicated when women's economic inclusion is accounted for in two models. For instance, a percentage increase in GDP increases exports trade integration in COMESA by 0.6382 percent and 0.5909 percent, similar to the findings by Santos Silva and Tenreyro (2006). Landlockedness improve export trade integration in COMESA by 0.5117 percent and 0.4804 percent. This result suggests that landlocked countries have higher impetus to trade within the region as this provides an opportunity to access a variety of goods coming through coastline countries from outside the world.

When analysed with women's economic inclusion, official language dummies used in education, business, and government improve exports trade integration in COMESA. For instance, Arabic, English, and French languages boost export trade integration in COMESA by 1.7684 percent, 6.1528 percent, and 5.9244 percent, respectively. This finding conforms to Tandrayen *et al.* (2022). Contiguity was found to improve export trade integration in COMESA by 2.8758 percent, indicating that proximity is an essential determinant of export trade

integration in COMESA, similar to the findings by Santos Silva and Tenreyro (2006) and Tandrayen *et al*. (2022).

4.2.3 Women's social inclusion and exports trade integration in COMESA

Models 4 and 5 of Table 3 indicate the findings of the effect of women's social inclusion indicators on export trade integration in COMESA. Both secondary school enrolment gender parity index and female secondary school enrolment improve COMESA's export trade integration. For instance, a percentage increase in secondary school enrolment gender parity index boosts exports trade integration in COMESA by 1.6976 percent while a similar increase in female secondary school enrolment increases exports trade integration in COMESA by 0.0108 percent at a ten percent level of significance. This result is similar to Kazandjian *et al.* (2016), who found that a higher female-to-male enrolment ratio is significantly and positively related to export diversification in low-income and developing countries. Also, this result conforms to Berg and Wood (1994), who provide evidence supporting the hypothesis that an educated female labour force is a determinant of manufacturing export growth. As such, equality in education leads to the accumulation of human capital for entrepreneurship, innovations, and employment, whose effects lead to higher productivity for domestic and international demand, thereby promoting export trade.

When women's social inclusion is accounted for, a country's GDP, landlockedness, language and border sharing improve export trade integration. Also, coloniser has a positive and significant effect on export trade integration when female secondary school enrolment is considered improving it by 2.9658 percent, 5.3524 percent, 3.327 percent, and 3.6140 percent in former British, French, Germany, and Italian colonies. These results conform to the gravity model assumptions that distance increases trade costs, lowering trade between countries. Border sharing reduces transportation costs, while common language reduces transaction costs, which lowers trade costs, thus improving export trade between countries. COMESA FTA dampen intra-COMESA export trade by 0.881 percent.

5.0 Conclusion and Policy Implications

5.1 Conclusion

The study analysed the effect of women inclusion on trade integration in COMESA. Specifically, the study had three objectives: (1) to analyse the effect of women's political inclusion on exports trade integration in COMESA; (2) to analyse the effect of women's economic inclusion on exports trade integration in COMESA; and (3) to analyse the effect of women's social inclusion on exports trade integration in COMESA. Except for Djibouti, Eritrea, Seychelles and Somalia, 17 COMESA Member States were studied from 2000 to 2022. The Pseudo Poisson Maximum Likelihood estimator was employed on the modified gravity model to answer the study question. Women inclusion was categorised into three—political, economic and social. The study found that women's political, economic and social inclusion are significant determinants of export trade integration in COMESA. The study findings show that political and economic inclusion dampens export trade integration in COMESA. On The contrary, social inclusion boosts export trade integration in the COMESA region.

5.2 Policy Implications

The study shows that women's social inclusion could help COMESA achieve export trade integration. Therefore, pursuing women's social inclusion could be used as a policy tool to address one of the main objectives of COMESA—advancing regional integration through export trade. Therefore, from the findings, policy efforts to improve women's social inclusion in COMESA should be promoted to stimulate export trade integration in COMESA.

Specifically: COMESA Member States should promote the attainment of female secondary education to improve women's ability to understand and take advantage of trade opportunities, thus promoting export trade integration in COMESA; and COMESA Member States should promote gender equality in secondary school enrolment to ensure women have access to the same education and training as men, improving their knowledge in export participation and fostering export trade integration in COMESA.

References

African Union, African Development Bank, and United Nations Economic Commission for Africa. (2019) *African Regional Integration Report.* Retrieved from https://www.integrate-africa.org/fileadmin/uploads/afdb/Documents/ARII-Report2019-FIN-R40-11jun20.pdf

Anderson, J. E., and Van Wincoop, E. (2003) 'Gravity with gravitas: A solution to the border puzzle'. *American Economic Review, 93*(1), pp. 170-192. https://doi.org/10.1257/000282803321455214

Baier, S., and Standaert, S. (2020) 'Gravity models and empirical trade'. *Oxford Research Encyclopedia of Economics and Finance*. https://doi.org/10.1093/acrefore/9780190625979.013.327

Balassa, B. (1991) Economic integration. In *The World of Economics,* pp. 176-186.

Berg, K., and Wood, A. (1994). *Does educating girls improve export opportunities?* Working Paper.

Buvinic, M., Furst-Nichols, R., and Pryor, E. (2014) Women's opportunities and challenges in Sub-Saharan African job markets. World Bank Publications.

Busee, M, and Spielmann, C. (2006). *Gender inequality and trade*, Review of International Economics, Wiley Blackwell, 14(3), pp. 362-379. https://doi.org/ 10.1111/j.1467-9396.2006.00589.x

COMESA. (2023) *2022 Annunal report.* Lusaka: COMESA secretariat.

COMESA secretariat. (2018) *COMESA in brief.* lUSAKA: COMESA.

Cuberes D., and Teignier, M. (2014) *Aggregate Costs of Gender Gaps in the Labor Market: A Quantitative Estimate*. UB Economics Working Paper 2014/308.

Duflo, E. (2012) 'Women empowerment and economic development'. *Journal of Economic Literature, 50*(4), pp. 1051-1079. http://doi.org/10.1257/jel.50.4.1051

Dugarova, E. (2018) Gender equality as an accelerator for achieving the sustainable development goals, Discussion paper. United Nations Entity for Gender Equality and the Empowerment of Women, New York, USA.

Elmslie, B. (2018) 'Retrospectives: Adam Smith's discovery of trade gravity'. *Journal of Economic Perspectives, 32*(2), pp. 209-222. https://doi.org/10.1257/jep.32.2.209

Frankel, J. A. (2010) *Mauritius: African success story, NBER Working papers 16569*. National Bureau of Economic Research, Inc.

Frankel, J. A., Stein, E., and Wei, S. (1997) *Regional trading blocs in the world economic system*. Peterson Institute.

Grown, C., Zammit, A., and Santos, M. E. (2014) Beyond women's economic in Sen, G. (2015). Gender, trade, and sustainable development. International Centre for Trade and Sustainable Development.

ILO. (2023) Where women work: Female-dominated occupations and sectors. *ILOSTAT*. https://ilostat.ilo.org/blog/where-women-work-female-dominated-occupations-and-sectors/

Kazandjian, R. *et al.* (2016) *Gender equality and economic diversification.* IMF Working Ppaer 16/140: IMF publisher.

Korinek J., Moïsé E., and Tange, J. (2021) *Trade and Gender: A Framework of Analysis*. OECD Trade Policy Paper n° 246, Organisation for Economic Co-operation and Development (OECD), Paris.

Motta, V. (2019) 'Estimating Poisson pseudo-maximum-likelihood rather than log-linear model of a log-transformed dependent variable'. *RAUSP Management Journal*, *54*(4), pp. 508-518. https://doi.org/10.1108/rausp-05-2019-0110

Oshota, S. O., and Wahab, B. A. (2022) 'Institutional quality and intra-regional trade flows: Evidence from ECOWAS'. *Journal of African Trade*, *9*(1-2), pp. 73-106. https://doi.org/10.1007/s44232-022-00005-9

Santos Silva, J.M.C., and Tenreyro, S. (2006) The log of gravity. *Review of Economics and Statistics*, *88*, pp. 641-658. https://doi.org/10.1162/rest.88.4.641

Sen, G. (2015). Achieve gender equality and empower all women and girls. UN Chronicle. 51. 13-14. 10.18356/a014136d-en.

Singh, H. P. *et al.* (2022) Impact of sustainable development goals on economic growth in Saudi Arabia: Role of education training. *Sustainability*.

Tandrayen-Ragoobur, V., Ongono, P., and Gong, J. (2022) Infrastructure and intra-regional trade in Africa. *The World Economy*, *00*, pp. 1-19. https://doi.org/10.1111/twec.13358

United Nations. (2015) *Transforming our World:The 2030 agenda for sustainable development.* United Nations.

Verick S. (2018) Female labor force participation in developing countries: Improving employment outcomes for women takes more than raising labor market participation—good jobs are important too. https://doi.org/10.15185/izawol

Women Economic Forum. (2023) *Global Gender Gap report.* Geneva: World Economic Forum.

World Bank and World Trade Organization. (2020) *Women and trade: The role of trade in promoting gender equality*. World Bank Publications.

Overharage, T. (2012). Less is More: Pooling and Sharing of European Military Capabilities in the Past and Present. https://core.ac.uk/download/36700963.pdf