



ELIT

Economic Laboratory Transition
Research Podgorica

Montenegrin Journal of Economics

For citation:

Nasania, J.K. (2026), "Exploring the Dynamic Relationship Between Regional Exports and Economic Growth: A Panel Autoregressive Analysis of Kenya and Tanzania", *Montenegrin Journal of Economics*, Vol. 22, No. 2, pp. 79-90.

Exploring the Dynamic Relationship Between Regional Exports and Economic Growth: A Panel Autoregressive Analysis of Kenya and Tanzania

JOHN KINGU NASANIA¹

¹Senior Lecturer, Department of Insurance the Institute of Finance Management (IFM), Tanzania, email: john.kingu2@ifm.ac.tz

ARTICLE INFO

Received October 11, 2024
Revised from November 11, 2024
Accepted 20, December 11, 2024
Available online April 15, 2026

JEL classification: F11, F41, F43

DOI: 10.14254/1800-5845/2026.22-2.7

Keywords:

Economic growth,
Export trade,
Panel Autoregressive analysis,
Regional exports,
Panel-ARDL-PMG.

ABSTRACT

Export led growth hypothesis and endogenous growth theory asserting that exports of goods and services and imports of capital goods can influence the economic growth. This paper investigates the dynamic relationship between regional exports and growth of economy in East African countries particularly Kenya and Tanzania, grounded in the export-led growth hypothesis and endogenous growth theory. Utilizing a panel dataset from the World Development Indicators spanning 1970 to 2023, we analyze economic growth, proxied by GDP in current US dollars, alongside regional exports from Sub-Saharan Africa, South Asia, East Asia and Pacific, the Arab World and Imports. We utilize the Levin-Lin-Chu (LLC) test for assessing unit roots, as well as the Kao cointegration test to evaluate cointegration relationships. Thereafter panel ARDL-Pooled Mean Group (Panel-ARDL-PMG) was estimated. Empirical findings reveal that all variables are non-stationary at level and once differenced becomes stationary. Again, variables have long run relationship means are cointegrated. Employing the panel ARDL-Pooled Mean Group methodology, our findings indicate that exports from South Asia and East Asia and Pacific, along with imports, significantly contribute to economic growth, while exports from Sub-Saharan Africa and the Arab World adversely impact growth in the long run. In the short run, only imports and exports from the Arab World positively influence economic growth, whereas other regions hinder growth. These results suggest that policymakers should enhance international trade policies to boost export contributions to economic growth, particularly by focusing on improving export quality and diversifying trade partnerships. Strengthening these aspects can foster sustainable economic development in Kenya and Tanzania.

INTRODUCTION

The relationship between export trade and growth of economy has been a long-standing subject of economic debate and research. Export trade, as a core component of international trade, involves the trading of goods and services across borders and is recognized as a vital driver of the development of the economy. As Uddin and Khanam (2017) highlight, international trade has contributed significantly to global economic growth, facilitating the efficient allocation of resources and promoting the specialization of production. For many countries, including Kenya and Tanzania, foreign trade provides access to essential goods and

services, while enabling the export of domestic agricultural and industrial products (Worku, 2021; Gatimu, 2020).

While much research has explored the function of trade in the development of the economy, gaps remain in our understanding of the specific impact of exports and imports in the growth of economy across different regions. Previous studies have focused primarily on trade dynamics within SSA, SADC, and the ECOWAS, and the European Union, but limited attention has been given to the trade relationships between East African nations and regions such as South Asia, East Asia and the Pacific, and the Arab world (Okoli et.al, 2024; Worku, 2021). This research seeks to fill that gap by examining how regional exports and imports influence the growth of economy in selected East African countries, particularly Kenya and Tanzania.

International trade theory provides the foundation for understanding how trade contributes to growth. The theories of absolute advantage and comparative advantage emphasize that countries should go for in producing goods in which they possess a comparative advantage, meanwhile importing goods they have a comparative disadvantage. The Heckscher-Ohlin theory further posits that countries should export products based on their plentiful factors of production, like capital or labor. For Kenya and Tanzania, both of which are labor-abundant, this suggests a focus on exporting labor-intensive products, particularly from the agricultural sector, while importing capital goods that enhance production capacity (Ali et al., 2021; Aluko; Adeyeye, 2020). However, the applicability of these theories must be assessed within the context of contemporary trade patterns and economic policies.

Trade openness, characterized by increased exports and imports, has been recognized as a main engine for economic growth, with the ELG model playing a central role in many countries' economic strategies. Moreover, the importation of capital goods, which facilitates technological advancement and enhances production efficiency, has been shown to contribute to growth (Espoir et al., 2024). The current study seeks to analyze how exports and imports, particularly the importation of capital goods, affect growth of economy in Kenya and Tanzania's trade with regions such as Sub-Saharan Africa, South Asia, East Asia and the Pacific, and the Arab world.

The gist of this paper lies in its contribution to both academic research and policymaking. First, it offers new insights into the effect of regional exports on growth of economy, especially in East Africa, and highlights indispensable role of capital goods imports in enhancing this growth. Second, it provides practical policy recommendations, offering valuable guidance for policymakers in Kenya and Tanzania on how to optimize foreign trade strategies to align with global trade dynamics. Third, by focusing on relatively under-researched regions, this study broadens the scope of existing literature on foreign trade and its implications for economic development. Understanding the trade patterns between East Africa and regions such as South Asia and the Arab world is critical, as these regions are becoming increasingly important trading partners for Kenya and Tanzania.

This research employs modern econometric techniques to investigate long-run and short-run association between exports, imports, and growth of economy. Specifically, the study utilizes the Panel Autoregressive Distributed Lag (panel-ARDL-PMG) model, that permit for the analysis of both long- and short-term dynamics between these variables. This method provides a thorough view the extent exports and imports determine growth of economy, while also identifying individual short-term effects for each country. The panel-ARDL-PMG approach is particularly well-suited to this analysis as it allows the assessment of long-run equilibrium and short-run adjustments, thereby offering a more holistic understanding of trade's impact on growth.

The findings will provide a clearer picture of how exports from Kenya and Tanzania to regions such as South Asia and the Arab world contribute to their economic growth, while also offering insights into the role of capital goods imports in boosting production efficiency. The results will not only inform policymakers but also shape future research directions on foreign trade and economic development in the region.

This paper is arranged as follows: Section One presents the review of literature; Section Two details the research methodology and data; Section Three provides the empirical results; and the final section offers conclusions.

1. LITERATURE REVIEW

1.1 Theoretical Literature Review

This study is grounded in classical and modern economic theories of trade, including comparative advantage, the Heckscher-Ohlin (H-O) model, and endogenous growth theory, while also considering insights from contemporary trade theories. These structures are essential in knowing the association between regional exports and growth in Kenya and Tanzania.

The comparative advantage theory, pioneered by David Ricardo, argues that countries should go for in the production as well as export of goods they possess a relative efficiency advantage compared to other nations. This concept remains central to trade theory, as it provides a rationale for the international division of labour and resource allocation. As explained by Worku (2021), specialization according to comparative advantage enables countries to maximise their productivity and economic welfare. However, comparative advantage has its limitations, particularly in explaining intra-industry trade and trade in services, which are significantly important in the global economy. For developing countries like Kenya and Tanzania, these limitations necessitate an exploration of how comparative advantage interacts with more structural factors like government policies and trade agreements.

Building on comparative advantage, the Heckscher-Ohlin (H-O) theory extends the discussion by focusing on factor endowments. The H-O theory put forward that a country can export goods that intensive use its plentiful resources. Thus, capital-rich countries can export capital-intensive products, while labour-rich countries can export labor-intensive goods (Espoir et al., 2024; Ali et al., 2021; Aluko & Adeyeye, 2020). In the context of Kenya and Tanzania, both nations are endowed with substantial arable land and natural resources, which positions them to export primarily agricultural products. This alignment with the H-O theory is evident in their export profiles, which feature traditional goods such as cashew nuts, coffee, tea, sisal, cotton, and pyrethrum, as well as non-traditional exports like iron ore, gold, diamonds, and Tanzanite (Moshi et.al, 2024). However, the H-O model has been critiqued for its inability to explain trade patterns in economies that rely on increasing returns to scale or where technology plays a dominant role in determining trade flows.

To address these gaps, the study incorporates endogenous growth theory, that highlights the capacity of capital formation and technological innovation in promoting long-term economic growth. According to endogenous growth theory, international trade can stimulate economic development by facilitating the importation of capital goods and technology, which enhances a country's productive capacity (Okyere & Jilu, 2020; Dudzeviciūtė et al., 2017). This theory is particularly relevant for Kenya and Tanzania, as both nations have focused on expanding their industrial base and modernizing their agricultural sectors through imported technology and machinery. Endogenous growth theory recognises that increased investment in human capital and technological innovation is critical for sustaining productivity and boosting exports. The theory also challenges the traditional notion of exogenous factors driving growth, suggesting that internal factors such as innovation policies and capital investment strategies can be powerful growth engines.

In addition to these classical and endogenous frameworks, contemporary trade theories like “new trade theory” and “new-new trade theory” provide valuable insights for understanding the export dynamics in developing economies. New trade theory, for instance, emphasises the economies of scale's role and network effects in explaining why some countries dominate global trade in certain sectors, even in the absence of clear comparative advantage. Moreover, the new trade theory, which focuses on firm-level heterogeneity, highlights how differences in firm productivity within the same industry can drive trade patterns. These modern theories suggest that the export performance of Kenya and Tanzania may not only be determined by factor endowments but also by the productivity and competitiveness of individual firms, particularly in industries like manufacturing and services.

By integrating these various theoretical perspectives, this study provides an insight of the factors driving regional exports and economic growth in Kenya and Tanzania. It underscores the importance of combining traditional theories of comparative advantage and factor endowments with contemporary insights into innovation, capital formation, and firm-level competitiveness. This integrated approach allows for a more comprehensive analysis of how both exports and imports impact economic growth in these East African nations.

1.2 Empirical Literature

The association between exports, imports, and growth of economy has generated mixed results across different studies, reflecting the complex dynamics of international trade and its diverse impact on economic development. Some studies have found a positive interrelation between exports and growth of economy (Okyere & Jilu, 2020; Dudzevičiūtė et al., 2017; Hodey et al., 2015), while others have reported negative effects, highlighting the need for further investigation, particularly in East African countries. This paper seeks to fill up this gap by contributing to the ongoing debate on the involvement of exports and imports in the growth of economy, with a specific focus in Kenya and Tanzania by providing insights into how exports and imports drive the economy.

Numerous empirical studies support the idea that exports positively influence growth of the economy. For instance, Hodey et al. (2015) found that export influenced the economic growth positively Sub-Saharan Africa (SSA), providing evidence that exports are crucial for the development of economies in this region. Similarly, Dudzevičiūtė et al. (2017) reported a positive association between exports and growth of economy in European Union countries, which further strengthens the argument that exports increase economic expansion significantly. Okyere and Jilu (2020) also supported the export-led growth hypothesis, showing that exports had advantageous role on growth of economy in Ghana.

However, the influence of exports is not universally positive. In some countries, exports have been found to reduce economic growth. Wabiga and Nakijoba (2018) reported that exports negatively affected the economic growth in Uganda, indicating that the structure and composition of exports could affect economic outcomes differently depending on the country. Similarly, Ali et al. (2021) found that exports reduced the Bahrain's economic growth, suggesting that the benefits of trade are not automatic and may depend on a range of factors, including the country's infrastructure, industrial base, and institutional frameworks. Also, imports play a complex task in economic growth, with findings that are similarly mixed. In some cases, imports affected economic growth positively. Bakari (2017) found that imports influenced the economic growth positively in Egypt, a result echoed by Mwangi et al. (2020), who observed a similar positive effect in Sub-Saharan Africa. Aluko and Adeyeye (2020) also confirmed the significant effect of imports on economic growth in African countries, suggesting that imports, particularly of capital goods and technology, can stimulate productivity and economic development.

On the other hand, imports have been found to hinder economic growth in certain countries. Uddin and Khanam (2017) reported that imports negatively affected economic growth in Bangladesh, attributing this to the excessive reliance on imported goods that suppress domestic production. Okyere and Jilu (2020) also found that imports affecting economic growth negatively in Ghana, while Ali et al. (2021) observed a similar effect in Bahrain. These studies indicate that the correlation between imports and economic growth is not straightforward and can depend on aspects like the composition of imports, domestic industrial capacity, and trade policies.

The conflicting findings on the role of both exports and imports in the growth of economy highlight the complexity of trade's influence on economies. In the case of Kenya and Tanzania, it is essential to examine how their specific trade structures, institutional frameworks, and levels of economic development interact with global trade dynamics. While the literature presents mixed results regarding the function of exports and imports on growth of economy, it is evident that these relationships are influenced by country-specific factors such as infrastructure, institutional quality, and trade policies.

2. METHOD AND DATA

This study employs panel autoregressive techniques to investigate the dynamic interconnection between regional exports and growth of economy. Panel autoregressive models are advantageous because they facilitate the estimation of coefficients in long-run and short-run, thus providing a more nuanced understanding of the interactions among the variables. This technique also allows for the assessment of individual effects for each variable, a capability that static panel regressions lack (Abille and Meçik, 2023).

The data utilized in this analysis is gathered from the World Bank database, covering the period from 1970 - 2023. Periodization was chosen based on the availability and completeness of data on exports and economic indicators. Before 1970, many export regions had significant gaps in export values, which could hinder the robustness of the analysis. The main dependent variable in this study is GDP, while the independent variables are ESSA, ESA, EEAP, EAW and IMP. The selection of these regions is grounded in their economic relevance and trade relationships with Kenya and Tanzania.

A detailed variables' description and their operational definitions is provided in Table 1. The table outlines the measurement criteria for each variable, ensuring clarity and transparency in the analysis. The selection of the study variables is theoretically supported by the premise that export activities can stimulate economic growth through enhanced production capabilities, job creation, and improved foreign exchange earnings. Conversely, imports may impact economic growth differently relying on the economic context and the nature of the imported goods. Variables under study and measurements are given out in Table 1.

Table 1. Variable Descriptions

<i>Variables</i>	<i>Measurement</i>	<i>Sources</i>
Gross Domestic Product (GDP)	"GDP (current US\$)"	WDI (2024)
Export in Sub Saharan Africa (ESSA)	"Merchandise exports to low- and middle-income economies in Sub-Saharan Africa (% of total merchandise exports)"	WDI (2024)
Export in South Asia (ESA)	"Merchandise exports to low- and middle-income economies in South Asia (% of total merchandise exports)"	WDI (2024)
Export in East Asia and Pacific (EEAP)	"Merchandise exports to low- and middle-income economies in East Asia & Pacific (% of total merchandise exports)"	WDI (2024)
Export in Arab World (EAW)	"Merchandise exports to economies in the Arab World (% of total merchandise exports)"	WDI (2024)
Merchandise Imports (IMP)	"Merchandise imports (current US\$)"	WDI (2024)

Source: Researcher's compilation, 2024. Note: Data were sourced from WDI - "World Development Indicators"

2.1 Model Specification

The present study employs the ELG-hypothesis and the endogenous economic growth model to formulate the study's analytical framework. The ELG- hypothesis posits that increases in exports can stimulate economic growth, particularly by enhancing domestic productivity and generating foreign exchange. The endogenous growth model, on the other hand, stresses the function of internal factors like human capital and technological innovation in spurring economic growth. Together, these theories suggest that both exports and internal factors are pivotal economic drivers.

To develop the model, this study follows the methodological approach established by Etensa et al. (2022), which offers a robust framework for analyzing the dynamic relationship between exports and growth of economy. The analysis includes essential pre-estimation tests, namely panel unit root and panel cointegration tests. These tests are crucial for determining the stationarity of the data and long-term association between the variables. Specifically, we utilize the Levin-Lin-Chu (LLC) test for assessing unit roots, as well as the Kao cointegration test to evaluate cointegration relationships.

2.1.1 Panel Unit Root

The study employed the LLC to determine the unit root amongst the variables. See equation 1.

$$Y_{it} = \rho Y_{it-1} + \alpha_{0i} + \alpha_{1i}t + u_{it} \quad 1$$

Where i for individual 1 to N at time 1 to T .

$\alpha_{1i}t$ represent time trend, while α_i is an individual effect and u_{it} stands for an error term.

$$u_{it} = \sum_{j=1}^{\infty} \phi_{ij} u_{it-j} + \varepsilon_{it} \quad 2$$

2.1.2 Panel Cointegration

Kao (1999) cointegration test was employed to determine the long-run interrelationship between GDP and export from SSA, exports from South Asia, exports from East Asia and Pacific, export from Arab World and imports in selected countries. The merit of this technique tends to estimate the homogeneous association via pooling regression and allowing the individual fixed effects. See equation 3 below.

$$Y_{it} = \alpha_i + \beta X_{it} + u_{it} \quad 3$$

Where β and X_{it} are vectors of row and column respectively whereas u_{it} is a regression error term. Testing for cointegration is imperative in this study since it will provide clues in future predictions or forecasting once variables are cointegrated.

$$\ln GDP_{it} = \sum_{j=1}^p \delta_i \ln GDP_{i,t-j} + \sum_{j=0}^q \beta_{ij} X_{i,t-j} + \gamma_i + \varepsilon_{it} \quad 4$$

Where $\ln GDP_{it}$ is a natural logarithm of gross domestic product stands for dependent variable, X_{it} stands for vectors for independent study variables, δ_i present coefficient of lagged dependent variable, β_{ij} are independent variable's coefficients γ_i stands for unit fixed effect while ε_{it} is the error term.

2.1.3 Panel Autoregressive Distributed Lag Model

The study re-formulated the panel-ARDL model (p, \dots, q) for lagging and differenced variables and inserting error correction term as shown in equation 5. This equation presenting the long run and short run coefficients as well as error correction term (ECT_{t-1}).

$$\begin{aligned} \ln GDP_t = & \phi_0 + \gamma_1 \ln GDP_{t-1} + \gamma_2 ESSA_{it-1} + \gamma_3 ESA_{it-1} + \gamma_4 EEAP_{it-1} + \gamma_5 EAW_{it-1} + \gamma_5 \ln IMP_{it-1} \\ & + \sum_{i=1}^p \alpha_1 \Delta \ln GDP_{t-i} + \sum_{i=1}^q \alpha_2 \Delta ESSA_{t-i} + \sum_{i=0}^q \alpha_3 \Delta ESA_{t-i} + \sum_{i=0}^q \alpha_4 \Delta EEAP_{t-i} \\ & + \sum_{i=0}^q \alpha_5 \Delta EAW_{t-i} + \sum_{i=0}^q \alpha_6 \Delta \ln IMP_{t-i} + \lambda ECT_{t-1} + \mu_{it-i} \end{aligned} \quad 5$$

This study employs the semi-log model where GDP and IMP are instituted the natural logarithm whereas other variables are without logarithm. The dependent variable remains the same as in equation 1 while independent variables are expressed as follows: ESSA stands for export from Sub-Saharan Africa, ESA is export from South Asia, EEAP is export from East Asia and Pacific, EAW is export from Arab World, $\ln IMP$ represent natural logarithm of Imports and ECT_{t-1} is error correction term as well μ is the error term. ϕ_0 is the constant term, γ_1 to γ_5 are the coefficient of changes of independent variables, α_1 to α_6 are independent variable's coefficients in the short run and λ is error correction term's coefficient. Δ present the difference operator. DGP and Imports are in current US dollar while all other variables are in percentage of total merchandise exports.

3. EMPIRICAL RESULTS

3.1 Descriptive Statistics

Descriptive statistics in table 2 presents the main variables of the study. The mean value of LNGDP is 23.41, indicating a relatively high level of economic output during the sample period. A standard deviation of 1.06 indicating moderate change in GDP across observations, with maximum and minimum values of 21.20 and 25.45, respectively, reflecting fluctuations in the economies of Kenya and Tanzania while maintaining robustness. ESSA exhibits substantial variation, with a mean of 26.46 and a standard deviation of 12.31, highlighting significant disparities in export performance among countries in the region. In contrast, ESA has a mean of 8.75 and a standard deviation of 4.99, suggesting lower export levels. EEAP's mean of 4.62 indicates limited engagement, while EAW's mean of 7.33 reveals potential opportunities for growth in export relationships with Arab nations. The mean value of LNIMP is 21.76, suggesting consistent import levels across the study countries.

Table 2. Descriptive statistics

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. dev</i>	<i>Min</i>	<i>Max</i>
LNGDP	108	23.41164	1.061246	21.19542	25.45436
ESSA	108	26.46396	12.3135	.1145155	43.2076
ESA	108	8.74676	4.992399	1.837496	24.08172
EEAP	108	4.61663	4.429142	.2610577	18.28178
EAW	108	7.328722	5.116074	.9075892	27.23149
LNIMP	108	21.76387	1.136115	19.57756	23.77566

Source: Researcher's computation, 2024.

3.2 Correlation Analysis Results

Table 3 show the correlation coefficients. A notable strong positive correlation is observed between LNGDP and LNIMP (0.9346), indicating that higher levels of imports are associated with increased economic growth in Kenya and Tanzania. This implies that imports may play a significant role in stimulating the economies of the two countries. Additionally, LNGDP shows significant positive correlations with other export variables: ESSA (0.4669), ESA (0.5056), and EAW (0.5626). These correlations imply that higher export levels in SSA, EA, and the Arab World are positively linked to the growth of economy, supporting the ELG -hypothesis.

Conversely, EEAP demonstrates weaker correlations with LNGDP (0.2653) and other variables, indicating that exports in EAP may have a limited influence on economic growth. Overall, the correlation analysis highlights the interconnectedness of exports and economic growth, suggesting areas for further investigation in the dynamic relationships among these variables.

Table 3. Correlation Coefficients

<i>Variables</i>	<i>LNGDP</i>	<i>ESSA</i>	<i>ESA</i>	<i>ESAP</i>	<i>EAW</i>	<i>LNIMP</i>
LNGDP	1.0000					
ESSA	0.4669	1.0000				
ESA	0.5056	0.2132	1.0000			
EEAP	0.2653	0.0243	0.3440	1.0000		
EAW	0.5626	0.4795	0.0857	-0.3232	1.0000	
LNIMP	0.9346	0.6747	0.4406	0.1798	0.6407	1.0000

Source: Researcher's computation, 2024.

3.3 Panel Unit Root Results

Table 4 elucidate the findings of the LLC unit-root results, indicating that all variables—gross domestic product (LNGDP), export from SSA, exports from SA, exports from EAP, exports from the Arab World (EAW), and imports (LNIMP)—are non-stationary at the level. However, after differencing once, all variables become stationary.

These findings are in line with with previous studies, like Daniel et al. (2023) and Terefe and Teera (2018), which report similar integration orders among variables in East African countries. The results suggest that the variables share the same order of integration, reinforcing the appropriateness of the model specification used in this study.

Table 4. Levin–Lin–Chu Unit-Root Test Results

LR variance: Bartlett kernel-Without trend		
<i>Variables</i>	<i>At Level</i>	<i>At First Difference</i>
LNGDP	Non-stationary	Stationary
ESSA	Non-stationary	Stationary
ESA	Non-stationary	Stationary
EEAP	Non-stationary	Stationary
EAW	Non-stationary	Stationary
LNIMP	Non-stationary	Stationary

Source: Researcher’s computation, 2024.

3.4 Panel Cointegration Results

Table 5 presents the findings of the Kao test for cointegration, indicating a significant association ship between gross domestic product, exports from SSA, exports from SA, exports from EAP, exports from AW, and imports. All reported p-values are below the 5% significance level, confirming the presence of cointegration among these variables.

This finding is consistent with studies by Okoli et al. (2024), Daniel et al. (2023), Etensa et al. (2022), and Yussuf (2022), which also reported similar results within the East African Community. Moreover, Espoir et al. (2024) corroborated that variables have long-run association ship across 54 African countries. These results suggest that enhancements in exports could significantly influence economic growth in Kenya and Tanzania.

Table 5. Kao Test Cointegration Results

Cointegrating vector	Statistic	p-value
Modified Dickey-Fuller t	-5.8974	0.0000
Dickey-Fuller t	-2.2979	0.0108
Augmented Dickey-Fuller t	-2.6548	0.0040
Unadjusted modified Dickey-Fuller t	-4.0646	0.0000
Unadjusted Dickey-Fuller t	-2.1475	0.0159

Source: Researcher’s computation, 2024.

3.5 Pooled Mean Group Regression Results

Table 6 outlines the PMG regression results, illustrating the long-run coefficients and short-run effect of export and import variables on growth of economy in Kenya and Tanzania.

In the long run, exports from South Asia (SA) and East Asia and the Pacific (EAP) significantly enhance economic growth, with increases in ESA and EEAP contributing positively by 0.0393% and 0.1159%, respectively. Conversely, exports from Sub-Saharan Africa (SSA) and the Arab World (AW) negatively influence GDP, with ESSA reducing GDP by 0.0037%, although this effect is statistically insignificant. Imports demonstrate a strong positive relationship with economic growth, showing a significant increase of 1.0547% for every 1% rise in imports.

In the short run, all regional exports, including SSA, SA, and EAP, negatively impact growth, while the Arab World and imports show positive effects. The error correction term, although not statistically significant, indicates that the system adjusts towards long-run association at a rate of 24.5% per annum, confirming the findings from the cointegration analysis. Overall, this suggests that strategic emphasis on improving exports in South Asia and East Asia, alongside enhancing imports, could significantly bolster economic growth in the region.

Table 6. Panel ARDL -PMG Results

<i>D.Ingdp</i>	<i>Coefficient</i>	<i>Std. err.</i>	<i>z</i>	<i>P> z </i>	<i>[95% conf.</i>	<i>interval]</i>
<i>Long run</i>						
ESSA	-.0036867	.0034765	-1.06	0.289	-.0105004	.0031271
ESA	.039264	.0130971	3.00	0.003	.0135941	.0649338
EEAP	.1158821	.0265321	4.37	0.000	.0638801	.1678842
EAW	-.0376751	.0107786	-3.50	0.000	-.0588007	-.0165494
LNIMP	1.054718	.0471856	22.35	0.000	.9622359	1.1472
<i>Short run</i>						
EC _{it-1}	-.2451063	.1968364	-1.25	0.213	-.6308985	.1406859
DESSA	-.0024466	.0015812	-1.55	0.122	-.0055456	.0006525
DESA	-.0093115	.0042233	-2.20	0.027	-.0175891	-.0010339
DDEAP	-.0221234	.0210105	-1.05	0.292	-.0633032	.0190564
DEAW	.0035477	.0101125	0.35	0.726	-.0162725	.0233679
DLNIMP	.0513896	.1524087	0.34	0.736	-.2473259	.3501052
Cons	.0914036	.0587009	1.56	0.119	-.0236481	.2064553

Source: Researcher's computation, 2024.

3.6 Panel ARDL-PMG and Individual Effect Results

Table 7 presents the Panel ARDL-PMG results, highlighting both long-run coefficients and short-run individual effects on economic growth in Kenya and Tanzania. The long-run results align with those from Table 6, indicating that exports from South Asia and East Asia and Pacific significantly enhance GDP, while exports from Sub-Saharan Africa and the Arab World negatively impact growth.

In the short run, exports from SSA, SA, EAP, and the Arab World (AW) exhibit negative effects on GDP for Tanzania, with coefficients of -0.0040, -0.0051, -0.0011, and -0.0066, respectively. Notably, these effects are statistically insignificant at the 5% level, suggesting that exporting in these regions does not enhance growth of economy in the short run. Conversely, imports have a positive and significant influence, where a 1% increase results in a 0.2038% rise in GDP, emphasizing the importance of capital goods for short-term growth.

In Kenya, the short-run effects are similarly negative for ESSA, ESA, Imports and EEAP, with only EEAP being statistically significant ($p = 0.032$). However, export from the Arab World positively affects GDP, with a coefficient of 0.0137, indicating that trade with this region could stimulate economic growth.

The error correction terms for both countries support the existence of a long-run association ship. In Tanzania, the adjustment speed is 48.3% per annum, while in Kenya, it is 44.2%, indicating that any economic shocks will gradually restore equilibrium. Overall, these findings highlight the nuanced impact of regional exports and imports on growth, with imports playing a crucial role in both countries, while the effectiveness of exports varies significantly by region.

Table 7. Panel ARDL-PMG and Individual Effect Results

<i>D.Ingdp</i>	<i>Coefficient</i>	<i>Std. err.</i>	<i>z</i>	<i>P> z </i>	<i>[95% conf.</i>	<i>interval]</i>
<i>Long run</i>						
ESSA	-.0036867	.0034765	-1.06	0.289	-.0105004	.0031271
ESA	.039264	.0130971	3.00	0.003	.0135941	.0649338
EEAP	.1158821	.0265321	4.37	0.000	.0638801	.1678842
EAW	-.0376751	.0107786	-3.50	0.000	-.0588007	-.0165494
LNIMP	1.054718	.0471856	22.35	0.000	.9622359	1.1472
<i>Short run</i>						
Tanzania						
EC _{it-1}	-.0482699	.0149502	-3.23	0.001	-.0775717	-.018968
DESSA	-.0040277	.0034191	-1.18	0.239	-.010729	.0026735
DESA	-.0050881	.003337	-1.52	0.127	-.0116285	.0014522
DEEAP	-.0011129	.0038888	-0.29	0.775	-.0087348	.006509
DEAW	-.0065649	.005648	-1.16	0.245	-.0176347	.004505
DLNIMP	.2037983	.0662035	3.08	0.002	.0740419	.3335548
Cons	.0327027	.044288	0.74	0.460	-.0541001	.1195055
Kenya						
EC _{it-1}	-.4419426	.0824128	-5.36	0.000	-.6034687	-.2804166
DESSA	-.0008654	.0020834	-0.42	0.678	-.0049487	.0032179
DESA	-.0135348	.0075838	-1.78	0.074	-.0283988	.0013291
DEEAP	-.0431339	.0200806	-2.15	0.032	-.0824911	-.0037767
DEAW	.0136602	.0031042	4.40	0.000	.007576	.0197443
DLNIMP	-.101019	.0925325	-1.09	0.275	-.2823794	.0803413
Cons	.1501045	.4150206	0.36	0.718	-.6633208	.9635299

Source: Researcher’s computation, 2024.

4. DISCUSSION

The empirical analysis reveals complex interrelationship between regional exports and growth of economy in Kenya and Tanzania. While exports in specific regions positively contribute to growth, those from Sub-Saharan Africa (SSA) exhibit a statistically insignificant negative impact. This finding contrasts with Dudzeviciūtė et al. (2017) and Hodey et al. (2015), highlighting a need for SSA countries to focus on product differentiation to enhance competitiveness. Conversely, exports from South Asia and East Asia show significant positive correlations, reinforcing the Heckscher-Ohlin theorem, which asserts that nations export goods in which they hold a comparative advantage. However, exports from the Arab World adversely affect growth, suggesting that East African countries must prioritize quality and diversification in their export strategies. The analysis supports the import-led growth hypothesis, revealing a significant positive correlation between imports and growth of economy, consistent with Mwangi et al. (2020) and Bakari (2017). This emphasizes the necessity of importing capital goods to bolster economic performance, a point echoed by Aluko and Adeyeye (2020).

In the short run, SSA, East Asia, and South Asia exports do not significantly drive growth, challenging the comparative advantage theory (Ali et al., 2021). However, the positive effects of imports affirm their role as crucial economic stimulants, supporting the export-led growth and trade liberalization theories. Long-run relationships confirmed by error correction terms suggest that GDP and exports inform future policymaking, consistent with Moshi et al. (2024). Therefore, policymakers must enhance the quantity and quality of exports while strategically importing to ensure sustainable growth.

CONCLUSION

This study analyzed the interplay between regional exports and growth of economy in Kenya and Tanzania from 1970 to 2023, utilizing a panel dataset and Panel-ARDL-PMG methodology. The analysis revealed significant long-run relationships between GDP and exports from South Asia and East Asia and Pacific, which positively impact economic growth. Conversely, exports from SSA and the Arab World were found to negatively affect growth, albeit with varying statistical significance.

These findings suggest that policymakers should prioritize enhancing the quality and quantity of exports, particularly to South Asia and East Asia, to stimulate long-term economic growth. In contrast, efforts should be made to improve the quality of agricultural exports and reduce reliance on raw product exports. Furthermore, the importation of capital goods is crucial, as it stimulates production capacity and contributes positively to economic growth.

In light of these results, policymakers are encouraged to focus on value-added production before exporting, especially in the agricultural sector. Additionally, the importation of advanced technologies and machinery should be prioritized to enhance productivity and export capabilities.

Future research should delve into the dynamics of intra-industry trade in East Africa, investigating its implications for economic growth and trade policy. By exploring these dynamics, researchers can provide valuable insights that could inform policy development in the region.

REFERENCES

- Abille, A.B., Meçik, O. (2023), "The exchange rate, income, trade openness and the trade balance: Longitudinal panel analysis for selected SSA countries", *International Trade, Politics and Development*, Vol. 7, No. 2, pp. 138-153.
- Ali, B.J., Hasan, H., Oudat, M.S. (2021), "Relationship among export, import, and economic growth: Using co-integration analysis", *Psychology and Education Journal*, Vol. 58, No. 1, pp. 5126-5134.
- Aluko, O.A., Adeyeye, P.O. (2020), "Imports and economic growth in Africa: Testing for Granger causality in the frequency domain", *The Journal of International Trade & Economic Development*, Vol. 29, No. 7, pp. 850-864.
- Daniel, O.J., Fredrick, O.S., Michael, J.N. (2023), "The effect of agricultural trade openness on economic growth in the East African Community", *Cogent Economics & Finance*, Vol. 11, No. 2, pp. 1-13. <https://doi.org/10.1080/23322039.2023.2250632>.
- Dudzeviciūtė, G., Simelytė, A., Antanavicienė, J. (2017), "Causal nexus between export and economic growth in the European Union countries", *Montenegrin Journal of Economics*, Vol. 13, No. 2, pp. 107-120.
- Esaku, S. (2021), "The long-and short-run relationship between the shadow economy and trade openness in Uganda", *Cogent Economics & Finance*, Vol. 9, No. 1, pp. 1-19. <https://doi.org/10.1080/23322039.2021.1930886>
- Espoir, D.K., Bannor, F., Sunge, R. (2024), "Intra-Africa agricultural trade, governance quality, and agricultural total factor productivity: Evidence from a panel vector autoregressive model", *The European Journal of Development Research*, Vol. 1, pp. 1-32.
- Etenza, T., Taye, L., Bersisa, M. (2022), "Infrastructure development and economic growth in East Africa: Quantity versus quality dimensions using the panel-ARDL approach", *International Journal of Empirical Economics*, Vol. 1, No. 4, pp. 1-28.
- Fayisa, T.F. (2021), "Determinants of export in East Africa: Heterogeneous panel data analysis", *Journal of Finance and Economics*, Vol. 9, No. 1, pp. 16-33.
- Gatimu, E.W., 2020, "Foreign direct investment, export and economic growth: Evidence from East African community countries", Doctoral dissertation, University of Nairobi.
- Hodey, L.S., Oduro, A.D., Senadza, B. (2015), "Export diversification and economic growth in Sub-Saharan Africa", *Journal of African Development*, Vol. 17, No. 2, pp. 67-81.
- Moshi, A., Lufuke, M., Baha, M. (2024), "Imports in East Africa: Boosting manufacturing performance or impeding domestic growth?", *Journal of African Economic Perspectives*, Vol. 2, No. 1, pp. 21-30.
- Mwangi, E.N., Chen, F., Njoroge, D.M. (2020), "Agricultural imports, agriculture productivity, and economic growth in Sub-Saharan Africa", *Journal of African Trade*, Vol. 7, No. 1, pp. 15-28.
- Okoli, U.V., Okolie, D.O., Okolie, J.I. (2024), "Marginal propensity to import and terms of trade: Panel Granger causality evidence from the East African Community (EAC)", *Economic and Regional Studies*, Vol. 17, No. 2, pp. 251-269.
- Okyere, I., Jilu, L. (2020), "The impact of export and import on economic growth in Ghana", *European Journal of Business and Management*, Vol. 12, No. 21, pp. 130-138.

- Terefe, K.D., Teera, J. (2018), "Determinants of tax revenue in East African countries: An application of multivariate panel data cointegration analysis", *Journal of Economics and International Finance*, Vol. 10, No. 11, pp. 134-155.
- Uddin, H., Khanam, M.J. (2017), "Import, export, and economic growth: The case of lower-income countries", *Journal of Business and Management*, Vol.19, No. 1, pp.37-42.
- Wabiga, P., Nakijoba, S. (2018), "High technology exports, gross capital formation, and economic growth in Uganda: A vector autoregressive approach", *International Journal of Business and Economics Research*, Vol. 7, No. 6, pp. 191-202.
- Worku, U.R. (2021), "The determinants of GDP growth rate in East Africa", *China-USA Business Review*, Vol. 20, pp. 1537-1514. <https://doi.org/10.17265/1537-1514/2021.01.002>
- Yussuf, Y.C. (2022), "Cointegration test for the long-run economic relationships of East Africa community: Evidence from a meta-analysis", *Asian Journal of Economics and Banking*, Vol. 6, No. 3, pp. 314-336.