Journal of Economics and Sustainable Development
ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online)
Vol.17, No.5, 2026

Intra - Industry Trade in Travel Services in East African Community: A Case of Kenya

Antony Ambeyi[1], BenJack Otieno Ochieng[2] , Evans Ovamba Kiganda[3]
Department of Economics
Maseno University, Kenya
* BenJack Otieno Ochieng[2] : benjackochieng@gmail.com
* Evans Ovamba Kiganda[3] : eovamba@yahoo.com

ABSTRACT
Faced with pre-mature deindustialisation and low services trade integration, the East African Community (EAC) member countries need to enhance intra-industry trade in services to realise their sustainable development agenda. This study examined the influence of per capita income, foreign direct investment (FDI), manufacturing value-added, and ICT infrastructure development on intra-industry trade (IIT) in travel services between Kenya and the EAC member countries. Using the poison pseudo maximum likelihood high-dimensional fixed effects estimator(ppmlhdfe) estimator, the gravity model was used to analyse annual panel data (2005-2024) sourced from World Bank, CEPII, World Trade Organization and African Development Bank. Purposive sampling was applied in selecting the economies of Kenya,Uganda,Tanzania,Rwanda and Burundi which constituted the target population.The intra-industry indices revealed that Kenya had an increasing IIT in travel services with the economy of Uganda and a decreasing IIT with the economy of Tanzania. However, for the economies of Rwanda and Burundi, the study revealed the existence of inter-industry trade. The study found FDI (β=0.448, p-value = 0.017) to have a positive and significant effect on intra-industry trade in travel services between Kenya and the selected EAC countries. This study shows the significance of regional multinational corporations on travel services among the EAC members economies. Therefore, there is need to promote and sustain the establishment of regional multinationals corporations across EAC to enhance the intra-industry trade in travel services.
Key words:*Kenya, East African Community, Gravity model, Intra-Industry Trade,Travel Services.*
DOI: 10.7176/JESD/17-5-03
Publication date: August 30th 2026

1.1 Introduction

Most developing countries are facing pre-mature deindustrialisation (Rodrik, 2016). To achieve a balanced sustainable economic growth and development, developing countries through their existing regional blocs need to enhance intra-industry trade in services (Rodrik, 2018). This is because of the ever-increasing influence of the services sector towards the growth of gross domestic product (GDP), trade, and employment world over (UNCTAD, 2018). Nano *et al.* (2019) observed that not only can growth of trade in services help developing economies to leap-frog to high-income status, but also provide greater efficiency in the agriculture and manufacturing industries.

The East Africa Community (EAC) adopted a strategy for trade in services for the period 2023 to 2033, with the objective of promoting service sector integration (EAC,2023). The strategy report noted services as the major contributor to GDP in EAC, which accounted for a larger share than the sectors of agriculture, industry and manufacturing. For instance, in terms of GDP contribution in 2021, services sector accounted for 54.4 percent of the Kenyan economy, 47.8 percent for Rwanda, 44.8 percent for Burundi, Uganda had 41.9 percent and 34.3 percent for the Tanzania economy (EAC,2023).

Trade in services has also emerged as the leading source of foreign exchange for most of the East Africa's countries (EAC,2023). This is evidenced by the Rwandese government in giving more priority to tourism, in addition to strategies on FIRE (Finance, Insurance and Real Estate) and MICE (Meetings, Incentives, Conferences and Events), that is supported by the building of the Kigali Convention Centre (EAC ,2023). Moreover, in support of trade in services, the Rwandan government launched RwandaAir in 2002, followed by an agreement of thirty million USD for the "Visit Rwanda" advert with Arsenal football club (United Nations, 2020).

Trade in travel services, that is closely associated with tourism remains a key pillar of Kenya's economy, contributing significantly to employment, foreign exchange earnings, and regional development (Tourism Research Institute (TRI),2025). Trade in travel services across economies is motivated by international arrivals.

The growing demand for travel services in Kenya necessitates greater investment in technology-driven solutions to enhance the non-residence persons experience. Moreover, the continued expansion of the MICE and FIRE sectors in Kenya offers significant opportunities that require infrastructure development (TRI,2025). Globally, Jomo Kenyatta International Airport (JKIA) remains the major entry point for Kenya's inbound travel, accounting for 67.8 percent of the total arrivals in 2024, followed by Moi International Airport (MIA) with 8.5 percent (TRI, 2025). For the EAC arrivals, JKIA had the highest numbers at 250,742, followed by Busia Border at 160,020 and then Namanga Border with 160,020 arrivals (TRI ,2025).

For the year 2024, business and conference travel accounted for the largest share in most EAC member countries; with Uganda at 46.7 percent, Tanzania 46.6 percent and Rwanda 46.9 percent. Visiting Friends and Relatives (VFR) was the second most common travel purpose, notably high in Burundi (48.6%) (TRI, 2025). The main purpose for non-residence persons travel in Kenya was business travel (or conference), that accounted for 40.1 percent, followed by VFR at 32.2 percent, and holiday/leisure at 17.1 percent (ITR, 2025). In total, Kenya received 975,883 arrivals from Africa, led by arrivals from Uganda at 225, 559, followed by Tanzania at 223, 290. Globally, Europe led by 680,373 arrivals, United States of America at 306, 501, and the United Kingdom had 180, 639 arrivals (ITR,2025).

Despite the potential gains, the EAC economies have recorded limited progress in services integration, even after the adoption of the 2010 EAC Common Market Protocol (EAC, 2023). The report attributes these challenges to weak infrastructure, limited technological capacity, foreign direct investment (FDI) restrictions, and insufficient appreciation of the services sector's role as an intermediate input across economies. While the report identifies these economic constraints as barriers to services trade, their specific impact on intra-industry trade in travel services within the EAC remains unclear, a gap that this study pursued to address.

Intra-industry trade (IIT) is gaining much scholarly attention because of product or services differentiation and firms' emerging economies of scale, which most traditional trade theories fail to address. Such theories include Staffan Linder (1961) theory of overlapping demand and the New Trade Theory that is associated with Krugman (1981). Linder (1961) hypothesised that economies that show similarity in demand patterns would also trade within similar industries in similar though differentiated goods. This is well applicable to IIT in services as we have similar services industries among countries that offer differentiated services to their populations. For instance, some Kenyan students prefer studying in Ugandan universities for some specific education programs, likewise to Ugandan students who prefer Kenyan universities for some postgraduate level programs.

Markusen and Venables (1998, 2000) postulated that foreign direct investment (FDI) contribution to the flow of capital, and other different roles played by multinational corporations in international trade is crucial, therefore a significant determinant of intra-industry trade. FDI arises from external economies of scale, which encourages differentiation of products by the MNCs (Grubel & Lloyd, 1975). For instance, services industries can establish subsidiaries (commercial presence) in foreign countries, particularly when there is need for direct contact with consumers. This is because for some firm to stay competitive, there is a need to tailor the services provided to meet the preferences of the consumers.

In the EAC, commercial banks (like Kenya Commercial Bank) and media houses (like Nation Media Group) of Kenya have established subsidiaries in Uganda and Tanzania to provide services with respect to the preferences of the counties' populations. Most studies have shown that FDI positively affects IIT especially when the multinationals companies maximumly use the host country endowed factor resources (Sotomayor, 2012). The contribution of FDI on IIT in services for the EAC economic bloc is not yet known despite its increment across the East Africa Community countries.

For economies that have similar Per Capita Incomes (PCI), the possibility of having overlapping demand patterns for differentiated services or products is high (Linder,1961). Economies with high PCI experience higher IIT because of their capacity to engage in production of differentiated products (or services) (Linder,1961). Similarly, Lee and Lloyd (2002) observed that economies with high PCIs trade more with each other; equally this can lead to enhanced IIT in differentiated products or services.

On the soft infrastructure front, Lemma et al., (2022) observed that Africa internet penetration between 2005 and 2019 grew at 2.5 percent a year. The authors projected that with such persistence growth; Africa can achieve a 75 percent penetration rate. On the communication infrastructure front, EAC-BIN (EAC Broadband ICT Infrastructure Network), has increased the ICT infrastructure coverage by laying four undersea cables (which includes SEACOM, EASSY, TEAMS and LION 2) along the EAC coast (Ochieng, Abala & Mbithi, 2020).

Banga and Velde (2018) noted that, Kenya's success in the digital economy compared to her African peers, could be attributed to the introduction of M-Pesa services by Safaricom in 2007. In addition, ICT development being a key pillar in Kenyans' the vision 2030, motivated the laying of undersea fibre-optic cables and the introduction of high-speed internet in 2010.

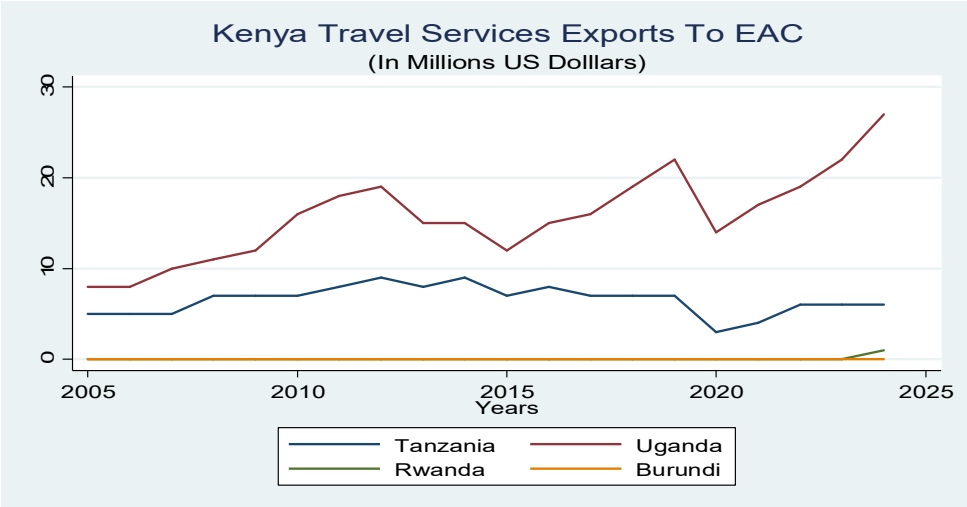
A country with advanced technology and high skill levels is reflected by the exports of more technologically advanced products or services, which can lead to increased IIT. An increase in IIT for high-end products to total trade is a revelation of specialisation, that is majorly an outcome of differences in technological Research and Development (Kawecka- Wyrzykowska et al., 2017). Though there has been ICT infrastructure growth among the EAC members, as pointed out by Lemma et al. (2022), its influence on IIT in services has yet to be established.

According to World Trade Organisation-WTO (2002), trade in services occurs when a given service is supplied across countries borders in one of the four modes: Mode 1 (cross-border trade in services); Mode 2 (consumption abroad); Mode 3 (commercial presence) and Mode 4 (movement of natural persons).Trade in travel services (personal and or business travel) is the single largest services export and includes an assortment of goods and services provided by a country to non-residents (Afreximbank,2024). These includes all the expenses incurred by students, tourists, patients and business travellers on goods and services acquired while in a foreign country; like accommodation, meals and education expenses. However, travel services do not include the transport to and from the country, this is categorised under transport services (Afreximbank,2024).

Trade in travel services mostly occurs via mode 2 (personal travel e.g. tourists and students) and mode 4 (business travel / workers movement across borders). For instance, under mode 2, Kenyans can visit the country of Uganda for adventure or education purposes. While in Uganda, trade on travel services will include the expenditure on goods and services during their stay in Uganda. Similarly, under mode 4 (Business travel), Kenyan workers representing Kenyan firms while in Uganda, will incur expenses on goods and services, as they offer specialised services to their Ugandan clients.

The continued liberalisation of trade in services under the WTO's General Agreement on Trade in Services (GATS) has enhanced trade in services around the globe (Salvatore ,2004). However, the WTO (2019) observed that of the 10 percent growth of services trade from the developing economies (2005 to 2017), a larger share came from emerging economies of China, India, Singapore, United Arab Emirates and Turkiye. Moreover, Africa only accounted for 1.9% of the global services exports, that were largely dominated by travel at 0.7 percent of global total services exports (EAC, 2023). This underscores the need to encourage intra-industry trade in services among the African countries in order to utilize the potential for growth and development offered by services trade (EAC,2023).

Figure 1 shows Kenya travels services exports to the EAC member countries.



Source: WTO (2026), Author's Computation
Figure 1: Kenya Travel Services Exports to Selected EAC Member Countries

From Figure 1, Ugandan economy led as the top market for Kenya's exports in travel services, followed by Tanzania, Rwanda and Burundi respectively. The ratification of the Common Market protocol in 2010 led to a significant increase in Kenya's travel services exports to the economies of Uganda and Tanzania, though there was a decline in the years 2015 and 2020 following global recession and the outbreak of the COVID-19 pandemic respectively (EAC, 2022).

1.2 Statement of the Research Problem

Trade in travel services development and integration is significant for the future sustainable development agenda of the EAC member countries. Faced with pre-mature deindustrialization and over-reliance on the United States, European Union and United Kingdom that constitute the major international arrivals, Kenya and the EAC member countries need to enhance intra-industry trade in travel services to cushion themselves from global economic shocks and increase on potential trade in services benefits. However, even after the EAC launched the Common Market Protocol in 2010 to strengthen regional integration of trade in services, the region has experienced weak services integration. This is largely due to infrastructure and technological constraints, restrictions on foreign direct investment (FDI), and a weak understanding of the services sector's role as an input across different industries. This study sought to fill the gap by examining how key economic factors namely; per capita income, manufacturing value added, FDI, and ICT infrastructure, shape intra-industry trade in travel services between Kenya and the EAC member countries, given their little-known relationship.

Poisson Pseudo Maximum Likelihood High-Dimensional Fixed Effects (PPMLHDFE) estimator for gravity model is used to establish this relationship. Moreover, understanding the degree of intra-industry trade in travel services among the EAC members countries and the effect of the key economic factors is critical for designing policies that can accelerate trade in travel services integration across the EAC region.

1.3 Objectives

The primary objective of this study is to analyze the influence of the key economic determinants on intra-industry trade in travel services between Kenya and the East African Community members. The specific objectives are to:

i. Establish the influence of difference in per capita income on IIT in travel services between Kenya and EAC members countries.

ii. Investigate the effect of ICT infrastructure development on IIT in travel services between Kenya and the EAC member countries.

iii. Establish the influence of manufacturing value added on IIT in travel services between Kenya and EAC members countries.

iv. Investigate the effect of FDI on IIT in travel services between Kenya and EAC members countries.

2.0 Literature Review

2.1 Gravity model

The gravity model has its origin from the law of universal gravitational force that was pioneered by Isaac Newton (Head, 2003). The law explains how two particles in the universe are attracted to each other based on their masses and distance (Head, 2003). The Newton's law is as depicted in the equation (1.1).

$$F = K\frac{N_1 N_2}{D^2} \qquad (1.1)$$

From equation (1.1), N_1 and N_2 are the respective masses of the objects, F is the force of gravity, D^2 is the distance between the two masses and k is a constant (Head, 2003). In a similar manner, for international trade, two economies trade in proportion to their market size (GDP or population) and proximity or distance. However, as noted by Kareem and Kareem (2017), Ravenstein (1885) was pioneer of gravity equation in the nineteenth century, then followed by Zipf (1946), contrary to trade literature. Tinbergen (1962) then formalized the model to explain trade flows between economies. Assuming two counties K and P, then trade between them is explained by equation 1.2.

$$X_{kp} = A\frac{Y_k^{\alpha}Y_p^{\beta}}{D_{kp}^{\gamma}} \quad \text{(1.2)}$$

Whereby X represents the exports flows from country k to county p, Y are the economical masses (GDP) for country k and p while distance (D) is the distance between the capital cities of the countries. α and β denotes the elasticities of the exporting and importing economies' GDP respectively, while γ is the elasticity of distance (Head, 2003). According to Tinbergen (1962), the volume of exports by country k depend on the economic size (Y_k) whereas the volume of imports by country p depends on its purchasing power or income (Y_p).

Therefore, taking the natural log of equation (1.2) and adding an error term (ε_{kp}), we get a linear relationship shown as in equation (1.3) which allows the interpretation of coefficients as elasticities.

$$\log(X_{kp}) = logA + \propto \log(Y_k) + \beta\log(Y_p) - \gamma\log(D_{kp}) + \varepsilon_{kp} \quad \text{(1.3)}$$

Equation (1.3) assumes the error term ε_{kp} to be independent and normally distributed.

Equation (1.3) can be modified into equation (1.4) to explain IIT in trade in services.

$$logIIT_{kpt} = \log c + b_1 logGDP_{kt} + b_2 logGDP_{pt} - b_3 logDistance_{kp} + \varepsilon_{kp} \quad \text{(1.4)}$$

Where for time t, IIT_{kpt} indicates IIT in services index between countries k and p, GDP represents countries k and p Gross Domestic Product, $Distance_{kp}$ is the distance between countries k and p while ε_{kp} is a random error term. c is a constant, while b's are estimated coefficients (Head,2003). Different approaches can be used to derive the gravity model equations. However, this study adopts Linder Hypothesis and the Krugman's (1979) New Trade Theory under gravity model in explaining IIT in services for the EAC.

2.2 Empirical Literature

International trade literature use GDP as a proxy for market size and economies with higher GDP are likely to experience higher IIT (Andresen, 2003; Leitao and Faustino, 2009; Sen, Saray and Karagoz, 2009). Varma and Ramakrishnan (2014), using a random effect Tobit model for the period 2003 to 2011, studied India IIT for processed food items with some of her trade partners. The study found that India had higher levels of IIT with Nepal, Bhutan, Bangladesh and Singapore. The results from Varma and Ramakrishnan (2014) showed that the differences in economic size negatively influenced the IIT. Similarly, Fertő (2007) study on Agri–food products for the economy of Hungary and the EU-15 partner economies revealed a negative relationship between Horizontal Intra Industry Trade (HIIT) and average GDP. The Application of Tobit model by Varma and Ramakrishnan (2014) could not guarantee unbiased estimate since Linder and de Groot (2006), argue that truncation method is not efficient enough to give accurate results in presence of zero values.

Shahbaz and Leitão (2010) examined Pakistan economy's IIT for the products in the manufacturing sector from 1980 to 2006, using a dynamic GMM approach. The country-specific explanatory variables for the study included geographical distance, average GDP per capita, FDI investment inflows, trade imbalances among others. The study findings revealed that average GDP per capita had a positive influence on IIT. Moshirian *et al.* (2005) applied the new trade theory to investigate the determinants of IIT in the USA banking sector. The study independent variables included average per capita income, factor endowments, economies of scale, market openness, FDI and trade intensity between the countries. The findings showed that average income per capita influenced the IIT in the banking sector.

Leitao (2012) investigated Portugal and 17 countries intra-industry trade determinants in the tourism services sector from 2002 to 2009 using Arellano and Bond GMM system estimator. The findings of the study revealed that a reduction in transportation costs led to an increased IIT. The author explained that distance between countries reflected social and cultural proximity or the transport costs between the transacting economies. Therefore, when countries are geographically far apart, they tend to experience low level of IIT between them.

Jámbor (2015) used General Methods of Moments to examine both the factors influencing both the HIIT and VIIT in agri-food items between EU and the Visegrad countries (Czech Republic, Hungary, Poland and Slovakia) for the period 1999 to 2013. The study found that FDI had a negative influence on IIT. Leitão (2011) examination of the IIT in agricultural products of the USA found that FDI positively influenced IIT. Caetano and Galego (2007) investigated the factors affecting HIIT and VIIT within the 25 European Member States. The study revealed positive but also significant relationship between FDI and both the VIIT and HIIT.

Hartman *et al.* (1993) investigated USA IIT in food-processing industrial products with 36 of her trade partners in 1987. The author applied OLS model and the outcome revealed that economies of scale positively influenced IIT. Hartman *et al.* (1993) application of OLS compromised on the results since most trade flow data are prone to heteroskedasticity and in some cases have zero values. To control for the heteroskedasticity and the zero values for the dependent variable, this study applied the PPML estimator using the gravity model.

According to Adeleye *et al*. (2021), rapid ICT evolution from 1990s has led to reduction of removal of trade barriers, and contributed significantly to increased trade volumes between economies. Dumor *et al.* (2024) investigated the role of ICT on trade flows on 65 Belt and Road Initiative (BRI) countries from 2000 to 2019. The BRI countries consist of 27 SSA countries. The empirical findings revealed that more access to ICT deepened bilateral trade exports among the BRI countries. Specifically, Dumor *et al.* (2024) showed that ICT and infrastructural development enhanced intra-regional trade in EAC.

Kere and Zongo (2023) applied gravity model evaluate digital technology effect on intra-African trade on 48 countries in Sub-Saharan African (SSA) from 2000 to 2018. Kere and Zongo (2023) findings revealed a positive effect of ICT on exports, but the import of primary products was negatively impacted. Abendin *et al.* (2022) investigated the influence digitalisation has on Intra-ECOWAS trade from 2000 to 2018. Abendin *et al.* (2022) empirical findings showed digitalisation significantly increased bilateral trade in the ECOWAS area. Abendin *et al*. (2022) study underscores the fact that ICT development can significantly lead to rise in trade between trading economies.

Donaubauer *et al.* (2018) adopted gravity model to evaluate the influence of infrastructure advancement on trade using a panel of 150 advanced and emerging economies. From analysis that covered the 1992 to 2011, the study found that infrastructure development helped to reduce both the bilateral and multilateral trade costs between the economies. Ochieng, Abala and Mbithi (2020) used the gravity model with PPML estimator to establish the influence of infrastructure stock on trade flows for 11 East African economies from 2000 to 2018. The outcome revealed that transport and ICT infrastructures positively impacted on the total trade volumes of the East African countries. Ahmad *et al*. (2011) investigated the role of ICT infrastructure on trade between Malaysia and her trading partners. The empirical finding showed that development of ICT infrastructure (that included Internet users, mobile-cellular subscriptions, personal computers and fixed telephone subscriptions) led to improved trade for Malaysia. Ahmad *et al*. (2011) study reinforces the need of modern ICT infrastructure by firms for efficient daily business operations.

Studies on intra-industry trade are on rise across the globe, however most of the empirical literature has been cantered on trade in goods. As for the services trade, the focus has been on the advanced economies despite the increasing premature de-industrialisation among the developing economies. With regards to the EAC bloc, trade literature on intra-industry trade in travel services remains scarce. This study significantly contributes to international trade literature by analysing intra-industry trade in travel services between Kenya and the EAC member countries by using the gravity model.

3.1 Research Methodology

This study adopted correlational research design to establish the relationship between the dependent variable and the independent variables. According to Kothari (2004), correlation research design helps a researcher to establish the relationship between the variables under a study phenomenon. Using purposive sampling, this study focused on the Republics of Kenya, Burundi, Rwanda, Uganda, and the United Republic of Tanzania under the East African Community bloc. EAC has a land area of approximately 5.4 million square Km and is a home to 301.8 million people, with a gross GDP of about US$312.9 billion (EAC, 2024).

This is quantitative study that applied annual panel secondary data from 2005 to 2024.The study period was based on the year 2005 following the ratification of the Customs Union in 2004. Moreover, most of the data on trade in services from the WTO are reported from 2005.The other sources of data included the World Bank Development Indicators, CEPII data base, and African Development Bank (AfDB). The data was analysed using Stata 14 version.

3.2 Measurement of Variables and A Priori Expectation

The difference in gross domestic product and geographical distance under this study are used as control variables. Table 1 shows measurement of study variables and their priori expectations.

Table 1: Variable Measurement and A Priori Expectation

Variable Name	Variable Measurement	Source	Expected Sign	Source
Intra Industry Trade in travel Services (IIT)	The unadjusted Grubel and Lloyd (1975) IIT index (With 0- pure inter-industry trade,1-pure intra-industry trade	Calculated from WTO bilateral trade flow database	N/A	
Difference in Gross Domestic Product (diffGDP)	Data measured in current prices in US Dollars	WDI-World development indicators-World Bank	-	Tinbergen (1962),Head(2003)
Difference in Per Capita Income (diffPCI)	Data measured in current U.S. Dollars	WDI-World development indicators-World Bank	-/+	Linder (1962) Leitao and Faustino (2009)
Foreign Direct Investment (FDI)	Data measured in current U.S. Dollars	WDI-World development indicators-World Bank	+/-	Helpman and Krugman (1985) Leitao (2012), Sotomayor (2012),
Manufacturing Value Added (MVA)	Data measured in current U.S. Dollars	WDI-World development indicators-World Bank	+	Hartman *et al.* (1993), Fontagné L. & Freudenberg, M. (2002)
Geographical Distance (DIST)	Measured in kilometers	CEPII database	-	Tinbergen (1962), Head(2003),

3.3 Formulation of Intra-Industry Trade Indices for Travel Services.

The intra-industry trade in services indices was calculated using the unadjusted Grubel-Lloyd (1975) index, expressed in percentage form (Equation 1.5). This is in line with Finger (1975) and this study's preference for trade patterns outcome. The G-L index values take the interval 0≤G-L≤100 when expressed in percentage form. Zero (0) values indicate pure inter-industry trade in travel services while one hundred (100) indicate pure intra-industry trade in travel services.

$$IIT_{jkpt} = \left[1 - \frac{|X_{jkpt} - M_{jkpt}|}{(X_{jkpt} + M_{jkpt})}\right] \times 100 \quad \text{..... (1.5)}$$

Where:

IIT_{jkpt} is the intra-industry trade index j between country (k) and country (p) for time t

X_{jkpt} are the exports of country (k) of service sector j to country (p) for time t

M_{jkpt} are the imports of country (k) of service sector j from country (p) for time t

4.0 Results

4.1 Intra-Industry Trade Indices for Travel Services.

Table 2 captures the intra-industry trade in travel services indices between Kenya and each of its four EAC partner countries; Tanzania, Uganda, Rwanda, and Burundi from 2005 to 2024**.** G-L index values greater than 50 percent indicate the trade tend towards intra-industry trade, while G-L index less than 50 percent indicates tendency towards inter-industry trade (Grubel-Lloyd, 2010).

Table 1: Unadjusted GL Indices for IIT in the Travel Services in Percentage

year	Tanzania	Uganda	Rwanda	Burundi
2005	90.91	40.00	0	0
2006	76.92	40.00	0	0
2007	62.50	57.14	0	0
2008	70.00	62.50	0	0
2009	73.68	58.82	0	0
2010	66.67	60.87	0	0
2011	76.19	56.00	0	0
2012	69.23	64.29	0	0
2013	66.67	75.00	0	0
2014	62.07	80.00	0	0
2015	43.75	96.00	0	0
2016	57.14	92.86	0	0
2017	48.28	96.77	0	0
2018	42.42	97.44	0	0
2019	41.18	84.21	0	0
2020	33.33	78.26	0	0
2021	27.59	82.76	0	0
2022	28.57	88.24	0	0
2023	25.00	84.21	0	0
2024	22.22	85.11	100	0

Source: Author's Computation, 2026 (WTO Data)

From Table 2, intra-industry trade in travel services varies distinctly between Kenya and the selected EAC member countries. Specifically, Kenya IIT trade in travel services with economy of Tanzania showed a decreasing trend across the study period. However, there was an improvement to a high of 79.19 percent for the post-ratification period for the year 2010 to 2017 and then a decline to a low of 22.22 percent from the year 2018 to 2024. The rise in IIT in travels services between the 2010 and 2015 was due to increased travel services trade between Kenya and Tanzania underscoring the impact of the common market protocol (EAC, 2023). The decline from 2017 to 2022 was attributed to global trade slowdown and the Covid-19 lock down among countries (EAC,2022).

Contrary to the economy of Tanzania, there was a significant rise in Kenya-Uganda IIT in travel services up to a high of 97.44 percent in the 2018 signifying the benefits of the common market protocol in 2010 (EAC, 2023).The high IIT trade in travel services with the economies of Tanzania and Uganda is in line with empirical trade literature that opines high IIT trade between similar economies (Leitao and Faustino, 2009; Sen, Saray and Karagoz, 2009). The averagely high IIT in travel services is not only attributed to the historical trading ties between Kenya the economies of Tanzania and Uganda (EAC, 2023), but also shared tourism eco-systems like Lake Victoria, Masai-Mara and Serengeti national reserves (Ungaya, 2021). However, Kenya trade in travel services with the economies of Rwanda and Burundi was mainly inter-industry trade. This is associated to their small economies compared to Kenyan economy as intra-industry trade tend to be high between economies with high and similar GDP (Saray and Karagoz, 2009).

4.2 Descriptive Statistics.

Descriptive statistics provides the summarized statistics that includes maximum, minimum, mean, medium and standard deviation.

Table 3: Descriptive Statistics of Dependent and Explanatory Variables

Statistic	IIT travel services	diffGDP	diffPCI	FDI	MVA	INFRA	DIST
Mean	33.310	4.41e+10	802.887	6.85e+08	2.45e+09	3.978	654.31
Minimum	0.00	3.43e+08	40.121	31593.78	1.32e+08	0.0003	503.5
Maximum	100	1.17e+11	1913.01	3.26e+09	8.15e+09	14.332	801.99
Std. Dev	36.198	3.01e+10	436.321	7.37e+08	2.41e+09	3.929	127.467
Observations	80	80	80	80	80	80	80

***Source*: Author's computation, 2026**

***Note*: variable diffgdp denotes the difference in gross domestic product of the exporter and importer countries for every study year (same for diffpci for per capita income)**

From Table 3, the IIT in travel services between Kenya and the EAC selected member countries had a mean of 33.31 percent, a minimum of 0.00 and a maximum of 100 percent. The mean of 33.31 for IIT in travel services across all the EAC trade partners means that Kenya has below average (less than 50 percent) IIT in travel services with her EAC counter parts. This points out the low services trade integration in the EAC.
The difference in gross domestic product has a maximum of 1.17e+11 USD and an average of 4.41e+10 USD. Difference in PCI has an average of 802.887 USD and a maximum of 1913.01 USD. FDI for Kenya's trading partners had a maximum of 3.26e+09 USD and an average of 6.85e+08 USD. Manufacturing value added had an average of 2.45e+09 USD and a maximum value of 8.15e+09 USD. The ICT infrastructure development index had an average of 3.978 indicating low ICT connectivity among the EAC member states and a maximum 14.332. The furthest capital city from Nairobi is Bujumbura (Gitega is the political capital) of Burundi with approximately 801.99 km while the closest capital city is Kampala of Uganda with approximately 503.5 km.

4.3 Normality test

This study adopted Jarque-Bera test for normality test whereby for the null, the variable is assumed to have a normal distribution.

Table 4: Jarque-Bera test for Normality

Variable	Observations	chi2(2)	Prob>chi2
IIT travel	80	9.304	0.0095
Diffpci	80	5.126	0.0771
Diffgdp	80	6.079	0.0478
Fdi	80	39.63	2.5e-09
Mva	80	9.647	0.008
Infra	80	7.993	0.0184
Dist	80	11.36	0.0034

***Source:* Author's computation, 2026**
***Note*: variable diffgdp denotes the difference in gross domestic product of the exporter and importer countries for every study year (same for diffpci for per capita income)**
Table 4 shows that only diffpci variable has a normal distribution at 5 percent level of significance. To mitigate the non-normal distribution of the non-negative dependent variable and the independent variables, this study applies PPML with high dimensional fixed effects (ppmlhdfe) that well handles gravity models in multiplicative form. PPML estimation method neither requires the dependent variables and the error terms to follow a normal distribution, nor does it require variables to have a Poisson distribution (Correia, Guimaraes & Zylkin,2020).

4.4 Cross Section Dependence

This study applied Pesaran (2004, 2015) CD-test because the time dimension of the panel is larger than the cross-sectional dimension (T=20 years, N=4). The null hypothesis is tested based on presence of cross-sectional independence among the variables (Pesaran, 2015).

Table 5:Pesaran (2004, 2015) CD-test Cross Section Dependence Test for IIT in Travel Services

Variable	CD-test	p-value	Average joint T
IIT Travel	-1.827	0.068	20.00
DiffGDP	10.761	0.000	20.00
DiffPCI	10.639	0.000	20.00
FDI	4.887	0.000	20.00
MVA	9.749	0.000	20.00
INFRA	10.75	0.000	20.00
DIST	0	1.000	20.00

***Source*: Author's Computation,2026**

From Table 5, the null hypothesis is rejected for the variables diffgdp, diffpci, FDI, MVA and INFRA, implying that there is cross-section dependence among the variables at five percent level of significance except for IIT in travel services(p=0.068) and distance (p=1.000). To mitigate the cross-section dependence effects on the

estimates, the study included the exporter-time and importer-time fixed effects that absorbs observable and unobservable country-specific characteristics which vary across the countries' dimensions using PPML estimator (Anderson & van Wincoop, 2003).

4.5 Panel Unit Root Tests.

This study used the second-generation test by Pesaran (2007) because of the presence of cross section dependence across the cross-section entities. The Pesaran (2007) test is quite simple and intuitive and also good for small time series (Pesaran, 2007). For the Pesaran (2007) test, a variable is said to be stationary at a given level of significance if the absolute value of the CIPS statistic is greater than any of the given significant levels of statistic.

Table 6: Pesaran (2007) Panel Unit-root Test at Level

Variable	CIPS statistic	10%	5%	1%	Remarks
IIT Travel	-0.408	-2.74	-2.88	-3.15	Non-stationary
DiffGDP	-1.885	-2.74	-2.88	-3.15	Non-stationary
DiffPCI	-2.525	-2.74	-2.88	-3.15	Non-stationary
FDI	-1.750	-2.74	-2.88	-3.15	Non-stationary
MVA	-2.070	-2.74	-2.88	-3.15	Non-stationary
INFRA	-1.600	-2.74	-2.88	-3.15	Non-stationary
DIST	1.700	-2.74	-2.88	-3.15	Non-stationary

Source: **Author's Computation ,2026**

From Table 6, all the variables were non-stationary since the absolute value of the CIPS statistic for each variable is less negative than the Pesaran (2007) critical values across all the significance levels. Consequently, the variables were tested at first difference to confirm their stationarity.

Table 7: Pesaran (2007) Panel Unit-root Test at first difference

Variable	CIPS statistic	10%	5%	1%	Remarks
d.IIT	-1.442	-2.74	-2.88	-3.15	Non-stationary
d.diffGDP	-3.179	-2.74	-2.88	-3.15	Stationary
d.diffPCI	-3.928	-2.74	-2.88	-3.15	Stationary
d.FDI	-5.977	-2.74	-2.88	-3.15	Stationary
d.MVA	-4.290	-2.74	-2.88	-3.15	Stationary
d.INFRA	-3.732	-2.74	-2.88	-3.15	Stationary
d.DIST	1.700	-2.74	-2.88	-3.15	Non-stationary

Source: **Author's Computation ,2026**

Table 7 shows that the variables diffGDP, diffPCI, FDI, MVA and INFRA are stationary at first difference at 5 percent level of significance. However, the IIT and DIST variables remained non-stationary. This is because the intra-industry trade index for travel services has numerous zero values while the distance variable is time invariant. To resolve stationarity issues, this study applies PPML estimator using multiplicative gravity model with time-year dummies (Yotov *et al.* ,2016).

4.6 PPML Gravity Model for Determinants of IIT in Travel Services

The application of PPML estimation approach of gravity model provided a natural way of dealing with the presence of zeros in the dependent variable and heteroskedasticity because of its multiplicative form. Baldwin and Taglioni's (2006) observed that failure to deal with the presence of the Multilateral Resistance Term (MTR) in gravity models leads to an omitted variable bias. To incorporate MTR in empirical gravity specifications, Herman (2023) suggested solution by Feenstra (2002), such that GDP and other country-level variables are replaced with exporter-year and importer-year fixed effects to mitigate the omitted variable bias problem.

To analyse the determinants of IIT in travels services, equation 1.6 was applied.

$$IIT_{jkptv} = \exp\left[\beta_0 + \beta_1 GDP_{kt} + \beta_2 GDP_{pt} + \beta_3 diffgdp_{kpt} + \beta_4 diffPCI_{kpt} + \beta_5 FDI_{pt} + \beta_6 MVA_{pt} + \beta_7 INFRA_{pt} + \beta_8 DIST_{kp}\right] \times \varepsilon_{kpt}$$
…… ……..… (1.6)

Whereby IIT is the intra-industry trade index for the travel services (the dependent variable) and difference in gross domestic product (diffGDP), Distance between capital cities of the trading countries (DIST), difference in Per Capita Income (diffPCI), Foreign Direct Investment (FDI), Manufacturing Value Added (MVA), and the ICT Infrastructure Development index (INFRA) are the explanatory variables. ε_{kpt} is the two-way error component term of the model. Where $\varepsilon_{kpt} = v_k + \gamma_t + \mu_{kpt}$ such that v_k is the unobserved individual effects, γ_t unobserved time effects and μ_{kpt} is the remaining part of the stochastic disturbance term.

Table 8: PPML Gravity Regression Results for Determinants of IIT in Travel Services

Independent Variables	**Estimate Coefficient**	**Std error**	**P-value**
Intercept	2.566*	0.323	0.000
Difference in gross domestic product	0.325	0.665	0.625
Foreign direct investment	0.370**	0.156	0.017
Manufacturing value added	-0.203	0.391	0.603
ICT infrastructure development index	0.501	0.719	0.486
Distance	-1.588*	0.317	0.000
Diagnostic Statistics			
Pseudo R2 = 0.725			
Deviance = 891.970			
Log pseudolikelihood = -567.896			

***Source*: Authors Computation,2026**
Note: * Shows Significant level at one percent
**** Shows significant level at five percent**

Table 8 shows the control variable of geographical distance between trading partners ($\beta_8 = -1.588 ; P = 0.000$, $(e^{-1.588} - 1) = -0.796$) has a negative and significant relationship with the IIT in travel services between Kenya and the EAC. These results are consistent with the empirical findings of Botric (2013), Leitao (2012), Clark and Stanley (1999) and Ferto (2007) that showed distance to have a negative relation with intra-industry trade. The negative coefficient confirms that IIT in travel services is negatively impacted by distance between Kenya and her EAC member economies. This result aligns with the gravity theory that postulates distance to negatively predicts trade flows between economies (Head,2003; Salvatici, 2013).

However, difference in gross domestic product ($\beta_3 = 0.325 ; P = 0.625$) had positive and insignificant relationship with the IIT in travel services between Kenya and the EAC. Empirical literature postulates that trading economies with higher GDP are likely to experience higher IIT (Andresen, 2003). The variable for difference in PCI was dropped because of multicollinearity to avoid biased estimates. The manufacturing value added variable though not significant (($\beta_6 = -0.203 ; P = 0.603$), has a negative relationship with IIT trade in travel services between Kenya and the EAC.

The relationship between FDI and IIT in travel services is positive and significant ($\beta_5 = 0.370 ; P = 0.017$, $(e^{0.370} - 1) = 0.448$). This study corroborates with the empirical finding of Kyereboah-Coleman *et al.* (2025) that found a positive impact of FDI on Intra- African trade among 54 African countries. Similarly, Leitao (2012),

Sotomayor (2012), and Tatar (2020) found a positive relationship between FDI and IIT. This result is also in line with Helpman and Krugman (1985) theoretical model implying that presence of regional multinationals positively affects IIT in travel services between Kenya and the EAC countries. This study underscores the significance role of multinational corporations (supplementary and or complementary) on intra-industry trade in travel services between Kenya and the EAC economies.

The positive effect of FDI inflows on IIT in travel services comes about by the fact that efficiency seeking multinational firms in EAC establish operations in member countries to take advantage of lower costs and increasing economies of scale (Arip *et al.,* 2011 ; Clark, 2005; Krugman,1979; Grubel & Lloyd,1975). Such business establishments tend to increase trade in travels services as the parent company uses part of her employees to service its subsidiaries across borders. Similarly, market-seeking firms within EAC invest in the EAC markets to access a larger customer base and expand their market share. This also leads to increased IIT in travel services as the multinational firms leverages its operations to move goods and services to and from its foreign subsidiaries. Moreover, resource-seeking multinational firms in EAC invest in countries with access to valuable resources or skilled labour. This also leads to increased IIT in travel services as the multinational firms' employees attend meetings and conferences to operationalize their subsidiaries.

The ICT infrastructure development has a positive though not significant ($\beta_7 =$ 0.501 ;P=0.486 , $(e^{0.501} - 1) = 0.650$) relationship with the IIT in travel services between Kenya and her selected trading partners in the EAC. As asserted by Adeleye *et al.* (2021), the positive relationship reveals that most travel services are infused with technological systems in terms of movement, booking of spaces and other delivery services solutions like online check in, e-ticketing, and digital payment systems that makes travel services more accessible and affordable. Moreover, Domor *et al*. (2024) study found significant positive effect of ICT on Intra-regional trade among 65 Belt BRI countries. Similarly, Donaubauer *et al.* (2018) found a positive influence of soft infrastructure development index on bilateral trade of 150 high-income and emerging economies.

Despite Domor *et al*. (2024), Adeleye *et al.* (2021), and Donaubauer *et al.* (2018) significant outcomes, this study result is insignificant because of poor technological integration among the EAC economies (Daniel, 2025). This implies lack of uniformity in the adoption of digital technologies that can guide interoperability of digital payments, data governance and harmonized regulation among EAC partner states (Daniel, 2025).

4.7 Heteroskedasticity

The use of PPML in gravity models is specifically modelled to address the issue of heteroskedasticity and autocorrelation whereby the variance of the error term is not constant across observations. PPML handles this by allowing the variance to be proportional to the mean of the dependent variable (Santos Silva and Tenreyro,2006).

4.8 Multicollinearity

Multicollinearity refers to a case in which two or more explanatory variables in the regression model are highly correlated (Gujarati,2004). High VIF values indicate presence of multicollinearity that can lead to instability in PPML estimates. The results from Table 9 indicate that no variable exceeded VIF greater than 10 (VIF>10) therefore none of the variables are highly collinear.

Table 9: Variance Inflation Factor Results for Travel Services

Variable	VIF	1/VIF
Zmva	7.10	0.140904
Zdist	5.43	0.184119
Zinfra	3.97	0.252040
Zdiffgdp	2.84	0.351597
Zfdi	2.72	0.368182
Mean VIF	3.99	

Source: **Author's Computation,2026**
Note: VIF> 10 Shows presence of Multicollinearity

4.9 Ramsey RESET Test (Model Mis-Specification / Omitted Variable Bias)

The Ramsey RESET test was used to detect if potential variables were omitted in the model specification. The null hypothesis states that the model does not suffer from misspecification errors suggesting the model is correctly specified. The null hypothesis is rejected when the p-value is smaller than the critical value (Yotov *et al,* 2016). The results from Table 10 indicate that the model does not suffer from misspecification errors since the null hypothesis is not rejected.

Table 10: Ramsey RESET Test Results for Travel Services

Item Result Name	Value
Chi2(1)	3.01
Prob>Chi2	0.0830

***Source*: Author's Computation,2026**

5.1 Summary of Research Findings

This study sought to investigate the effect of difference in per capita income, ICT infrastructural development , manufacturing value added and foreign direct investment on intra-industry trade in travel services between Kenya and the East African Community member countries.

The study found FDI to have a positive and significant effect on intra-industry trade in travel services between Kenya and EAC member countries ($\beta_5 = 0.370\,; P = 0.017\,,\ (e^{0.370} - 1) = 0.448$).This finding is similar to Leitao (2011), Tatar (2020), and Sotomayor (2012) that found a positive relationship between FDI and IIT. This result shows the significant role played by regional multinational corporations towards enhancing intra-industry trade in travel services between Kenya and EAC member countries.

ICT infrastructure development had a positive though insignificant effect on IIT in travel services between Kenya and the EAC member countries (β_1= 0.501 ;P=0.486 , $(e^{0.501} - 1) - 0.650$). Further, the result for manufactured value added had a negative and insignificant relationship between manufacturing value added and IIT in travel services (β_6= -0.203 ;P=0.603 , $(e^{-0.203} - 1) = -0.184$).This outcome is not in line with Cernosa (2009) and Hartman *et al*. (1993). The variable for per capita income was dropped due to multicollinearity.

The IIT in travel services indices were calculated using the unadjusted Grubel-Lloyd (1975) approach between Kenya and the selected EAC member countries. Though Kenya intra-industry trade in travel services with economy of Tanzania showed a decreasing trend, it had an increase to a high of 76.19 percent for the post-ratification period and a decline to a low of 22.22 percent from the year 2018 to 2024. Kenya IIT in the travel services with the economy of Uganda experienced a significant rise up to a high of 97.44 percent in the 2018 signifying the benefits of the common market protocol in 2010.

5.2 Conclusions on the Study Findings

This study concludes that FDI has a positive and significant impact on intra-industry trade in travel services between Kenya and selected EAC members. This underscores the importance of multinational corporations in enhancing IIT in travel services within the East Africa Community. Though ICT infrastructural development had a positive effect on IIT in travel services, its effect is not significant.

Based on the calculated IIT indices, this study concludes that Kenya has a high intra-industry trade in travel services with the economy of Uganda and a decreasing intra-industry trade in travel services with the economy of Tanzania. Kenya trade in travel services with the economies of Rwanda and Burundi was mainly inter-industry trade.

5.3 Policy Recommendations

The significant positive relationship between IIT in travel services and FDI showed the importance of regional multinational corporations among the EAC economies. Regional multinational corporations operate subsidiaries across the EAC that encourages business and personal travels via staff and relatives' movement. Therefore, there

is need for the EAC governments to enact policies that promote the establishment of regional multinational corporations to enhance the intra-industry trade in travel services within EAC.

ICT infrastructural development had a positive, though not significant relationship with the IIT in travel services. This points out the need for EAC governments to uniformly continue upgrading the EAC members countries ICT infrastructure in order to promote intra-industry trade in travel services across the EAC region. Lastly , more efforts need to be put in place to encourage trade in travel services integration between Kenya and the economies of Rwanda and Burundi.

REFERENCES

African Development Bank (2024). AfDB Data Portal. https://projectsportal.afdb.org

African Development Bank (2024). East Africa Economic Outlook 2024. Driving East Africa's Transformation: The Reform of the Global Financial Architecture. African Development Bank Group

African Development Bank (2019). *East African Economic Outlook: Macroeconomic Development and Prospects, Political Economy of Regional Integration*. African Development Bank Group, Avenue Joseph Anoma 01 BP 1387 Abidjan 01 Côte d'Ivoire.

Afreximbank (2024). African Trade Report 2024. Climate Implications of the AfCFTA Implementation. African Export-Import bank, Cairo.

Andresen, M. A. (2003). "*Empirical intra-industry trade: what we know and what we need to know"*. University of British Columbia and Institute for Canadian Urban Research Studies.

Anderson, J.E. &Van Wincoop, E. (2003). Gravity with gravitas: a solution to the border puzzle. *American Economic Review*. *93* (1): 170–192.

Baldwin, R. E. & Taglioni, D. (2006). Gravity for Dummies and Dummies for Gravity Equations (September 2006). NBER Working Paper No. w12516, Available at SSRN: https://ssrn.com/abstract=930606.

Baltagi, H. B. (2005). E*conometric Analysis of Panel Data* (Third Edition), Chichester, United Kingdom: Wiley.

Caetano, J., & Galego, A. (2007). In Search for the Determinants of Intra-Industry Trade within an Enlarged Europe. South-Eastern Europe Journal of Economics, 5(2), 163-183.

Correia S., Guimaraes P. & Zylkin T. (2020). PPMLHDFE: Fast Poisson estimation with high-dimensional fixed effects. *The Stata Journal (2020)20*, Number *1*, pp. 95–115. DOI: 10.1177/1536867X20909691.

Daniel M. (2025). Leveraging Digital Transformation for Socio-Economic Growth in the East African Community: A Strategic Framework for Regional Integration. *Global Scientific Journal*. *13*(9), ISSN 2320-9186.

EAC (2024). Overview of EAC. https://www.eac.int/overview-of-eac

EAC (2023). EAC Strategy for Trade in Services 2023-2033.EAC Secretariat, Arusha

EAC (2022). EAC Trade and Investment Report 2022. EAC Secretariat, Arusha

Feenstra, R. C. (2002). Border effects and the gravity equation: Consistent methods for estimation. *Scottish Journal of Political Economy 49* (5), 491–506. https://doi.org/10.1111/1467-9485.00244.

Fertő, I. (2007). Intra-industry Trade in Horizontally and Vertically Differentiated Agri-food Products between Hungary and the EU. *Acta Oeconomica*, *57*(2), 191-208.

Finger, J.M. (1975). Trade overlap and intra-industry trade. *Economic Inquiry*, *8*:581-589.

Grubel, H.G., & P.J. Lloyd. (1975), *Intra-industry trade: the theory and measurement of international trade in differentiated products*, McMillan: London

Gujarati, D. N. (2004). Basic Econometrics, Fourth edition, The McGraw-Hill Companies.

Hartman, A. & Henderson, R. & Sheldon, M., (1993). "A Cross-Section Analysis of Intra-Industry Trade in the U.S. Processed Food and Beverage Sectors," *Agricultural and Resource Economics Review*, Cambridge University Press

Head, Keith (2003). *Gravity for Beginners*. Mimeograph, University of British Columbia

Helpman, E. and P. Krugman (1985). *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Economy*. Cambridge, MA: MIT Press

Helpman, E. (1987), Imperfect competition and international trade: evidence from fourteen industrial countries, *Journal of the Japanese and International Economies*, No. 1.

Herman P.R. (2023). Gravity Estimation: Best Practices and Useful Approaches. Economics Working Paper Series Working Paper 2023–10–C. U.S. International Trade Commission 500 E Street SW Washington, DC 20436.

Jámbor A. (2015), Country- and industry-specific determinants of intra-industry trade in agri-food products in the Visegrad countries. *Studies in Agricultural Economics, Vol. 117*.

Kareem F. O & Kareem O. I (2017). Specification and Estimation of Gravity Models: A Review of the Issues in the Literature. European University Institute Working Papers. RSCAS 2014/74 Robert Schuman Centre for Advanced Studies Global Governance Programme-118.

Kothari, C. R. (2004). *Research Methodology: Methods and Techniques* (2nd ed.). New Age International.

Krugman, P. (1979). Increasing returns, monopolistic competition and international trade. *Journal of International Economics*, vol. *9*, no.4, pp.469-479.

Krugman, P. and Obsfeld, M. (1994). International Economics, Third Edition, New York, HarperCollins College Publishers.

Leitão. C. N. (2011). Intra-Industry Trade in the Agriculture Sector: The Experience of United State. *African Journal of Agricultural Research Vol. 6*(1), pp. 186-190

Leitão, N. C. (2012). The determinants of intra-industry trade in the tourism services. Online at https://mpra.ub.uni-muenchen.de/37444/ MPRA Paper No. 37444, posted 19 Mar 2012 16:46 UTC Munich Personal RePEc Archive.

Leita˜o, N. C. & Shahbaz M (2012). Liberalization and United States' Intra-Industry Trade. *International Journal of Economics and Financial Issues, 2* (4), 505 – 512.

Moshirian F., Li D., Sim A.-B. (2005), Intra-industry trade in financial services, *Journal of International Money and Finance*, Vol. *24*, Issue 7.

Nano, E., Nayyar, G., Rubinova, S. & Stolzenburg, V. (2019), "Services liberalization and educational attainment: Evidence from India*",* Working Paper, Geneva: World Trade Organization.

Pesaran, H.M. (2015) Testing Weak Cross-Sectional Dependence in Large Panels. *Econometric Reviews, 34*, 1089-1117.https://doi.org/10.1080/07474938.2014.956623.

Rodrick, D. (2016). Premature deindustrialization. *Journal of Economic Growth*, *21*(1), 1-33.

Rodrik, D. (2018). An African Growth Miracle? *Journal of African Economies*, *27*(1), 10–27.

Salvatore, D. 2004. Growth and Poverty in a Globalizing World. *Journal of Policy Modelling*, *26*:543-551.

Santos Silva J. M. & Tenreyro S. (2006), The log of gravity, *The Review of Economics and Statistics*, Vol. *88*, No. 4.

Sen A, Saray M. and Karagoz M (2009). Intra-Industry Trade between Turkey and OECD Countries: A Panel Data Analysis. *Zagreb International Review of Economics & Business*, Vol. *12*, No. 2, pp. 73-86, 2009.

Shahbaz, M., & Leitão, N. C. (2010). "Intra-industry Trade: The Pakistan Experience." *International Journal of Applied Economics*, *7*(1), 18-27

Tinbergen, J. 1962. *Shaping the World Economy: Suggestions for an International Economic Policy*. New York: The Twentieth Century Fund.

Tourism Research Institute (2025). Annual Tourism Sector Performance Report 2024.Kenya.

UNCTAD (2018). *World Investment Report 2018: Investment and New Industrial Policies*. (United Nations publication. E.18. II. D.4. New York and Geneva).

Ungaya G. (2021). The Politico-Economic Competition Affecting Ecotourism Development in Serengeti-Mara Ecosystem between Kenya and Tanzania. Scientific Research Journal (SCIRJ), Volume IX, Issue II, 1ISSN 2201-2796.

United Nations (2020). *The African Continental Free Trade Area: catalyst for accelerating services trade in Eastern Africa*. United Nation Commission for Africa, Sub Regional office for Eastern Africa, 24th Session of the Intergovernmental Committee Services officials and experts.

Varma, P., & Ramakrishnan, A. (2014). "An Analysis of the Structure and the Determinants of Intra-Industry Trade in Agri-food Products: Case of India and Selected FTAs. *Millennial Asia, 5*(2), 179-196.

World Trade Organization. (2002). *The Legal Texts: The Results of the Uruguay Round of Multilateral Trade negotiations*. Geneva: WTO Secretariat.

World Trade Organization. (2019). *The Future of Services Trade*. World Trade Organization report, Geneva.

Yotov, Y. V., R. Piermartini, J.-A. Monteiro, and M. Larch (2016). An Advanced Guide to Trade Policy Analysis: The Structural Gravity Model (Online Revised Version). World Trade Organization and the United Nations Conference on Trade and Development. https://doi.org/10.30875/abc0167e-en.