

**DO REGIONAL ECONOMIC DISPARITIES PROMOTE REGIONAL VALUE  
CHAINS? A CASE STUDY OF EAST AFRICA COMMUNITY MEMBER  
STATES.**

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**A RESEARCH THESIS SUBMITTED TO THE DEPARTMENT OF ECONOMIC  
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## DECLARATION

This thesis is my original work and has not been presented for a degree in any other university or any other award.

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## **DEDICATION**

I dedicate this work to my sponsor, the Common Markets for Eastern and Southern Africa, the government of Kenya for its very important role in implementing policies and my family for financial and moral support.

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I appreciate my supervisor Dr. Samuel Muthoga for the guidance he offered throughout the process even to completion. Further, my parents, Joseph Chokera and mother Joyce Kainga for challenging me.

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## ACRONYMS AND ABBREVIATIONS

<b>EAC</b>	:	East African Community
<b>GDP</b>	:	Gross Domestic Product
<b>GVA</b>	:	Gross Value Added
<b>ICT</b>	:	Information Communication and Technology
<b>ITC</b>	:	International Trade Centre
<b>KEN</b>	:	Kenya
<b>NTBs</b>	:	Non-tariff Barriers
<b>REC</b>	:	Regional Economic Communities
<b>RECAMP</b>	:	Regional Enterprise Competitiveness and Access to Markets Programme
<b>RVC</b>	:	Regional Value Chains
<b>RWA</b>	:	Rwanda
<b>TZA</b>	:	United, Republic of Tanzania
<b>UGA</b>	:	Uganda
<b>UNIDO</b>	:	United Nations Industrial Development Organization
<b>UNSD</b>	:	United Nations Statistics Division

## **OPERATIONAL DEFINITION OF TERMS**

Regional Value Chains (RVC) is described as the trade in intermediate inputs of goods or services from inception to production between suppliers and lead firms within a single region.

Regional Economic Disparities (RED) is the difference in economic capabilities between states in a region.

Gross Value Added (GVA) is the total output without final consumer consideration.

Regional Economic Communities (REC) represents nations in signed treaties for trade and economic integration.

Trade diversion is the transfer of trade from regional economic communities to trade with countries outside a specific REC.

Intra-regional trade is the transfer of goods between states in the same regional economic community.

## ABSTRACT

### *Background, Problem, Objective, Methodology and Findings*

Regional economic disparities in developing countries impact growth of regional value chains to compete in the global markets. Regional economic disparities are the difference in economic capabilities between states in a region. The objective of this paper is to explore the impact of regional economic disparities (RED) on growth of food and beverage regional value chains (RVCs) in the East Africa Community (EAC) manufacturing sector. The paper employs the New Economic Geography (NEG) model in investigating the dynamics of promotion of regional value chains in EAC's manufacturing sector. By making use of secondary data from five member states, the author surveys labour in the manufacturing sector, total income of labourers and executives, taxes, intra-regional and extra-regional trade in foods and beverages, and gross value added as the regional value chain determinant. To answer the research questions, regression analysis was used to shed light on (i) the effect of regional economic disparities on promotion of regional value chains in EAC and (ii) the effect of prices on regional value chains. The findings show disparities having a positive and significant effect on promotion of RVCs, price, intra and extra-regional trade, and executive salaries while labourers' salaries and taxation have a negative and significant effect on the promotion of RVCs. The significance of this research lies in the potential to enable EAC member states to realize and leverage their protection, industrialization, export performance and economic development strategies. Future research work may look into Climate Changes, Export Controls and Politics as promoters of regional value chains as well as infrastructure, and technology. The results show need for labourers to acquire more skills necessary to remain relevant in the ever transforming manufacturing sector. Further, that technology absorption is crucial among producers and regional tax agreements are necessary in industry location decisions. Finally, that wages determine production and the nations paying their workers more tend to enjoy more intra-regional trade. According to these findings, EAC member states need to increase intra-regional trade, apply some protectionist policies as well encourage increased budgets for education and building of institutions while also attracting foreign direct investments with tax reliefs. *Keywords: Trade diversion, regional value chains, regional economic disparities, global value chains, intra-regional trade, competitive advantage and price volatility,*

## CHAPTER ONE: INTRODUCTION

### 1.1 Background

Regional value chains (RVCs) enable producers and service providers to benefit from access to raw materials, and economies of scale in production. In Kenya for example, maize is imported in tonnes by millers and the government through the National Cereals Board as raw maize from other EAC countries before making flour from them. RVCs also provide expanded market opportunities and facilitate technological and skills transfer. They connect lead firms and suppliers within a single world region (Ambos et al., 2021). As such, they are an essential step towards greater integration into the global economy (Gao et al., 2024). However, African countries face challenges in sustaining exports over prolonged periods; one in every ten export relationships survives beyond the third year (Kainga, 2023) through this study, regional economic disparities impact on the promotion of regional value chains is explored.

In the East Africa Community (EAC), as in other RECs, trade is crucial for economic development, and participation in global value chains. However, the effects of COVID-19, supply-side challenges, and the prevalence of non-tariff barriers (NTBs) cause a decline in intra-regional exports. For example, Tanzania imposed bans and restrictions on Kenyan dairy, in addition to numerous weighbridges, police check and custom procedures between country to country in EAC. In addition to external shocks, economic disparities within the EAC further complicate the promotion of regional value chains. In 2020, intra-regional trade in the region, including EAC declined by 11%, dropping from US\$ 10.9 billion in 2019 to US\$ 9.7 billion (Maye, 2024). Challenges in regional value

chains include increased costs throughout the supply chain, differences in levels of industrialization, and the emergence of newer markets.

Policy-driven economic disparities continue to affect intra-African trade. Education, labour and capital policies locally agreed upon and not harmonized with EAC policies create unfair advantages within states. With EAC countries among the top 15 that need to prioritize intra-African trade and logistics to realize growth (Food and Agriculture Organization of the United Nations, 2021) policy harmonization and infrastructural development will need to be sort. Using data from the World Bank, the United Nations Industrial Development Organization (UNIDO), the COMTRADE database (United Nations Statistics Division), and the United Nations Conference on Trade and Development (UNCTAD), this study examined the effects of regional economic disparities on the promotion of regional value chains.

### **1.1.1 The Promotion of Regional Value Chain**

Regional value chains (RVCs) refer to trade in intermediate goods between firms within a single region. The East African region, with its shared geographical location, is a prime example. According to Duan et al., (2021), trade in parts represents global value chains. Bellemare (2022) describes the value chain as all activities involved in the production of a commodity, from design to market entry as a final product. In this study, the focus will be on the trade between suppliers and lead firms, excluding final product consumers.

By 2025, revenue from agro-processing in Africa will increase by 122 billion dollars, and therefore, there is a great potential for job creation and manufacturing within African nations (Signe' & Johnson, 2018). To fully benefit from global value chain

competitiveness, African states must enhance intra-regional trade in intermediate inputs, promote integration, and leverage comparative advantages. These efforts can boost competitiveness and help achieve this goal by 2025. According to Slim et al., (2018), if two economies experience rapid growth, their mutual trade also experiences notable expansion. This underscores the importance of country-specific knowledge in their comparative advantages.

Slim et.al., (2018) noted that integrating production processes for developing countries allows them to leverage their comparative advantages. In this context, EAC member states must identify their specializations and enhance their comparative advantages by promoting regional trade in intermediate inputs, ultimately boosting their competitiveness in global value chains. This approach not only extends export relationships beyond the third year but also creates potential for job creation and manufacturing. The RECAMP fact sheet identifies three competitive advantages for the five COMESA countries in this research: agro-processing, horticulture, and leather products. Therefore, the author primarily focused on agro-processing, specifically within the food and beverages sector. This targeted approach aimed to increase intra-regional trade and economic development by showing the importance of specialization in regional and global value chain competitiveness.

### **1.1.2 Regional Economic Disparities: Food and Beverages Trade in the EAC**

The study used data from 2002 to 2021 to analyse the effects of regional economic disparities on the promotion of regional value chains in the EAC. Figure 1.1 shows the country-specific imports for food and beverages sold by EAC states.

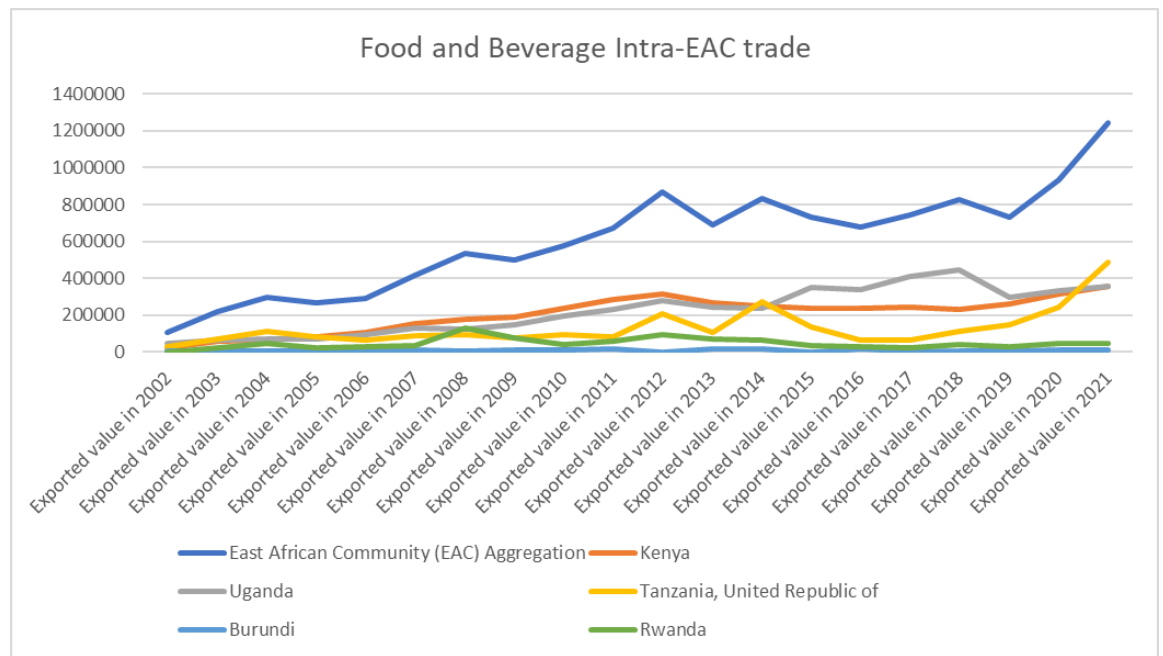


Figure 1.1 Calculations from International Trade Centre

From the above data, intra-regional trade in the food and beverage sector showed that since 2002, there has been a steady upward trajectory in trade. However, an interruption was experienced between 2012 and 2016, marked by fluctuating trade volumes as a result of external shocks and political issues experienced during this period. At this time, Tanzania had imposed restrictions on Kenyan made food and beverages including wheat products, political unrest was being experienced in Burundi when the President sought a third term impacting trade because the borders were closed. Globally, there was high volatility in prices of wheat and fuel prices. Kenya again between 2012 and 2014 experienced drought causing food shortages. After this uncertainty, trade resumed an upward trend. Uganda emerged as a leading exporter, followed by Kenya, Tanzania, Rwanda, and Burundi. In 2020, Tanzania’s food and beverage exports to EAC increased significantly, showing a dynamic shift in intra-regional trade patterns. This shift can be attributed to the little restrictions Tanzania put during the COVID-19 pandemic when other

EAC states imposed strict lockdowns. At this same period Kenya and Uganda put restrictions on each other while Kenya removed several non-tariff barriers it had on Tanzania.

Moreover, the study compared intra-regional trade to world imports by EAC states to find out which between EAC and the world, EAC states trade with most. The study looked at the nations among the five of interest importing most from outside EAC states and which ones trade more within. By this, the study was able to predict how the promotion of regional value chains can be affected by prices and other economic disparities. It is according to the maximum utility theory, that the author assumed a country would trade with another because it gets value for money. This theory states that consumers, the manufacturers, want to achieve the highest level of satisfaction from their economic decisions (Team, 2022) which are means economists can determine where consumer prices are affordable, where labour transfers to, there higher wages and consumer prices level.

From the below data, EAC's imports from the world increased consistently up to 2012 when they slightly dropped and continued dropping until 2016. In those four years, there was no generalized system of preference claims to European states for example. After 2016's decrease in imports, there was a significant increase in imports which was followed by a drop in the year 2017-2018. From then onward, imports were increasing from the world; Kenya imported more from the world far above the other states followed by Tanzania, Uganda then Rwanda and Burundi respectively.

To assess further why there seems to be trade diversion in the region, the researcher will collect food and beverage data on exports from EAC to the world. From this, the author

sought to find out why most EAC states divert trade. Figure 1.2 below shows imports by EAC countries from the rest of the world.

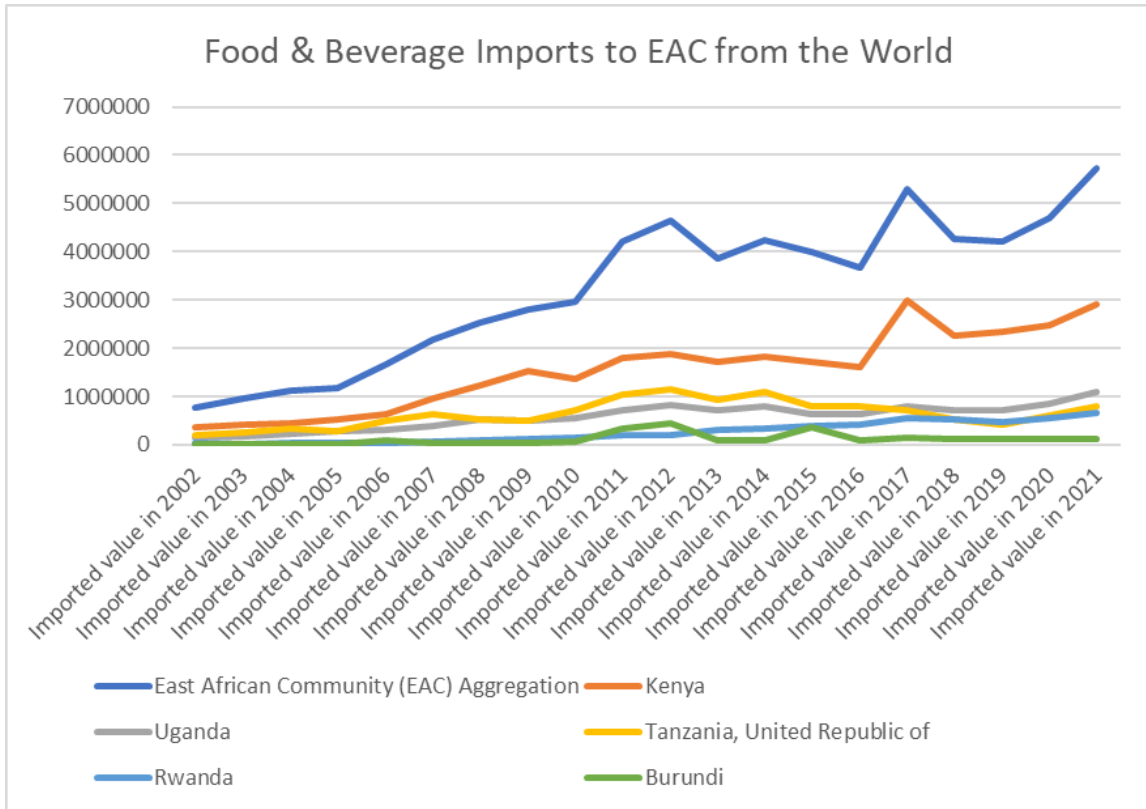


Figure 1.2 Calculations by author from the International Trade Centre database

From the above data, among EAC states, Kenya exports to the global market more, with export volumes significantly surpassing those of all other EAC states. After Kenya, Tanzania and Uganda are the next leading exporters, followed by Rwanda and Burundi. A more comprehensive examination of this data revealed a striking trend. Kenya’s exports of food and beverage exceeded the combined totals of Uganda, Tanzania and Burundi between 2001 and 2021. The difference is proof of trade diversion within the EAC because the volumes of exports to the world are greater than within. By observing this changes, the author tells whether prices or economic disparities have an effect on value addition.

### 1.1.3 Value Addition in East Africa Community’s Food and Beverages Sector

Figure 1.3 below identifies country-specific performance in value addition of agricultural produce over 2002-2020, shown in thousand United States Dollars.

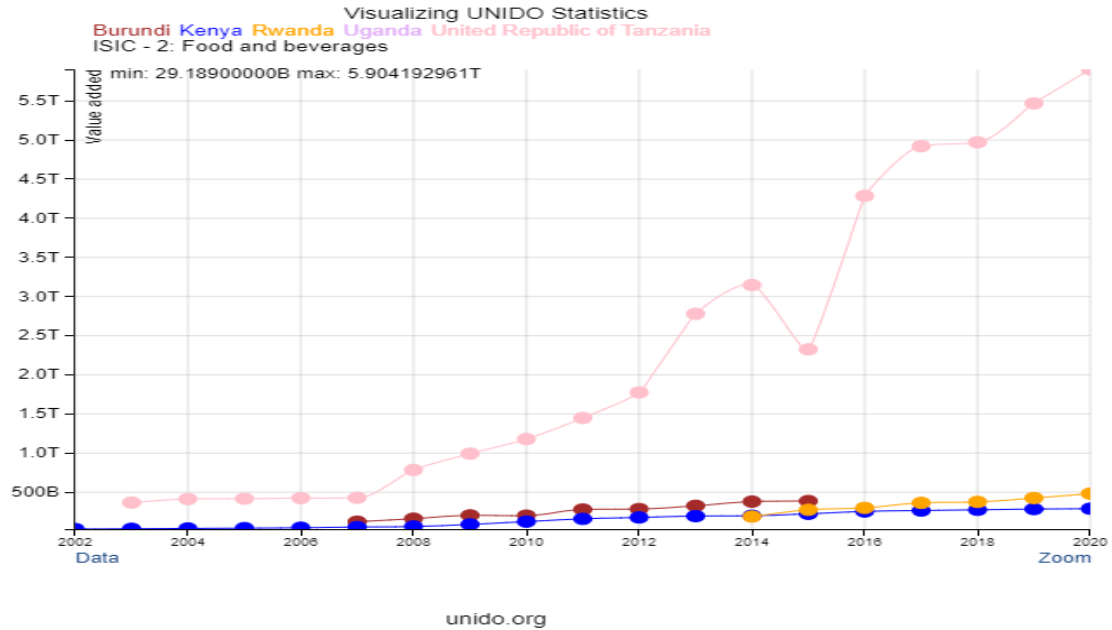


Figure 1.3 Value Added data in Food and Beverages for EAC countries(2002-2020) from UNIDO.

Tanzania's performance in value addition is higher than all the states in EAC as observed above. The data for Uganda's performance in value addition of food and beverages would be obtained from the Uganda National Bureau of Statistics because it was unavailable at UNIDO. According to Nicita & Olarreaga (2007), production-related data is limited for most developing countries and therefore, researchers have to use numerous sources while searching for data.

Tanzania’s value-added in food and beverage saw slight growth from 2003 to 2007, followed by significant increases between 2008 and 2012. A sharp peak occurred in 2014 before a subsequent decrease. From 2015, the country experienced increases until 2017 which continued to 2020. Though Tanzania's agricultural sector contributes a large share

of export earnings, it suffered significant declines in world primary product export prices. Its manufacturing sector is heavily import-dependent but internationally uncompetitive (Karagu, 2012) understanding this, competitive advantage needs to be utilized wholly.

In Kenya, the increase in value added to food and beverage products showed consistent growth. It was significantly low; from 2002 to 2008, followed by then between 2008 and 2010 an increase was observed. This trend continued until 2020. The same also happened in Burundi and Rwanda, with their food and beverage value added experiencing notable increases during the periods of 2008-2010, 2007-2015, and 2014-2020, respectively. This consistency in growth proved the necessity of growth in manufacturing in agro-processing.

In Figure 1.5 below, Kenya is seen to have more people working in the food and beverage value-addition industry followed by Tanzania, Rwanda and Burundi respectively. Between 2002 and 2007, the number of Kenya's employees in the industry increased then decreased between 2008 and 2010 after which the number began increasing until 2014. They then decreased slightly between 2016 and 2017 and slightly increased in 2018 and then another decrease that was followed by an increase in 2020. Kenya's dominance in overall trade according to Karagu (2012) could be highly attributed to its comparatively wider range of highly developed manufacturing industries. That is shown in Figure 1.6 the frontier technology index covering Information Communication Technology (ICT) skills, Research and Development (R&D), Industry Activity, and access to finance.

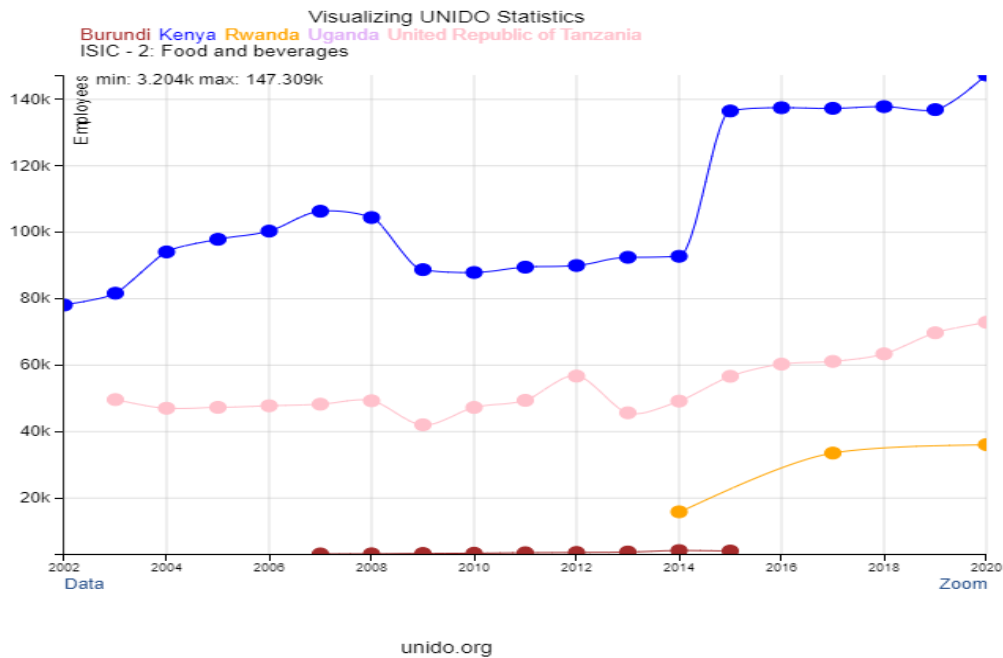


Figure 1.4 Employees in the Food and Beverage Industry (2002-2020), data from UNIDO

Employment in Tanzania’s food and beverage manufacturing sector declined from 2003 to 2004 then rose between 2005 and 2008. A dip occurred in 2009, followed by another rise from 2010 to 2012. After 2012, there was a decrease that was then followed by a continuous increase up until 2020. In Rwanda, the number of employees increased between 2014 and 2020 while in Burundi, the increase was between 2007 and 2015. Rwanda is recognized for its significant achievements in revitalizing its economy, as it now has comfortable international reserves and substantially reduced external debts (Karagu, 2012) EAC therefore should take advantage and improve local production to increase regional competitiveness in the global space.

Below is the data on technological innovation within EAC. As stated, it shows how much a country has invested in ICT skills, research and development, industry activity and access to finance for each state collected from UNCTAD.

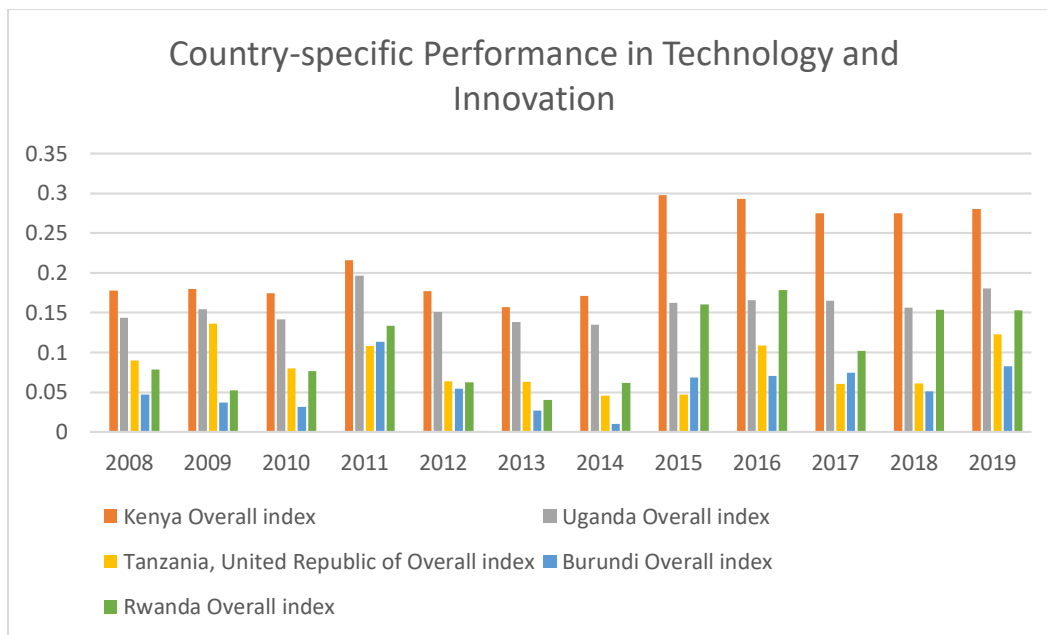


Figure 1.5 from the United Nations Conference on Trade and Development (UNCTAD) Database

The overall index above combines all five drivers of technology and innovation; access to finance, ICT skills, industry activity, and research and development. They all cover national capacities to use, adopt and adapt technologies (UNCTAD, 2019) which play an important role in manufacturing and value addition of value chains. Daly et al., (2016) identified access to finance, scale, and human capital as strategic drivers for participation in global and regional value chains. He stated that they facilitate product upgrades. In the study, human capital is shown by the employees' functions in the manufacturing sector such as casual labour and decision-making functions of executives. Executives will be expected to have sector-specific skills and ICT competencies, while industry scale will be measured by activities, research and development, and trade in value-added foods and beverages.

From 2008-2019 Kenya's overall index was the highest, experiencing significant growth between 2014 and 2015 followed by Uganda, Rwanda, Tanzania, and Burundi,

respectively. In two instances, between 2010 and 2011 and 2014 and 2015, Rwanda experienced significant growth in the overall index while Burundi underwent the least change over the period 2008-2019. On the other side, Tanzania has been experiencing years of ups and downs except between 2012 and 2014, when the growth rates were low.

#### **1.1.4 Regional Economic Communities and Integration**

For supranational integration schemes to succeed, member states must fulfil several prerequisites, including minimizing regional economic disparities (Villaverde & Maza, 2009). Nonetheless, these regional economic disparities have not been clearly defined due to the multifaceted nature of the term ‘disparity’. In the context of this paper, regional economic disparities will be defined as the variations in economic capabilities among economies within EAC. This classification is important in setting a clear starting point for providing solutions to economic disparities in regional economic communities, especially EAC.

To promote regional value chains, GVA data served as an indicator as it captures trade among firms and suppliers while excluding final product consumers. Gross Value Added gives a picture of the state of the economic activity from the producer's or suppliers' side (Strategy, n.d.). GVA data may be more accurate as it accounts for government transfer to individuals, organizations, or between governments as well as indirect taxation, particularly in agro-processing and supplier distribution.

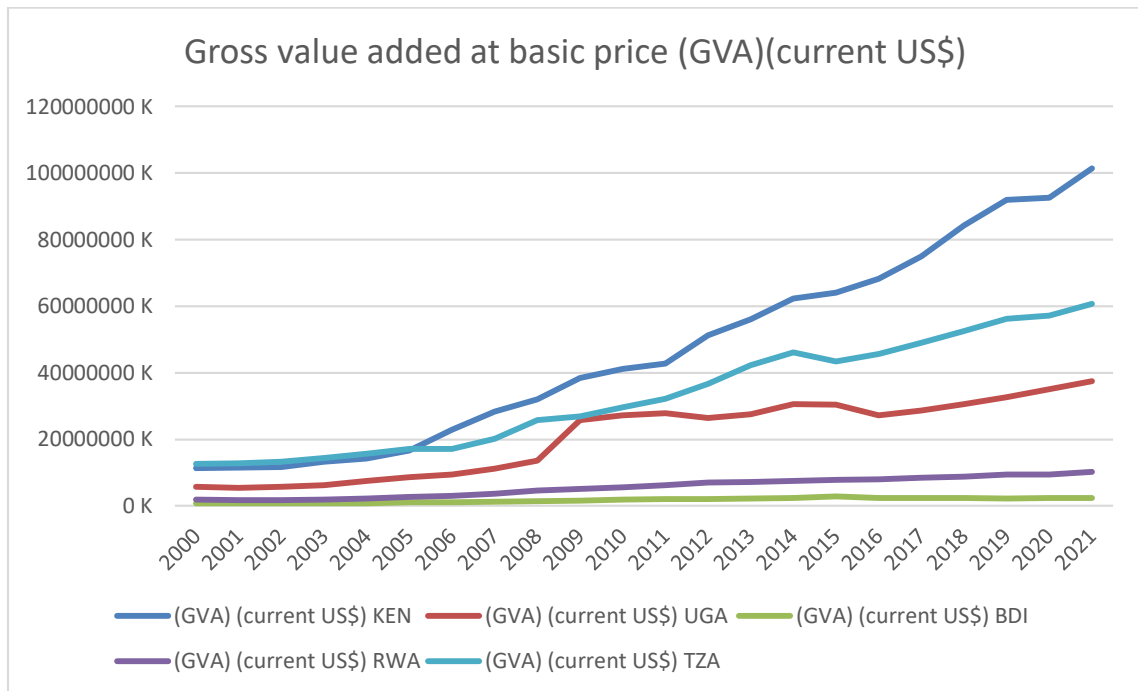


Figure 1.6 from World Bank's World Development Indicators (2000-2021)

Above is GVA data for EAC states over the period 2001 to 2021 from the World Bank indicators in current United States dollars. The acronym KEN, and TZA represent Kenya and Tanzania; Uganda as UGA, Rwanda as RWA, and lastly Burundi as BDI. Kenya's GVA grew consistently from 2000 to 2001 shooting significantly between 2005 and 2006, between 2011 and 2012, 2017 and 2018 and between 2020 and 2021. Tanzania's GVA dropped between 2000 and 2001 and increased from 2002 through to 2016 when it dropped again from the previous year. Between 2007 and 2008 the increase was significantly high as well as between 2020 and 2021.

In Rwanda, between 2000 and 2002 the GVA dropped then rose in 2003 and continued increasing until 2020 when it dropped slightly from the previous year 2019 and then rose again in 2021. Uganda's dropped between 2000 and 2001 then rose in 2002

continually. Rwanda experienced significant GVA growth from 2008 to 2012. A slight dip followed in 2012, before rising again until a significant decline in 2016. Growth resumed in 2017, continuing through 2021.

Burundi experienced an increase in the GVA between 2000 and 2001 followed by a decrease in the GVA for two consecutive years 2002 and 2003. Tanzania's GVA increased significantly between 2004 and 2005, continuing to rise until 2015. A significant decline followed until 2019, then rose again until 2021. Among the five countries, Kenya is the only state that has not experienced a decrease in gross value added since 2000. Burundi is the nation with the most consecutive declines reaching up to four years consecutively, followed by Rwanda which had two. Uganda and Tanzania did not have consecutive years of GVA dropping.

## **1.2 The Statement of the Problem**

East African Community's intra-regional trade has been disenchantingly low even after the failure of the states to reach a complete monetary union by 2015. Moreover, compared to other developing regional blocks like Asia and Latin America, intra-regional trade is still at a low of 9% while the other are 45% and 18%, respectively (Slany, 2017). The low level of intra-regional trade in EAC limits economic growth reduces market opportunities for businesses, and hinders the region's ability to compete in global value chains. With minimal intra-regional trade and African economies too small to negotiate with powerful trading blocs, full integration is essential for the region to compete effectively in global value chains.

Economists have tested and published that intra-regional trade could back up employment and assist countries to grow their economies for example the New Economic Geography model that encourages firms to industries to set up in countries with better infrastructure and access to market like Kenya whose port of Mombasa acts as a stop for other landlocked countries attracting labour and investments. However, in EAC, the little intra-regional trade happening is also faced with challenges in export prices. The price gap between global imports and EAC intra-regional exports remains a concern, as member states continue to favour external suppliers despite having equal tariffs. Further, EAC countries continue to put trade restrictions between each other, make licensing of traders hard and processes at the borders being cumbersome in addition to having poor road infrastructures that cause delays for drivers, for example in 2015 when rains led to a 60-hour traffic jam with 1500 trucks stranded. This slows down the formation of monetary unions and ultimately, a political federation in the region because countries prefer having their own goals to creating regional goals and agendas.

High regional prices and limited intra-regional trade hinder traders, manufacturers, and distributors by restricting market expansion and limiting opportunities for increased production and specialization. Regional integration offers businesses and consumers several benefits, including overcoming the limitations of small, fragmented national markets, enabling risk sharing, and leveraging regional competitive advantages (AAMP Policy Briefing, 2008). While previous studies have examined trade barriers and economic disparities, few have explored how these disparities affect the promotion of regional value chains in the EAC. It is against this background that the research questions arise.

### **1.3 Objectives of the study**

The study aimed to show the effects of regional economic disparities on promoting regional value chains in the EAC region.

The specific objectives were:

1. To examine the effect of regional economic disparities on the promotion of regional value chains in the EAC
2. To determine the effect of regional economic disparities on consumer prices, considering production concentration and trade linkages within the EAC

### **1.4 Research Questions**

1. What is the effect of regional economic disparities on the promotion of regional value chains in EAC?
2. What is the effect of regional economic disparities on consumer prices, considering production and trade linkages within the EAC?

## **1.5 Significance of the Study**

Chapter four of the EAC treaty recommends mobilizing resources and efficiently allocating them to the most productive sectors of the respective economies to maximize integration (Karagu, 2012). This study provided policymakers with insights into how economic disparities affect regional value chains, helping them design more effective trade policies. It also contributed to academic literature by filling a gap in the understanding of regional value chains in the EAC. The paper revealed how regional economic disparities affect trade creation and pricing within regional value chains.

## **1.6 Scope of the Study**

This study analysed the effect of regional economic disparities on the promotion of regional value chains, in the EAC region. It assessed data from five countries Kenya, Uganda, Rwanda, Burundi and Tanzania from 2002-2020. This study analysed Gross Value Added (GVA), trade volumes, and employment data to assess the impact of regional economic disparities on the promotion of regional value chains. This study identified comparative advantages for EAC countries to improve regional trade and integration. It examined successful countries in specific value chains to inform these recommendations, assessing the overall impact on regional value chains. This was assessed by looking at data in the period 2002-2021. The Democratic of Congo (DRC) and South Sudan were excluded from this study due to their recent accession to the EAC and the lack of consistent data on their trade and economic performance during the study period.

## **1.7 Limitations of the study**

The initial chapter served as an introduction to the study, presenting its focal areas, and elucidating the study's purpose, significance, and scope. Subsequently, the following chapter delved into a comprehensive review of both theoretical and empirical literature, while chapter three focused on elucidating the chosen methodology. In chapter four, the researcher analysed data and made interpretations of the data. The last chapter made policy recommendations, and concluded and summarized the whole study.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

In this chapter, the study reviewed the theoretical and empirical literature on price volatility, value chain promotion, regional integration, and trade creation and trade diversion. The researcher further looked into the relationship between regional economic disparities and the promotion of regional value chains in this respect. The section was divided into three; firstly, the theoretical literature which covered the theories relevant to the study, second the empirical literature and third the overview of both theoretical and empirical literature.

### **2.2 Theoretical Literature**

This study was based on the New Economic Geography theory, although one limitation was that the nonlinear aspects of the NEG model do not adequately inform about the changes in the distribution shape or shifts in regional positions over time. To address this, the study measured data over 20 years, allowing for the observation of trends and shifts that lead to more robust conclusions. Whilst most empirical studies have relied on the Generalized Method of Moments (GMM) and systems methods, this study employed the full Krugman model for measurement. This choice aimed to enhance the accuracy of the analysis and provide a clearer understanding of the economic dynamics at play.

#### **2.2.1 New Economic Geography**

Paul Krugman in the monocentric spatial economy and the industrial agglomeration theory, respectively combined the two theories in 1991 to become the typical general location model of New Economic Geography (NEG) (Masahisa, 2011). The theory's concept proposes to explain the formations and evolution of spatial economic structures in

agriculture and manufacturing (agro-processing). It is used to measure regional economic disparities by considering human economic activities in production, consumption between producers and producers, and trade. The theory further emphasizes resource endowments, international trade, population growth, and regional supply and demand (Juillion, 2023) crucial considerations throughout this paper that will help the researcher to make observations among the EAC countries.

Like other new trade theories, the new economic geography theory assumes full employment and flexible domestic and international product and resource prices which adjust instantaneously to conditions of supply and demand (Rekiso, 2019). The study utilized the NEG model to measure regional economic disparities by examining human economic activities in production and consumption. This approach allowed for a comprehensive understanding of how these disparities evolve, particularly in the context of agriculture and manufacturing. GVA provided a more precise measure of the value created by industries within a region, allowing for a clearer understanding of economic contributors at a local level. This was particularly relevant when analysing regional disparities, as it highlights the economic output generated by specific sectors. The theory states as follows:

$$W_r = C_1 \left[ \sum_{s=1}^R T_{sr}^{1-\sigma} G_s^{\sigma-1} (w_s L_s^M + L_s^A) \right]^{\frac{1}{\sigma}} \dots\dots\dots (2.2.2)$$

Where  $C_1 = \mu^{\frac{1}{\sigma}} \frac{c}{\sigma-1} C_2^{\frac{1-\sigma}{\sigma}}$   $C_2 = \frac{c}{\sigma-1} (\sigma^\sigma F)^{\frac{1}{\sigma-1}}$ ,  $T_{sr} [= T(D_{sr}, \tau) > 1]$  is the distance for transporting manufactured goods from the region ‘s’ to ‘r’,  $\tau$  the unit-distance transport costs.  $L^M$  signifying the total number of manufacturing workers,  $\mu$  denoting the expenditure share allocated to the manufacturing good (1-  $\mu$ ) representing the share

allocated to the agricultural good, and ‘c’ and ‘F’, representing the marginal and fixed costs associated with producing a single unit of a manufacturing variety.  $Y_s = w_s L_s^M + L_s^A$  which determines the nominal income.

**2.2.2 The Neoclassical Theory**

The Heckscher-Ohlin-Samuelson, neoclassical model assumes that rational behaviours and goals of sellers and consumers in the marketplace drive the flow of resources, goods, services and money (Keen & Mazzone, 2023). By using the theory this study will explain why growth is different in the regions with better labour and capital although the theory is not our main anchor because the study is unable to measure technological spillovers fully. This theory is given by

$$Y = (AL)^{1-\alpha}, K^\alpha \dots\dots\dots (2.2.3)$$

Where Y is the total production A the productivity, K- is the amount of capital and L labour force whilst  $\alpha$ - the constant  $0 < \alpha < 1$ .

**2.2.3 Functionalism and Neo-functionalism Theory**

According to David et al., (1940), regional integration can be achieved through a bottom-up approach in which members of an economic community can begin by cooperating in specific areas with little politics and grow integration by spilling over to other areas. By identifying the effects of regional economic disparities on the promotion of regional value chains, the study showed where EAC states can begin integrating to avoid trade diversion. This theory could be used although it is limited by being qualitative because integration is pegged on the quality of institutions formed by the coming together of states and the sovereignty of these states which cannot be measured using quantitative methods.

### 2.3 Empirical Literature

In addition to regional dynamics, domestic factors play a significant role in price volatility; therefore, it is imperative to consider how government interventions and market conditions influence the stability of food prices within the context of regional trade. In the research ‘Regional Economic Integration and Economic Upgrading in global value chains’, Obasaju et.al., (2021) found that regional economic community member states should penetrate one another’s market at a relatively low cost and be able to obtain necessary inputs, *inter alia*, for their production process. Using the gravity model and systems generalized methods of moments in analysis, the authors found that the level of development did not contribute significantly to economic upgrading and that for enhanced value addition, access to the location of demand and input supply of intermediate inputs are expedient (Obasaju et.al., 2021). While most economists agree that intra-regional trade could lead to more integration and increased participation in value chain competitiveness, the authors revealed the drivers of economic development, the author sought to understand as well what can be done to increase bilateral trade and stabilize prices within the EAC.

In his research titled ‘Global Value Chains (GVCs) and Economic Growth’, Mao, (2021) unveiled that successful economies proliferate by following non-linear global value chain participation patterns. Using the input-output table to measure GVC participation, Mao recommended that emerging markets should decrease foreign-dominated global value chains and then raise the involvement of trade in GVCs (Mao, 2021). He said through participation in GVCs, emerging economies acquire foreign knowledge and production skills, that are necessary for states to achieve autonomy and independence from foreign-

dominated GVCs (Mao, 2021). This in turn enables them to establish their regional value chains and attract foreign direct investments.

Furthermore, in 'Participation of Developing Countries in Global Value Chains' (Kowalski et al., 2015), the study revealed that the removal of tariffs in regions may be necessary albeit not sufficient condition for further integration. He said if policies are inadequate for covering border and customs procedures or indeed the ability to engage in regional issues, such as trade facilitation, competition policy, investment, intellectual property protection, and dispute resolution developing states may not participate in global value chains as expected. The removal of tariffs could cause the establishment of foreign industries which can foster global participation.

Researchers Deardorff & Sharma (2019) in 'The Simple Analytics of trade creation and diversion' seemed to agree that poor economies might not gain from intra-regional trade owing to the poor correspondence of their exports to the imports of economically strong economies. The researcher thus seeks to encourage the formation of a strong regional economic community as it sets the stage for competing with strong economies as a REC instead of an individual state (Deardorff & Sharma, 2019). This process will require RECs formulation harmonization of policies so that member states can work toward the same goals (Deardorff & Sharma, 2019). They revealed that the quality of infrastructures, procedures at borders, and market size were the determinants of global value chain participation and that by pursuing a multilateral liberalization in competitive sourcing intermediates trade diversion and costs would be reduced. They further disagreed with the author by observing that exports can be negatively impacted by the combination of expansionary macroeconomic policies and restrictive trade policies (Deardorff & Sharma,

2019). The author believes REC interventions in promoting protectionist policies on exports and the building of a skilled labour force can create opportunities for production and hence trade in intermediate goods.

On the other hand, in their study titled ‘Disaggregated Analysis of Product Price Integration in Southern Africa Development Community,’ Balchin et al., (2014), found that geographic proximity and shared membership in regional trade and monetary agreements reduce absolute price deviations between bilateral country pairs. They noted that adjacent countries tended to exhibit smaller average absolute price deviations (Balchin et al., 2014). Therefore, when countries within a regional economic community divert trade, there is more to intra-regional trade than just price variations. Factors such as institutional functionalism may play a big role in enhancing trade within RECs in addition to price deviations.

Minot & Nicholas (2013) in studying ‘How volatile are African food prices?’, discovered domestic factors contributed more to the volatility of African food market prices than international fluctuations. He found out that in the states where the government intervenes in setting market prices, volatility was relatively high (Minot & Nicholas, 2013). In his paper, access to information about prices and stock levels, safety nets, government interventions, and willingness to participate in international trade are some domestic factors affecting price volatility. They advised that nations should not strive to be food self-sufficient because local prices would be relative to national experiences and instead aim to participate in international trade (Minot & Nicholas, 2013). In that respect, the author will consider price volatility to be also affected by value addition in EAC, therefore,

determining production levels of GVC competitiveness. After all, that way, the countries could achieve price stabilization.

AAMP Policy Briefing, (2008) In researching ‘Trade in food staples: promoting food security and food security through intra-regional trade’ found out that African states are affected by international prices differently. Stressing the fact that African states must first integrate and trade with each other to begin competing internationally (AAMP Policy Briefing, 2008). They realized that the states signed in as members of a regional economic community could benefit from price stability if they participated in intra-regional trade (AAMP Policy Briefing, 2008). The policy brief revealed that trade barriers hindered opportunities to moderate price spikes through intra-regional trade and discouraged government interventions in food staple pricing. This proved that the price is a contributor to trade diversion (AAMP Policy Briefing, 2008). The observed developmental patterns in successful economies not only highlight the importance of industry evolution but also underscore the necessity for these economies to establish regional value chains, which can further enhance their competitive edge in the global market.

Wang et.al., (2017 ) showed that labour and specialization enable firms to exploit niches consistent with their comparative advantages. They found that the association between global value chain participation and economic growth was more pronounced in advanced economies than emerging economies because they were involved more in complex global value chains, unlike their counterparts who participated in simple value chains like agro-processing whilst already developed states were value adding in electrical equipment manufacturing. They revealed that a larger share of domestic production activities has a negative association with economic growth and that for economies to grow

into global competitors in value chains, they needed to be involved in trade by crossing value chains more than once across regional borders, which has a positive association with GVC participation and economic growth. As the literature indicates, participation in intra-regional trade is crucial for achieving price stability: thus, understanding the barriers that hinder such trade becomes essential for promoting economic resilience among member states.

Kummritz & Quast (2016) In their research' Global Value Chains in Low and Middle-Income Countries' concluded that developing economies should upgrade their global value chain integration by increasing domestic export content in exports. By assessing high-income countries' participation in value chains, they found that these states were the starting points and end points of GVCs as they were providers of upstream inputs and the demand markets for final products (Kummritz & Quast, 2016). The developing states were mainly involved in assembling for finishing goods and hence advised that developing states should move from goods to tasks for better participation and competition (Kummritz & Quast, 2016). The authors, therefore, support that for developing economies to participate in regional value chains, they must narrow down niches that will allow them to move products more than once across borders; which is achievable by specialization.

In their study titled "Infrastructure, Value Chains, and Economic Upgrades", Luo & Xu, (2018), the authors emphasize the critical importance of having an accessible, affordable, and reliable infrastructure network. Such infrastructure is seen as fundamental for facilitating business operations, reducing transport costs, and enhancing market access, as well as improving the overall efficiency of various productive factors (Luo & Xu, 2018). Consequently, infrastructure plays a critical role in influencing the transaction dynamics of

individual firms and the marginal return on investment. Furthermore, the authors argue that participation in global value chains offers developing countries the opportunity to specialize in niches without the need to create an entire value chain from scratch. They referenced research by the World Economic Forum (2014), which suggests that well-developed infrastructures can effectively bridge geographical distance between regions, foster integration of national markets, and establish connections with other economies (Luo & Xu, 2018). In this paper, other factor endowments, such as labour, technology adoption, and intra-regional trade were looked into to show how they affect the promotion of regional value chains (Luo & Xu, 2018). Furthermore, the role of infrastructure cannot be overlooked, as it serves as a foundational element that facilitates the establishment of regional value chains and enhances overall economic growth, particularly in developing countries.

Lin et.al., (2010) in the research ‘Growth Identification and Facilitation’ noted that one of the most prevalent factors contributing to the success of economies is the historical guidance provided by developed states, essentially acting as an economic ‘compass’. According to their argument, government policies aimed at promoting industrial upgrading and diversification should be centred around industries that possess a latent comparative advantage (Lin et.al., 2010). They found that a combination of industries, trade and technological policies played an important role in driving structural transformation (Lin et.al., 2010). Additionally, they emphasized that infrastructure development is crucial for enhancing the competitiveness of domestic firms, as it directly impacts transaction costs and the potential rate of return on investment (Lin et.al., 2010). Whilst the new economic geography model provides a theoretical framework for understanding regional integration,

empirical evidence from successful economies illustrates how these theories manifest in real-world scenarios, particularly in the transition from labour-intensive to capital-intensive industries.

In summary, the interplay between theoretical frameworks, empirical findings, and domestic factors illustrates the complexity of regional integration and economic growth, setting the stage for further exploration of these themes in the subsequent sections of this paper.

## **2.4 Literature Review**

The NEG model will be integrated with Solow's growth model and functionalism theories to provide a multi-faceted analysis of regional value chains. This integration will enhance the interpretation of secondary data and the overall findings of the study. The NEG model will serve as a foundational framework to understand how labour and capital move in response to wage differentials and product prices, respectively. This will help in assessing the economic interactions between EAC member states and their impact on growth and development.

In reviewing the empirical studies, most researchers concentrated on structural differences and regulatory, infrastructural and economic growth as measures of participation in global value chains. This paper will employ the analysis of gross value added as the independent variable instead of gross domestic product over a period measuring wages, price volatility, value addition, intra and extra-regional trade as well as labour in the food manufacturing sector. The findings from other researchers can be summarized into those encouraging specialization, value-addition and trade in intermediate inputs as well as those on price stabilization through infrastructural

transformation and institutional harmonization. In the next chapter, a new economic geography model shall be applied for data analysis and conclusion.

## **CHAPTER THREE: METHODOLOGY**

### **3.1 Introduction**

This chapter covers the research methodology, and the theoretical framework used and presents the model specification for the study. The study will provide the definition and measurements of variables, data type and analysis techniques and finally, the data sources. The NEG model has been used because it explains the movement of labour and productivity, meaning therefore, the regions with more production will have lower consumer prices and will attract a larger labour force and increased economic activity.

### **3.2 Research Design**

The research design serves as the blueprint for this study, outlining the approach used to answer the research questions effectively (Kumar, 2011). This study examined the impact of regional economic disparities – the independent variable – on the promotion of regional value chains. The key dependent variables include value addition, technical innovation, employment in manufacturing, exports and imports.

To minimize errors arising from data limitations, the study will introduce random errors in measurement, improving the reliability and accuracy of the findings (Huntington-Klein, 2021). Additionally, randomization techniques will be applied to control extraneous variables, such as the quality of institutions, border regulations, and country-specific policies. Control groups will be established to ensure that these factors do not interfere with the analysis, allowing for a clearer assessment of causal relationships. Data on the study variables will be collected over time from five East African Community (EAC) member states.

This study adopted a causal or explanatory research design, which was essential for identifying the nature and extent of cause-and-effect relationships (Porro et.al, 2019). By evaluating the effects of regional economic disparities on value chain development, this approach will help assess how specific modifications in economic conditions influence established standards and practices. The core focus of causal research is to analyse specific phenomena and clarify the correlations between variables, ultimately contributing to a deeper understanding of regional economic integration and development.

### 3.3 Theoretical Framework

The study is grounded in the New Economic Geography (NEG) model as outlined by Bode & Mutl (2013). The model is extended to incorporate the following equation:

Theoretical Model

$$\ln w_r = \frac{1}{\sigma} \ln \mu + \frac{1}{\sigma} \ln \left[ \sum_{s=1}^R T_{sr}^{1-\sigma} g_s^{\sigma-1} (w_s L_s^M + L_s^A) \right]_{R_{s=1}}$$

Where:

$W_r$  represents the logged wage rate in region  $r$  at time  $t$ .

$w$  – denotes equilibrium wage rates.

$L_M$  represents equilibrium manufacturing employment.

$L_A$  refers to exogenous agricultural employment.

$T$  signifies bilateral interregional transport costs.

$\sigma$  is the elasticity of substitution.

$\mu$  denotes the expenditure share for manufacturing goods.

### 3.4 Empirical Model Specification

The study shall estimate data for five EAC countries for the period 2000-2022. Annual data according to Ohtake (2022) implies evaluating the NEG model using short-term responses to local wage shocks. Bode (2013) asserts that a sample period of 16 years is long enough to limit the effect of outliers therefore, data for 22 years will be enough. The empirical model on the effect of regional economic disparities and price on the promotion of regional value chains is specified as follows:

$$\ln GVA_r = \alpha + \beta_1 \ln Trade_r + \beta_2 \ln WageRate_r + \beta_3 \ln Labour_r + \beta_4 \ln IncomeMfg_r + \beta_5 \ln TaxVA_r + \beta_6 \ln VA\_GDP_r + \varepsilon_r$$

Where  $GVA_r$  captures the gross value added in region  $r$ ,  $Trade_r$  is total trade (intra and extra-regional trade),  $WageRate_r$  wage rate of executives in manufacturing,  $Labour_r$  represents total non-executive labour in agriculture and food & beverage industries,  $IncomMfg_r$  total income for manufacturing workers,  $TaxVA_r$  is tax rate on value-added goods and  $VA\_GDP_r$  is value-added as a share of GDP while  $\varepsilon_r$  is the error term.

### 3.5 Data Type and Source

The data is going to be studied over a period of 22 years and be collected from the International Trade Centre, World Bank Indicators and transportation estimated.

#### 3.5.1 Definition of Variables

Variable	Measurement	Definition
GVA	Values in USD	Gross value added
Intra and Extra-regional trade	Value in USD	Total number of cereal goods exported or imported from both the world and from EAC
Wage rate	Value in USD	Total income for executives in the manufacturing sector

Labourers	Total number of people in manufacturing and farming	Workers in agricultural and food and beverage industries
Income for Manufacturing Workers	Values in USD	Combination of wages of all workers involved in the food and beverage value chain
Taxation	Percentage	Average tax rate per year for value added goods
Value Added	Percentage	Value added as share of GDP. Proof for infrastructural development.

### 3.6 Data Analysis

The study began by regressing data to assess trade openness in the East African Community (EAC) region, followed by an evaluation of intra-regional trade performance and export diversification. The model analysed wage disparities to examine their impact on the pricing of goods across regions. To ensure statistical robustness, the Levin-chu (LLC) test was used to check for stationarity, with differencing applied where necessary to avoid spurious regression results. The choice between fixed effects (FE) and random effects (RE) models was determined through the Hausman test, which would identify whether unobserved heterogeneity is correlated with explanatory variables. Additionally, random errors were accounted for through robust standard errors, and instrumental variables were considered where endogeneity was detected to correct heteroscedasticity and serial correlation to ensure unbiased and consistent results. Beyond statistical significance, causality was examined using Granger causality tests, instrumental variable regression, and structural modelling techniques to better understand the underlying economic relationships to mitigate biases. By establishing these relationships, the study

determined how regional economic disparities influenced the promotion of regional value chains by analysing trade patterns over time and identifying key drivers that have shaped the integration of value chains within the EAC.

### **3.7 Estimation Procedures**

#### **3.7.1 Time series**

To ensure the reliability of the data and the accuracy of the results after analysis, the study will follow a two-step process. First, it will test for the stationarity of the data collected over the period from 2000 to 2022. Stationarity tests are essential to assess whether the data's statistical properties remain constant over time, a crucial assumption for many statistical analyses. Subsequently, the study will proceed to test for cointegration. Cointegration tests are vital for exploring long-term relationships between variables and identifying whether there is a stable, common trend among them. By conducting both stationarity and cointegration tests, the study aims to ensure the robustness and credibility of the results, providing a strong foundation for the subsequent data analysis and interpretation.

#### **3.7.2 Stationarity Test**

The Unit root test will be conducted on dependent and independent variables to determine the stationarity of the data. The Levin-lin-chu unit root test will be employed and whenever data is found as not stationary, meaning the mean and variance are not constant, the results will be differentiated until they become stationary. By doing this, the study could ensure that there were no spurious results obtained.

### **3.7.3 Co-integration Test**

To determine the long-run relationship between the dependent and independent variables, the Pedroni test will be conducted. This will show a long-run relationship if the results are stationary.

### **3.7.4 Hausman Test**

This study will employ the Hausman Test to determine which model, whether fixed effects or random effects, is the most suitable for examining the relationship between regional economic disparities and the promotion of regional value chains. This test is essential for selecting the appropriate econometric model that aligns with the nature of the data and the research objectives, ensuring the robustness and accuracy of the analysis.

### **3.7.5 Testing for Granger Causality (GC)**

The test will investigate the relationship between variables to determine whether the data has the potential to drive changes in the dependent variable. Hoffman's perspective (2021) suggests that 'x' Granger causes 'y', signifying that alterations in 'x' should precede corresponding changes in 'y'. This Granger causality principle is a fundamental tool for unveiling temporal sequences and establishing potential causal links between variables. By employing this approach, the research seeks to gain insights into the influence of regional value chain data on the dependent variable and to ascertain the direction of causality.

## CHAPTER FOUR: FINDINGS, INTERPRETATION AND DISCUSSION

### 4.1 Introduction

This chapter gives the results of all econometric tests performed by the study as well as the fixed effect estimates. The estimation of the models

### 4.2 Summary of Data

A summary of the data is presented in the table below showing the variables employed in the achieving of the study's objective, their sources and overview. The data has been collected from different sources including the International Trade Centre, World Bank indicators, UNIDO and the East Africa Bureau of Statistics. Intra-regional and extra-regional trade is shown by amount of trade in dollars from countries within East Africa to represent intra and countries outside the EAC to represent extra-regional trade. Each state's GVA will represent the economic disparities in the regions while the promoters of regional value chains will be amount of extra and intra-regional trade, wage rates for executives, and the total income for workers in manufacturing sectors in East Africa, total number of workers in manufacturing and country-specific taxations for value added goods.

*Table 4.1 Descriptive Statistics Results for East African Community*

<b>Variable</b>	<b>Observations</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Minimum</b>	<b>Maximum</b>
Import Values from EAC	115	17490.831	43099.177	0	240000
Import Values from World	115	205068.88	243028.41	1300	1111324
Export Value from EAC to World	115	34609.504	64050.398	1	403000

Employees in Manufacturing as % of Total Value added as % of GDP	115	5.749	2.042	2.26	11.57
Executive Salaries in Manufacturing Total income for workers in Manufacturing Country Specific Taxation	115	1422.556	666.691	533.915	3926.1
Gross Value Added	115	648.469	373.713	120.035	1690.5
	115	11.801	2.35	7	16.678
	115	2.165e+10	2.288e+10	7.251e+08	1.013e+11

*Table 14.1 Source: Authors computation from STATA 15 with data from ITC, WDI, and Bureau of Statistics*

The East African Community has few employees in food manufacturing industry averaging 5.75% among the countries reviewed and the maximum and minimum being 11.57% and 2.26% respectively. Over the study period, taxation percentages for value added goods was 11.8% while the highest tax rate was 16.69% and minimum at 7%. The EAC member states also trade more with states outside the regional economic community as the average value of exports in USD from EAC to the world was USD 34,609.5 while the maximum value over the study period was USD 403,000 while the minimum was USD 1. The states further import more than they export to the World as the value of imports averaged USD 205068.88 and the minimum and maximum value of imports was USD 1300 and USD 1,111,324 whereas trade between EAC states averaged USD 17,590.83 and the maximum value traded within was USD 240,000 which is slightly above the average value imported from the world. The percentage of value added goods as share of GDP averaged 19.62% while the maximum was 29.4% and 10.6% was the minimum. Executive salaries in the manufacturing sector average pay was USD 1422.556 while the maximum pay was

USD 3926.1. Labourers in manufacturing workers on the other hand earned an average of USD 648.469 and the minimum and maximum pays for the workers were USD 120.035 and USD 1690.5 respectively.

It is clear from the average of means below that Kenya trades with EAC states more than all the other countries' in EAC while Burundi trades least. Looking at EAC countries' average means for imports from EAC, Kenya seemed to import more from the world followed by Tanzania. In finding out which state exported more to World from EAC, Tanzania emerged as the highest exporter followed by Uganda which had an average of 7.37% of labourers working in industries which was highest followed by Kenya then Rwanda. Value added as share of GDP showed that Uganda was highest followed by Tanzania then Kenya. Executives in the manufacturing industry were paid highest in Kenya followed by Uganda similarly labourers in manufacturing are paid higher in Kenya then Uganda and Rwanda. The states with high taxes on average were Kenya followed by Burundi, Rwanda had the highest gross value added followed by Kenya on average.

#### **4.3 Stationarity Test Results**

Data analysis that contains non-stationary series may lead to spurious results. To avoid this econometric challenge, the study adopted the Levin-Lin-Chu unit-root test and the results are presented in Table 4.2

***Table 4.2 Unit-root test***

Variable	P-Value	P-Value (1 <sup>st</sup> Difference)
Imports from EAC to EAC	0.1542	0.0000
Imports from World to EAC	0.2017	0.0000

Exports from EAC to World	0.5915	0.0000
Employees in manufacturing	0.0006	
Value added as share of GDP	0.0139	
Executive Salaries in Manufacturing	0.0000	
Workers in Manufacturing	0.0022	
Taxation	0.0002	
Gross Value Added	1.0000	0.0033

The p-value of the natural log of imports from EAC to EAC countries is greater than 0.05 therefore, the variable is not stationary differentiation. After the first differentiation the p-value becomes <0.05 therefore, the panel is stationary at first differentiation. The p-value for imports from world to EAC was also greater than 0.05 hence not stationary. After first differentiation, the panel was stationary at 0.0000. The p-value for the variable on exports from EAC to world was also greater than 0.05% and after the first differentiation the panel becomes stationary. The natural logs of the other variables; percentage of employees in manufacturing, value added as percentage share of GDP, salaries for both executives and labourers, and taxation were stationary as shown above because the p-values were less than 0.05 hence stationary. The p-value for the natural log for gross value added was above 0.05 hence not stationary but after the first differentiation the data is stationary.

#### **4.4 Cointegration Test**

The pedroni test for cointegration was applied to determine the long-run relationship between variables due to the variables that were found to be stationary at first difference. The study sought to find out if there existed a co-integration relationship between gross value added and the variables intra-regional trade, extra-regional trade, infrastructural development shown by percent of value addition share, wages in manufacturing, amount of labour and taxation in the five EAC states. The p-values for all

the variables were less than 0.05 showing cointegration and therefore, a long-run relationship.

Pedroni Test	P-value
Modified Phillips-Perron t	0.0058
Phillips-Perron t	0.0089
Augmented Dickey-Fuller t	0.0065

#### 4.4.1 Hausman Test

Hausman test will be run to determine if random effects or fixed effects model is the most appropriate for testing the relationship between dependent and independent variables.

#### 4.5 Granger Causality

In order to answer the first research question on the effect of regional economic disparities on promotion of regional value chains, a granger causality test was carried out.

Null Hypothesis	Dependent Variable	P-value	Test
Intra-regional trade does not promote GVA growth	Growth of GVA per capita	0.0000 0.0000	Z-bar Z-bar tilde
Extra-regional imports do not promote GVA growth	Growth of GVA per capita	0.3330 0.3459	Z-bar Z-bar tilde
Exports to the world do not promote GVA growth	Growth of GVA per capita	0.0000 0.0005	Z-bar Z-bar tilde
Number of employees in manufacturing do not promote GVA growth	Growth of GVA per capita	0.1398 0.2918	Z-bar Z-bar tilde
Salary paid to industry executives does not promote value addition	Growth of GVA per capita	0.3738 0.3797	Z-bar Z-bar tilde
Other employees in industry incomes do not promote value addition	Growth of GVA per capita	0.0046 0.0306	Z-bar Z-bar tilde
Country taxes do not promote production in industries	Growth of GVA per capita	0.4601 0.4501	Z-bar Z-bar tilde

#### Key

*The null hypothesis is rejected when the p-value is less than 0.05 and the alternative is adopted and the opposite is true.*

Intra-regional trade can predict growth of GVA, this is because the p-value is less than 0.05 hence the alternative hypothesis is adopted. Trade with countries outside EAC evidenced the p-values to be greater than 0.05 hence the null hypothesis is adopted. Looking at exports from EAC to the world, the p-value was less than 0.05 hence the null hypothesis is rejected and the alternative adopted, therefore, exports to the world granger-causes GVA. On the other side, the number of employees in manufacturing, salaries for executives and taxes do not granger cause promotion of regional value chains because their p-values were greater 0.05. The salaries paid to other employees not executives had their p-value less than 0.05 hence the alternative hypothesis is adopted and the null rejected.

#### **4.6 Fixed Effects Versus Random Effects**

##### **Descriptive Statistics**

<b>Hausman (1978) specification test</b>	
	<b>Coef.</b>
Chi-square test value	3.221
P-value	.864

After conducting the Hausman test the p-value was greater than 0.05 hence random effects model was the most appropriate.

⊕ Random effects Regression results							
lnGVA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
lnIEAC	.062	.022	2.84	.004	.019	.105	***
lnIWorld	.241	.051	4.70	0	.141	.341	***
lnEEAC	.112	.023	4.87	0	.067	.157	***
lnemployees	.091	.156	0.58	.561	-.216	.397	
lnExecsalary	1.572	.327	4.81	0	.932	2.212	***
lnworkerincome	-.413	.166	-2.48	.013	-.738	-.087	**
lnTaxation	-.552	.248	-2.23	.026	-1.039	-.066	**
Constant	11.569	1.105	10.47	0	9.402	13.735	***
Mean dependent var		23.099	SD dependent var		1.337		
Overall r-squared		0.915	Number of obs		115		
Chi-square		1146.961	Prob > chi2		0.000		
R-squared within		0.750	R-squared between		0.963		

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

To answer to the second objective, the effect of consumer prices on regional value chains promotion, results for random effects analysis were used. The results showed that natural logs for intra-regional trade has a positive and significant coefficient at 90% level ( $\beta=0.062$ ,  $p=0.004$ ). This implies that a one-unit increase in imports within EAC member states will translate to 0.062 increase in GVA. For imports from the world into EAC, the analysis evidenced that the variable has a positive and significant coefficient at 90% confidence ( $\beta=0.241$ ,  $p=0$ ). This means that an increase in imports from countries outside EAC will cause a 0.241 growth in the gross value added. Further the natural log for exports from EAC into the world showed a positive and significant correlation with growth of gross value added because the variable had a coefficient of 0.112 and a p-value of 0 which was significant meaning that an increase in exports by 0.112 would cause an increase in the gross value added by the same unit.

The number of employees working in the manufacturing sector was not significant although it had a positive coefficient of 0.091, though the p-value was greater than 0.05 hence insignificant. The pays executives receive has a positive and significant coefficient

at 90% confidence level ( $\beta=1.572$ ,  $p=0$ ). This implies that an increase in salary for executives by one unit will cause a 1.572 increase in GVA. The coefficient for  $\ln\text{workersincome}$  was negative and significant at 95% confidence level ( $\beta=-0.413$ ,  $p=0.013$ ). This means that a one unit change in workers income will generate a 0.413 decrease in GVA. The coefficient for  $\ln\text{Taxation}$  was negative and significant at 95% confidence level ( $\beta=-0.552$ ,  $p=0.026$ ). This implies a unit change in taxing will generate a 0.552 decrease in GVA.

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter presents the study summary, conclusion and policy implications from the study and the area of further research.

### **5.2 Summary**

The study aimed at finding out whether regional economic disparities, herein represented by different kinds of explanatory variables affect promotion of regional value chains. Most studies on intra and extra-regional trade assessed economies and gross domestic product and few looked into specific produces and value added products. Therefore, to cover the gap on EAC's major economic activity, agriculture, this study analysed data to find out whether there is trade in value added agricultural products in light of the need for reducing poverty and providing sustainable employment. The new economic geography model in the theoretical study showed that agriculture and manufacturing can be used for analysis to fulfil the study objectives. The study therefore, analysed the independent variables to find out how regional economic disparities affect the promotion of regional value chains and determine the effect of consumer prices on regional value chains promotion within EAC.

The first objective of the study was to show how economic disparities affect regional value chains. To determine this, the study employed the random effects test on regression and it was found that trade both intra-regional and international had significant and positive contribution to regional value chains, similar to executive salaries. The number of employees working in a sector was not significant while the salaries they receive and taxes had negative and significant effects on regional value chains.

The second objective on determining how consumer prices affected promotion of regional value chains was determined by assessing the countries' exporting more than the others and had more employees. According to Krugman (1991), wage rate will tend to be higher in the larger markets, and the regions with larger populations will face a lower price for manufactured goods. This was consistent with our study because the gross value added was affected negatively by wages while the number of employees was not significant.

### **5.3 Conclusion**

Regional economic disparities can play an important role in promoting regional value chains. The study has established that indeed economic disparities have an effect on regional value chains promotion. Intra-regional trade, extra-regional trade, executive salaries in manufacturing sector has positive and significant effects on promotion of regional value chains. The study concludes that labourer salaries, and taxation have negative and significant effect on promotion of regional value chains.

On the first objective therefore, the study found that regional economic disparities have a relationship with the promotion of regional value chains. EAC member states have a significant relationship with intra-regional trade in agricultural and manufactured cereal products. In regard to extra-regional trade was observed to produce more outputs than intra-regional trade for EAC which was also consistent with other studies. This may be due to inefficient production caused by inadequate technology and skills. This was also observed by looking at countries' salaries pay to the executives. Their salaries had a positive relationship and also a significant one with regional value chains. This is more likely due to the skills they have acquired and the motivation received from their salary. Their competence gives them expert influence therefore, making it easy for their employees to

produce more. Other employees pay had a negative and significant relationship with promotion of regional value chains. This could be because, the industries may be diverting equipment and maintenance money to increasing salaries. The number of employees had no significant relationship with promotion of regional value chains probably because some work can be performed by equipment. Taxation had a negative and significant effect on regional value chains promotion because manufacturing firms are taxed from when they acquire raw materials from farmers to the time they produce and even at selling.

In the second objective, price has a positive and significant relationship with promotion of regional value chains. This is observed by the states EAC countries traded more with and where workers received more pay. The countries in EAC that traded more with the world had paid their employees more salaries on average and this could mean they prefer trading with outside EAC states nations because they acquire products at cheaper prices than EAC and also the consumers who are workers, can buy less.

#### **5.4 Policy Implications**

According to this study it is prudent if EAC countries will start focusing on increasing intra-regional trade as well as extra-regional trade for agricultural produces and value added products. Because of their different soils, and weather patterns, EAC states can produce according to their soil abilities for sustainable food security. Competitive advantage will be achieved and also because of this, these countries can determine to trade between themselves in intermediary inputs and with countries outside EAC with finished products.

EAC states can also instead of trade with outside EAC states in agricultural produce, improve infrastructures, harmonise border laws and customs by setting up committees of

state representatives with experts in regional integration, law and economics then trade within EAC in the raw materials. To improve farming in these produces, because it was evident in the study employee numbers was not significant, can trade with states outside EAC in the necessary technologies for manufacturing and farming.

It is important to also improve employee skills according to the needs of the countries. For example, by social education, communities can be trained on the needed skills within the nation and young people offered scholarships by in-need organizations for them to study in vocational training colleges those technical skills they need and offer them employment after completion. This will drive production through elimination because unnecessary skills will be reduced to as low as practicable.

Other sustainable energies like solar can also be used in manufacturing as well as electricity prices reduced through introduction of competitors by encouraging foreign direct investments (FDIs) in these sector within EAC. Lastly, the nations within EAC should begin taxing manufacturing firms at production and not from the point of acquiring inputs, by this the study showed that if producers are taxed for example, the farmers while acquiring farm inputs and not consumers when buying from farmers. Then manufacturers should be taxed at sale and given subsidies at the production level.

### **5.5 Areas of Further Studies**

This study investigated the relationship between regional economic disparities and regional value chains in EAC. Further research can be conducted in the area of employees' contribution in manufacturing with the aim of finding out how employees relate to production since they appeared to negatively affect promotion of regional value chains. Other studies can also look at infrastructure, technology and the laws governing regional

value chains because in EAC, intra-regional trade was lower than extra-regional trade. These could be contributors to trade diversion in the region. Research can also be done to find out the relationship between regional value chains and the competitive advantages in each EAC states. By that, researchers can understand intermediate inputs from each country and advise nations to trade in what value chains to become more competitive global.

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