

TRADE LIBERALIZATION AND EXPORT SURVIVAL IN KENYA

BY

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DECLARATION

I confirm that this is my original work that has not been submitted in any academic setting for a degree award.

Signature

Date.....

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This research has been submitted with my approval as a university supervisor.

Signature

Date.....

Dr. Bethuel Kinyanjui

Supervisor

DEDICATION

I dedicate this work to God and my parents Mr. and Mrs. Kaaria. My parents have always had my back in all my endeavors.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACFTA	African Continental Free Trade Area
AGOA	African Growth and Opportunities Act
BRICS	Brazil, Russia, India, China and South Africa
COMESA	Common Market for Eastern and Southern Africa
EAC	East African Community
EIA	Economic Integration Agreements
EPC	Export Promotion Council
EPPO	Export Promotion Programs Office
EPZs	Export Processing Zones
ERS	Economic Recovery Strategy
EU	European Union
GDP	Gross Domestic Product
HS	Harmonized System
IGAD	Intergovernmental Authority on Development
IORA	Indian Ocean RIM Association
ISIC	International Standard Industrial Classification
KETA	Kenya Export Trade Authority
KIPPRA	Kenya Institute for Public Policy Research and Analysis
MUBs	Manufacturing Under Bonds
PTA	Preferential Trade Agreements
ROK	Republic Of Kenya
SAPs	Structural Adjustment Programs
TFTA	Tripartite Free Trade Area
WTO	World Trade Organization

ABSTRACT

This paper explores the effect of trade liberalization on export survival using product level SITC-5 digit panel data from 1980 to 2018. This study focuses on agricultural sectors, manufacturing sectors and Economic Integration Agreements (EIAs) as a proxy for trade liberalization. Employing discrete-time random effects logit regression model, this study showed that Kenya has short export durations with a failure rate of 64% in the first year and close to 90% in the fifth year. Economic Integration Agreements like EAC and COMESA confer more additional benefits for Kenya's exports growth through survival advantages. For instance, exporting manufactured goods to COMESA along with agricultural exports to EAC serves Kenya with higher survival probabilities. However, trade agreements between Kenya and EU do not result to any increase in survival for any sector. Based on the findings, therefore Kenya's export survival is better inspired by exporting to regional blocks that are geographically close. Therefore, policy makers should focus on deepening intra-African trade.

Keywords: Agricultural sector, export survival, manufacturing sector, trade liberalization, trade agreements.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

To promote trade liberalization¹ and global economic integration, developing countries in Sub-Saharan Africa began to implement trade reforms advocated for by the World Bank and International Monetary Fund through Structural Adjustment Programs (SAPs) in the 1980s (Jones *et al.*, 2011). Trade liberalization exposes economies to the international market leading to increased trade volumes, competitiveness and economic growth (Ackah and Morrissey, 2005). Increased trade involves the expansion of exports which leads to growth in intensive and extensive margins (Besedes and Prusa, 2011; Rasagam *et al.* 2013; Chen and Kurokawa, 2018). However, low export survival rates² hinder export expansion, growth and competitiveness in Africa (Brenton *et al.* 2009; Farole and Mukim, 2013; Lemessa *et al.*, 2018). In Kenya, whereas trade liberalization was expected to help increase export performance, employment and economic growth in the 1990s, there has been little change. According to World Bank (2012), Kenya's export sector is still a weak engine in her growth machine because low export survival rates have posed a lurking menace in her export growth. Some studies on Kenya find that export survival rates in Kenya are between 20% and 48% after the first year (Kinuthia, 2014; Chacha and Edwards, 2017).

Most theories of international trade³ predict that trade lasts forever once comparative advantage is determined on when fixed and sunk costs are paid for (Békés and Muraközy, 2012). Vernon's Product Cycle Theory (1966) asserts that specialization patterns are based on the life cycle of a product and technology diffusion. However, the theory fails to explain shorter durations observed in the data (Nitsch, 2009). Besedeš and Prusa, (2006a and 2006b) contested these assertions by testing (Rauch and Watson, 2003) search and matching model where importers search and deepen relationships with reliable low-cost suppliers. They affirmed that trade durations are short-lived in all countries.

¹ Trade liberalization is the reduction or elimination of trade barriers to promote free movement of goods and services between countries which unfolds in varied dimensions (Omolo, 2012).

² Export survival is the consecutive number of nonzero exports to an importer in years (Brenton *et al.*, 2012).

³ Comparative Advantage and Hecksher-Ohlin (factor endowment and factor intensity). Refer to Krugman (1979), Melitz, (2003) on fixed and sunk costs at industry and firm levels.

Few studies have examined the effect of trade liberalization on export survival. A study on US manufacturers (Alessandria and Choi, 2014) found that a tariff reduction from 8 percent increased the export period from 5.9 to 9.1 years. Lowering tariffs reduces the sunk costs⁴ of entry boosting firm productivity (Baldwin and Yan, 2012) and it is unlikely that they will exit. In addition, multi-product firms that have greater productivity can produce a range of products based on consumer preferences and their ability to cover fixed costs. Exit rates of products decline as firms export longer resulting into greater survival periods (Timoshenko, 2015). Tariff reductions, through trading agreements conditional on survival promote expansion of exports through intensive margins⁵(Albornoz and Prado, 2018). Government interventions through tax rebates (Anwar *et al.*, 2019) and export promotions (Lederman *et al.*, 2016) increase export survival.

Developed and developing countries have similar export entry patterns but survival rates in developing countries are lower (Brenton and Newfarmer, 2009). This research paper contributes to this incipient export survival literature in Kenya in unique ways. In the context of (Besedes *et al.*, 2015; Recalde *et al.*, 2016; Türkcan and Saygılı, 2018) this study goes beyond (Kinuthia, 2014) and (Chacha and Edwards, 2017) to investigate the depth of Economic Integration Agreements (EIAs) through various integration stages. More so, this study examines the survival of exports the EU and the BRICS countries. Also, it employs discrete time models as has been the norm of recent studies (Hess and Person, 2012; Fu and Wu, 2014; Córcoles *et al.*, 2015; Gullstrand and Persson, 2015; Chacha and Edwards, 2017; Türkcan and Saygili, 2018).

1.1 Overview of trade Liberalization Regimes and Export Sectors in Kenya

1.1.1 Trade Liberalization Regimes

Trade liberalization in Kenya unfolded in various phases following various trade facilitation strategies. After independence, Kenya pursued import substitution industrialization strategies guided by Sessional Paper No. 10 of 1965. They were geared

⁴ Sunk costs are retrospective costs that cannot be recovered after being incurred. For example finances spent on advertising campaigns and research (Dixit 1989a and 1989b; Baldwin and Krugman, 1989).

⁵ Intensive margins are export opportunities on existing partners while extensive margins are export opportunities from new partners and markets while (Besedes & Prusa, 2011; Chen & Kurokawa, 2018)

towards protecting the infant industries from foreign competition but they lead to a biased manufacturing sector directed to domestic goods production (Were *et al.*, 2002; Manda and Sen, 2003; Omolo, 2011; Oiro, 2015). Higher tariffs were imposed on final goods compared to capital and intermediate goods to discourage imports (Nyaga, 2015). The economy experienced several hits namely; oil shocks in 1973 and 1979, a collapse of EAC in 1977, boom and bust cycle in coffee prices in 1976-1979 and the widening of the current account deficit. The immediate result was high production costs coupled with decreased market size which led to low production volumes. Firms that had adopted the import substitution strategies stalled in the first stage. They remained as infants in spite of the occasioned import licenses, administrative controls, price controls among others. Hence, import substitution strategies proved inefficient and inadequate.

The second phase lasted from 1980's to 1999. Structural Adjustment programs (SAPs) were adopted along with export promotion schemes. SAPs were in three stages; 1980-1984, 1985-1991, 1992-1995. There were conditions imposed on SAPs such as tariff cuts and rationalization, import liberalization, and shifting from quotas to tariffs (Omolo, 2011). One fifth of controlled products were exempted from import licensing in 1982 (Manda and Sen, 2003) followed by devaluations to counter capital outflows due the coup attempt in the same year. 1987 was the onset of the shift from quotas to tariff equivalents because the exports had declined drastically. Tariffs skyrocketed following the shift from quantitative restrictions. Later in 1990, the government embraced phased tariff reductions (high rate bands) while rationalizing tariff bands. Wacziarg and Welch, (2008) predict that Kenya was completely liberalized in 1993, though substantial outcomes were not experienced yet.

In an attempt to abandon the inward looking policies in the previous regime, the government undertook export promotion mechanisms by adopting a sessional paper in 1986 for renewed economic growth. Manufacturing Under Bonds (MUBs) and Export Processing Zones (EPZs) were incorporated in 1988 and 1990 respectively. Other government interventions in export market promotions included; Export Promotion Programs Office (EPPO) for tax rebates, Export Promotion Council, Green Channel, Kenya Export Trade Authority (KETA) among others Were *et al.* (2002). Import license

schedules were terminated except for health, security and safety reasons in 1993. Kenya joined COMESA, World Trade Organization (WTO) and Intergovernmental Authority on Development (IGAD) in 1994, 1995 and 1996 respectively. EAC resurfaced later in 1999.

The third phase from 2000-2019 which was preceded by the Economic Recovery Strategy for Wealth and Employment Creation (ERS) (2003-2007). This action plan aimed to adopt effective macroeconomic policies to create jobs, promote good governance, encourage private and public investments *inter alia*. Vision 2030's launch followed in 2008 and has been implemented through two medium term plans so far, 2008-2012 and 2013-2017. Trade has been highlighted in Vision 2030 as a crucial engine in spurring economic growth by enhancing employment and overall GDP (ROK, 2007). The National Trade Policy that was launched in 2017 stipulates Kenya's trade strategy locally and internationally (ROK, 2017). Under this phase, Kenya joined the Indian Ocean RIM Association (IORA) and African Growth and Opportunity Act (AGOA) in 1997 and 2000 respectively. She is also a signatory to various trade agreements; the Comprehensive EU-EAC EPA Agreement in 2016, COMESA-EAC-SADC Tripartite Free Trade Area (TFTA) in 2015 and the African Continental Free Trade Area (ACFTA) in 2018. Kenya has been involved in thirty six bilateral pacts so far (ROK, 2017). Kenya has had a continuum of strategic plans in a bid to transform Kenya into an export-led economy especially the EPZ Strategic plans for 2009-2013 and 2014-2019 that recommended one-stop border to facilitate trade e.g. with Uganda at Busia and Tanzania at Namanga. Last year, the president announced the 'Big Four' agenda for the period 2018-2022 that embodies both agricultural and manufacturing as key engines to economic growth (KIPPRA, 2018).

1.1.2 The Trend of Kenya's Export Sectors and Exporter Transitions

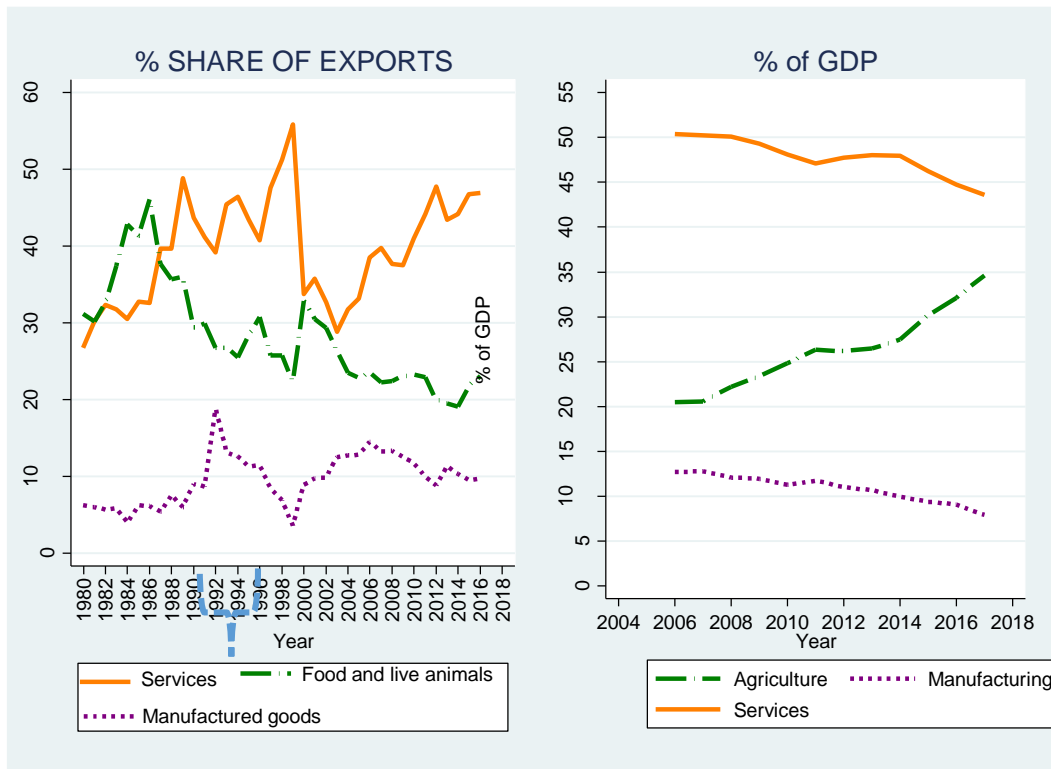
Figure 1 presents the percentage growth in Kenya's export sectors across time. The agricultural sector (food and live animals) was overtaken by the services sector in 1987 during the structural adjustment period. Firms set up during the liberalization period and after seem to have shifted to producing final goods unlike during the pre-liberalization era where they dwelled on primary and intermediate exports (Farole and Mukim, 2013).

While Kenya's services sector has performed exceptionally well, its manufacturing sector declined steadily in 1999 after a perpetual increase from 1991-1992. This ramp up in the early 1990s can be attributed to diversification and value addition after trade liberalization in 1993 (World Bank, 2016).

There is an indication of a spike in manufacturing exports from 2000-2004 because of an increase in textile and apparel exports after Kenya joined AGOA. Farole and Mukim, (2013) reveal that it is not that manufacturing exports decline, the prevalent issue is that the manufacturing export basket is small. Generally, Kenya's manufacturing sector is dynamic but it faces high churn rates hence low probabilities of survival (World Bank, 2014 and 2016). Kenya's manufacturing sector has been overtaken by the services sector maybe because there are more impediments specific to setting up manufacturing plants in Kenya (Farole and Mukim, 2013).

The downturn in the agricultural sector in 2011 can be attributed to a severe drought in the same year. This is an indication of Kenya's over-reliance on agriculture. In other words Kenya's export growth is majorly through intensive margins due to reliance on traditional exports (Rasagam *et al.*, 2013) and (World Bank, 2012). Snail-paced growth in Kenya's exporting sectors especially in the agricultural and manufacturing sectors from 2006 to 2014 may be explained by domestic shocks i.e. shocks and political unrest which have prolonged effects when compared to exogenous shocks (World Bank, 2016). In summary, the export performance has been volatile (peaks and pitfalls) calling for policy channeled to promoting productivity to enhance survival periods. Ideally, it is good to promote export survival because it not only enhances export growth but it also promotes sustainability in foreign markets (Brenton *et al.*, 2012).

Figure 1: Share of Kenya's Export sectors and contribution to GDP combined



Source: Own computation from UN COMTRADE, Atlas of Economic Complexity and World Development Indicators respectively.

1.2 Statement of the Problem

Competitiveness and transforming Kenya into an export-led economy are the ultimate goals envisaged in the National Trade Policy and the Kenya Association of Manufacturers frameworks, (ROK, 2017) and (KAM, 2017). These strategies are articulated in the long term policy blueprint Vision 2030 (ROK, 2017). Kenya has continually pursued trade liberalization by integrating into regional blocks and global markets especially from the 1990s. It has also enacted legislation to promote domestic exporters. In spite of these efforts, Kenya's export sector is still dismal due to overreliance on primary products (Rasagam, 2013).

Farole and Mukim, (2013) compared the survival rates in Kenya and South Africa export sectors. Kenya's export growth deteriorated after frequent entry and exit of firms while that of South Africa blossomed. Low survival is good news if there are "creative

destructions” in efficient markets with highly productive firms that replace least productive firms (Brenton *et al.*, 2012). In contrast, high entry and exits in Kenya lower export growth. Non-tariff barriers impede growth in her exporting sectors. About 74% of exporters in Kenya are faced with immense non-tariff barriers; one third are self-imposed and two thirds from her trade partners. For instance, Kenya’s agri-food sector is severely hit by Non-Tariff Barriers (quality standards and certifications) imposed by EU (Farole *et al.*, 2013).

Kenya’s export market has expanded intensively with minute expansion in extensive margins from 2005-2009. Exporters have scaled down in specializations to accommodate small sets of good exports. We may attribute this to death rates of incumbent cohorts in the exporting markets as well as little innovations to produce new products (Rasagam, 2013). She has implemented immense trade reforms in a bid to reap the gains of liberalized trade but it has not been reflected in the outcomes (Manda and Sen, 2003; Kinuthia, 2014). Policies oriented towards diversification, growth and survival of exports are a prerequisite if Kenya is to be a beacon of excellence among her peers within her borders and thrive through stiff competition abroad. Our study seeks to bridge this gap investigate the implications of trade liberalization on export survival. More so, pave way for studies oriented towards export survival in the global and regional markets.

Exclusive studies on export survival in Kenya have left open questions on the depth and quality of regional integration agreements (Kinuthia, 2014; Chacha and Edwards, 2017). They are silent on the effect of EU on export survival. These studies have examined various export survival determinants. On the other hand, this work specifically examines the effect of trade liberalization on export survival. This study is also an extension of (Kinuthia, 2014) cox regression model by employing a different econometric model, discrete time analysis that controls for tied durations, unobserved heterogeneity and proportional hazard assumption.

1.3 Research Questions

- i. What is the effect of trade liberalization on export survival?
- ii. What is the effect of trade liberalization on export survival in the agricultural and manufacturing sector

1.4 Research Objectives

1.4.1 General Objective

- i. To investigate the effect of trade liberalization on export survival in Kenya

1.4.2 Specific Objective

- i. To examine the effect of trade liberalization on the survival of Kenya's agricultural sector
- ii. To examine the effect of trade liberalization on export survival in the manufacturing sector in Kenya

1.5 Justification of the Study

This is an opportune moment for an export survival study in Kenya for policy practitioners and academics. Figure 1 is a clear indication that Kenya's agricultural and manufacturing sectors are trailing behind the services sector implying that goods export trade in Kenya is dismal which is attributed to low survival rates for Kenyan goods in regional and global markets. This has led to a peculiar occurrence in Kenya, premature de-industrialization⁶ (Rodrik, 2016). A proviso that is important for us to denote from the onset is that the primary focus of this study is on trade in goods. Nevertheless, trade in services has become a salient feature in regional and global markets where Africa has great potential (Brenton *et al.*, 2012).

Understanding the link between the elimination of trade frictions, export transitions, export diversification, export survival and export growth would be insightful for scholars and researchers. In a similar vein, academia and researchers interested in pursuing survival studies would abstract from various aspects of our work i.e. export margins, trade in services, trade hysteresis, inter alia to add to the export survival studies in Kenya that are in a relative state of infancy.

Mutually beneficial trade integration agreements, proactive government interventions, reductions/removal of trade barriers and cross-country differences in export survival periods (in developed and developing countries) highlighted in this study would be useful

⁶ Premature de-industrialization occurs when the service sector contribution to GDP and employment surpasses outperforms that manufacturing sectors ignoring predictions of proper industrialization especially in developing countries.

for policy makers as well as other stakeholders in policy formulation including those involved in advocacy and development with regard to trade. For example, in the Ministry of Industry, Trade and Cooperatives, Kenya Association of Manufacturers, Kenya Revenue Authority, Ministry of Foreign Affairs, Export Promotion Council among others. More so, this study surveys export markets diversifications, products and destinations that new and incumbent exporters can target for debuts in new or existing foreign markets.

1.6 Organization of the Paper

Chapter one introduces the study stating the problem and research objectives. Chapter two presents the relevant empirical and theoretical review. Chapter three, four and five describe the methodology, empirical results and summary consecutively.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter describes the literature on trade liberalization and export survival.

2.1 Theoretical Literature Review

The evolution of trade theories is outlined below.

2.1.1 Traditional Theories of Trade

The theory of absolute advantage presumes that a country should export a good that it has a low labor unit requirement in producing and import the good that it has a high labor unit requirement. According to Ricardo it was not necessary for a country to have absolute advantage in both goods. They could specialize in exporting goods they had comparative cost advantage in and import that which they had comparative cost disadvantage (Pacheco and Thirlwall, 2017). Comparative advantage evolves with time through diffusion of technology, life cycle of a good and factor accumulation. Therefore, countries can transform their disadvantages to gain from trade (Stefan and Imre, 2018).

Ricardo's theory comparative advantage was an impetus to the formulation of Heckscher-Ohlin model of factor endowment and factor intensity. The theory implies that a country should export a good that it produces cheaply using its most abundant factor (labor and capital) and import that which it produces expensively (Agrawal *et al.*, 2017). These three theories suggested that trade would last forever and were thus silent on factors influencing the length of trade duration.

Vernon (1966) theorized a product cycle model of two countries, a rich North and poor South. The Northern country invents a product. It dominates over the Southern country in the first stages of the trade relationship. Later on, the Southern country imitates the production process after a diffusion of technology. These Southern countries have relative cost advantage due to an unprecedented supply of less skilled labor. Mass production is also favored by high demand of the product in the South. Completing the cycle, products invented by the technology leader are exported from the South. Dynamics of specialization in the south are explained by technology diffusion, product life cycle

and differences in factor endowments. This model explored the determinants of export participation overlooking explanations for survival patterns in trade relations (Kamuganga, 2012).

2.1.2 Variety-based/intra-industry Trade Theories

The traditional theories were discredited for not explaining anomalies in actual trade patterns. Krugman pioneered this school of thought in the late 1970s throughout 1980s that centered on industries in analyzing trade and not nations. Trade reforms were taking shape in the 1980s especially in developing nations, thus firm level models were better placed at outlining the intricacies of trade liberalization.

Firm models posit that differentiated products have higher survival rates compared to homogenous goods (Krugman, 1979; Helpman and Krugman, 1985). If consumers demand variety and if the diversified product is from the country of origin the good will trade longer. Trade ties for homogenous goods begin with larger transactions compared to small purchases for differentiated goods. Simply put, trade would be long-lived even with the small values of initial purchases. Short trade durations were not spelt out by these theories either.

Equilibrium models on plant dynamics, uncertainty and associated with export entry resulting into export hysteresis are driven by sunk costs (Baldwin and Krugman, 1989). Assuming there were no sunk costs then high churn rates and almost zero survival rates would emerge. Firms would easily enter export markets when there are positive returns and exit soon after returns deteriorate. On the other hand, uncertainty originates from exchange rate shocks, new tariffs and non-tariff barriers or sudden alterations of transport and marketing costs. Their scholarly works reveal that low tariffs promote tradable varieties compared to non-trade varieties. Trade liberalization thus, encourages incumbents to diversify products resulting to a longer trade partnership. However, they were short of addressing the question of “for how long” after entry will a firm last in the export market? Refer to (Redding, 2011; Bernard *et al.*, 2012; Melitz and Redding, 2014) for further explanations on inter and intra-trade theories.

2.1.2.1 Baseline Models of Firm Heterogeneity, Entry/birth, Exit/death and Survival of Trade

The theories in 2000s based comparative advantage on firms as opposed to industries. They incorporate monopolistic competition, firm heterogeneity and resource reallocations within industries. They were able to explain productivity growth advantage due trade liberalizations, spillover effects from foreign export market participation.

The ground breaking model on heterogeneity within firms and fixed costs (moneys on foreign market regulations, market surveillance and network distributions) was by formulated (Melitz, 2003). His seminal work postulates that self-selection exists in exporting where the most productive firms succeed⁷ in exporting. The hazard rate of exiting will be lower. Trade liberalization through a reduction in tariffs will induce the death of the least efficient firms while expanding efficient exporter status⁸ in two margins. The non-exporters enter the export markets profitably (extensive margins) and the existing exporters expand due to reductions in fixed and variable costs. They deepen the existing trade partnerships (intensive margins) through increased aggregate productivity. Exit rates are also enhanced by the upward pressure of real wages from expanding firms as it will be less profitable for non-performers to thrive. The non-exporters who continue to produce will contract. There will be labor shifts emanating from the exits and contracts reallocating to the most efficient survivors hence improvements in productivity from economies of scale, synergy effects and experience. Vicious cycles of birth, survival, intensity and growth are experienced by the most productive exporters. Melitz, (2003) underscored exporter transitions so it had to be expounded to incorporate findings on plant-level uncertainty along with entry and survival costs of exporting (Alessandria and Choi, 2014).

Rauch and Watson, (2003) search model has been adopted in export survival studies. It investigates trade ties between the developed and developing countries. A trade

⁷ See Baldwin, J., & Yan, B. (2012) on export success defined by survival and size of the market share.

⁸ Potential avenues of the status of a firm: from non-exporters to exporters (birth); persistence in exporting (survival); from exporters to non-exporters (death); and maintaining the non-exporter status (Baldwin & Yan 2012;Lederman, e.t. al 2016)

partnerships hinges on three scenarios namely, search, investment/deepening and rematch/termination. The buyer searches a potential foreign supplier from a pool of suppliers with varied period costs. It is usually uncertain whether foreign suppliers can match large orders. If the search and match process is successful then the buyer scrutinizes the supplier's period costs. The matched buyer may invest massively, start with small orders or reject the supplier. The reliability of the supplier in fulfilling determines the depth of the trade relationship. If the buyer loses their confidence in the seller, the ties are broken and the buyer re-searches for another supplier. Rauch, (1999) alludes to the fact that search cost for differentiated products surpass those of standardized products e.g. the training costs if a supplier is to deliver large orders. It is evident from these frameworks that trade durations have a direct relationship with the initial trade value/search costs.

Product appeals determine the survival of products in multi-product lines (Bernard *et al.*, 2010). These idiosyncratic shocks oblige firms to drop and add products that sit in well with the tastes and preferences of consumers. Firms reallocate resources to the most profitable export after surviving both positive and negative export shocks. Incumbent cohorts with productivity below zero value cut-off exit. Highly productive firms persist in markets because they can cover the fixed costs associated with frequent product churns.

2.2 Empirical Literature

Besedes and Prusa, (2006a and 2006b), tested the stylized facts presented by Rauch – Watson model using two panels of US 8- digit level import data from 1972-1988 and HS 10-digit data (ranging from 1989-2001). They proved that trade durations were short. US imports lasted for a median of 2-4 years. Half of these imports persisted in the first year and not more than a fifth of the imports survived to the fifth year. Trade durations for US exporters from developing nations were shorter. The cox model results indicated that hazard rate (risk of indebtedness) for standardized products was 23% higher than that of heterogeneous products though initial transactions were larger. More so, initial orders determined the life expectancies i.e. higher initial transactions were an indication of survival. Uncertainty and risk provided clear insights as to why buyers preferred smaller purchases in the beginning. They had to establish confidence and trust with the foreign

suppliers first (Besedes, 2008). In addition, though not the focus of our study; (Besedes, 2011) analyzed export growth based on intensive and extensive margins⁹. His finding was that developing countries were well versed in extensive margins as opposed to their counterparts (developed countries) who were able to intensify by deepening trade ties (intensive margins).

Another pioneer study on the factors influencing export survival of Canadian exporting establishments by (Sabuhoro *et al.*, 2006) using mixed proportional hazards (MPH) model and data from the Exporter Registry of Statistics Canada from 1993-2000, denoted that survival rates were positively correlated with large market sizes, multi-products and expansions in the export margins. Most importantly, survival rates across sectors were different. Exporters in manufacturing, fishing and trapping, agricultural and related services industries persistent longer in foreign markets compared to other sectors.

Albornoz and Prado (2018) study on French exporters analyze tariff reductions of products and countries overtime after Uruguay Round negotiations and the formation of WTO. Result imply that lowering tariffs results into third party effects. Unaffected countries by bilateral trade liberalization are used as control experiments before debuts into distant liberalized countries. The learning process of exporters result to trade policy spillovers that rub off on the test grounds (non-liberalized countries). Furthermore, conditional on survival firms expand intensively by learning.

A more recent study on the implications of Turkish Economic Integration Agreements (EIAs) with her trading partners suggested that survival rates increased with adoption of EIAs (Türkcan and Saygılı, 2018). It distinguishes trade in finished and unfinished products. A random effects discrete-time probit regression, at 6 digit Harmonized System from 1998-2013, showed that cutting down trade costs promotes Global Production Networks and thus increasing the probabilities of survival for unfinished as compared to finished products. Global Production Networks thrive on reduced non-production costs i.e. transportation, customs and logistics, administrative costs for certificates of origin, trade permits, import licenses among others (Blyde *et al.*, 2015).

⁹ Extensive margins are export opportunities from new partners and markets while intensive margins are export opportunities on existing partners (Besedes & Prusa, 2011; Chen & Kurokawa, 2018)

Fugazza and Molina, (2016) investigated 96 countries spanning from 1995-2004. They dissect the countries into three, developing South, Emerging South (has characteristics of developing but it is not yet developed) and North. Their study revealed a direct relationship between export spells and initial purchase values. Additionally, product types determines the period of trade. It is counter-intuitive that fixed costs increase export survival in developing nations while reducing it in emerging and developed economies.

According to (Alessandria and Choi, 2014) startup costs for US manufacturers are approximately 3.7 times larger than continuation costs after entry into the export markets. A reduction in tariffs from 8 percent to free trade increased trade duration from 5.9 to 9.1 years. They suggest that tariffs are taxes that impede the accumulation of durable assets (exporters). Sunk costs imply that a large portion of profits from exporting are returns on investments in export capacity as opposed to returns on building a plant. Another study by (Baldwin and Yan, 2012) on Canadian firms indicated that highly performing exporters are less likely to exit markets. Tariff reductions reinforced the trade persistence of these exporters by boosting their productivity advantage.

A study on Irish firms merges firm characteristics from Census of Industrial Production and trade records while disaggregating products to HS 6-digit level from 1996-2015 showed that survival rates for peripheral products in a firm are lower compared to the firm's core products (Lawless and Studnicka, 2018). More so, exporters that were already exporting diversified products in the beginning survive longer if they launch new products as a result of expertise¹⁰. This gives credence to (Bernard *et al.*, 2010) suggest that exporters with heterogeneous products reallocate resources to their key products after trade liberalization. The proximity of a new product to the core product implies that the trade relations will last longer (Lawless and Studnicka, 2018; Goya and Zehler, 2017). The results from this Irish study contradict stylized facts from (Rauch and Watson, 2003) that higher initial order values result to longer product export durations because initial export values decline with exporter experience¹¹.

¹⁰ See (Gorg et al. 2012) on firm expertise (products initially exported before introducing a new brand)

¹¹ Aeberhardt et al. (2018) describes experience based on survival (by comparing the export transitions with how it has persisted in trade) Araujo et al. (2016) bases experience on the number of similar export

Lederman *et al.*, (2016) investigated the influence of export promotion strategies on firm entry and survival using ISIC-4- digit code product level in seven Latin American nations namely: Uruguay, Peru, Ecuador, Colombia, Chile, Bolivia and Argentina. Promotion of exports indicated high survival rates in all countries in the span of four years (2006-2010) except for Colombia. The findings were insightful as it was in line with the goal of promotion strategies, to correct imperfect information and market failure. Fixed costs reduce after government intervention in markets and thus, encouraging extensive margins (entry into markets) rather than boosting exports for existing trade relations (intensive margins). In addition, encouraging export tax rebates (Anwar *et al.*, 2019) in China increased trade spells in the high technology firms. The medium survival period was 1.6 years in high technology firms, 1.46 years in low technology firms and 1.75 for foreign firms. In sum, reimbursing value added taxes and consumption taxes increases the duration of trade relationships.

Békés and Muraközy, (2012) studied Hungarian firms using a random effects showed that trade liberalization promotes the extensive margins of short-term/temporary and long-term/permanent exporters but most importantly it enhances the intensive margins of the long-term exporters hence higher survival rates. Further, temporary exporting (series of short spells) was associated with low productivity and high costs incurred by the firm. However, stable export activity could be promoted through incentives channeled to sunk costs e.g. promotions.

Sequential firm-level studies by (Baccini *et al.*, 2017 & 2018) shed light on the unprecedented proliferation of North-South Preferential Trade Agreements (PTAs), multinationals and non-tariff barrier on imports. In most cases, PTAs are aimed at reducing tariffs as much as they incorporate friendly market clauses like minimal administrative controls. Tariff cuts favor the most competitive firms can pay the fixed and variable costs of exporting. Reduced costs of trade encourage new entrants to export markets. Likewise, incumbents increase their export margins. These studies were not focused on exploring trade survival. However, we can draw insights on export

destinations. Albornoz *et al.* (2016) bases experience on survival periods, number of export destinations, number of shocks that the firm has maneuvered and its exposure.

productivity and growth from PTAs and thus infer that the high productive firms will persist in trade for longer periods.

Survival periods vary across African countries. South African exporters exhibit higher survival rates of 50% after the first year compared to Cameroon and Malawi who have survival rates of 25% (Fernandes *et al.*, 2016). In addition, Mohamed (2011) opined that the median duration of exports for Ghanaian manufacturing sectors is 5-6 years. Kamuganga, (2012) explored the impact of regional trade integration and other export survival determinants using a Cox regression model on bilateral data at HS 6 digit level from 1995-2009. Median duration was one year with an average of 36% export relationships surviving after the first year. Regional trade cooperation sustained African exports longer. Preferential Trade agreements depreciated the persistence of export periods that the study attributes to incessant negotiations that deter implementation. The study amplified Africa's survival advantages in traditional exports. Specifically, agricultural products, crude petroleum products and minerals. Costs of exporting, infrastructure underdevelopment and negative macroeconomic factors like exchange rate volatility and underdeveloped financial markets impeded export survival rates in Africa.

Cadot *et al.*, (2013) firm level study inspects determinants of survival past one year in Malawi, Mali, Tanzania and Senegal using custom data from 2000-2008. The study attest to "learning effects" from export incumbents to new exporters. Multi-products firms and venture to new markets enhanced trade durations after the past year. In Zambia (Banda *et al.*, 2013) exporters barely last for a single year.

Emerging studies (Hess and Persson, 2010 and 2012; Besedeš, 2013; Córcoles *et al.*, 2015; Türkcan and Saygili, 2018) adopt discrete-proportional hazard models. They fault continuous-time proportional hazard models for not controlling for unobserved heterogeneity, biasness when data is discrete and violation of a similar effects assumption of proportional hazards at different periods of the trade spell.

There are few studies on export survival in Kenya. Some panel studies have included Kenya in survival studies on developing countries (Besedeš and Prusa, 2006b; Kamuganga, 2012; Farole and Mukim, 2013; Fernandes *et al.*, 2016; Fugazza and

McLaren, 2016; Carrère and Straus-Kahn 2017) while Kinuthia, (2014) and Chacha and Edwards (2017) conduct explicit studies on export survival in Kenya. Chacha and Edwards, (2017) firm level study finds that 52% Kenyan firms exit in the first year. In addition, Kenya's membership to COMESA has a positive relationship with survival but it is not statistically significant. Using Micro-level data (Kinuthia, 2014) indicates that survival rate of exports after the first year is 20%. Cox regression results from the study show that membership to EAC and COMESA is non-significant in explaining trade durations.

2.3 Overview of the Literature

Trade literature has met several strands and ramifications to explain export survival mostly in developed nations and in the Latin American countries. Export durations have been termed as short in developed and developing countries irrespective of whether the datasets are at country product-level or at firm-level (Lawless and Studnicka, 2018). Hence, contradicting the theoretical prediction that trade was long lasting once comparative advantage is determined. Highly productive and efficient exporters are likely to persist in trade after trade liberalization (Baldwin and Yan, 2012). Few survival studies have been carried out in African countries where export durations are shorter. Previous studies in Kenya have left open questions on influence of Economic Integration Agreements (EIAs) on the survival on agricultural and manufactured good exporters (Kinuthia, 2014; Chacha and Edwards, 2017) This paper uses a different econometric model as opposed to (Kinuthia 2014), the discrete-time model that reduces the short comings of the cox regression model that may bias the termination probability upwards. This study sets out to fill the gaps in these studies and therefore add to emerging literature.

CHAPTER THREE: METHODOLOGY

3.0 Methodology

The research method employed and data description is described in this chapter.

3.1 Parametric Model Specification

Various modelling techniques have been adopted in survival analysis. They include parametric, semi-parametric (Cox model) and non-parametric (Kaplan-Meier) models (Fu and Wu, 2014; Lemessa *et al.*, 2018). The nature of the data sets determines the model's selection criteria. Cox model is advantageous because it does not necessitate a specified baseline function. However, this study adopts discrete time models following (Hess and Persson, 2012) assertions about the shortcomings of the cox models. Many short-lived trade relationships and groupings into time-discrete/ yearly intervals imply that the durations will have many pairs. These tied durations are not harnessed in cox models resulting into parameter and standard error biases. More so, spurious negative dependencies and biases in estimators emerge due to the fact that cox models fall short of addressing for unobserved heterogeneity (frailty).

Computing large data sets involving multidimensional integrals is problematic. For instance, Stata is unable to run iterations beyond 11000. Authors have accounted for this shortcoming by incorporating dummy variables (Besedeš and Prusa, 2006b) as well as extensions into stratified cox models (Besedeš, 2008; Nitsch, 2009). Limitations have resurfaced regardless. Lastly, the proportional hazards assumption in cox models assumes that covariates have constant effect on the hazard rate. This is highly unlikely because explanatory variables have varied effects. An example by (Hess and Persson, 2011a) reveals that initial trade transactions affect the possibility of trade failure during the first year differently as compared to failure 10 years later. A number of recent studies such as (Hess and Persson, 2012); Fu and Wu, 2014; Córcoles *et al.*, 2015; Türkcan and Saygili, 2018; Anwar *et al.*, 2019) use discrete-time models for these reasons.

3.2 Duration Model Specification

Like (Hess and Persson, 2012; Fu and Wu, 2014; Anwar *et al.*, 2019), this study estimates the durations of exports using a discrete time model. With similar and varying notations we have,

$p_j = (t_j, t_{j+1})$ where $p = 1 \dots J$ which is a representation of the time intervals while t_j and t_{j+1} denote the beginning and end of interval respectively. Let b_j indicate failures with c_j as the number of censored spell endings (Jenkins, 2005) in the interval p_j given that F_j is the number of firms at risk when the interval starts. If f_j is the adjusted number of spells prone to failure, the midpoint of the interval expressed as

$$f_j = F_j - \frac{c_j}{2} \quad (1)$$

Therefore the life table estimator for discrete-time models is

$$\hat{S}(p) = \Pr(T > j) = \prod_{k=1}^j \left(1 - \frac{b_k}{f_k}\right) = \prod_{k=1}^j (1 - h_k) \quad (2)$$

h_k is the interval hazard rate which show that an export spell T dies during the time interval $(k - 1, k)$, $k = 1, 2 \dots, j$ (Anwar *et al.*, 2018). The survivor function in equation two estimates the probability of surviving till the interval j ends which is the product of probabilities of no eventualities of failure in the intervals up to and including the current one. That is,

$$\hat{S}(p) = (1 - h_1)(1 - h_2) \dots \dots \dots (1 - h_{j-1})(1 - h_j) \quad (3)$$

A link function, random effects logit model can be specified to explain the effect of independent variables on the hazard rate below. According to Córcoles *et al.*, (2015) preference for a logit model is based on the fact that the odds ratios are constant as explanatory variables change (Long & Freese, 2006) while predicted probabilities in non-linear models (e.g. probit model) vary as covariates change. Random effects are more suited compared to fixed effects because they estimate explanatory variables that are constant overtime e.g. border distances that are controlled for in fixed effect models. However, estimates are still obtained using a fixed effects logit model by performing a

Hausman test to establish whether the differences in the coefficient estimates of the two models are significant.

$$h(x_{ik}) = \Pr(T_i < t_{j+1}/T_i > t_j, x_{ik}) = \psi(x'_{ik}\beta + \gamma k + a_i) \quad (4)$$

The explanatory variables (time-variant or time-invariant) inferred to affect the hazard rate are represented by x_{ik} while β is a vector of parameters which our study estimates. The hazard and survival rates are inversely proportional. Subsequently, γk is the baseline hazard rate function i.e. $\gamma k = \theta \ln(j)$ such that termination rate is time-variant throughout the period. a_i is the random effects indicator from a Gaussian distribution to control for frailty. The distribution function $\psi(\cdot)$ ensures that the conditional probability h_{ik} oscillates around and between 0 and 1.

A binary variable y_{ik} is introduced to obtain binary panel regression with a log-likelihood function that is 1 if the spell is observed to end at the k^{th} time interval and zero otherwise. Specifying the binary variable enables us to represent discrete-time models as a series of binary dependent variables.

$$\log L = \sum_{i=1}^n \sum_{k=1}^{k_i} [y_{ik} \log h_{ik} + (1 - y_{ik}) \log(1 - h_{ik})] \quad (5)$$

$\sum_{i=1}^n$ is a summation of countries from 1.....n and $\sum_{k=1}^{k_i}$ sums up time intervals (k) from 1..... k_i (Because time periods vary across trade spells). A logit regression equation with hazard rate as the dependent variable of an export relationship is obtained (Anwar et.al, 2018).

$$F(h_{ij}) = \alpha_j + \beta_o + \beta_1 trade liberalization_{ij} + \beta_2 x_{ij} + \omega_i + \mu_{ij} \quad (6)$$

Note that for random effects $\omega_i = \omega + \varepsilon_i$ we obtain,

$$F(h_{ij}) = \alpha_j + \beta_o + \beta_1 trade liberalization_{ij} + \beta_2 x_{ij} + \omega + \varepsilon_i + \mu_{ij} \quad (7)$$

$$\text{Let } \varepsilon_i + \mu_{ij} = v_{ij} \quad (8)$$

Substituting equation (8) into equation (7) we have,

$$F(h_{ij}) = \alpha_j + \beta_o + \beta_1 trade liberalization_{ij} + \beta_2 x_{ij} + \omega + v_{ij} \quad (9)$$

Where $\beta_1 trade liberalization_{ij}$ is the existence of (EIA) x_{ij} is the vector of control variables which are; trade costs (distance) macroeconomic factors, trade agreements and institutions. ω indicates the random effects component. Subsequently, v_{ij} is referred to as a composite error term incorporating ε_i specific error component (cross-section) and μ_{ij} is both a time series and cross-section error component.

3.3 Estimation Issues

A completed spell is when the birth and death years are known with precision. Censoring occurs when information about the duration in the original state is unknown. For, instance a firm may have been exporting before the sample period (left censoring) or the firm may export after the sample period (right censoring). A common practice in survival analysis is to omit left-censored spells to avoid restrictive assumptions about the hazard rate while right-censored spells have no causal effects on sample likelihood derivations (Hess and Persson, 2010; Fugazza and Molina, 2016; Türkcan and Saygılı, 2018 ; Anwar *et al.*, 2019). For example, 1981 will be the starting year and not 1980. Otherwise, 2018 is still the final year

Multiple spells result when exporters start to export soon after exiting (Fu and Wu, 2014). This should be accounted for using multiple-spell dummy variables (Brenton *et al.*, 2010; Fugazza and Molina, 2016; Carrère and Straus-Kahn, 2017). Multi spell dummies, year dummies have been used to complement the discrete time analysis in reducing endogeneity plague that the estimates are subject to.

Random effects control for unobserved heterogeneity. The choice of the heterogeneity distribution does not necessarily bias the estimates (Hess and Persson, 2010). Lastly, endogeneity originating from measurement errors will be addressed by using year and regional dummies (Türkcan and Saygılı, 2018). Continuous time models fail to account unobserved heterogeneity (resulting from high number of products and countries), tied durations and the proportional hazard assumption. Consequently, this study employed the discrete time model in a logit regression with random effects to counter unobserved heterogeneity (Córcoles *et al.*, 2015). There was also a strong correlation between the six governance indicators (control of corruption, rule of law, government effectiveness, voice

and accountability, political stability and absence of violence and regulatory quality) that would somewhat bias the results. A principal component analysis provided component scores that were representative of the indicators which the study portrays as institutions.

3.4 Data and Variables

This study employs product level data dated 1980 to 2018 from the World Integrated Trade Solution (WITS) database disaggregated at SITC 5. Product – Destination level data is available at the Exporter Dynamics Database. Variables are classified into trade flows, trade costs, macroeconomic conditions, market access, institutions and regional trade agreements.¹² Trade flows data is retrieved from World Integrated Trade Solution (WITS) database for 2019 that will be SITC 5 data reported by Kenya's importing partners. Studies suggest that for developing countries, trade data is more precise and reliable when it is reported by the importer (Brenton *et al.*, 2010; Carrère and Straus-Kahn, 2017).

Most imperative to illuminate, is the choice of destination factors/demand factors across the board that explain importer appeal for Kenyan exports. In that spirit, to represent trade liberalization/ market access, this paper settled the level of EIAs based on bilateral country paired data on 167 countries as opposed to Kenyan tariff data that was grossly missing for year prior to 1995. Trade liberalization schemes result to persistence in the export markets (Alessandria and Choi, 2014; Baldwin and Yan, 2012).

Macroeconomic data will be obtained from World Development indicators and institution variable sourced from Worldwide Governance Indicators. Distance data is available on CEPII database. The proximity of Kenya's capital to the importer's capital, a gravity variable will proxy for exporting cost as is the case in (Besedeš and Prusa, 2006b ;Türkcan and Saygılı, 2018). Geographical distances increase the hazard rates

Macroeconomic conditions are; exchange rate, GDP, FDI's and financial development of the importing partner. The Kenyan Shilling is compared to the US dollar in determining the exchange rate. Kenyan exports are likely to decline if the US appreciates their exchange rates. Higher GDPs of the trading partners prolong trade because it signals a

high potential for demand. Financial development is when domestic credit from lending sectors is channeled to sectors in the economy but not to the government. Daway-Ducanes and Gochoco-Bautista, (2019) amplify the importance of financial development (in terms of the size of the financial sectors) in promoting economic growth. Larger financial sectors faced with credit and liquidity expansions enhance trade durations (Besedeš et al., 2014).

Kaufmann *et al.*, (2011) governance index encompasses six indicators of the importing country that represent the institutions variables. These are; control of corruption, rule of law, government effectiveness, voice and accountability, political stability and absence of violence and regulatory quality. Studies presume that it is problematic to determine the influence of this variable but good governance enhances export survival (Kinuthia, 2014). Scores of good and poor performance vary are determined by indices varying from -2.5 to 2.5.

Dummy variables for membership in regional and multinational integrations; EAC, COMESA, AGOA and EU will be included. They will be coded as 1 if the importer is a party to the trading agreement and 0 otherwise. Other trading partners in AGOA will be omitted, the study only considers Kenyan exports to USA. The variable will be coded as 1 if the exports under AGOA are imported by US.

Table 3. 1: Variable description and source

Variable	Description	Source
Trade flow	SITC 5 digit level data	WITS (2019)
Trade cost	Distance between the importers capital and Nairobi	CEPII (2019)
Trade Liberalization/Market Access	Economic Integration Agreements	Baier and Bergstrand's website
Macroeconomic factors	GDP of the importer	WDI (2019)
	Exchange rate of the importer in USD	WDI (2019)
	Financial development of the importer (Domestic credit to the private sectors as a % of GDP)	WDI (2019)
Institutional factors	Control of Corruption	WGI (2019)
	Rule of law	WGI (2019)
	Government effectiveness	WGI (2019)
	Voice and accountability	WGI (2019)
	Political stability and absence of violence	WGI (2019)
	Regulatory quality	WGI (2019)
Trade agreements	EAC. Dummy variable = 1 if country is in EAC and zero otherwise. Also index for EAC-CU and EAC-CM.	Own computation
	COMESA. Dummy variable =1 if partner is a member and zero otherwise.	
	AGOA. Dummy variable = 1 if export is to the US under AGOA and zero otherwise.	
	EU. Dummy variable = 0 if export is to the UK under EU and zero otherwise.	

CHAPTER FOUR: EMPIRICAL RESULTS AND DISCUSSION

4.0 Descriptive Statistics

Table 4.1 displays the descriptive statistics in mean, standard deviation, minimum and maximum for 167 countries used in the study

Table 4. 1: Summary statistics of key explanatory variables

Variables	Observation	Mean	Std. Dev	Min	Max
Exports	119,551	144.328	1343.697	0	121932
Distance	103,383	4240.94	3472.099	583.764	15754.4
Importer GDP	115,138	7.27E+1	2.19E+12	1.47E+1	2.05E+1
Financial Development	107,187	45.8160	45.09976	0.18585	308.978
Exchange Rate	82,143	615.901	1228.59	2.50E-1	25000
Voice and Accountability	93,508	0.02162	0.957287	-2.0503	1.801
Political stability	93,555	-0.11076	0.906924	-2.8100	1.9651
Government effectiveness	93,554	0.17747	0.990148	-2.4837	2.4370
Regulatory quality	93,554	0.207373	0.928258	-2.2363	2.2605
Rule of Law	93,555	0.166611	0.965845	-1.9385	2.1002
Control of Corruption	93,554	0.123442	1.073503	-1.7133	2.470
Institutions	93,507	0.226032	2.263044	-5.1259	4.8856
Agriculture Sector	24,365	1	0	1	1
Manufacturing Sector	33,163	2	0	2	2

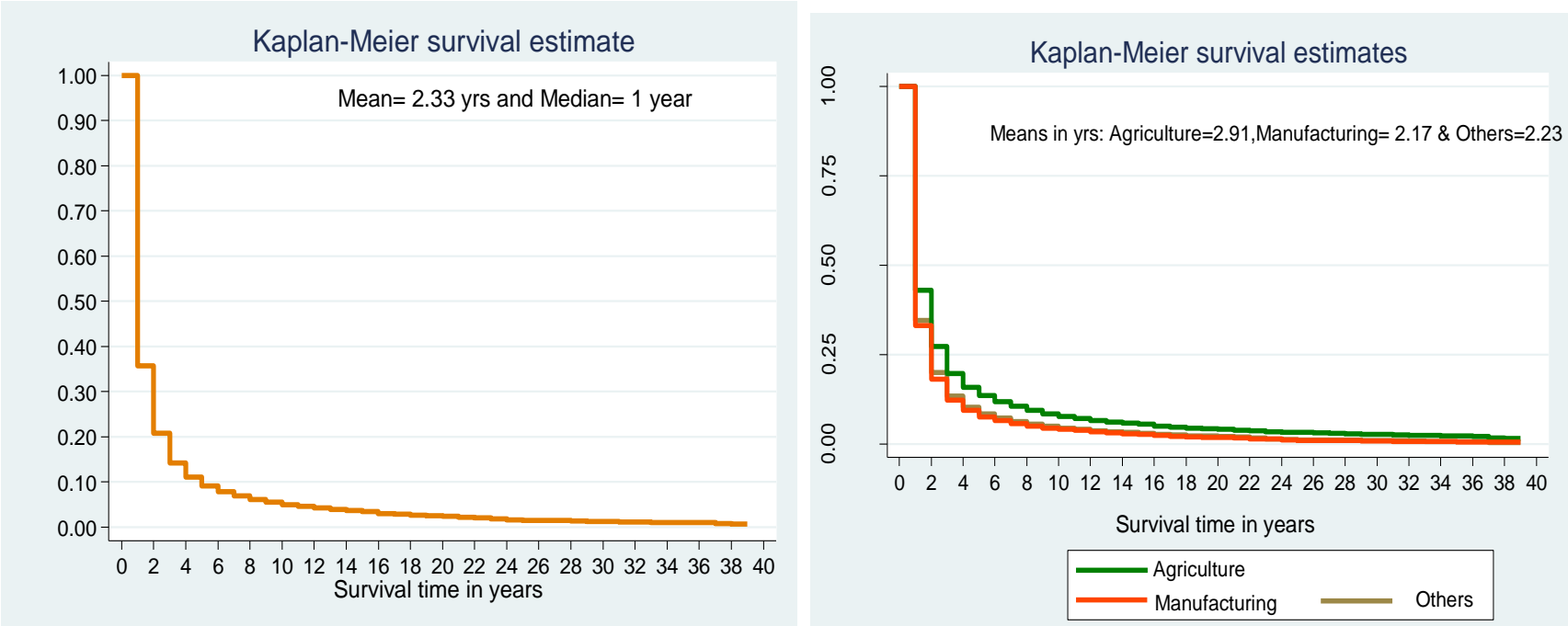
Source: Own Computation

Figure 2a depicts that the survival percentage Kenya's total exports in the 1st year as 35.70% and 20.75% in the 2nd year. Less than 10% survive after the 5th year. This compares with Africa's average survival of 35 % in the 1st year Kamuganga (2012). Mean and median survival periods of 1 and 2.33 years consecutively relates to Brenton et al. (2009) that the median and mean survival of Africa's relationship is 1 and 2.08 years consecutively.

Desicating exports into agricultural and manufacturing sectors reveals that the survival rate is 43.01% and 33.19% respectively evidenced in Figure 2b below. The duration of agricultural exports outperforms that of manufacturing. This reaffirms the fact that Kenya's manufacturing sector lags behind in competitiveness significantly. A similar exercise on Figure 3a and 3b based on agreements shows that exporting through EAC

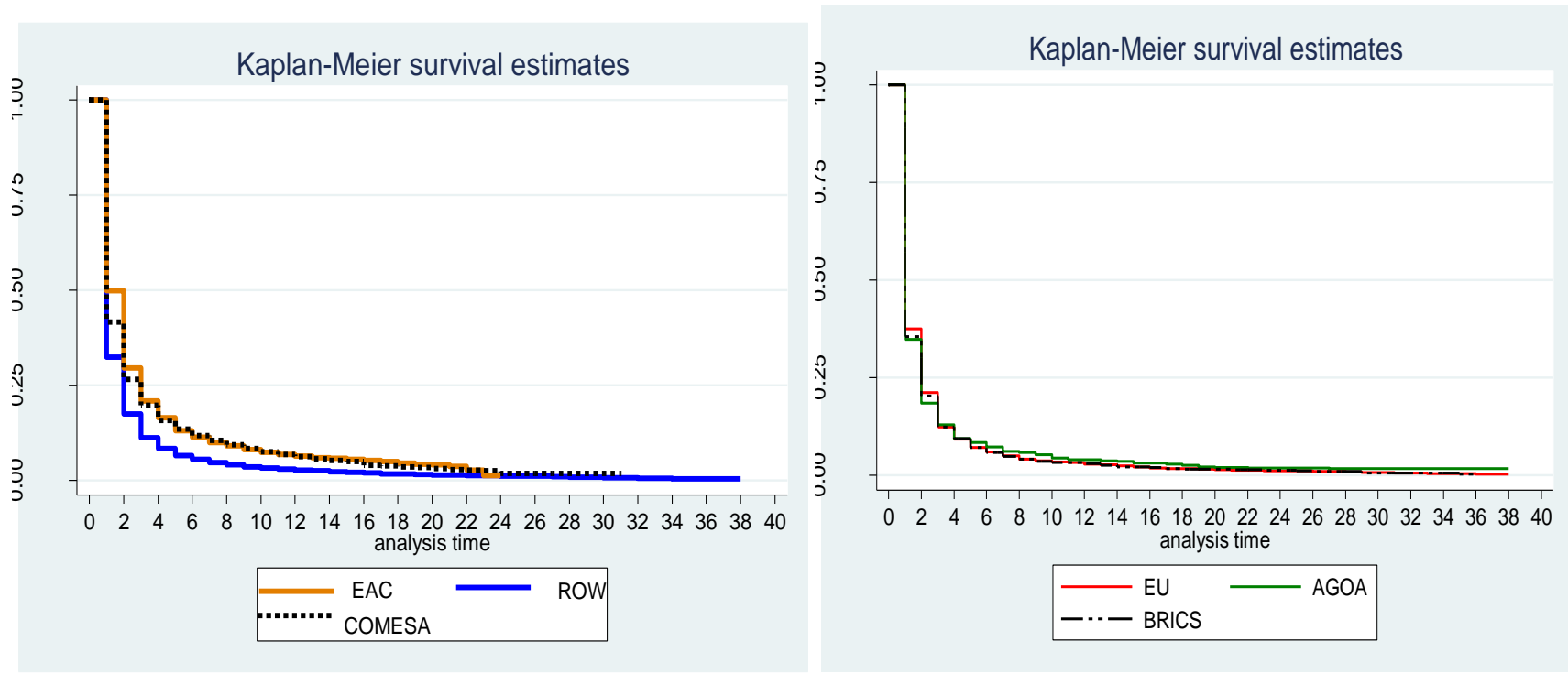
lasts longer compared to other trading blocs. The survival rates are 50%, 42%, 38%, 34%, and 30% respectively for EAC, COMESA, EU, AGOA and BRICS. Mean duration of exporting through EAC is 4 years with a median of two years while exporting to COMESA has a one year shorter mean and median duration. Exporting to United States through AGOA last for a mean of approximately 3 years with the rest lasting for 2 years.

Figure 2: Duration of the total exports, agriculture and manufacturing sectors in Kenya for period 1980-2018



Sources: Own Computation

Figure 3: Export survival probabilities based on agreements



Source: Own Computation

4.1 Impact of trade Liberalization on Export Survival in Kenya

Results after a discrete –time panel regression to investigate the effect trade liberalization (uses EIAs as a proxy) the duration of exports are shown below. The dependent variable is the termination probability in the sense that a spells ends. Positive coefficients increase the hazard rate (termination of the export activity). Conversely, negative coefficients signify a decrease in the hazard rate (continuum of export activity).

Table 4. 2: Logit Model Estimation Results

Dependent variable: Termination probability=1/x	1	2	3	4
		All	Agric	Manu
EIA exists	-0.56*** (0.03)	-0.24*** (0.029)	-0.14** (0.062)	-0.24*** (0.054)
Distance		0.00*** (0.000)	0.00*** (0.000)	0.00*** (0.000)
Importer GDP		-0.00** (0.000)	-0.00 (0.000)	-0.00** (0.000)
Financial Development		0.00*** (0.001)	0.000 0.001	0.00** -0.001
Exchange rate		0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Institutions		0.02 (0.01)	0.08*** (0.023)	0.02 (0.019)
Constant	1.55*** (-0.03)	0.98*** (-0.043)	1.18*** (-0.13)	0.97*** -0.081
Log Likelihood	-45255.9	-22229	-4234.2	-6381.4
Year Effects	No	No	Yes	No
Region Effects	No	No	No	No
Observations	87,017	44,930	8,285	12,846

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.10 with 1%, 5% and
 10% statistical significance consecutively

Source: Own Computation

Using equation 6 the results of trade liberalization on export survival are presented on Table 4.2 with a gradual inclusion of control variables in columns (2) to (4). In this baseline regression, the trade liberalization proxy has a negative relationship with hazard rate. In Column (1), a 1% rise in trade liberalization increases the persistence of a trade relationship by 56%. This negative relationship holds throughout the columns, affirming the robustness of positive impact on trade liberalization on the Kenyan export relationships. Survival rates for agricultural and manufacturing sectors are 14% and 24% consecutively. Thus, liberalization opens the market for manufactured products as opposed to agricultural products. The survival of export relationships for all exporting sectors in Kenya is inspired by importer GDP. A high importer GDP imply larger market sizes for Kenyan products increasing survival as shown by the negative significant relationship with hazard rate. This result is robust as the negative relationship persists across all the columns.

Distance, financial development, exchange rate are detrimental to the persistence of Kenyan export relationships. Weighted distance raises trade costs by increasing the time taken to costs of delivering the products hence the positive significant effect on the failure rate. Macroeconomic indicators may increase on decrease export survival (Kamuganga, 2012). Financial development is found to increase hazard rate for general exports significantly. This could be attributed to underdeveloped financial markets or a high cost of credit to exporting firms compared to domestic firms. Institutions have a positive and insignificant effect on failure rate for the manufacturing sector and other sectors but has a significant effect on the death of agricultural good relationship. This effect may be due to the opposing effects on the six governance indicators.

A positive significant coefficient on exchange rate suggests that a rise in the real exchange rate (foreign appreciation) lowers the demand for Kenyan exports and hence increasing export relationship failure. This results corroborate those of (Fugazza and Molinna, 2009; Kamuganga, 2012 and Kinuthia, 2014). Melitz (2003) implications assert that domestic real exchange rate appreciation lowers the competitiveness of firms in foreign markets. Consequently, foreign appreciations should increase Kenyan exports which is not the case.

Using model 2 on Table 4.3 we investigate the effect of intra-African trade blocks on Kenyan exports. Export survival varies with the type of trade agreements and economic sectors as shown in Figure 3-5. Membership to EAC and COMESA that are both intra-Africa trade blocks has a significant and positive relationship on the survival of the total exports. As an offset however, exporting through COMESA promotes survival rate by 1% for all export products compared to EAC. Exporting agricultural products to EAC trading partners enhances the duration of the export relationship more by a significant margin of 10% as opposed to exporting to COMESA. Unlike exporting to EAC, exporting to COMESA fine-tunes the survival of manufactured good exports by 6%. The importer GDP and institutions encourage exports in both regional blocks.

Table 4. 3: Logit regression results for EAC and COMESA

Dependent variable: Termination probability=1/x									
	1 Baseline	2 Agric	3 Manu	4 All	1 Baseline	2 Agric	3 Manu	4 All	
IF EAC	-0.46*** (0.027)	-0.28*** (0.084)	-0.44*** (0.067)	-0.38*** (0.039)	IF COMESA	-0.45*** (0.023)	-0.18** (0.081)	-0.50*** (0.066)	-0.39*** (0.037)
Distance		0.00*** (0.001)	0.00*** (0.000)	0.00*** (0.000)	Distance		-0.00** (0.000)	0.00*** (0.000)	0.00*** (0.000)
Importer GDP		-0.00 (0.000)	-0.00*** (0.000)	-0.00*** (0.000)	Importer GDP		-0.00 (0.000)	-0.00*** (0.000)	-0.00*** (0.000)
Financial Development		0.00 (0.001)	0.00** (0.001)	0.00*** (0.000)	Financial Development		0.00 (0.001)	0.00 (0.001)	0.00*** (0.000)
Exchange rate		0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	Exchange rate		-0.000 (0.00)	-0.000 (0.00)	-0.000 (0.00)
Institutions		0.05** (0.02)	-0.01 (0.017)	-0.02 (0.01)	Institutions		0.05** (0.02)	-0.02 (0.018)	-0.02** (0.01)
Constant	1.15*** (0.018)	0.89*** (0.077)	0.83*** (0.06)	0.84*** (0.034)	Constant	1.25*** (0.019)	0.93*** (0.095)	1.13*** (0.078)	1.06*** (0.044)
Log Likelihood	-64996.7	-4635.36	-6946.29	-24173.4	Log Likelihood	-64936.9	-4638.68	-6939.29	-24166.4
Observations	120213	9041	13726	48365	Observations	120213	9086	13954	48875

*** p<0.01, ** p<0.05, * p<0.10 represent significance levels at 1%, 5% and 10% respectively.

Source: Own Computation

The positive coefficient for financial developments on export survival implies that importing markets in COMESA and EAC for Kenyan products are underdeveloped. On the other hand an appreciation of exchange rate for COMESA trading partners is found to increase survival of exports while an appreciation in EAC decreases survival of all exports. These effects are not significant in both cases. Institutions increase the survival of goods in the manufacturing sector and other sectors in both EAC and COMESA but the effect is significant in COMESA. In sum, Kenya's export trade with EAC favors agricultural goods unlike COMESA that enhances the survival of manufactured goods.

Table 4. 4: Logit regression results for EU and BRICS

Dependent variable: Termination probability=1/x									
	1 Baseline	2 Agric	3 Manu	4 All	1 Baseline	2 Agric	3 Manu	4 All	
IF EU	0.10*** (0.029)	0.13 (0.103)	0.35*** (0.103)	0.25*** (0.052)	IF BRICS	0.14*** (0.053)	0.29* (0.152)	-0.12 (0.12)	0.03 (0.066)
Distance		0.00 (0.000)	0.00*** (0.000)	0.00*** (0.000)	Distance		0.00 (0.000)	0.00*** (0.000)	0.00*** (0.000)
Importer GDP		-0.00 (0.000)	-0.00*** (0.000)	-0.00*** (0.000)	Importer GDP		-0.00** (0.000)	-0.00*** (0.000)	-0.00*** (0.000)
Financial Development		0.00 (0.001)	0.00* (0.001)	0.00*** (0.000)	Financial Development		0.00 (0.001)	0.00** (0.001)	0.00*** (0.000)
Exchange rate		-0.00 (0.000)	-0.00 (0.000)	-0.00* (0.000)	Exchange rate		-0.00 (0.000)	-0.00 (0.000)	-0.00 (0.000)
Institutions		0.04** (0.021)	-0.03 (0.018)	-0.02** (0.01)	Institutions		0.06*** (0.02)	-0.01 (0.018)	-0.01 (0.01)
Constant		0.79*** (0.072)	0.72*** (0.059)	0.73*** (0.032)	Constant	1.14*** (0.018)	0.80*** (0.072)	0.75*** (0.059)	0.75*** (0.032)
Log Likelihood	-65134.6	-4640.28	-6962.16	-24214.3	Log Likelihood	-65137.8	-4639.34	-6967.38	-24225.3
Observations	120213	9086	13954	48875	Observations	120213	9086	13954	48875

*** p<0.01, ** p<0.05, * p<0.10 represent significance levels at 1%, 5% and 10% respectively.

Source: Own Computation

In Model 3 Table 4.4 shows that Kenya's total export trade is dampened if the trading partners are EU countries. There is a tremendous significant decline of 35% for the manufacturing sector and an insignificant decrease for the agricultural sectors. This reemphasizes the fact that manufactured goods are more uncompetitive in EU. Such conjecture relates to (Banda et al., 2013) assertion that preferential access in foreign markets like United States and Europe erode Zambia's export growth. In 2014, the EU declared a duty and quota free trade regime, thus, Kenya also lost preferential access.¹³

The main determinants of duration in EU are the large economic sizes of such economies, quality of the institutions and foreign exchange rate depreciations. On the other hand Kenya trade with emerging economies promotes its exports manufactures with an insignificant magnitude. It lowers the duration of total exports though a significant decline of 29% is evident at 10% significance level. Similar to EU, large economic sizes, quality institutions and foreign currency appreciations promote the persistence of Kenyan export activity for manufacturing sector and other sectors. This study suggests that it is not beneficial to export to EU for both agricultural and manufactured commodities based on the high significant exit rate. On the other hand, exporting to the BRICS countries increases survival for manufactured goods in small margins. This regression results do not reflect the effect of AGOA on the survival of Kenyan exports due to lack of variability in the data as exports are to a single market, the United States.

¹³ *Trade between the EU and Kenya*. Retrieved from http://eeas.europa.eu/archives/delegations/kenya/documents/press_corner/trade_between_the_eu_and_kenya_2105.pdf

CHAPTER FIVE: SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

5.0 Summary

This paper examined the effect of trade liberalization on export survival in Kenyan agricultural and manufacturing sectors using data disintegrated at SITC- 5digit level between 1980 and 2018. Using a discrete time random effects model, the study revealed that the mean and median survival period for total exports is two and one year respectively. Approximately, 64% of the total exporters exit in the first year with almost 90% exiting in the fifth year.

It was evident that survival rates vary with sectors and the type of trade agreements. Export survival in the manufacturers lasts longer compared agricultural products with a significant margin of close to 10% when Kenya had an Economic Integration Agreement (EIA) with a partner country. This suggests the trade liberalization favors a market for manufactures than agricultural goods.

Agricultural goods thrive more in EAC compared to manufactured goods but with a magnitude of 10%. Conversely, exporting manufactures to COMESA increased export survival significantly while it dampened the survival for agricultural goods. Intuitively, countries maybe trading in similar primary products reducing export gains and durations. Interestingly, exporting to EU suppressed manufactured goods more than agricultural goods. This study highlights the importance of exporting manufactures to emerging economies (BRICs) other than agricultural goods whose survival period is short-lived. Institutions in developed (EU) and emerging economies (BRICS) increased the persistence of manufactured goods and exports in other sectors. The economic size of the importers also promoted lasting trade relationship by increasing Kenya's market share in total exports.

5.1 Conclusion

The study was consistent with theory that trade liberalization increases the survival of exports in Kenya by promoting productivity and competitiveness when trade costs are reduced. Positive sentiments emerging from this analysis- constraints notwithstanding- is

that Kenya should focus on exporting agricultural goods to EAC but export manufactures to COMESA and emerging economies so as to drive export growth and survival.

5.2 Policy Recommendations

Policy makers should focus on deepening trade relationships with EAC and COMESA. Ultimately, government interventions are mandatory in addressing export growth and survival constraints by improving in export competitiveness through product and market diversifications.

5.3 Areas for further research

The study calls for firm-level studies to incorporate aspects of firm productivity, product types (heterogeneous, homogenous, final and intermediate) for micro-level insights in exporting like (Besedeš and Nair-Reichert, 2009; Anwar *et al.*, 2019). In addition, researchers should channel adopt better economic techniques besides the discrete-time models. Particularly, the flexible link function by Hess et al. (2016).

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