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Coordinated Border Management and Trade Facilitation at Namanga Border Post, Kenya

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Abstract

Trade facilitation at the Namanga border post is currently facing a number of challenges that result into delays of clearance of goods across the Kenya-Tanzania border. The situation often encourages increased smuggling of goods as traders try to use shortcuts to avoid government agencies' bureaucracies that always cause losses to several businesses due to delayed movement of commodities across the border. All these challenges are associated with disjointed coordination of trading by different agencies involved. The purpose of this study was to establish the effect of coordinated border management on trade facilitation in Kenya, focusing on Namanga one-stop border point. Specific objectives of the study included: to establish the effect of cooperation among border agencies, coordination between border agencies, border collaboration challenges between border agencies, coexistence among border agencies, and the effect of communication among border agencies on trade facilitation at the Namanga border point. New Trade Theory and Export Base Theory were used in the study. The study adopted causal research design and a target population of 140 staff of border control agencies at Namanga Border Point. Census was used to include all of them in the study where primary data was collected using a structured questionnaire and analyzed using descriptive (frequencies & percentages) and inferential (multiple linear regression) data analysis methods. The study's key findings indicated that a unit increase in cooperation among border agencies would lead to a 0.153 increase in Trade facilitation at Namanga Border Post ($\beta1=0.153$, $p=0.008<0.05$); a unit increase in for Coordination of border agencies would lead to a 0.246 increase in Trade facilitation at Namanga Border Post ($\beta2=0.246$, $p=0.014<0.05$); a unit increase in Collaboration between border agencies would lead to a 0.123 increase in Trade facilitation at Namanga Border Post ($\beta3=0.123$, $p=0.03<0.05$); a unit increase in Coexistence among border agencies would lead to a 0.232 increase in Trade facilitation at Namanga Border Post ($\beta4=0.232$, $p=0.001<0.05$); a unit increase in cooperation among border agencies would lead to a 0.331 increase in Trade facilitation at Namanga Border Post $\beta5=0.331$, $p=0.000<0.05$). The study concluded that coordinated border management has a significant effect on trade facilitation at Namanga border post. The study recommended that there is need for the government and other key stakeholders to adopt international standards and tools of trade, such as SAFE Framework of Standards and performance of Time Release Study (TRS), that will help the identify bottlenecks and the border and address them efficiently. The study suggested that a comparative study should be carried out on the effect of coordinated border management on trade facilitation in at least two border points. A study should also beconducted on how the government is addressing challenges of coordinated border management to improve trade facilitation.
Keywords: Border Management, Trade facilitation

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1. Introduction

1.1 Background of the Study

In international trade, coordinated border management and trade facilitation remains a crucial undertaking to ensure that goods and services effectively reach their intended destinations within a reasonable time and cost. The need for freedom and fast movement of goods and services across the border has further been linked to the increasingly liberalized trade worldwide. According to the World Trade Organization (WTO), the trade facilitation framework was first initiated at the Singapore Ministerial Conference of 1996 and later adopted at the Doha Development Agenda (DDA) to boost trade all over the world by easing movement of goods and services across all strategic border points (Australian Customs and Border Protection Service, 2011). From its simple definition as making trade easier (Bowman, 2006), trade facilitation calls for proper synchronization of trading systems and processes as well as rules to ensure that international movement of goods and services is streamlined to remove unnecessary bottlenecks that could inconvenience the flow. In a broader sense, trade facilitation encompasses removal or lowering of non-tariff barriers to trade through harmonization of trade procedures, including the exchange of information and handling of paperwork between different parties in the supply chain (Department for International Development [DFID], 2008).

The global objective of trade facilitation is to enhance smooth flow of trade across borders by ensuring faster, cheaper, and more foreseeable processes while at the same time observing strict compliance to set business regulations. Although the concept of trade facilitation may be broad in terms of its operational implications, according to Kieck (2010), there are four fundamental principles or pillars that define the concept. These include simplification, harmonization, standardization and transparency. World Customs Organization (WCO) (2010) further observes that the four pillars must be always observed if the objective of trade facilitation has to be achieved. However, these principles cannot be realized unless there is conscious collaboration among intergovernmental agencies monitoring and controlling cross-border movement of goods and services and human traffic (DFID, 2008). Therefore, border agency cooperation (BAC) acts as the underlying foundation upon which the success of trade facilitation can be defined. Among other requirements, mutual trust amongst all the relevant agencies at the border points would further increase viability of business transactions within their jurisdictions. Border agency cooperation further ensures that synergy is created to enhance policies and structures for managing trade at border points.

Although intergovernmental cooperation at the borders may not be a remedy to all trade hurdles, from the onset this move attempts to enhance efficiency and effectiveness in border management of trade where all the border control agencies create a common operational ground (WCO, 2010). Border agency cooperation further enables all the border control agencies to have a common objective where an integrated approach is used to achieve the set objective. Infrastructure, policy, manpower, technology, facilities, and processes remain key thematic areas for border agency cooperation such that specific needs of different stakeholders are effectively catered for in a more coordinated manner (Zarnowiecki, 2011). Yet, despite the need for working systems to enhance trade facilitation at border points, there is evidence that often there are lapses in various domains of trade management that make it difficult for coordinated flow of information, simplified controls, and cross-functional teamwork (World Trade Organization [WTO] (2011). Although different entities have different definitions for border agency cooperation, the bottom line is that it is very essential for smooth-running of coordinated border management and trade facilitation. The World Customs Organization (WCO), the European union (EU), the Work Bank, and the Organization for Security and Cooperation in Europe (OSCE) all have slightly different definition for border agency cooperation, but common among these definitions is the aspect of interagency collaborative efforts for easing trade at international borders (WCO, 2015).

In Africa, the Chirundu One-Stop Border Post between Zimbabwe and Zambia can be cited as a demonstration of cross-border management and trade facilitation. Apart from the traffic from Zambia to Zimbabwe, the border post also serves as trade gateway for Zambia with other African countries, including as an entryway to the seaport in South Africa. Initially, the border post had over 20 government agencies from both Zambia and Zimbabwe operating independently in handling different responsibilities. This situation led to increase of operational costs and disjointed decision-making, which together made it difficult to coordinate and facilitate trade in a more efficient way (DFID, 2008). However, the later consolidation of structures and streamlining of operations changed the situation for the better. The financial support of the border post by the Department for International Development (DFID), the Japan International Cooperation Agency (JICA), and the World Bank has since improved international trade across the Zambian borders. Yet, although there is improved level of border agency cooperation at Chirundu Border Post, there are still challenges occasioned by the two countries' difference in terms of policy and practice.

In the East African region, cross-border trade plays a critical role in the economic development of the partner states,

both within and outside of their borders. Effective management of border points encourages free movement of goods and services, hence improving the livelihood opportunities for the citizens of these partner states. However, due to unfair competition among the member countries and operational differences in other subsectors, such as tax administration, non-tariff barriers, and public health safety compliance standards among other aspects of trade. Joint border management and trade facilitation is not always an easy undertaking for the countries concerned (Kieck, 2010). The establishment of One-Stop Border Post (OSBP) at Namanga, just as an earlier one at Busia border, was anticipated to ease cross-border trading at all levels, including informal traders who mainly comprise of women and small-scale entrepreneurs (Kivuva & Magara, 2012).

Despite all these, there are a number of challenges that still face coordinated border management and trade facilitation at Namanga border point. For instance, the tax levies the East African Community (EAC) member states at the border is thought to be too high for the small-scale traders to afford hence forcing a number of them to operate outside the law (Njiwa, 2012). Despite some business analysts' view that the partner states are committed to tap into more partnership with the private sector organizations (PSOs) and the civil society organizations (CSOs) so as to enhance coordination and accelerate sustainable trade facilitation, there are still socio-economic and political cooperation hurdles that often appear to scuttle successes of general trade operations at the Namanga border.

1.2 Statement of the Problem

Despite the need for working systems to enhance trade facilitation at border points, there is evidence that often there are lapses in various domains of trade management that make it difficult for coordinated flow of information, simplified controls, and cross-functional teamwork (World Trade Organization, 2011). These lapses often lead to delays and smuggling at the border points (World Bank, 2012). Furthermore, despite the growing demand for coordination of all trade activities at the border by involving a multiagency approach for effective trade facilitation, competing interests by various key institutional players sometimes tend to scuttle these efforts (Moise and Sorescu, 2013).

Traders have suffered delays of up to three days at the Namanga border due to lack of synchronized checks by border agencies and having different tax regimes charged on goods (Luke Anami, 2021). World Bank indicated that such challenges in trade facilitation lead to an increase cost of doing business by 75%, thereby hindering intra-continental trade in African (EAC Press, 2018).

The main idea behind coordinated border management is to ensure that there is effective coordination of commercial activities by relevant agencies operating at the border for efficient and effective trade operations outcomes. In theoretical terms, various countries and trade entities have embraced CBM as their foundation for driving structural border reforms for more efficiency and effectiveness when it comes to better business outcomes (Kieck, 2010). Yet, in practice, agencies working at the border tend to work at cross-purposes hence failing to chart a common pathway for sustainable trade facilitation (Ndumbe, 2013).

Enhancement of international and interagency cooperation eventually leads to eradication of unnecessary bureaucracies in trade hence establishing a leveled market for all the players. CBM also ensures that there is harmonization of tariffs and removal of all unnecessary restrictions of the movement of goods and services across the border points. Despite the importance of CBM in trade facilitation at the border points, there are still challenges that need to be addressed. Lack of common principles of cooperation, coordination, border collaboration, coexistence, and communication among various key border control agencies may be a precursor for weak customs checks that could further derail meeting of international standards by transit goods (USAID, 2017). This study aims to assess whether coordinated approach by border control agencies at Namanga attains greater efficiencies of trade flow while maintaining compliance with government trading rules and regulations.

1.3 General Objective

The general objective of this study was to find out the effect of Coordinated Border Management on trade facilitation in Kenya, focusing on Namanga Border Post.

1.3.1 Specific Objectives

The study was guided by the following specific objectives:

i. To establish the effect of cooperation among border agencies on trade facilitation at the Namanga border post.

ii. To examine the effect of coordination between border agencies on trade facilitation at Namanga border post.

iii. To determine the effect of border collaboration between border agencies on trade facilitation at the Namanga border post

iv. To establish the effect of coexistence among border agencies on trade facilitation at the Namanga border post.

v. To examine the effect of communication among border agencies on trade facilitation at the Namanga border post.

1.4 Research Hypothesis

The research hypotheses were as follows:

Ho1: Cooperation among border agencies has no significant effect on trade facilitation at Namanga border post.

Ho2: Coordination between border agencies has no significant effect on trade facilitation at Namanga border post.

Ho3: Collaboration between border agencies has no significant effect on trade facilitation at Namanga border post.

Ho4: Coexistence among border agencies has no significant effect on trade facilitation at the Namanga border post.

Ho5: Communication among border agencies has no significant effect on trade facilitation at the Namanga border post.

1.5 Significance of the Study

Trade facilitation at border points is critical to a number of entities, including the government in terms of enhanced tax collection, traders in terms of reduced capital tied-up in logistics as well as increased reliability of shipments, and to various border control agencies there is better resource utilization through improved cross-border cooperation, sharing of intelligence, operational data, and resources. However, effective coordinated border management and trade facilitation may be influenced by other factors. This study may therefore be significant to the various agencies working at border points, the KRA, policy makers, and to the researchers and academicians.

The findings of this study are expected to help in enhancing knowledge among various government agencies about trade facilitation and how this can be improved at border points. Furthermore, the findings may help policy makers in coming up with relevant laws and regulations to enhance harmony in border management and trade facilitation across different border stations. It is also expected that the outcome of this study will be important in improving interstate trade relations through harmonization of structures and processes for trade where there are reduced costs for trade and streamlined movement of people and merchandise for quick destinations. The study is also expected to act as reference point for future studies and stimulate further research on border management and trade facilitation.

1.6 Scope of the Study

The study was an examination of the effect of coordinated border management on trade facilitation in Kenya, with a particular focus on Namanga Border. Specifically, the study sought to establish the effect of cooperation among border agencies on trade facilitation at Namanga border, the effect of coordination between border agencies on trade facilitation at Namanga border, and to determine how collaboration between border agencies affect trade facilitation at Namanga border. The target population was officers of border control agencies at Namanga such as: Immigration, Port Health, Customs Department of KRA, Kenya Bureau of Standards and, Kenya National Police.

2.0 Literature Review

2.1 Introduction

This chapter discusses relevant literature on border management and trade facilitation. The chapter also provides a brief focused discussion on the theories that guided the study. Further, empirical literature review and conceptual framework is presented in this chapter.

2.2 Concept of Trade Facilitation

Trade facilitation has been defined variedly by various international organizations. However, the concept has commonly been viewed as mainly focusing on procedures and controls related to moving of goods across national borders (Grainger, 2010). Such control strategies are critical in improving cross-border trade through reduction of associated costs and maximization of efficiency while ensuring that legitimate regulatory frameworks are not violated (Grainger, 2011). In this sense, the concept of trade facilitation can be viewed from four different but interrelated perspectives: simplification and harmonization of relevant rules and procedures, modernization of trade systems or structures, administration and management of trade and customs procedures, and the institutional mechanisms for safeguarding effective application of trade facilitation.

The concept of trade facilitation among the concerned stakeholders is founded on the need to modernize cross-border operations, heighten the spirit of national competitiveness, embrace trade facilitation principles as fronted by the World Trade Organization (WTO), and improve general security at the border points (WTO, 2011). Several developing countries and donors take trade facilitation as a central cog within 'aid-for-trade' and capacity building programs. Effective trade facilitation must be anchored on the principles of cooperation and coordination among various stakeholders. For instance, in Asia, Abu Dhabi and the United Arab Emirates (UAE) are the epitome of cross-border trading due to interstate cooperation (Zarnowiecki, 2011). However, due to what is viewed as high level of sovereignty, this trade relationship may not translate to gains for other countries in the region. The Federal Customs Authority (FCA) seems to wield more authority than other legal entities managing customs operations within their respective jurisdictions thereby creating frictions (DFID, 2008). The multiple agencies operating in strategic border zones often espouse conflicting administrative directives, and this creates border management challenges that end up hampering trade facilitation.

Trade facilitation is a key product of well-coordinated and studiously managed border activities where all stakeholders are actively involved. However, important to note is the fact that bureaucracies involved in coordination of multiple federal, state, and local government agencies as well as several grassroots stakeholders tend to cause the players to work at cross-purposes (WTO, 2011). Although several countries have tried to put in place strategies to address these challenges by, for instance, reducing customs tariffs, encouraging foreign investments and enhancing regional integration, this approach still seems to encourage hurdles. Some of these impediments are directly tied to disruptive and high administrative costs which together tend to hamper efficiency of modern international transport and logistics transactions (Grainger, 2011). According to World Bank (2010), such disruptions and high costs are effectively being addressed through trade

facilitation, especially when it comes to reducing unnecessary costs.

Trade facilitation may involve simple processes, such as ensuring that there is harmonization of office hours for employees in different stakeholder organizations, or more complex ones, such as redesigning how various government offices work so as to avoid duplication of roles and wasting of resources (Grainger, 2012). The approach to trade facilitation may also vary, where it could be 'top-up' or 'bottom-up' driven. The former approach is inclined towards implementation of international trade facilitation sanctions whereas the latter is often as a result of the drive to address operational challenges (WCO, 2007). Trade facilitation involves various categories of stakeholders, such as traders, transport operators, trade service providers such as banking and insurance institutions, transport infrastructure operators, and specialist service operators, such as shipping agents, and freight forwarders (WTO/OECD, 2010). What is critical here is the relationship existing between various players so that facilitation can be effective.

2.3 Concept of Coordinated Border Management

For the last three decades since the 1990s, there has been a growing demand for coordination of all trade activities at the border by involving a multiagency approach in order to facilitate effective trade (Doyle, 2011). Hence, the concept of Coordinated Border Management (CBM) was developed through the efforts of various stakeholders in trade at cross-border areas so that this could help to address any emerging issues to do with interstate trade. CBM is basically viewed as a critical concern to non-customs border agencies, policy makers, and international organizations (Haddal, 2010). The main idea behind CBM is to ensure that there is effective coordination of commercial activities by relevant agencies operating at the border for efficient and effective operations outcomes.

Figure 2.1 Continuum of Inter-governmental Integration

In practical terms, various countries and trade entities have embraced CBM as their foundation for driving structural border reforms for more efficiency and effectiveness when it comes to better business outcomes (Kieck, 2010). Some of the efforts by CBM have been directed towards active creation of standardized customs procedures through instituting joint control mechanisms and common offices for coordination of trade activities. Enhancement of international and interagency cooperation eventually leads to eradication of unnecessary bureaucracies in trade hence establishing a more or less leveled market for all the players. CBM also ensures that there is harmonization of tariffs and removal of all unnecessary restrictions of the movement of goods and services across the border points. Despite the importance of CBM in trade facilitation at the border points, there are still challenges that need to be addressed.

Further, absence of coordinated border management would imply duplication of roles by border control agencies, such as inspections and other relevant measures, which could cause delays of movement of people and their merchandises (Wanjiku et al, 2012). Inefficiency and unpredictability of border and transit procedures undoubtedly increase business costs in terms of warehouse rent, logistics costs and increased reliability of shipments. Too much bureaucracy at the border points due to duplication of roles among different border control agencies sometimes tends to increase non-compliance as traders use non-designated border crossing points to ship their wares thus denying the government revenue (WCO, 2015).

Eventually, lack of proper border coordination, cooperation, collaboration, or communication may lead some traders to completely give up their business pursuits hence adding to the problem of unemployment. Given the time lapse since this study was conducted, this proposed research is necessary to understand if the dynamics are any different now. Lack of proper coordination at the border points was a major impediment to the relatively small agricultural cross-border trade since most of the traders were discouraged by the huge business losses they sometimes incurred as a result of poorly managed trade facilitation. Despite these important findings, the study was carried out more than 12 years ago, hence the need for this current study.

2.4 Theoretical Review

The study was guided by the New Trade Theory and Export Base Theory. As further discussed in the subsequent subsections, each of these theories helped in explaining the variables used in the study.

2.4.1 New Trade Theory

The New Trade Theory was founded to explain the engagement in intra-industry trade by various countries on the continent (Krugman, 1979). The discovery of the theory was informed by the realization that a greater part of international commerce is led by intra as opposed to inter-industry. The theory stems from the assumption that consumers usually prefer a variety of products which are sold at different prices in the market. The multiplicity of firms selling different products in the market gives customers a wider range of choices hence scaling up the level of completion and making it possible for the companies to be innovative in an effort to increase their market base. Regarding the impact of coordinated border management on trade facilitation, the theory would imply that the higher the level of coordination and streamlining of structures and processes for trade, the more profits traders are likely to make (Krugman & Venables,1993). Business operations at the border sometimes fail to make anticipated maximized profits due to bureaucracies from numerous state agencies, with some of them having overlapping responsibilities due to poor cooperation and communication between key players.

According to New Trade Theory, there must be simplified systems at the border points where goods and services reach their intended destinations within a fairly short time so as to minimize costs in terms of warehousing and other related costs incurred whenever merchandises delay at entry border points. The theory further postulates that unless trade facilitation is properly and effectively done, high trade costs can have adverse effects on profit margins, especially in small economies, such as the Kenyan case. The argument is that small developing economies are mainly dominated by the agricultural as opposed to manufacturing sectors, which is the basis for unpredictable and low returns. This would imply that unless there is clear coordinated border management for effective trade facilitation, if most of the goods at the border points are unprocessed ones for instance, then it means that if there are unnecessary delays a country could make huge losses in terms of missed opportunities (Leichenko, 2000).

On the contrary, the New Trade Theory postulates that where economies are driven by the manufacturing industry, there are higher chances of good revenue for the country at the border points even if by any chance the systems are not effective enough when it comes to clearing cross-border movement of people and goods. The New Trade Theory further explains the intricacies of growing an economy where there are no varieties of products when it comes to intra-trade since that means that in the event that there is a problem clearing certain types of goods at the border, then it would result into stagnation in revenue streams. Conversely, if a country is dealing with multiple goods at the border points, then there are chances for tradeoffs even when there are hitches with regard to clearing some of the types of goods being traded in at the cross-border regions. Furthermore, according to the New Trade Theory, there are cost advantages by manufacturing firms due to their high likely big market share and production abilities that would tend to favour them even when they are experiencing some clearing and forwarding issues at the border points (Poon, 2000).

The New Trade Theory was relevant for this study as it provided clear perspectives on how to figure out the likely scenario when there is improper coordination of border management and trade facilitation both in terms of the country's ability to earn revenues from intrastate businesses and its capacity to expand its economy due to better clearing and forwarding systems at its border entry points. This study intends, as one of its specific objectives, to establish the impact of coordination between border agencies on trade facilitation. As a common modern principle of trade, simplified processes of business transactions are imperative in helping to cut on costs hence providing an opportunity for enhanced profits (Thirlwall, 2006). Ineffective trade procedures and systems that upset this balance would not be the desired route to pursue by most state agencies. Therefore, the theory provides a relevant background against which to discuss the influence of coordination, collaboration, cooperation, coexistence, and communication on trade facilitation at the border points.

2.4.2 Export Base Theory

Naturally, economic activities of most countries can be viewed in terms of exports and imports. The export base theory was founded by North (1957) on the reasoning that a country's economic growth is fundamentally accelerated through its produce for export which guarantees foreign exchange earnings. Through exports, a country expands its market for region growth in terms of output and employment creation. The export base theory further explains that based on the assumptions of elasticity of input supply and export demand, a country's economic growth would greatly be enhanced not only through direct exports, but also through Keynesian income multiplier. This means that the increase in export market for a given country or region would cause increase for demand of the local goods, hence further creating more income opportunities for the country or region (Leichenko, 2000). The theory further states that many countries' rate of economic growth is determined by their level of export markets for their local products. Furthermore, other subsidiary industries in a country are also influenced by that country's export market for its core produce as this ensures creation of employment for majority of the people, and improves political stability for the possibility of expanded businesses in different trade domains.

The theory further emphasizes the need for young economies to support one another in regional blocks to encourage economic expansion for the common prosperity of a given region. Countries must capitalize on technology and research to enhance the viability of their staple commodities and increase their competitive advantages in foreign markets. Based on this study, the export base theory makes a lot of sense as it emphasizes the need for trade facilitation at all levels if a country has to realize its economic potentials. Although the theory does not expressly dwell on the happenings at border points in terms of coordination of business transactions and facilitation, the emphasis on exports as the foundation of any country's economic development and growth is indirectly touching on systems and activities at border areas since exports must be handled at such locations. Increased demand on exports would increase the demand for the same commodities at local levels thereby increasing investment not only in the export industry, but also in other economic subsectors as well. Gradual expansion on investment on other activities in the economic ecosystem would eventually cause other upcoming products to access the foreign market.

According to Tiebout (1956), the export base theory is not only limited to the concept of export base, but encompasses other variables of the economy such as income growth as related with a wide range of economic activities. Furthermore,

since the exports and locally sold goods are interrelated in the economy, a country or region must optimize other local outputs. However, by and large, the export base theory continues to apply in regional economic planning and development, especially in the analysis of international trade development and growth (Brown, Coulson & Engle 1992). The idea that exports provide an engine of growth is also frequently applied in studies of the regional and national impacts of foreign export growth (Webster, Mathis & Zech 1990). This study examines the effect of coordinated border management and trade facilitation in Namanga border. Using the export base theory, the study was effectively guided in exploring the effect of cooperation and the impact of coordination among border agencies on trade facilitation in the study site. To this extent therefore, the theory was relevant for the study.

2.5 Empirical Literature Review

The study addressed three independent variables and critically analyzes their influence on trade facilitation at border points. Numerous studies have been carried out on these factors and revealed different outcomes. As discussed in subsequent subsections, cooperation among border agencies, coordination between border agencies and collaboration challenges between border agencies present various effects or impacts on trade facilitation.

2.5.1 Effect of Cooperation among Border Agencies on Trade Facilitation

Cross-border trade requires effective border management by various relevant offices so as to avoid unnecessary losses to the traders and the government that may be occasioned by the delay as a result of bureaucracies or noncooperation by different key players. A study by Ndumbe (2013) to examine the effect of cooperation among border management agencies on trade facilitation in Cameroon-Nigeria border revealed that agricultural cross-border trade which was dominated by women and small and medium scale dealers was often adversely affected in a situation where government authorities at the border did not expedite clearance to allow quick movement of their produce to their intended customer destinations. The study further indicated that female traders in the informal trading subsectors were more inconvenienced in their movement of the farm produce due to uncooperative customs officials at border points. Bogged by less supportive systems and driven by their desire to avoid any further businesses losses, some of the small-scale traders resorted to defying the legal trade regulations by using alternative routes to reach their intended market terminuses.

The USAID (2013) conducted another research on the relationship between border agencies' interrelations and trade facilitation among traders in Karonga market in Malawi-Tanzania border. The findings of the study indicated that men dominated formal export trade in most products, including value-added agricultural products and non-agricultural commodities. The study further noted that different government officials tended to listen to male traders more than female traders. The gendered differences in terms of access to support systems placed most women traders at disadvantaged positions, which sometimes forced them to use illegal means/routes to transport their goods. These findings were also echoed in another study in Rwanda where it was established that male traders at the border markets outnumbered their female counterparts in formal export trade by far (USAID, 2013). These studies further showed how different agencies at the border points treated traders based on gender biases. Overall however, the studies revealed that regardless of the gender or financial ability of the traders, there was need for harmonization of systems and processes to create a common ground for trade facilitation at the border points. This would help to minimize on losses and maximize on profits for the traders and eventually enable the government to earn good revenues in terms of taxes. Despite these important findings by USAID (2013), it was important to conduct this proposed study to review the situation in a different study setting and historical period.

A study was carried out by Njiwa (2012) on how cooperation among border agencies impacted trade facilitation at border points. The findings of the study indicated that the nature of business, experience and financial resources of traders also determined the level of and speed with which assistance was offered to various cross-border business dealers. An individual or company's trading history further determined the level of cooperation or assistance to be expected from border agencies. Other variables that were likely to be influenced by trading history of a trader when being facilitated at the border points included the profits generated or prominence of the trader, trading volume and strength, as well as the coping behaviour and practices in dealing with trade-related challenges. Experience of traders also counted significantly in terms of knowing who to talk to and other trading requirements that made clearance at the border less complicated. The study further noted that harmonized operations at the border points coupled with the traders' level of experience made it relatively easy to maneuver out of any challenges, including paying for licenses or catering for storages of goods and personal accommodation in the event that there were some delays at the clearance points. These findings clearly indicated that cooperation among various government agencies at the border is important in trade facilitation at the border. However, the study did not specifically focus on a single study site. Hence this current study was useful to critically evaluate the situation at Namanga border to find out if there are different dynamics that could come into play to explain the relationship between coordinated border management and trade facilitation at border points.

2.5.2 Effect of Coordination between Border Agencies on Trade Facilitation

A few studies have been conducted on coordinated border management and trade facilitation in Africa and elsewhere, but with different explanations as to the impact these have on countries' economic development. In Africa, cross-border trade is progressively increasing, thus offering thousands of households and individuals income and job opportunities. A study by Yang and Gupta (2007) on the state of cross-border trade in the region established that since the 1990s the regional integration initiatives on the continent have resulted into tremendous growth of trade across the borders. The study further revealed that cross-border trade has particularly improved following the expansion of intraregional agricultural trade where women and the poor smallholder farmers in rural areas are benefiting immensely from the proceeds of cross-border trade. The study however noted that despite the good progress witnessed in the growth of agricultural cross-border trade which is clearly driven by local communities in terms of production, consumption and interchange of the produce across borders, there are still a number of challenges that need to be addressed. .

Improved opening of cross-border trade in most countries in Africa has necessitated the need for removal of economic and regulation barriers to intrastate and intra-regional trade. In a study by the World Bank (2012) to understand how coordinated border management and trade facilitation at the border points can help in boosting cross-border trade in food staples, the study noted that removal of barriers to regional trade would greatly translate to more business opportunities for the traders and increase revenue base for the countries in terms of tax revenues. Furthermore, the study revealed that in order for the African countries to benefit more from cross-border trade, concerted efforts were required in management of activities at the border points so that harmonized systems and process are used to ease traffic and allow easy movement of goods and services. Better coordinated border management and trade facilitation would also reduce the cost of trade and improve profit margins for the traders and eventually encourage more investment for expansion of the economy. The study by the World Bank (2012) however did not focus on specific countries hence giving room for vagueness in their findings. This current study specifically addressed the research problem with reference to Namanga border point. Specific study site would enhance credibility of the findings for possible generalization to other areas with similar characteristics.

Progressively, various bilateral, multilateral and regional trade treaties have been encouraged by a number of African economies to facilitate flow of trade within the region and across the globe. This move is important for ensuring that there is liberalization of businesses, which would in turn increase completion and encourage expanded markets (Guthiga et al., 2011). Yet, for the trade policies to be translated into actions there is need for harmonized systems and processes to allow common perspectives on critical aspects of the trading process. Coordinated border management and trade facilitation at the border points provide a common ground for all key trade stakeholders to easily navigate through their challenges (Afrika & Ajumbo, 2012). This includes less-privileged players such as small scale and women traders who play a critical role in production, consumption and trading of agricultural commodities which are the mainstay the economy in most African countries. In a study by Ama et al (2013) to understand the dynamics of trade at cross-border areas in Africa, the findings revealed that as the debate for regional integration in trade intensifies, for this to be fully realized formal systems of trade must be instituted. Yet, there is evidence that a good proportion of intra-regional and cross-border trade is carried out using informal structures.

The sentiments in Ama et al (2013) study were echoed in a similar study by the United States Agency for International Development (USAID, 2013) which indicated that a number of cross-border businesses that especially involved women and other less-financially able groups were conducted informally (USAID, 2013). This scenario ended up increasing the cost of doing business hence denying profits to the traders and tax revenues to the government. The study by USAID (2013) further noted that agricultural trade which was mostly dominated by women was particularly affected by lack of proper coordination and trade facilitation at border points since their perishable produce often ended up rotting if they were not expeditiously cleared so that they could reach their intended destinations in good time. On the other hand, storage and boarding costs went high as clearance was being awaited for at some of the disjointed relevant offices at the border. The aforementioned literature is just representative of what happens to cross-border trade under circumstances where there is no effective coordinated border management and trade facilitation.

2.5.3 Effect of Collaboration between Border Agencies on Trade Facilitation

Coordinated border management has several advantages when it comes to trade facilitation at border points. This concept provides room for bringing together various government ministries and state agencies of several countries together to institute harmonized trade systems and processes for the common good of the trading parties and the consolidated offices of the governments in question. However, due to various challenges as a result of the involvement of several players in the coordination of trade activities under the arrangement of coordinated border management, it sometimes becomes difficult to bring together all the border agencies so that they can speak in one voice on cross-border trade matters (Ogalo, 2010). Studies have also indicated that different policy perspectives from the various countries involved at any given

time and border point, it sometimes proves untenable to push for certain trade rationalization agendas, and this could render some systems dysfunctional for a long time. Some of the challenges may also have to do with rallying all the stakeholders to identify common challenges and opportunities with regard to important operational and monitoring structures at the border. The failure to come up with a common approach to pertinent trade issues was likely to derail important procedures, such as effective inspections of goods and expeditious clearing of their movement to intended destinations (Kimanuka & Titeca, 2012).

Varied vested interests by the countries sharing a common border point have also been identified as an impediment to collaboration between border agencies for effective trade facilitation (Wanjiku et al, 2012). For the Namanga case, for instance, the one-stop border point (OSBP) on the Tanzania's side was funded by the JICA and on completion in 2014 due to some outstanding issues; the project was not immediately handed over to the government as earlier anticipated. Some of the issues revolved around water connection and supply of furniture. On the Kenyan side, the project was funded by African Development Bank (ADB). However, the delay of completion of the project complicated matters between the project contractor and the engineer as the latter decided to levy liquidated damages to the former for failure to honour their initial contractual terms. The standoff led to dragging of completion of the project. The exemplar of the Namanga OSBP is typical of could derail collaboration among different players at the border points, which could in turn impede cross-border trade facilitation (Wanjiku et al, 2012).

Studies have also revealed how misunderstandings between countries can lead to difficulty in fostering collaboration among agencies for easy trade facilitation. For instance, in Chirundu OSBP in the Zambia-Zimbabwe border, in terms of management of infrastructure, there is an agreement that Zambia as the host country would be responsible for maintenance and rehabilitation, supply and replacement of office equipment, fixtures, and furniture whenever it is necessary to do so; installation of new facilities as and when the case arises; security infrastructure; cleaning provisions; and IT infrastructure as well as settling of water and electricity bills among other related costs. However, these promises are not always fulfilled, hence leading to occasional standoff between the two countries over management of the facility (Kieck, 2010). The misunderstandings may naturally further strain the relationship between border agencies thereby making it hard for their collaboration and trade facilitation. But, since these challenges may not be cross-cutting in all one-stop border points, this proposed study would be necessary to understand the effect of collaboration challenges between border challenges and trade facilitation at border points.

According to the East African Legislative Assembly (EALA), the Namanga OSBP has been associated with a number of organizational challenges which some business analysts feel could jeopardize collaboration between various border agencies, both in Kenya and Tanzania. Some of the purported administrative challenges include lack of clear procedures for cross-border clearance or movement of local people, erratic power supply, lack of a joint border committee for reviewing financial needs for the operation of the border point, and lack of enough drive-through scanners for vehicles carrying goods, as well as lack of power points for plugging in refrigerated carriers of perishable and fresh farm produce. Other challenges are alleged to revolve around inadequate common space for hawkers do conduct their business, and inadequate knowledge and sensitization regarding the benefit of a common trade between Kenya and Tanzania and the entire East African Community (EAC) region (EALA, 2015).

2.5.4 Effect of Coexistence among Border Agencies on Trade Facilitation

Coexistence among border agencies implies maintain a good working relationship the makes it possible for effective flow of information in order to help in moving forward operations of trading systems (Arvis et al, 2016). Effective coexistence and communication among border agencies is geared towards empowering control agencies to maintain an active correspondence relationship with other key stakeholders in the trading chain. Coexistence and communication also ensure that control officers at work effectively through interagency exchange of information and crucial data to help business transactions at the border. According to Kieck (2010), there is no linear way of contextualizing coexisting and communication among border agencies and trade facilitation at the border points. However, proper coexistence may require offices of key players being located in closer proximity, which could necessitate 'one-stop' for border activities. Coexistence among border agencies may also be viewed in terms of common control zones where all key players in trade facilitation refer to as hared rulebook in as far as business operations at the border are concerned.

Furthermore, control zones must comprise of offices, inspection areas, and other related facilities which are located within shared physical territories or neighbourhoods (Atkin & Dave, 2015). Such a structure would ensure that immigration, import and export formalities or transactions among various agencies are handled seamlessly. This would further remove or lessen bureaucracies that tend to hinder faster service delivery at all levels which may eventually cause a lot of delays when it comes to the general trade facilitation (Carballo, Georg, & Christian, 2016). For instance, since inspection and searches of all cargoes and/or vehicles are generally supposed to be conducted in the presence of officers from both countries at the border, proper communication and coexistence would imply that there are no unnecessary disagreements that could derail or delay clearing and forwarding processes at the border (Duval, Nora, & Chorthip,

2016). Yet, there is evidence that sometimes crises are deliberately created by officials from either country operating at the border so as to achieve their sinister objectives (Ehrich & Axel, 2018).

There is also the question of simplification of customs duties so as to minimize the risks of duplication of roles by various agencies operating at the border. Establishment of customs clearance zones would also improve movement of people and clearance of goods so as to enhance the whole process of trading at the border areas. Cross-agency dialogue, coordination and integration remain critical in enhancing trade facilitation at the border areas (Carballo et al, 2016). Based on proper communication and the principle of coexistence, dialogue, coordination and integration tend to ensure that there are minimal, if any, cases of duplication of complying requirements by various players at the borders. Such measures help in improving transparency by ensuring that relevant information is readily and electronically available for those who may need it (WCO, 2017).

2.5.5 Effect of Communication among Border Agencies on Trade Facilitation

Availability of relevant information commonly contributes to reduction of trade costs. Studies have indicated that a number of international freight forwarding firms in Serbia experienced unwarranted delays at the border due to inadequate documented information, which ended up causing about 30% of all the delays experienced in border trade transactions (Alcantara et al, 2015). These findings concur with Moise and Sorescu (2013) who suggest that lack of proper communication and inadequate information among agencies were some of the common delaying factors when it comes to exports globally. These weaknesses ended up causing major delays at clearing points hence eating into profits and loss of tax revenues for the concerned countries.

In their efforts to cement and institute proper communication channels, a number of countries or agencies have actively tried to improve coordinated border management for the sake of effective trade facilitation. Streamlining and harmonization of business transaction procedures help border agencies to optimize their operations hence curbing the problem of roles duplication and in the process allowing efficient flow of goods and movement of people across the common border (Ehrich & Axel, 2018). Through open and transparent mechanisms amongst border agencies, there are high chances of rationalization of tax and customs administration, improvement in physical infrastructure at the customs crossing points, as well as introduction of automated customs systems to ease communication and flow of relevant information required for making critical decisions at particular levels of the trade facilitation chain (WCO, 2017). However, the impact of communication among agencies on trade facilitation at the border remains unclear, hence the need to explore it further.

Beyond information availability and sharing, some agencies however are reluctant to commit to consistency in coordination and sharing. Hence, this requires further interrogation of the whole broader question of communication and inculcation of sense of reciprocity in information sharing among different agencies tasked with trade facilitation at the borders (WTO, 2015). According to the United States Agency for Development (USAID, 2017), effective communication among agencies facilitating trade at the borders requires trained staff, up-to-date references, and constant touch with other key stakeholders as well as updated websites where the right and current information can always be picked with ease.

Although it is important to have the right information for decision making by different agencies dealing with trade facilitation at the border, the information should also be as consistent as possible. Hence, there is need for constant harmonization of information to ease communication amongst all the agencies involved. On this basis, intense border agency coordination and integration based on mutual recognition and respect should be critical be critical in guiding the process (Ehrich & Axel, 2018). Mutual recognition agreements further help to move forward the process in a smooth manner, while at the same time eliminating chances of duplications in certifications and issuance of any relevant documents for trade (Pelkmans et al, 2016).

2.6 Summary and Research Gap

A study was carried out by Njiwa (2012) on how cooperation among border agencies impacted trade facilitation at border points. His findings clearly indicated that cooperation among various government agencies at the border is important in trade facilitation at the border. The study did not specifically focus on a single study site, however. Hence this proposed study is useful to critically evaluate the situation at Namanga border to find out if there are different dynamics that could come into play to explain the relationship between coordinated border management and trade facilitation at border points. In a study by the World Bank (2012) to understand how coordinated border management and trade facilitation at the border points can help in boosting cross-border trade in food staples, the study noted that removal of barriers to regional trade would greatly translate to more business opportunities for the traders and increase revenue base for the countries in terms of tax revenues. The study revealed that in order for the African countries to benefit more from cross-border trade, concerted efforts were required in management of activities at the border points so that harmonized systems and process are used to ease traffic and allow easy movement of goods and services. Better coordinated border management and trade facilitation would also reduce the cost of trade and improve profit margins for the traders and eventually encourage more investment for expansion of the economy. However, the study by the World

Bank (2012) did not focus on specific countries hence giving room for vagueness in their findings.

2.7 Conceptual Framework

A conceptual framework presents a diagrammatical association between the independent and the dependent variables. In this case, the conceptual framework illustrates a relationship between cooperation, coordination, collaboration, coexistence, and communication of border agencies as independent variables, and trade facilitation as the dependent variable. Each of the variables was further measured using various relevant sub-variables, as demonstrated in figure 2.2.

Figure 2.2: Conceptual Framework

3. Research Methodology

3.1 Introduction

This chapter presents relevant research methods that were used to achieve the objective of the study. These include research design, target population, sample and sampling technique, data collection instruments, data collection procedures data collection instruments, pilot testing, data analysis and presentation, and measurement of the study variables.

3.2 Research Design

This study adopted causal research design. A causal research design investigates the cause-and-effect relationships. While focusing on analysis of a phenomenon, causal research explains the pattern of relationships between variables if specific causal evidence is found to exist. Explanatory research designs go beyond description and attempts to explain the reasons for the phenomenon. This study intended to understand the effect of coordinated border management on trade facilitation in Kenya, with specific focus on Namanga border. Hence, the causal research design was suitable to help in explaining how coordinated border management leads to trade facilitation.

3.3 Study Area

The study was carried out in Namanga border town which is the main entry point between Kenya and Tanzania. The town lies about 180 kilometers away from Nairobi and 120 kilometers away from Arusha, Tanzania. Presently, the busy border town is characterized by cumbersome and slow clearance procedures for goods moving between the two countries which often end up causing major delays and congestion as huge consignments wait for days before they are cleared at the border post. Delays in clearance at the border point imply that there are often inconveniences at every step in the trade chain hence eventually causing huge business losses to all the players, including governments of the two countries in terms of tax revenue losses. Namanga border area was suitable for this study given the huge delays experienced and the numerous cases of smuggling that often feature at the border town (Atkin and Dave, 2015).

3.4 Target Population

The target population for this study comprised of border control officers from key border agencies involved in clearing goods at Namanga border. It comprised of KRA Customs officers, staff of other border control agencies namely: KEBS, Port Health, Immigration, and Kenya National Police. The target population was obtained from various government agencies at the Namanga border area involved with cross-border trade facilitation.

Table 3.1: Target Population at Namanga OSBP Source: (Compiled by Researcher, 2020)

3.5 Sampling and Sample Size

Owing to the relatively small number of the target population, the study used the entire population (census) where all the research participants were involved in the study. These were grouped into various relevant categories, as stratified in table 3.1.

3.6 Data Collection Procedures

All necessary preparations were made before fieldwork began. Data collection authorization was obtained from KESRA before proceeding for fieldwork. Additionally, all the necessary materials for data collection were assembled, including printing enough blank questionnaires. The researcher then made initial visits to the selected border agencies to inform the management about the research, including providing clear explanations about the intention of the study. Fieldwork started by the researcher delivering blank questionnaires to the respondents and requesting them to complete the same before filled ones were picked on agreed dates. Where necessary, the researcher administered the questionnaires to the respondents through face-to-face interactions. This alternative approach was informed by the respondents' conveniences and preferences.

In the case of self-administered questionnaires, completed ones were collected later by the researcher. For the respondents who were not able to self-administer the questionnaire, the researcher booked appointments and scheduled time for visiting them so that the questionnaires could be administered. Throughout data collection process, all field protocols were adhered to, including strictly observing the principles of informed consent, confidentiality, and anonymity. These required that the respondents be properly informed about the objectives of the study so that they could make informed decisions regarding their participation in the study. Furthermore, the information shared by the respondents was kept in confidence and published anonymously without revealing their true identity so that they could be properly protected from any possible harm as a result of their participation in the research.

3.7 Data Collection Instruments

The study used a questionnaire for collecting primary data. The questionnaire comprised of close-ended questions to allow for fixed and elaborative responses from the respondents. A questionnaire was preferable for data

collection due to its ability for allowing uniform understanding of the questions as well as its convenience for collection, collation, and analysis of collected data. A questionnaire was also more convenient to handle during fieldwork thereby saving time during data collection.

3.7.1 Reliability of Data Collection Instruments

Reliability of a research tool denotes the extent to which it can produce consistent results after repeated trials (Gall, Gall & Borg, 2008). Cronbach's alpha (α) coefficient was used to test reliability of the questionnaire before it was taken to the field. This strategy was applied to measure internal consistency of the questionnaire where a value of 0.7 or more was used to determine high reliability of the research tool. The higher the score the more reliable the scale was considered to be. Hence, a value of 0.7-1.0 was deemed to indicate remarkably high reliability of the questionnaire.

3.7.2 Validity of Data Collection Instruments

Validity of a research tool implies its ability to measure what it was intended for and perform the anticipated function accordingly (Kothari, 2013). The questionnaire was tested for content and construct validity where expert opinion was sought from the researcher's supervisor and other faculty members from the university department who offered effective guidance and input on the study topic. This approach ensured that the questionnaire was revised well and accordingly.

3.8 Pilot Testing

Piloting is a fieldwork process that involves subjecting the research instruments to a few selected respondents prior to the actual data collection. This move provides an opportunity for improving the research instruments accordingly (Orodho, 2005). The questionnaire was tested for validity and reliability prior to being applied in the field for data collection. Pilot testing involved 6 respondents, which constituted the accepted 10% of the sample size. The respondents for piloting were selected from Internal Container Depot - Nairobi OSBP, to avoid any possible biases during the actual data collection. This process was important for helping to improve the research tool in terms of proper and objective interpretation of the questions in the questionnaire by all the respondents.

3.9 Data Analysis and Presentation

The study used quantitative which was analyzed using descriptive (frequencies & percentages) and inferential (multiple linear regression) statistics. Quantitative data was processed using Statistical Package for Social Sciences (SPSS) computer software and excel worksheets where the findings were presented using frequency distribution tables and narratives.

The multivariate regression model used was: $Y= \beta 0X0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5+ \varepsilon$

Where:

Y = Trade facilitation

X1 = Cooperation of border agencies

X2 = Coordination of border agencies

X3 = Collaboration among border agencies

X4 = Coexistence among border agencies

X5 = Communication among border agencies

ε = Error Term for the regression model

β0X0 = Beta Coefficient

β1, β2, β3, β4, β5 were the regression coefficients for the variables X1, X2, X3, X4, & X5 respectively. Overall significance of the model was tested using analysis of variance by use of F statistics at 95% confidence level whereas the coefficient of determination R2 was used to show the contribution of independent (predictor) variables on the dependent variable (outcome of the study).

3.10 Diagnostic Tests

Diagnostic tests were carried out to ensure that the model framework satisfied various econometric assumptions in order to derive reliable coefficient estimates. These included tests for normality, independence, multicollinearity, and homoscedasticity.

3.11 Ethical Considerations

Relevant authorization was obtained before proceeding for fieldwork. These included a letter from Moi University and a research permit from the National Commission of Science, Technology and Innovation (NACOSTI) authorizing fieldwork to be undertaken. During data collection, all the research participants were duly notified of their role in the study and all the research ethical protocols observed. The research team strictly observed the principles of confidentiality, anonymity, and informed consent so that the respondents were protected from any possible harm as a result of their participation in the study.

The nature and purpose of the study was fully disclosed to the respondents so that they could participate out of free will. Besides, their shared information was used only for the purpose of the study hence preserving the respondents' integrity. Further, the actual names of the respondents were not revealed at the time of publication of the research report hence respecting safety and privacy. Overall, ethical research ethics was strictly observed during the entire period of the research.

3.12 Measurement of Study Variables

The study measured five independent variables which included cooperation of border agencies, coordination of border agencies, collaboration challenges between border agencies, coexistence, and communication among border control agencies. Table 3.2 presents operational definition of variables and how they were measured.

Table 3.2: Operational Definition of Variables

4. Research Findings and Discussion

4.1 Introduction

This study sought to find out the effect of coordinated border management on trade facilitation at Namanga Kenya/Tanzania border. Specific objectives included to

establish the effect of cooperation among border agencies on trade facilitation, to find out the effect of coordination between border agencies on trade facilitation, to determine the effect of border collaboration between border agencies on trade facilitation, to understand the effect of coexistence among border agencies on trade facilitation, and to examine the effect of communication among border agencies on trade facilitation at the Namanga border. This chapter presents findings and discussions of these findings. The presentation is based on the specific objectives of the study.

4.2 Response Rate

All the five categories of the respondents participated in the study, and a summary of the response rate is presented in table 4.1.

Table 4.1 Response Rate

From table 4.1 above, out of the population of 140, 130 respondents managed to participate in the study whereby they filled and returned the questionnaires attaining a response rate of 92.85%. This response rate was considered to be representative enough to objectively answer the research questions.

4.3 Reliability Test Results

Reliability is the degree to which a research tool produces consistent results after repeated tests. Cronbach's Alpha test was used to test reliability of the research constructs and the findings are summarized in table 4.2.

Table 4.2: Reliability Tests of Variables

Based on the analysis in table 4.2, Trade Facilitation had a Cronbach's Alpha coefficient of 0.831, cooperation of agencies had a Cronbach's Alpha coefficient of 0.855, coordination of border agencies had a Cronbach's Alpha coefficient 0.821, collaboration between border agencies had a Cronbach's Alpha coefficient 0.869, coexistence among border agencies had a Cronbach's Alpha coefficient 0.836 while communication among border agencies had a Cronbach's Alpha coefficient of 0.835. According to Robins and Judge (2007), a coefficient of 0.7 or more indicates a high degree of reliability of the items in the questionnaire. Hence, the analysis in table 4.2 implies that all the five independent variables produced reliable information in determining the effect of coordinated border management on trade facilitation at Namanga Border, Kenya.

4.4 Respondents' Personal and Demographic Information

The respondents' personal and demographic information was collected based on their gender, age, level of education, and the period they had served for their respective companies. This data is presented and discussed accordingly in subsequent subsections.

4.4.1 Respondents' Gender

The respondents were asked about their gender. Table 4.3 and figure 4.1 provides a summary of these findings.

Table 4.3 Gender of Respondents

Figure 4.1 Distribution of Respondents by Gender

Based on the statistics on figure 4.3, 67 (51.5%) of the respondents were male while 63 (48.5%) of them were female. The results can be interpreted to mean that the number of either gender was representative enough to give unbiased information.

4.4.2 Respondents' Age

The respondents were asked about their age, and figure 4.2 presents a summary of these findings.

Table 4.4: Age of Respondents

Figure 4.2 Distribution of Respondents by Age

As indicated in figure 4.2, majority of the respondents were aged 31-40 years, totaling to 51 (39.2%). These were followed by those aged 41-50 years who totaled to 37 (28.5%), 20-30 years old amounting to 22 (16.9%), and finally those in the category of 51 years and above who accounted for 20 (15.4%) of the total. From the age distribution, a greater majority of the respondents were still in their prime career years. This may explain why they were likely to give objective information for the study which could possibly be used to address any likely challenges for the good of their careers and the organizations they worked for.

4.4.3 Respondents' Level of Education

The respondents were asked about their level of education to gauge their abilities in their career roles and responsibilities. Their level of education was measured in terms of secondary education, professional certificate, diploma, degree, and Masters Certificates. Figure 4.3 presents a summary of these statistics.

Table 4.5 Level of Education

Figure 4.3 Distribution of Respondents by Level of Education

From the statistics in figure 4.3, majority of the respondents were degree holders, totaling to 51 (39.2%). Those who had diploma amounted to 30 (23.1%), those who had Master qualification were 23 (17.7%), those with professional certificates were 17 (13.1%) while 9 (6.9%) had secondary education qualification. The respondent's level of education can be interpreted to imply that a greater majority of the respondents had the right qualifications for the job and therefore provided credible data for answering the research questions.

4.4.4 Respondents' Length of Service for Employers

The respondents were also asked about the number of years they had spent with their respective employers. This was important for understanding their level of knowledge about the workings of various organizations that were involved in the study. Statistics of this information are presented in figure 4.4.

Table 4.6: Respondents' Length of Service with Employers

Figure 4.4 Distribution of Respondents by Years of Experience with Employers

Figure 4.4 shows that majority, 73 (56.2%) of the respondents had worked for their employers for 11-15 years

with the least being 3 (2.3%) that had worked for 1-5 years. Further, 38 (29.2%) of them had worked for 16 years and above while 16 (12.3%) had worked for 6-10 years. This implied that they had a good understanding of the operation of their respective companies and therefore provided credible information for answering the research questions.

4.5 Descriptive Analysis of Independent Variables

The study featured the effect of cooperation, coordination, border collaboration challenges, coexistence among border agencies, and the effect of communication among border agencies on trade facilitation at the Namanga border. These factors are further discussed in details in the subsequent subsections.

4.5.1 Cooperation among Border Agencies and Trade Facilitation at Namanga Border

A number of propositions were used to measure the effect of cooperation among border agencies on trade facilitation at Namanga border. A summary of the findings was presented in table 4.7.

Table 4.7 Cooperation among Border Agencies and Trade Facilitation

Statistics in table 4.7 indicate that majority of the respondents represented by 57(43.8%) agreed that there is enhanced sharing of resources, such as scanners, among border control agencies at the Namanga one-stop border post (OSBP); majority of the respondents represented by 53(40.8%) disagreed that Border control agencies hold regular meetings together; majority of the respondents represented by 42(32.3%) agreed that there is enhanced sharing of information among border control agencies; majority of the respondents represented by 49(37.7%) agreed that Border control agencies often pursue common projects e.g. awareness programs for traders, customs agents, travelers to enhance faster clearance and compliance

4.5.2 Coordination between Border Agencies and Trade Facilitation at Namanga Border

A number of propositions were used to measure the effect of Coordination between Border Agencies on trade facilitation at Namanga border. A summary of the findings was presented in table 4.8

Table 4.8: Coordination between Border Agencies and Trade Facilitation

Statistics in table 4.8 indicate that majority of the respondents represented by 54(51.5%) agreed that there are streamlined mechanisms for submission of information by traders and customs agents to relevant offices between border agencies; majority of the respondents represented by 49(37.7%) agreed that there is enhanced sharing of processes e.g., verification, inspection, border patrol etc. by border control agencies; majority of the respondents represented by 60(46.2%) agreed that there is formal communication between border control agencies on a regular basis; majority of the respondents represented 41(31.5%) agreed that sometimes there is sharing of work among border control agencies

4.5.3 Border Collaboration between Border Agencies and Trade Facilitation at Namanga Border

The respondents were also asked about the effect of Collaboration between Border Agencies on trade facilitation at Namanga border, where different views were presented based on various propositions or test items for analysis of the effect of collaboration between border agencies on trade facilitation at the Namanga one-stop border point. The findings are summarized in table 4.9

Table 4.9: Border Collaboration between Border Agencies and Trade Facilitation

Statistics in table 4.9 indicate that majority of the respondents represented by 52(40.0%) agreed that there is sharing of responsibilities by border control agencies at Namanga OSBP; majority of the respondents represented by 48(36.9%) agreed that there is adequate manpower to enable each border control agency to fulfill their mandate; majority of the respondents represented by 58(44.6%) agreed that there is sharing of standard operating procedures among border control agencies; majority of the respondents represented by 50(38.5%) agreed that Border control agencies collaborate to ensure there is no congestion at the border.

4.5.4 Coexistence among border agencies and Trade Facilitation at Namanga Border

The fourth objective of the study was to understand the effect of coexistence among border agencies on trade facilitation at the Namanga border. The respondents' sentiments on this variable are summarized in table 4.10.

Table 4.10: Coexistence among Border Agencies and Trade Facilitation

Statistics in table 4.10 indicate that majority of the respondents represented by 49 (37.7%) agreed that Border control agencies at the Namanga border work autonomously when it comes to trade facilitation.; majority of the respondents represented by 53(40.8%))agreed that there is no formal communication between border control agencies at the border; majority of the respondents represented by 58(44.6%) agreed that Border control agencies develop policies and services independent of each other; majority of the respondents represented by 53(40.8%) agreed that Border control agencies have common concerns regarding clearance of cargo.

4.5.5 Communication among border agencies and Trade Facilitation at Namanga Border

The fifth objective was to examine the effect of communication among border agencies on trade facilitation at the Namanga border. Table 4.11 presents a summary of these findings.

Table 4.11 Communication among Border Agencies and Trade Facilitation

Statistics in table 4.11 indicate that majority of the respondents represented by 48(36.9%) disagreed that many border control agencies at Namanga have elaborate communication structures for interagency sharing of information; majority of the respondents represented by 57(43.8%) agreed that there is a clear policy requiring border control agencies at Namanga border to share information for enhancing trade facilitation.; majority of the respondents represented by 64(49.2%) agreed that Border control agencies at Namanga are keen on embracing the principle of interagency communication; majority of the respondents represented by 64(49.2%) agreed that Border control agencies get together to work on common interests.

4.5.6 Coordinated Border Management and Trade Facilitation at Namanga Border

In a general sense, the study was about the effect of coordinated border management on trade facilitation in Kenya, with a focus at the Namanga border. A number of test items were used to measure this variable, and as summary of the findings is presented in Table 4.12.

Table 4.12: Coordinated Border Management and Trade Facilitation

Statistics in table 4.12 indicate that majority of the respondents represented by 58(44.6%) agreed that there is predictability of time spent clearing goods at the border as a result of coordinated border management; majority of the respondents represented by 57(43.8%) agreed that Traders are familiar with cargo clearance procedures at the border; majority of the respondents represented by 54(41.5%) agreed that there is ease of sharing of information as a result of coordinated border management; majority of the respondents represented by 61(46.9%) agreed that there is reduction of trade costs incurred by traders at the border e.g., warehouse fees, as a result coordinated border management.

4.6 Inferential Analysis of Independent Variables

Besides descriptive analysis, inferential data analysis was carried out to establish the relationship between independent (predictor) variables and the dependent variable, or the outcome of the study.

4.6.1 Test for Assumptions of Parametric Tests

To begin with, tests for the assumptions made by the parametric tests were conducted. These included normality, homogeneity of variance, outliers test, and multicollinearity.

4.6.1.1 Test for Normality

In order to carry out linear regression, the assumption is that the error term (residual) must be normally distributed. Normality was tested using Histogram plots and the findings are presented in figure 4.5. For data to be normally distributed, the distribution of the standardized residuals peaks in the middle of the Histogram and is symmetrical about the mean.

Figure 4.5: Residual Plot for Normality Test

This results of the histogram plot confirmed the assumption on normality was not violated. Furthermore, Kolmogorov-Smirnov test was performed to determine whether the assumptions of a normal distribution of the data were violated (Math-Statistics-Tutor, 2010), and the results are presented in table 4.13.

Table 4.13: Kolmogorov-Smirnov Test

Table 4.13 shows the distribution of the standardized and unstandardized residuals of the study. Based on the Shapiro-Wilk and Kolmogorov-Smirnov tests, the null hypothesis is rejected if the p-value is less than 0.05 meaning the data is not normally distributed. At the same time, the null hypothesis is retained if the p-value is greater than 0.05 meaning the data is normally distributed.

As shown in table 4.13, the p values for both standardized ($p=200$, $p=0.54 >0.05$) and unstandardized residuals ($p=200$, $p=0.54 >0.05$) of the study based on Shapiro-Wilk and Kolmogorov-Smirnov tests were above 0.05. This indicates that the residuals are normally distributed, which agrees with the Histogram plot.

4.6.1.2 Linearity Test

The normal P-P plot was used to determine Linearity. The findings are presented in figure 4.6.

Figure 4.6 Linearity Test.

The results on figure 4.6 of the P-P Plot of Regression indicate that the predicted values spread along the line of the best fit. This was interpreted to mean that there was a linear relationship between the dependent variable and the independent variables.

4.6.1.3 Test for Multicollinearity

In parametric tests it is presumed that independent variables should not be highly correlated, implying that multicollinearity should not exist. Variance Inflation Factor (VIF) was used to test for multicollinearity, and the findings are presented in table 4.14.

Table 4.14: Multicollinearity Test

According to Sasa-Escudero et al (2009), when there is multicollinearity between the variables, the model tends to have a VIF of more than 10 or a tolerance level of less than 0.2. However, based on the statistics in table 4.14, all the independent variables did not have VIF values that exceeded 10. This meant that there was no multicollinearity in the dataset and hence the independent variables did not have any effect on each other. These findings therefore implied that the data was ultimately suitable for regression modeling.

4.6.1.4 Test for Homoscedasticity

Homoscedasticity refers to constancy of variance. For any linear regression analysis, the error terms are assumed to be the same across all values of the independent variables. This

was achieved through plotting a residual scatter plot for predicted scores and standardized residual values also known as errors of prediction. The findings of homoscedasticity test are presented in figure 4.7.

Figure 4.7: Scatter Plot of Standardized Predicted Values against Standardized Residuals

The assumption of homoscedasticity is met if the scores are randomly scattered about a horizontal line. Based on the findings in figure 4.7, the scores appeared to be randomly scattered. Hence, this indicated that the homoscedasticity assumption was not violated.

4.6.2 Pearson Correlation Analysis

The study applied Pearson correlation analysis to examine the strength of the relationship between coordinated border management and trade facilitation in Kenya. Specifically, the study sought to establish the strength of the relationship between cooperation among border agencies, coordination between border agencies, collaboration between border agencies, coexistence among border agencies, communication among border agencies (independent/predictor variables), and Trade facilitation at Namanga Border Post (dependent variable or outcome of the study). The study used 1%. Level of significance. According to Oso and Onen (2009), this level of significance gives the researcher chances of making the correct decision regarding the existence of a significant relationship between dependent and independent variables. The results of the Pearson correlation analysis are shown on Table 4.15

Table 4.15: Correlation Analysis

Based on the correlation statistics results on table 4.15, there was a positive and a significant correlation between the dependent variable Trade facilitation at Namanga Border Post and the independent variables: cooperation among border agencies($r=0.597$, $p=0.000$), coordination between border agencies($r=0.779$, $p=0.000$), collaboration between border agencies ($r=0.547$, $p=0.000$), coexistence among border agencies($r=0.687$, $p=0.000$) and communication among border agencies($r=0.765$, $p=0.000$).

4.6.3 Multivariate Analysis

A multivariate regression analysis was performed to establish the strength of the influence of the independent variables on the dependent variable (trade facilitation). Table 4.18 presents regression coefficients with P-values of individual variables used in the study.

4.6.3.1 Model Summary

The findings of the coefficient of correlation R and the coefficient of determination R square (R2) are presented in Table 4.16.

Table 4.16: Model Summary for Coordinated Border Management and Trade Facilitation

From the model summary above, the coefficient of correlation R is .874, indicating that there is a strong association between the independent (predictor) variables and the dependent variable (trade facilitation). The coefficient of determination R square (R2) was 0.763 adjusted to 0.754, can be interpreted to mean that 75.4% of all changes in Trade facilitation at Namanga Border Post was explained by the independent variables namely Communication among border agencies, Collaboration between border agencies, Cooperation of border agencies , Coexistence among border agencies and Coordination of border agencies. Hence, this further implied that apart from the predictor variables which were the subject of this study, there were other factors accounting for remaining 24.6% which influenced trade facilitation at the Namanga border post. But, since these factors were not within the scope of this study, future research should focus on them.

4.6.3.2 Analysis of Variance (ANOVA)

The analysis of variance of the regression model was carried out to test the good of fit of the model of the study. Table 4.17 presents the ANOVA findings.

Table 4.17 Analysis of Variance

From the ANOVA in table 4.17, the statistics further showed that the model was valid $F(5, 124) = 79.977$, $p=0.000<0.005$. Hence, this indicated that the regression model was significant in predicting the effect of independent variables (coordinated border management) on trade facilitation, the outcome of the study.

Table 4.18 Multiple Regression Analysis

Based on the statistics in table 4.18 above, the regression constant ($\beta 0$) was 1.112. This was interpreted to mean that when all factors are at zero, there would be a 1.112 Trade facilitation at Namanga Border Post. The beta coefficient for Cooperation of border agencies was $\beta 1=0.153$, $p=0.008<0.05$).This was interpreted to mean that when all other factors remain constant, a unit increase in cooperation among border agencies would lead to a 0.153 increase in Trade facilitation at Namanga Border Post.

The beta coefficient for Coordination of border agencies was $\beta 2=0.246$, $p=0.014<0.05$).This was interpreted to mean that when all other factors remain constant, a unit increase in for Coordination of border agencies would lead to a 0.246 increase in Trade facilitation at Namanga Border Post.

The beta coefficient for Collaboration among border agencies was $\beta 3=0.123$, $p=0.03<0.05$).This was interpreted to mean that when all other factors remain constant, a unit increase in Collaboration between border agencies would lead to a 0.123 increase in Trade facilitation at Namanga Border Post.

The beta coefficient for Coexistence among border agencies was $\beta 4=0.232$, $p=0.001<0.05$).This was interpreted to mean that when all other factors remain constant, a unit

increase in Coexistence among border agencies would lead to a 0.232 increase in Trade facilitation at Namanga Border Post.

The beta coefficient for Communication among border agencies was β5=0.331, p=0.000<0.05).This was interpreted to mean that when all other factors remain constant, a unit increase in cooperation among border agencies would lead to a 0.331 increase in Trade facilitation at Namanga Border Post.

From the beta coefficient results, the following model was established:

Y=1.112+.153X1+0.246X2+123X3 +0.232X4+0.331X5 + ε

where Y represents trade facilitation, and X1 stands for cooperation among border agencies, X2 coordination between border agencies, X3 collaboration between border agencies, X4 coexistence among border agencies, and X5 communication among border agencies. Taking all factors at zero, the constant was 1.112, implying the level of Trade facilitation at Namanga Border Post.

4.6.4 Hypotheses Testing

Hypothesis I: The hypothesis of the study was:

H01: There is no significant relationship between cooperation among border agencies and Trade facilitation at Namanga Border Post.

Ha1: There is a significant relationship between cooperation among border agencies and Trade facilitation at Namanga Border Post.

In testing this hypothesis, multiple regression analysis was done between cooperation among border agencies and trade facilitation and the results indicated that there was a significant influence of cooperation among border agencies on Trade facilitation at Namanga Border Post based on (p=0.008<0.05). Hence, the study rejected the null hypothesis (H01) and accepted the alternative (Ha1)

Hypothesis 2: The hypothesis of the study was:

H02: There is no significant relationship between coordination between border agencies and Trade facilitation at Namanga Border Post.

Ha2: There is a significant relationship between coordination between border agencies and Trade facilitation at Namanga Border Post.

In testing this hypothesis, multiple regression analysis was done between coordination between border agencies and trade facilitation and the results indicated that there was a significant influence of coordination between border agencies on Trade facilitation at Namanga Border Post based on (p=0.014<0.05). Hence, the study rejected the null hypothesis (H02) and accepted the alternative (Ha2)

Hypothesis 3: The hypothesis of the study was:

H03: There is no significant relationship between border collaboration between border agencies and trade facilitation at Namanga border post.

Ha3: There is a significant relationship between border collaboration challenges between border agencies and trade facilitation at Namanga border post.

In testing this hypothesis, multiple regression analysis was done between border collaboration challenges between border agencies and trade facilitation and the results indicated that there was a significant influence of border collaboration challenges between border agencies on Trade facilitation at Namanga Border Post based on (p=0.03<0.05).. Hence, the study rejected the null hypothesis (H03) and accepted the alternative (Ha3).

Hypothesis 4: The hypothesis of the study was:

H04: There is no significant relationship between coexistence among border agencies and trade facilitation at Namanga border post.

Ha4: There is a significant relationship between coexistence among border agencies and trade facilitation at Namanga border post.

In testing this hypothesis, multiple regression analysis was done between coexistence among border agencies and Trade facilitation at Namanga Border Post and the results indicated that there was a significant influence of coexistence among border agencies on Trade facilitation at Namanga Border Post based on (p=0.001<0.05). Hence, the study rejected the null hypothesis (H04) and accepted the alternative (Ha4)

Hypothesis 5: The hypothesis of the study was:

H05: There is no significant relationship between communication among border agencies and trade facilitation at Namanga border post.

Ha5: There is a significant relationship between communication among border agencies and trade facilitation at Namanga border post.

In testing this hypothesis, multiple regression analysis was done between communication among border agencies and trade facilitation and the results indicated that there was a significant influence of communication among border agencies on Trade facilitation at Namanga Border Post based on (p=0.000<0.05). Hence, the study rejected the null hypothesis (H05) and accepted the alternative (Ha5)

4.7 Discussion of Key Findings

The findings were processed based on five specific objectives of the study. These included the effect of cooperation, coordination, collaboration, coexistence, and communication among border agencies on trade facilitation. This subsection provides a discussion of key findings of the study in line with the specific objectives and alongside previous literatures on these subthemes.

4.7.1 Effect of Cooperation among Border Agencies on Trade Facilitation at Namanga Border Post

Indeed, descriptive statistics of this study indicated that there is Cooperation among Border Agencies on Trade

Facilitation. Based on the correlation statistics results, the study established that there was a positive and a significant correlation between trade facilitation and cooperation among border agencies as shown by (r=0.597, p=0.000). From the findings of the multiple regression analysis, the beta coefficient for Cooperation of border agencies was β1=0.153, p=0.008<0.05).This was interpreted to mean that when all other factors remain constant, a unit increase in cooperation among border agencies would lead to a 0.153 increase in trade facilitation at Namanga border point. Overall, the studies revealed that there was need for harmonization of systems and processes to create a common ground for trade facilitation at the border points. This would help to minimize on losses and maximize on profits for the traders and eventually enable the government to earn good revenues in terms of taxes.

A study by Njiwa (2012) on how cooperation among border agencies impacted trade facilitation at border points also emphasized the importance of working together by all the agencies to harmonize their systems for the sake of effective trade facilitation. An individual or company's trading history further determined the level of cooperation or assistance to be expected from border agencies. Under circumstances where there is no harmonization of trade facilitation systems at border points due to vested interests of various organizations, such a situation increased cases of corruption as some traders were forced to bribe their ways around in order to get favours. The study further noted that harmonized operations at the border points along with the traders' level of experience made it relatively easy to maneuver out of any challenges, including paying for licenses or catering for storages of goods and personal accommodation in the event that there were some delays at the clearance points.

Hence, the findings of this study, like other numerous past studies, emphasized the importance of cooperation among various government agencies at the border for trade facilitation at the border. Evaluation of the situation at Namanga border helped to reveal different dynamics that often come into play to explain the relationship between coordinated border management and trade facilitation at border points. The findings further cemented the need for all systems at the border point to work closely to make facilitate trade and enable business organizations to avoid huge losses unnecessarily and make profit.

4.7.2 Effect of Coordination between Border Agencies on Trade Facilitation at Namanga Border Post

From both the descriptive and inferential analyses, the study findings revealed that effective coordination between border agencies was critical for trade facilitation at the border points. Based on the correlation statistics results, the study established that there was a positive and a significant correlation between trade facilitation and coordination between border agencies as indicated by (r=0.779, p=0.000). From the findings of the multiple regression analysis, the beta coefficient for Coordination of border agencies was β2=0.246, p=0.014<0.05).This was interpreted to mean that when all other factors remain constant, a unit increase in for Coordination of border agencies would lead to a 0.246 increase in trade facilitation at Namanga border point.

Effective interagency coordination at the border points was critical for improved opening of cross-border trade among many countries, which also necessitated removal of economic and regulation barriers to intrastate and intra-regional trade. A study by the World Bank (2012) to understand the relationship between coordinated border management and trade facilitation at the border points revealed that there was a direct link between the two concepts. Improved interagency coordination can help in boosting cross-border trade barriers, thus creating more business opportunities for the traders and increasing revenue base for the countries in terms of tax revenues.

Furthermore, like the previous study by the World Bank (2012), this current study emphasized the need for enhanced formal interagency communication at the border points to boost trade and for the countries to benefit more from such arrangements. Better coordinated border management and trade facilitation would also reduce the cost of trade and improve profit margins for the traders and eventually encourage more investment for expansion of the economy. The current study at Namanga border point provided an update of how border coordination is critical in boosting business across numerous countries engaged in cross-border businesses. Guthiga et al (2011) noted that various bilateral, multilateral and regional trade treaties have been encouraged by a number of African economies to facilitate flow of trade within the region and across the globe through enhanced border management through effective coordination among various corporate players.

4.7.3 Effect of Collaboration between Agencies on Trade Facilitation at Namanga Border Post

Based on the correlation statistics results, the study established that there was a positive and a significant correlation between trade facilitation and collaboration between agencies as shown by (r=0.547, p=0.000). From the findings of the multiple regression analysis, the beta coefficient for Collaboration between border agencies was β3=0.123, p=0.03<0.05).This was interpreted to mean that when all other factors remain constant, a unit increase in Collaboration between border agencies would lead to a 0.123 increase in trade facilitation at Namanga border point. A study by Ogalo (2010) revealed that poor collaboration between border control agencies made it difficult for traders at the border to access the necessary services for timely movement of their goods and services. Similarly, a study by Kimanuka and Titeca (2012) noted that conflicting trade policies by various countries operating at border points made it extremely difficult for traders to access necessary services. The divergent

policy perspectives would imply that each major player at the border control points was likely to pursue its own individual agenda at the expense of a broader common agenda, hence derailing business transactions.

Furthermore, Wanjiku et al (2012) noted that there was also a likelihood that poor collaboration would likely lead to vested interests by the countries sharing a common border point have to be a serious impediment to collaboration between border agencies for effective trade facilitation if there was no official policy document clearly spelling out terms of engagement. For the Namanga case for instance, the one-stop border point (OSBP) on the Tanzania's side was funded by the JICA and on completion in 2014, due to some outstanding issues the project was not immediately handed over to the government as earlier anticipated. On the Kenyan side, the project was funded by African Development Bank (ADB). However, the delay of completion of the project complicated matters between the project contractor and the engineer as the latter decided to levy liquidated damages to the former for failure to honour their initial contractual terms. According to Wanjiku et al (2012), the standoff led to dragging of completion of the project. The exemplar of the Namanga OSBP is typical of what could derail collaboration among different players at the border points, which could in turn impede cross-border trade facilitation. The sentiments by earlier research about the effect of poor cooperation among different border control agencies on trade facilitation were clearly echoed in this current study.

4.7.4 Effect of Coexistence among Border Agencies on Trade Facilitation at Namanga Border Post

Based on the correlation statistics results, the study established that there was a positive and a significant correlation between trade facilitation at Namanga border post and coexistence among border agencies as shown by ($r=0.687$, $p=0.000$). From the findings of the multiple regression analysis, the beta coefficient for Coexistence among border agencies was $\beta4=0.232$, $p=0.001<0.05$).This was interpreted to mean that when all other factors remain constant, a unit increase in Coexistence among border agencies would lead to a 0.232 increase in trade facilitation at Namanga border point.

Coexistence among border control agencies is an important concept for enhancing businesses at the border points. Arvis et al (2016) defines coexistence among border agencies as maintaining a good working relationship between all players at the border points for enhancing effective flow of information to help in moving forward operations of trading systems. The findings by the current study were a reflection of the research by Kieck (2010) which established that effective coexistence and communication among border agencies is instrumental in empowering control agencies to maintain an active correspondence relationship with other key stakeholders in the trading chain.

Effective coexistence and communication also ensure that control officers at work effectively through interagency exchange of information and crucial data to help business transactions at the border. These sentiments were also replicated in a study by Atkin and Dave (2015) which noted that enhanced coexistence among border control agencies also enabled control zones comprising of offices, inspection areas, and other related facilities which are located within shared physical territories or neighborhoods to effectively serve the business community. Carballo, Georg, and Christian (2016) further revealed that such a structure would ensure that immigration, import and export formalities or transactions among various agencies are handled seamlessly. This would further remove or lessen bureaucracies that tend to hinder faster service delivery at all levels which may eventually cause a lot of delays when it comes to the general trade facilitation. Ehrich and Axel (2018) indicated that lack of good working relationships between various border control agencies was a recipe for sabotage amongst various entities which may end up ruining many cross-border businesses.

Coexistence among various border control agencies also led to simplification of customs duties so as to minimize the risks of duplication of roles by various agencies operating at the border. Establishment of customs clearance zones would also improve movement of people and clearance of goods so as to enhance the whole process of trading at the border areas. Like this current study, Carballo et al (2016) also noted that cross-agency dialogue, coordination and integration remain critical in enhancing trade facilitation at the border areas. Based on proper communication and the principle of coexistence, dialogue, coordination and integration tend to ensure that there are minimal cases of duplication of complying requirements by various players at the borders, hence expediting movement of goods and services in a more transparent business environment.

4.7.5 Effect of Communication among Border Agencies on Trade Facilitation at Namanga Border Post

Based on the correlation statistics results, the study established that there was a positive and a significant correlation between trade facilitation at Namanga border post and communication among border agencies as shown by ($r=0.765$, $p=0.000$). From the findings of the multiple regression analysis, the beta coefficient for Communication among border agencies was $\beta5=0.331$, $p=0.000<0.05$).This was interpreted to mean that when all other factors remain constant, a unit increase in cooperation among border agencies would lead to a 0.331 increase in trade facilitation at Namanga border point.

The outcome of this study was generally a reflection of findings by previous studies on this subject. For instance, Alcantara et al (2015) discovered that availability of relevant information commonly contributes to reduction of trade costs as different players are able to make appropriate key decisions for their business progress. The previous study further established that a number of international freight forwarding

firms in Serbia experienced unwarranted delays at the border due to inadequate documented information, which ended up causing about 30% of all the delays experienced in border trade transactions

Similarly, Moise and Sorescu (2013) noted that lack of proper communication and inadequate information among border control agencies commonly interfered with exports business globally, especially when it came to clearing of goods across borders. These weaknesses ended up causing major delays at clearing points hence eating into profits and occasioning huge losses of tax revenues to the affected countries. Ehrich & Axel (2018) noted that a number of countries or agencies have actively tried to improve coordinated border management for the sake of effective trade facilitation through effective communication channels. Streamlining and harmonization of business transaction procedures help border agencies to optimize their operations hence curbing the problem of roles duplication and in the process allowing efficient flow of goods and movement of people across the common border.

5. Summary, Conclusions, And Recommendations

5.1 Introduction

This chapter presents a summary, conclusions, and recommendations of the research as well as suggestions for future studies.

5.2 Summary of Research Findings

The study investigated the effect of coordinated border management on trade facilitation in Kenya, focusing on Namanga Border. Specifically, the study examined the effect of cooperation among border agencies, coordination between border agencies, collaboration between border agencies, coexistence among border agencies, and communication among border agencies on trade facilitation at the Namanga border. Each of these variables is summarized in the subsequent subsections.

5.2.1 Cooperation among Border Agencies and Trade Facilitation

Based on descriptive and inferential statistics results, the study established that cooperation among border agencies significantly influenced trade facilitation at the border. Based on the correlation statistics results, the study established that there was a positive and a significant correlation between trade facilitation and cooperation among border agencies as shown by ($r=0.597$, $p=0.000$). From the findings of the multiple regression analysis, the beta coefficient for Cooperation of border agencies was $\beta1=0.153$, $p=0.008<0.05$).This was interpreted to mean that when all other factors remain constant, a unit increase in cooperation among border agencies would lead to a 0.153 increase in trade facilitation at Namanga border point.

The study revealed that there was a challenge when it comes to sharing of information among border control agencies, as a number of them preferred to work alone. This was due to the possibility of some agencies gaining competitive advantage over the rest, especially based on crucial information they had for making critical operations decisions. It also emerged that although border control agencies often pursue common projects such as awareness creation programs for traders, customs agents, and travelers to enhance faster clearance and compliance, this practice was not as common as it would have been expected. This meant that there often cases of competition among such agencies hence leading to delays in crafting common operational rules where necessary.

5.2.2 Coordination between Border Agencies and Trade Facilitation

The study noted that coordination between border agencies had significant effects on trade facilitation at Namanga border. From both the descriptive and inferential analyses, the study findings revealed that effective coordination between border agencies was critical for trade facilitation at the border points. Based on the correlation statistics results, the study established that there was a positive and a significant correlation between trade facilitation and coordination between border agencies as indicated by ($r=0.779$, $p=0.000$). From the findings of the multiple regression analysis, the beta coefficient for Coordination of border agencies was $\beta2=0.246$, $p=0.014<0.05$).This was interpreted to mean that when all other factors remain constant, a unit increase in for Coordination of border agencies would lead to a 0.246 increase in trade facilitation at Namanga border point.

Enhanced coordination among different key players in coordinated border management played a critical role in facilitating trade at the border point. Although there was expected to exist streamlined mechanisms for submission of information by traders and customs agents to relevant offices between border agencies, this was not the case, hence derailing quick clearance exercises for the movement of both the people and goods at the border point.

5.2.3 Collaboration between Border Agencies and Trade Facilitation

Based on the correlation statistics results, the study established that there was a positive and a significant correlation between trade facilitation and collaboration between agencies as shown by ($r=0.547$, $p=0.000$). From the findings of the multiple regression analysis, the beta coefficient for Collaboration between border agencies was $\beta3=0.123$, $p=0.03<0.05$).This was interpreted to mean that when all other factors remain constant, a unit increase in Collaboration between border agencies would lead to a 0.123 increase in trade facilitation at Namanga border point

Despite collaboration among border agencies, the study also revealed that there was no guaranteed sharing of standard operating procedures among border control agencies, which made it difficult to always have a common agenda at the border point. The same applied when it came to border control

agencies collaborating to ensure there is no congestion at the border, with some of the agencies preferring to operate independently. This often-derailed smooth operation of transactions at the border point. Furthermore, despite existing of formal partnership between border control agencies, this partnership was not consistently demonstrated through common policy guidelines to enhance business at the border point.

5.2.4 Coexistence among Border Agencies and Trade Facilitation

Based on the correlation statistics results, the study established that there was a positive and a significant correlation between trade facilitation at Namanga border post and coexistence among border agencies as shown by ($r=0.687$, $p=0.000$). From the findings of the multiple regression analysis, the beta coefficient for Coexistence among border agencies was $\beta4=0.232$, $p=0.001<0.05$).This was interpreted to mean that when all other factors remain constant, a unit increase in Coexistence among border agencies would lead to a 0.232 increase in trade facilitation at Namanga border point.

The mixed reactions from the respondents on coexistence meant that a lot remained to be done for all the border control agencies to earn lasting respect for each other; a situation which was likely to encourage long-term coexistence for improved trade facilitation among all the business players in the cross-border businesses. Similarly, there are several challenges among border agencies at Namanga that make it impossible for coexistence for effective trade facilitation, with majority (59%) of the respondents holding this view.

5.2.5 Communication among Border Agencies and Trade Facilitation

Based on the correlation statistics results, the study established that there was a positive and a significant correlation between trade facilitation at Namanga border post and communication among border agencies as shown by ($r=0.765$, $p=0.000$). From the findings of the multiple regression analysis, the beta coefficient for Communication among border agencies was $\beta5=0.331$, $p=0.000<0.05$).This was interpreted to mean that when all other factors remain constant, a unit increase in cooperation among border agencies would lead to a 0.331 increase in trade facilitation at Namanga border point.

Communication among border control agencies was a critical element in helping all the relevant organizations to facilitate cross-border trade at the Namanga one-stop border post. Yet, there were a number of challenges affecting this factor. For instance, it emerged that not all border control agencies at Namanga have elaborate communication structures for interagency sharing of information, which usually makes it difficult to make common key decisions to help in trade facilitation across borders. Also, there were mixed reactions regarding whether there is no clear policy requiring border control agencies at Namanga border to share information for enhancing trade facilitation.

5.3 Conclusions

Drawing from the research findings, it was evident that coordinated border management has a significant effect on trade facilitation at Namanga border post. To a greater extent, there harmonization of the operations of key border control agencies for smooth facilitating of trade across the borders. Relating to specific aspects of coordinated border management for enhancing trade facilitation, a lot still needed to be done on cooperation among border agencies, and coordination between border agencies.

5.4 Recommendations

There is need for the government and other key stakeholders to adopt international standards and tools of trade, such as SAFE Framework of Standards and performance of Time Release Study (TRS), that will help the identify bottlenecks and the border and address them efficiently. This will create a harmonized business environment that enhances cooperation among border agencies on trade facilitation at Namanga border point.

Private sector, such as transporters, clearing agent, importers, and exporters etc., should strive to join the AEO programme which will accord them preferential customs facilitation in clearance and reduced time spent at service points.

The government should create a legal framework that allows collaboration of border control agencies. For instance, cross training of personnel of border control agencies, sharing of Standard Operating Procedures and policies on information sharing which will allow all border control agencies at Namanga one-stop border point to work seamlessly in order to enhance effectiveness of trade facilitation at the border point.

The government and other stakeholders in cross-border business should institute policy and operational structures that allow proper coexistence among border control agencies for more effective and efficient trade facilitation at the Namanga border.

All border control agencies must have a common communication mechanism for helping them to make harmonized key decisions for effective and efficient trade facilitation at the Namanga border. In addition, constant communication between government agencies and private sector will be instrumental to ensure that feedback provided by the private sector is integrated to improve operations.

5.5 Suggestions for Further Studies

A comparative study could be carried out on the effect of coordinated border management on trade facilitation in at least two border points. A study should also be conducted on how the government is addressing challenges of coordinated border management to improve trade facilitation.

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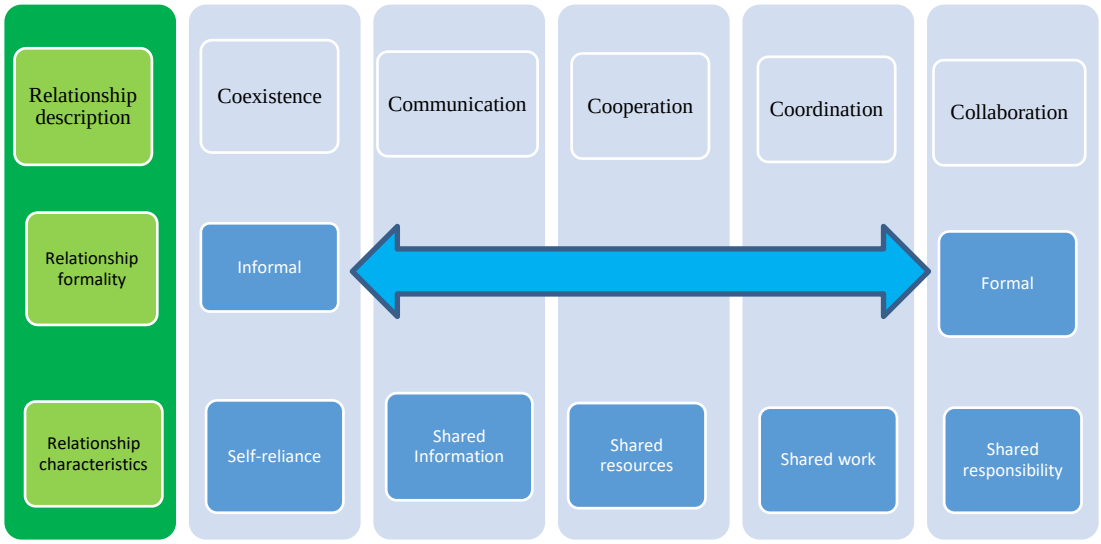

Figure 2.1 Continuum of Inter-governmental Integration
Source: Institute of Policy Studies (2008, p. 14)

Independent Variables

Cooperation of border agencies
- Shared resources
- Shared information

Coordination of border agencies
- Sharing work
- Streamlined submission of information
- Shared processes

Collaboration of border agencies
- Shared responsibility
- Shared Manpower

Coexistence among border agencies
- Shared interests
- Formal frameworks

Communication among border agencies
- Interagency communication structures
- Stakeholder willingness

Dependent Variable

Trade Facilitation
- Reduced cost of trade and time (speed, warehouse and logistics fees)
- Simplified procedures
- Predictability

Figure 2.2: Conceptual Framework

Table 3.1: Target Population at Namanga OSBP

Respondents	Target Population
KRA Customs Officers	60
KEBS Staff	20
Port health Staff	20
Immigration Staff	20
Kenya National Police	20
Total	**140**

Table 3.2: Operational Definition of Variables

Variables Independent Variables	Indicators	Data analysis techniques	Tools of Analysis
Cooperation of border agencies	• Shared resources • Sharing information	• Descriptive statistics • Inferential statistics • Content analysis	• SPSS & Excel
Coordination of border agencies	• Sharing work • Streamlined submission of information • Shared processes	• Descriptive statistics • Inferential statistics • Content analysis	• SPSS & Excel
Collaboration between border agencies	• Shared responsibility • Shared manpower	• Descriptive statistics • Inferential statistics • Content analysis	• SPSS & Excel
Coexistence among border agencies	• Shared interests • Formal frameworks	• Descriptive statistics • Inferential statistics • Content analysis	• SPSS & Excel

Communication among border agencies	• Interagency communication structures • Stakeholder willingness	• Descriptive statistics • Inferential statistics • Content analysis	• SPSS & Excel
Dependent Variable			
Trade facilitation	• Reduced cost of trade and time • Simplified procedures • Predictability of delivery times	• Descriptive statistics • Inferential statistics • Content analysis	• SPSS & Excel

Table 4.1 Response Rate

Respondents	Questionnaire Administered	Questionnaire Filled and retuned	Percentage
Total	140	130	0.92857

Table 4.2: Reliability Tests of Variables

Variables	Cronbach's Alpha
Trade Facilitation	0.831
Cooperation of border agencies	0.855
Coordination of border agencies	0.821
Collaboration between border agencies	0.869
Coexistence among border agencies	0.836
Communication among border agencies	0.835

Table 4.3 Gender of Respondents

Gender	Frequency	Percent
Male	67	51.5
Female	63	48.5
Total	130	100.0

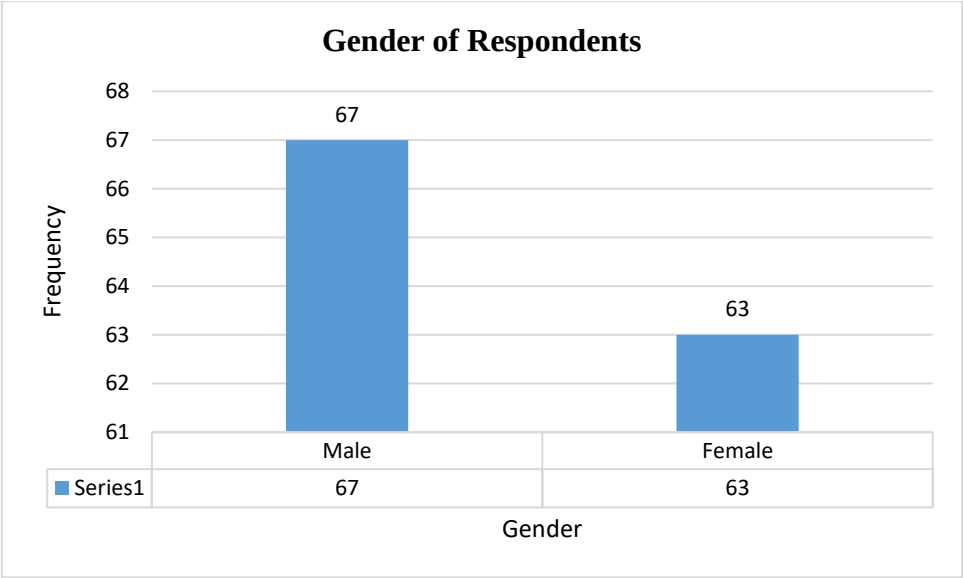

Figure 4.1 Distribution of Respondents by Gender

Table 4.4: Age of Respondents

Age	Frequency	Percent
20-30	22	16.9
31-40	51	39.2
41-50	37	28.5
51 and Above	20	15.4
Total	130	100.0

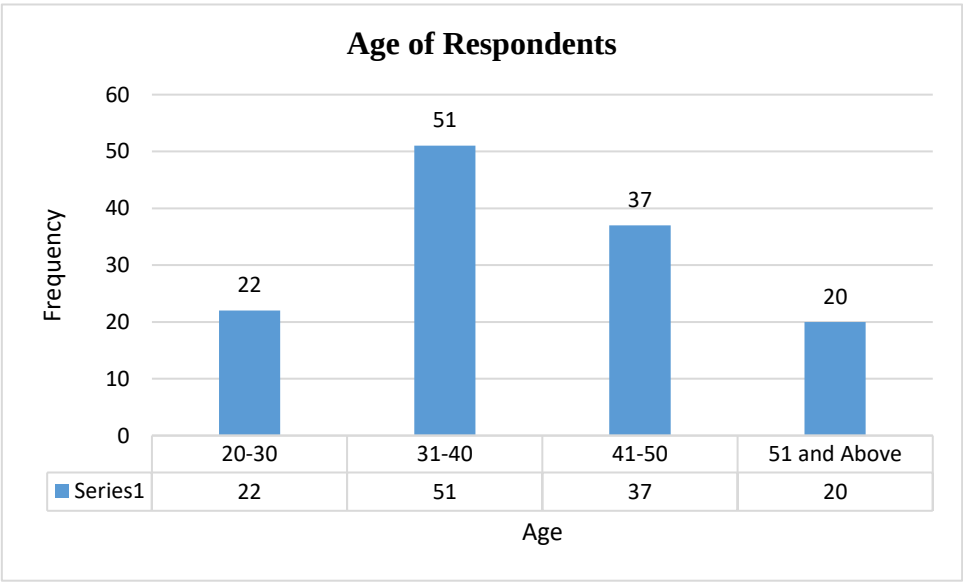

Figure 4.2 Distribution of Respondents by Age

Table 4.5 Level of Education

Level of Education	Frequency	Percent
Secondary education	9	6.9
Professional Certificate	17	13.1
Diploma	30	23.1
Degree	51	39.2
Masters	23	17.7
Total	130	100.0

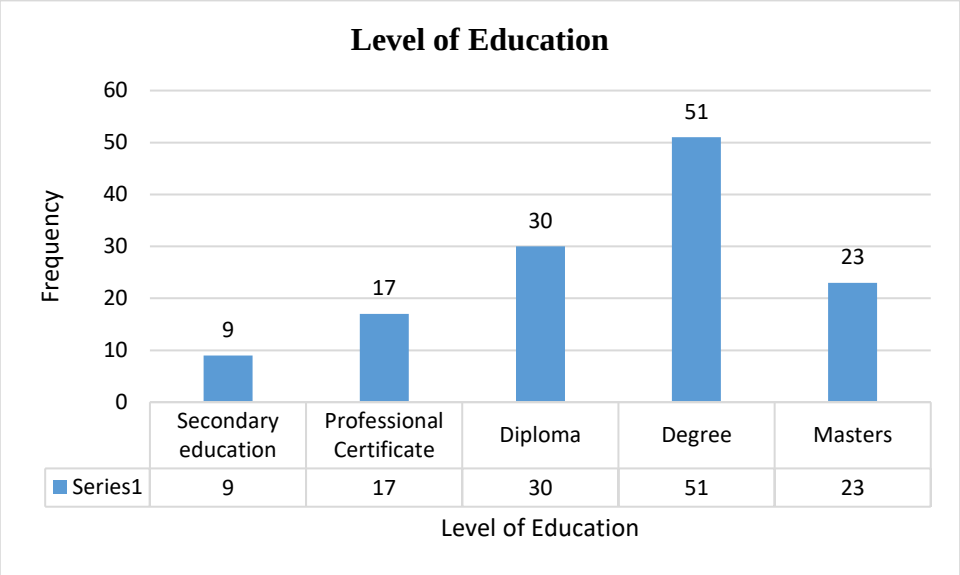

Figure 4.3 Distribution of Respondents by Level of Education

Table 4.6: Respondents' Length of Service with Employers

Length of Service with Employers	Frequency	Percent
1-5 years	3	2.3
6-10 years	16	12.3
11-15 years	73	56.2
16 years and Above	38	29.2
Total	130	100.0

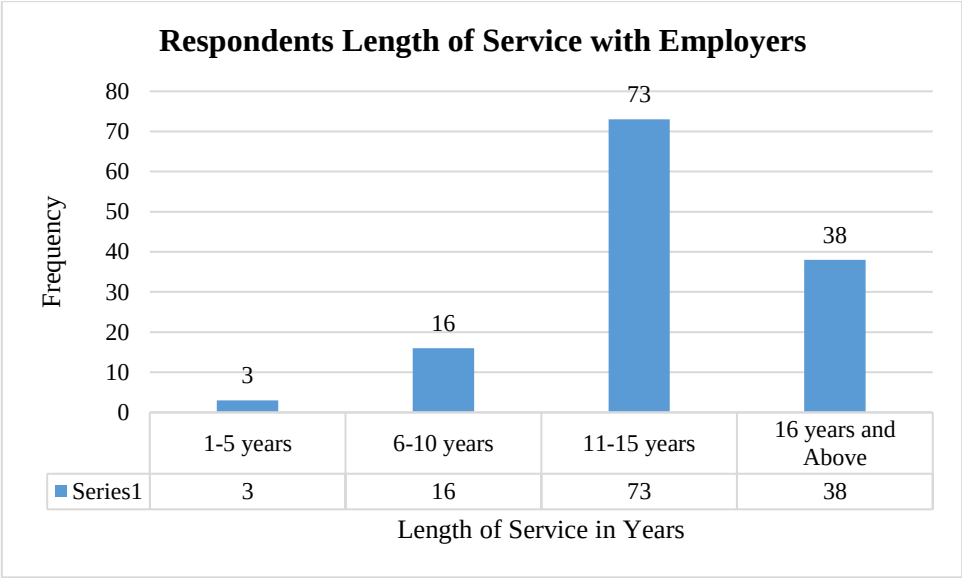

Figure 4.4 Distribution of Respondents by Years of Experience with Employers

Table 4.7 Cooperation among Border Agencies and Trade Facilitation

Test Items	*SD* *n (%)*	*D* *n (%)*	*N* *n (%)*	*A* *n (%)*	*SA* *n (%)*	*Total* *n (%)*
There is enhanced sharing of resources e.g. scanners, among border control agencies at the OSBP	21(16.2)	19(14.6)	12(9.2)	21(16.2)	57(43.8)	130(100)
Border control agencies hold regular meetings together	40(30.8)	53(40.8)	9(6.9)	16(12.3)	12(9.2)	130(100)
There is enhanced sharing of information among border control agencies	15(11.5)	25(19.2)	18(13.8)	42(32.3)	30(23.1)	130(100)
Border control agencies often pursue common projects e.g. awareness programs for traders, customs agents, travelers to enhance faster clearance and compliance	8(6.2)	25(19.2)	12(9.2)	49(37.7)	36(27.7)	130(100)

Table 4.8: Coordination between Border Agencies and Trade Facilitation

Test Items	*SD* *n (%)*	*D* *n (%)*	*N* *n (%)*	*A* *n (%)*	*SA* *n (%)*	*Total* *n (%)*

There are streamlined mechanisms for submission of information by traders and customs agents to relevant offices between border agencies	19(14.6)	24(18.5)	3(2.3)	30(23.1)	54(51.5)	130(100)
There is enhanced sharing of processes e.g., verification, inspection, border patrol etc. by border control agencies	10(7.7)	10(7.7)	27(20.8)	49(37.7)	34(26.2)	130(100)
There is formal communication between border control agencies on a regular basis	8(6.2)	13(10.0)	11(8.5)	38(29.2)	60(46.2)	130(100)
Sometimes there is sharing of work among border control agencies	16(12.3)	25(19.2)	13(10.0)	41(31.5)	35(26.9)	130(100)

Table 4.9: Border Collaboration between Border Agencies and Trade Facilitation

Test Items	***SD*** ***n (%)***	***D*** ***n (%)***	***N*** ***n (%)***	***A*** ***n (%)***	***SA*** ***n (%)***	***Total*** ***n (%)***
There is sharing of responsibilities by border control agencies at Namanga OSBP.	12(9.2)	13(10.0)	13(10.0)	40(30.8)	52(40.0)	130(100)
There is adequate manpower to enable each border control agency to fulfill their mandate	11(8.5)	10(7.7)	28(21.5)	48(36.9)	33(25.4)	130(100)
There is sharing of standard operating procedures among border control agencies	8(6.2)	17(13.1)	13(10.0)	34(26.2)	58(44.6)	130(100)
Border control agencies collaborate to ensure there is no congestion at the border.	12(9.2)	21(16.2)	13(10.0)	50(38.5)	34(26.2)	130(100)

Table 4.10: Coexistence among Border Agencies and Trade Facilitation

Test Items	***SD***	***D***	***N***	***A***	***SA***	***Total***

	n (%)	***n (%)***	***n (%)***	***n (%)***	***n (%)***	***n (%)***
Border control agencies at the Namanga border work autonomously when it comes to trade facilitation.	4(3.1)	20(15.4)	12(9.2)	45(34.6)	49(37.7)	130(100)
There is no formal communication between border control agencies at the border	14(10.8)	10(7.7)	7(5.4)	53(40.8)	46(35.4)	130(100)
Border control agencies develop policies and services independent of each other.	7(5.4)	17(13.1)	11(8.5)	58(44.6)	37(28.5)	130(100)
Border control agencies have common concerns regarding clearance of cargo.	12(9.2)	21(16.2)	4(3.1)	40(30.8)	53(40.8)	130(100)

Table 4.11 Communication among Border Agencies and Trade Facilitation

Test Items	***SD*** ***n (%)***	***D*** ***n (%)***	***N*** ***n (%)***	***A*** ***n (%)***	***SA*** ***n (%)***	***Total*** ***n (%)***
Many border control agencies at Namanga have elaborate communication structures for interagency sharing of information	5(3.8)	48(36.9)	11(8.5)	36(27.7)	30(23.1)	130(100)
There is a clear policy requiring border control agencies at Namanga border to share information for enhancing trade facilitation.	7(5.4)	10(7.7)	7(5.4)	49(37.7)	57(43.8)	130(100)
Border control agencies at Namanga are keen on embracing the principle of interagency communication.	2(1.5)	17(13.1)	1(0.8)	64(49.2)	46(35.4)	130(100)
Border control agencies get together to work on common interests	12(9.2)	10(7.7)	4(3.1)	64(49.2)	40(30.8)	130(100)

Table 4.12: Coordinated Border Management and Trade Facilitation

Test Items	***SD*** ***n (%)***	***D*** ***n (%)***	***N*** ***n (%)***	***A*** ***n (%)***	***SA*** ***n (%)***	***Total*** ***n (%)***

There is predictability of time spent clearing goods at the border as a result of coordinated border management	7(5.4)	10(7.7)	7(5.4)	58(44.6)	48(36.9)	130(100)
Traders are familiar with cargo clearance procedures at the border	8(6.2)	11(8.5)	6(4.6)	48(36.9)	57(43.8)	130(100)
There is ease of sharing of information as a result of coordinated border management.	7(5.4)	11(8.5)	13(10.0)	54(41.5)	45(34.6)	130(100)
There is reduction of trade costs incurred by traders at the border e.g., warehouse fees, as a result coordinated border management.	6(4.6)	10(7.7)	8(6.2)	45(34.6)	61(46.9)	130(100)

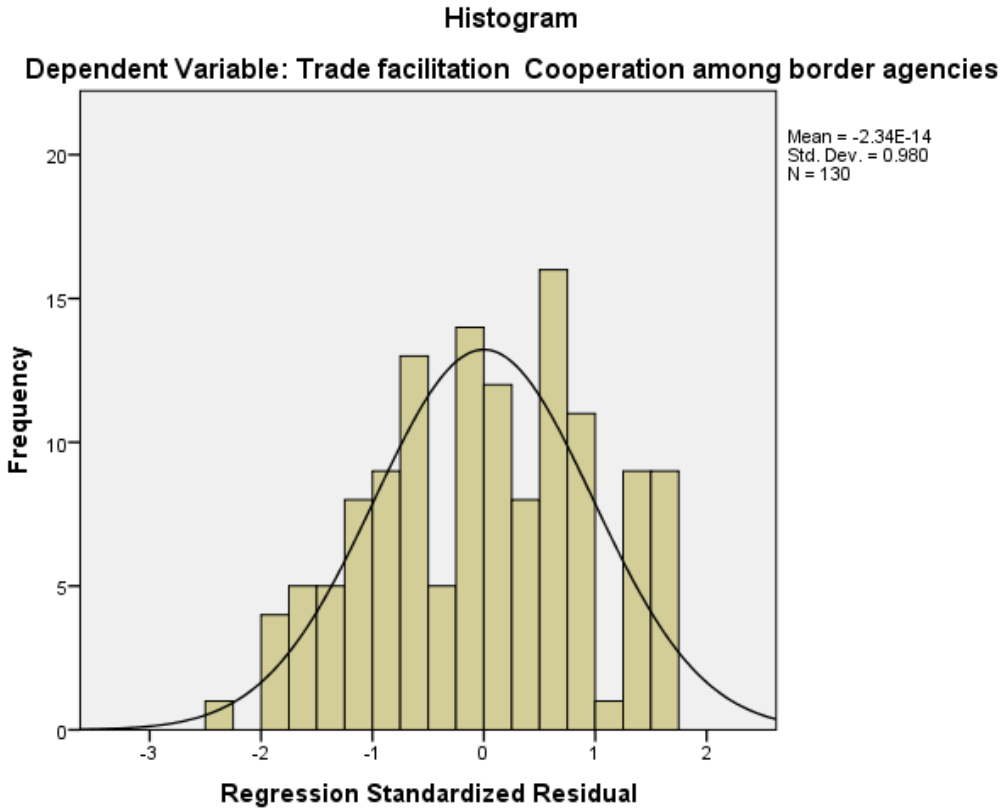

Figure 4.5: Residual Plot for Normality Test

Table 4.13: Kolmogorov-Smirnov Test

	Kolmogorov-Smirnov[a]	Shapiro-Wilk

	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.067	130	.200*	.977	130	.054*
Standardized Residual	.067	130	.200*	.977	130	.054*

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

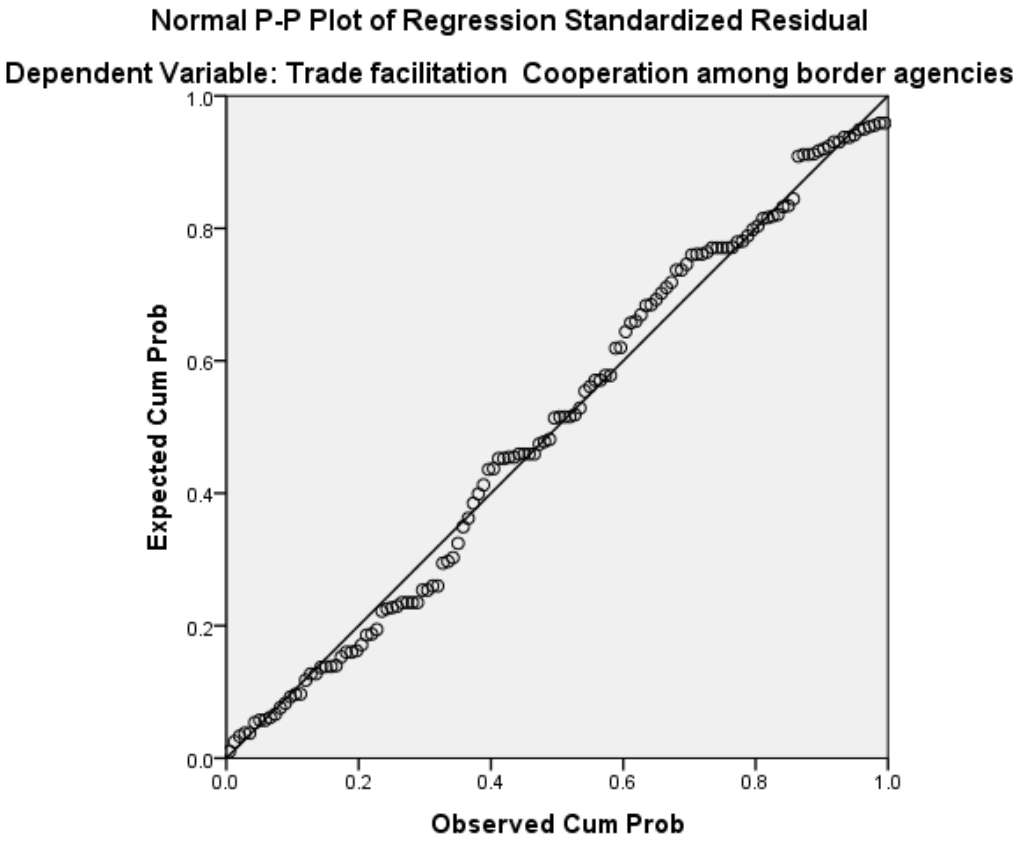

Figure 4.6 Linearity Test.

Table 4.14: Multicollinearity Test

	Collinearity Statistics	
	Tolerance	**VIF**
(Constant)		
Cooperation of border agencies	.589	1.698
Coordination of border agencies	.195	5.136
Collaboration between border agencies	.606	1.650

Coexistence among border agencies	.426	2.349
Communication among border agencies	.224	4.473

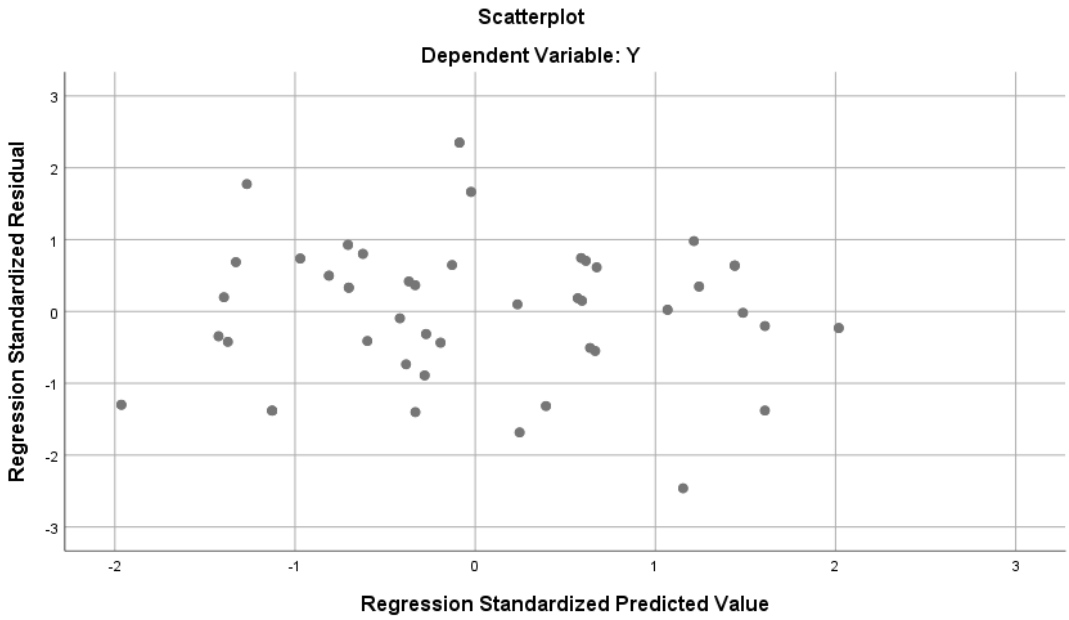

Figure 4.7: Scatter Plot of Standardized Predicted Values against Standardized Residuals

Table 4.15: Correlation Analysis

		Trade facilitation at Namanga a Border Post	Cooperation of border agencies	Coordination of border agencies	Collaboration between border agencies	Coexistence among border agencies	Communication among border agencies
Trade facilitation at Namanga Border Post	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	130					
Cooperation of border agencies	Pearson Correlation	.597**	1				
	Sig. (2-tailed)	.000					
	N	130	130				

Coordination of border agencies	Pearson Correlation	.779**	.416**	1			
	Sig. (2-tailed)	.000	.000				
	N	130	130	130			
Collaboration between border agencies	Pearson Correlation	.547**	.513**	.365**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	130	130	130	130		
Coexistence among border agencies	Pearson Correlation	.687**	.557**	.596**	.572**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	130	130	130	130	130	
Communication among border agencies	Pearson Correlation	.765**	.450**	.865**	.372**	.461**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	130	130	130	130	130	130

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.16: Model Summary for Coordinated Border Management and Trade Facilitation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.874[a]	.763	.754	.13238

Table 4.17 Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.007	5	1.401	79.977	.000[b]
	Residual	2.173	124	.018		
	Total	9.180	129			

Table 4.18 Multiple Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.112	.172		6.483	.000		
	Cooperation of border agencies	.132	.049	.153	2.695	.008	.589	1.698
	Coordination of border agencies	.134	.054	.246	2.485	.014	.195	5.136
	Collaboration between border agencies	.062	.028	.123	2.196	.030	.606	1.650
	Coexistence among border agencies	.149	.043	.232	3.461	.001	.426	2.349
	Communication among border agencies	.158	.044	.331	3.582	.000	.224	4.473

a. Dependent Variable: Trade facilitation at Namanga Border Post