Effects of the East African Community Single Customs Territory (EACSCT) on the Movement of Goods along the Rwandan Customs Posts

Vincent Nkundabaramye (Corresponding author)

Kigali Independent University ULK

P.O Box 2280 Kigali, Rwanda

Telephone: +250788212679

E-mail: vincentnkundabaramye@gmail.com

Abstract

Despite the factors making cross-border movement of goods complex and unpredictable, the latter plays a critical role in international trade. However, the EAC has introduced single customs territory to respond to the factors affecting the movement of goods and enhance trade within the region. This study then assesses the extent to which EACSCT affects the movement of goods across the Rwandan customs posts. The study used primary data collected on the perceptions of various trading agents on the implementation of the EACSCT, aspects of trade facilitation and movement of goods. Descriptive statistics and Multi-Level Model were used to analyse data and for estimates. The findings indicate that the EACSCT is successfully implemented along the Rwandan customs posts as rated good by various groups of trading agents. The level of trade facilitation is rated very high and the movement of goods has, to a large extent, been facilitated along the Rwandan customs posts. The findings also reveal that the EACSCT has significantly and positively affected the movement of goods along the Rwandan customs posts. These findings give an understanding that the EACSCT has significantly reduced or removed the barriers to the movement of goods by enhancing the level of trade facilitation. It is expected that 1-unit increase in the level of trade facilitation will make the barriers to the movement to fall by 1.133 points. Hence, calling for all border crossing agencies and stakeholders to work in synergy to continue streamlining the level of trade facilitation.

Keywords: East African community, single customs territory, movement of goods, customs post

1. Introduction

The creation of the East African Community (EAC) can be traced back to the colonial era when the colonial territories of Kenya and Uganda created a free trade area in 1921, which Tanganyika joined in 1923. In 1927, the three territories became a customs union (Mohabe, 2011). The union provided for free trade among the countries as well as a common external tariff, a common currency and common income tax regime. Common services for railways, posts and telecommunications and research were also established (Adedeji, 2002).

However, for several factors including political differences between the leadership of the community; perceived and real inequalities in the benefits each country was deriving from the community; the power of particular prominent political actors in partner states amongst other factors, the community collapsed in 1977. Mohabe (2011) highlights that the EAC collapsed almost a decade after it had been established.

The EAC was in the aftermath revived in 1999 to act as a regional inter-governmental organisation. The treaty for the establishment of the EAC was signed on 30th November 1999 and entered into force on 7th July 2000 following its ratification by original three partner states–Kenya, Uganda and Tanzania. The community has now expanded in terms of membership; and it comprises six member states, Kenya; Tanzania; Uganda; Rwanda; Burundi; and South Sudan. The EAC has, since its re-establishment, been committed to introducing trade facilitation practices among the partner states with the aim to reduce and gradually eliminate the barriers to trade and movement of goods. The community has so far operationalised customs union and common market.

In the framework of a fully-fledged customs union and common market, the partner states pledged to implement single customs territory (SCT). The implementation of the SCT along the Northern corridor started in 2013 while the full implementation of the EACSCT started in 2014. The purpose of the implementation of the EACSCT was to deepen and widen cooperation in political, economic and social spheres and to facilitate trade and movement of goods within the community. The SCT was also introduced in the EAC to improve trade environment and create business competitiveness within the community by removing internal border controls and documentation. Eberhard-Ruiz and Calabrese (2017) also argue that the SCT was piloted for a range of products with the aim of speeding up the clearance of goods at their arrival in Mombasa or Dar es Salaam and reducing the need for costly anti-smuggling measures such as bond payments on transit goods. As regard the implementation, existing literature shows that the SCT system has been almost fully implemented for maritime imports through the port of Mombasa to Rwanda (TradeMark East Africa, 2015).

This paper assesses whether the implementation of the EACSCT affects the movement of goods by reducing or removing the factors that make the movement of goods along the EAC logistics corridors unpredictable and more complex using the case of the Rwandan customs posts. This problem gets the roots from the existing literature which shows that despite the

implementation of different trade facilitation practices including SCT and recent improvements in customs procedures and harmonisation of documents in the EAC, corridor operations are still characterised by high costs and long transit times, which are estimated to reduce GDP growth by around 1% annually, especially for landlocked countries (OECD, 2017) like Rwanda. However, this paper is guided by 4 specific objectives: to determine the level of the implementation of the EACSCT, to examine the level of trade facilitation, to establish the extent to which the movement of goods has been facilitated and to assesses the extent to which the EACSCT affects the movement of goods along the Rwandan customs posts.

The rest of this paper is organised as follows: section 2 deals with conceptual review of literature, section 3 reviews empirical literature, section 4 presents the methodology, section 5 presents the results and discussions of the findings and section 6 presents conclusion and recommendations.

2. Conceptual Review of Literature

2.1 Concept of Single Customs Territory

A SCT is a stage in the full attainment of the customs union achievable through removal of trade restrictions including minimization of internal border controls on goods moving between partner states (EAC, 2014; Uganda Revenue Authority, 2016). The ultimate goal of a SCT is realization of free circulation of goods (EAC, 2014). The SCT has some important features which include: clearing goods at the first point of entry; one customs declaration made at the destination country; paying taxes at the point of destination when goods are still at the first point of entry; moving goods under a single regional guarantee bond from the port to destination; goods in transit/transfer are monitored by electronic cargo tracking system; interconnected customs systems; and minimized internal controls/checks (Uganda Revenue Authority, 2016).

In the context of the EAC, the implementation of SCT is largely concerned with the clearance and movement of goods (Programme for Infrastructure Development in Africa, 2016); and it is based on the fundamental operational principles of the EAC under Articles 6 and 7 of the treaty for the establishment of the EAC. The implementation of the EACSCT came up as the result of the 2012 summit of the heads of partner states. The implementation of the SCT along the Northern corridor started in 2013 while full implementation started in 2014.

The framework for the attainment of the EACSCT spells out that the aim of the EACSCT is lowering the cost of doing business and enhancing intra-EAC trade by integrating customs clearance processes and reducing internal border controls (preamble, paragraph 2). This framework also indicates that the main pillars of the EACSCT include free circulation of goods, revenue management and legal and institutional framework (preamble, paragraph 4), which were to be achieved through removing restrictive regulations and border controls on goods moving between the partner states.

The EACSCT is basically built on Destination Model of clearance. This means that the partner states are considered one customs territory whereby, a single declaration is required.

The goods entering the region must be cleared at the first point of entry and taxes are paid at destination before release. The goods destined to outside the region are cleared under the transit regime. Interestingly, the declarations are made electronically, and processed by the authorities from the country of destination prior to releasing the goods from the first port of call (TradeMark East Africa, 2016). Equally important, the SCT system allows clearing agents to deal with a single declaration, which can be done remotely from their own premises (TradeMark East Africa, 2015). As a result, many advantages were recorded not only to the trading community but also to the customs administration. The TradeMark East Africa (2015) indicates that the EACSCT removes the need for a physical presence for transit clearance at the port, the need for multiple transit bonds, and removes the need for additional transit clearance at internal EAC borders.

2.2 Concept of Movement of Goods

According to Woudsma (2001), the elements of freight movement and the actors involved are much more complex, which makes it a difficult subject to research. Such a complexity has made it a difficult concept to define throughout the literature. Hence, the literature records a shortage of the conceptualisation of the concept movement of goods. However, the concept "movement of goods" has been generally defined as the process by which goods are transferred from one place to another.[1] The movement of goods basically takes place through the various means such as air; rail; water; and road. In the context of international trade then, the movement of goods can be defined as the process of moving goods in/out of the country as imports/exports and goods in transit.

The movement of goods along the transport corridor from the place of origin to the destination and particularly international movement of goods encompasses some important steps. According to Grainger (2007), prior to export, those steps include packing, storage, haulage to the port, port entry and customs clearance, and loading onto a vessel. And once arrived in the port of destination, they include off-loading, storage, release from the port and customs clearance, delivery to the buyer, unpacking, after-sales services (for example, assembly, warranties and guarantees).

In addition, moving the goods across the borders involves various operations and services which, in one way or the other, make it complex. Hence, a call for a wide range of intermediaries to intervene at different levels of the process. Those intermediaries may include the transport operators, the trucking and haulage companies, the freight forwarders, the customs brokers, the banks and finance companies, the insurance companies, the port operators and stevedores, and the IT systems suppliers and many more others (Grainger, 2007).

The movement of goods along the transport corridor is also affected by the costs associated with moving the goods as well as the transit system. The latter comprises important

---

[1]Operation and Supply Chain Dictionary,
https://www.mbaskool.com/business-concepts/operations-logistics-supply-chain-terms/16288 -movement-of-goods.html, accessed on 26 May 2018.

components such as hard and soft infrastructure and institutions that enable the transit system to move goods and vehicles on the corridor (Arvis et al., 2011). Interestingly, those components need to be regularly upgraded to make the movement of goods along the transit system within the region more effective and responsive to the barriers to trade and movement of goods.

Furthermore, the movement of goods along the transport corridor is also influenced by the factors related to infrastructure management and quality (Marteau *et al.*, 2007) as well as the lack or breakdowns of necessary infrastructure and transport equipment. Moreover, for most developing countries rely heavily on tariff duties, they tend to develop redundant procedures to avoid fiscal loss (Marteau *et al.*, 2007); and this gives rise to additional inventories, emergency shipments, suspended operations, and lost markets (Arvis et al., 2011). Hence, resulting into unnecessary costs associated with cross-border movement of goods and end up by making the latter more complex and unpredictable.

2.3 Linkage between the EACSCT and Movement of Goods

The SCT in general and the EACSCT in particular is directly or indirectly linked to the movement of goods. As an element of a full-fledged customs union, the EACSCT promotes the movement of goods by streamlining controls and inspections across the customs and border posts and hence addressing existing barriers to the movement of goods. The EACSCT is built on Destination Model of clearance. As such, the partner states are considered one customs territory, whereby a single declaration is required. The goods entering the region must be cleared at the first point of entry and taxes paid at destination before release. The goods destined to outside the region are cleared under the transit regime, thus promoting the movement of goods across the region.

In addition, the declarations are made electronically and processed by the authorities from the country of destination prior to releasing the goods from the first port of call (TradeMark East Africa, 2016). The SCT system also allows clearing agents to deal with a single declaration, which can be done remotely from their own premises. This removes the need for a physical presence for transit clearance at the port, the need for multiple transit bonds, and removes the need for additional transit clearance at internal EAC borders (TradeMark East Africa, 2015). This, in turn, allows expediting movement of goods at the border by shifting controls by the border authorities at an earlier or later stage, thus reducing waiting times at the border (Lesser and Moisé-Leeman, 2009).

The EACSCT was also introduced to resolve some barriers pertaining cross-border movement of goods in the region like duplicated procedures; multiple security bonds; NTBs such as unnecessary roadblocks along the corridors; congestion at the borders; and complex clearance processes. In addition, the Uganda Revenue Authority (2016), indicates the SCT is also expected to affect the movement of goods by reducing turnaround time for transporters; reducing clearance time; reducing the cost of doing business, reducing administrative costs and regulatory requirements; and enhancing application of IT and data collection at the regional level amongst others.

Moreover, in a bid to ease monitoring cargo and ensure faster and efficient cross-border movement of goods along the transit corridors in the process of the SCT, electronic cargo tracking system was introduced. And this system was found advantageous in a number of ways. Apart from facilitating the movement of goods by reducing paperwork and enhancing use of technology and cargo safety, it generates timely information, hence helping predicting arrival of the goods.

3. Empirical Review of Literature

Existing literature contains few empirical studies which address the level of implementation and the effects of the EACSCT across the partner states in general and more specifically across Rwanda. The study by the TradeMark East Africa (2015) reveals that the SCT system has been almost fully implemented for maritime imports through the port of Mombasa to Rwanda, with only a small number of goods still cleared under the old system.

Another study by the TradeMark East Africa (2016) also shows that all intraregional trade goods between Kenya, Burundi, Uganda, and Tanzania are cleared under the SCT scheme, while products traveling along the central corridor, from Tanzania to Rwanda are fully rolled out under the SCT. As a result, this has reduced the number of declarations and removed duplicate processes at the point of entry and at final destination in the EAC and simplified the administrative burden of the transaction for about 80% of goods imported through one country and destined for another (TradeMark East Africa, 2016).

The implementation of the EACSCT is also reported to have reduced clearance time from Mombasa to Uganda from 18-22 days to 4-6 days, Mombasa to Rwanda from 22 days to 6 days, Dar es salaam to Kigali/Bujumbura from 18–21 days to 3-4 days and reduced turnaround times for transporters from 1 to 3 round trips from Mombasa to Kampala/Kigali in a month and 2 to 4 round trips per month from Dar es Salaam to Kigali (EAC, 2016). The EACSCT has also resulted into time and cost saving. Before the rollout of SCT, document preparation could take 10 days on average but with SCT procedures, it takes 1 day; thus a time saving of 9 days. Similarly, declaration cost has reduced from USD 360 to just USD 36; thus a cost saving of USD 300 per declaration. Time and cost for clearance of a container have also reduced from 33 days at a cost USD 3375 to 7 days at a cost of USD 1,731, thus a time saving of 26 days and a cost saving of USD 1,644.[2] Besides, a number of customs declarations has dramatically reduced by 90%.[3]

---

[2] OECD-WTO 2017 Aid for Trade - Case Story Template, SurveyMonkey. Available at: https://www.oecd.org/aidfortrade/casestories/casestories-2017/CS-79-TMEA-Uganda-Revenue-Authority-customs-systems-enhancement-programme.pdf. Accessed on November 14, 2018.

[3] OECD-WTO Public Sector Case Story Template. Available at:

https://www.oecd.org/aidfortrade/casestories/CaseStory2015_06_Uganda_TradePolicies.pdf Accessed on May 28, 2018.

The implementation of the EACSCT also affected doing business in the region. The World Bank Group (2019) revealed in Doing Business report 2019 that Rwanda and Uganda reduced the time required to export and import by implementing the SCT. Moreover, Eberhard-Ruiz and Calabrese (2017) revealed that there has been improvements in time taken to move goods within the region as a result of the SCT. For instance, time taken for moving goods between Nairobi and Kampala has reduced from 10 days to 5 or 7 days and from 7 days to 2 or 3 days between Kampala and Kigali.

However, while most empirical studies have confirmed the improvements in trade facilitation as a result of the introduction of the EACSCT, no study has specifically addressed the effects of the EACSCT on the movement of goods in the EAC in general or in either of the partner states in particular. Hence, this paper seeks to address existing knowledge gap by providing a comprehensive assessment of the effect of the EACSCT on the movement of goods along the Rwandan customs posts. Equally important, this paper embraces a mixed approach (qualitative and quantitative approaches) with multi-level model as a holistic approach to assess the extent to which the EACST affects the movement of goods along the Rwandan customs posts. Hence, this new approach of methodology also substantially contributes to the existing empirics.

4. Methodology

4.1 Research Design, Population and Sampling Techniques

The EAC is composed of six partner states namely, Kenya; Uganda; Tanzania; Burundi; Rwanda; and South Sudan. However, the study was conducted in Rwanda. The latter shares borders with Uganda in the North, Tanzania in the East, Burundi in the South and Democratic Republic of Congo in the West. Nevertheless, the study focuses on the Rwandan customs posts found at the common borders of Rwanda and other EAC partner states. The study adopted descriptive research design with mixed approach (qualitative and quantitative). The population of the study comprises different trading agents namely traders, transporters, freight forwarders and clearing agents.

As regard sampling, stratified sampling technique was adopted. This means that the population elements were grouped into 4 groups of trading agents that are individually more homogeneous than the total population. Purposive sampling technique was then used to select the sample that is representative of each group of trading agents. Thereafter, the fact that the population was not certain in terms of number, the formula proposed by Daniel and Cross (2013) to determine the sample size when sampling is from an unknown population, or when sampled population is large enough was adopted.

$$n = \frac{Z^2 pq}{d^2}$$

Whereby, n = sample size

Z = the value on the Z Table at 95% confidence level =1.96

d = desired level of precision or sampling error = 5% or 0.05

p = Variability of the population estimated at 10% or 0.1

q = 1-p = 0.9

$$n = \frac{(1.96)^2(0.1)(0.9)}{(0.05)^2}$$

$$= 138.29 \quad \sqcup \quad 139$$

A total number of 139 trading agents comprising 49 traders; 30 transporters; 30 freight forwarders; and 30 clearing agents was selected as sample size. Uneven distribution of respondents across the groups of trading agents is attributed to the fact that the size of the population from which the respondents were sampled was also uneven across the groups. It is estimated that the group traders (importers, exporters and both) has a large number of population, while the population size of other groups is estimated to be approximately the same.

4.2 Data Collection Methods, Reliability and Normality

In order to collect data, a questionnaire comprising five-point Likert scale items was administered to the respondents. The questions were grouped into 4 parts. Part 1 collected demographic information of respondents; part 2 collected information on the level of the implementation of the EACSCT across the Rwandan Customs posts; part 3 collected data on the perceptions of various trading agents on the level of trade facilitation along the Rwandan customs posts; and part 4 gathered information on the perceptions of various trading agents on the movement of goods along the Rwandan customs posts. As far as reliability is concerned, data collected were tested for internal consistency reliability using Cronbach's Alpha. This was found to be equal to 0.872 (refer to Table 1), hence acceptable as recommended by George and Mallery (2003). Factor analysis scoring for items was, on the other hand, used to ensure validity. This helped to restructure the questionnaire after finding out the scores of different items in the questionnaire. The items with less than the acceptable score or value of 0.3 were deleted from the questionnaire to ensure validity. As regard normality, Shapiro-Wilk and Kolmogorov-Smirnov tests were performed and their results were found to be greater than 0.05. Thus, providing strong evidence that data were approximately normally distributed.

Table 1. Test for Internal Consistency Reliability

Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
Items capturing the extent to which the movement of goods has been facilitated along the Rwandan customs posts	.824	.820	10
Items capturing the level of trade facilitation across the Rwandan Customs posts in the framework of the EACSCT	.829	.832	16
Overall Survey Questionnaire Cronbach's Alpha	. 864	.872	26

Source: Compiled from Field Data, 2018

Data Analysis and Estimation Methods

For the analysis of data, the study adopted descriptive statistics and multi-level model for estimations. Descriptive statistics such as mean, standard deviation, 95% confidence interval for mean and minimum and maximum means were used to determine the level of the implementation of the EACSCT, to establish the level of trade facilitation and to determine the extent to which the movement of goods has been facilitated along the Rwandan customs posts. Multi-level model was, on the other hand, applied to estimate the extent to which the EACSCT affects the movement of goods across the Rwandan customs posts. However, before the analysis, data collected were quantified by computing the average scores of the relevant items using Statistical Package for Social Sciences (SPSS).

It is also important to mention that in order to estimate the effects of the EACSCT on the movement of goods along the Rwandan customs posts, the following hypotheses were formulated and tested: Null hypothesis states "the EACSCT has no effect on the movement of goods across the Rwandan customs posts". Alternative hypothesis states "the EACSCT has significant positive effects on the movement of goods across the Rwandan customs posts", given that the relationship between the EACSCT (X) and the movement of goods (Y) would be moderated by the level of trade facilitation (W). As such, the following models were employed: null model (1), random intercept and fixed slope model (2), random intercept and slope model (3), and cross-level interaction model (4).

$$y_{ij} = \gamma_{00} + u_{0j} + e_{ij} \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

$$y_{ij} = \gamma_{00} + \gamma_{10}(X_{ij} - \bar{X}_j) + \gamma_{01}(W_j - \bar{W}) + u_{oj} + e_{ij} \quad \dots\dots\dots\dots\dots (2)$$

$$y_{ij} = \gamma_{00} + \gamma_{01}(W_j - \bar{W}) + \gamma_{10}(X_{ij} - \bar{X}_J) + u_{0j} + u_{1j}(X_{ij} - \bar{X}_J) + e_{ij} \quad \dots\dots\dots\dots (3)$$

$$y_{ij} = \gamma_{00} + \gamma_{01}(W_j - \bar{W}) + \gamma_{10}(X_{ij} - \bar{X}_j) + \gamma_{11}(X_{ij} - \bar{X}_j)(W_j - \bar{W}) + u_{0j} + u_{1j}(X_{ij} - \bar{X}_j) + e_{ij} \dots (4)$$

Whereby,

y_{ij}: Response variable (movement of goods) score for the ith trading agent in group j;

γ_{00}: Grand mean movement of goods across the groups of trading agents

u_{0j}: Group level (level 2) residual term

e_{ij}: Individual level (level 1) residual term (randomly distributed error).

X_{ij}: Individual EACSCT score for the ith trading agent in group j

$\bar{X}_j$: Group average EACSCT score

$\mathbf{W}_j$: Group j level of trade facilitation score

$\bar{W}$: Average group level of trade facilitation score

γ_{10}: Predicted slope regressing the EACSCT on the movement of goods

γ_{01}: The amount of change in the scores of the movement of goods associated with a 1-unit increase in the level of trade facilitation

γ_{11}: Cross-level interaction effects: moderating effects of the level of trade facilitation on the relationship between the EACSCT and the movement of goods.

5. Results and Discussions

5.1 Characteristics of Respondents

The study engaged different trading agents to participate as respondents by filling the questionnaire in order to collect necessary information to achieve the objectives. The characteristics of the respondents are defined according to their gender, age, experience, activity and transit corridor used. In terms of gender, Figure 1 shows that both male and female trading agents participated in this study, though male trading agents dominated the study with the majority of 64.70% of all respondents against 35.30% of female trading agents.
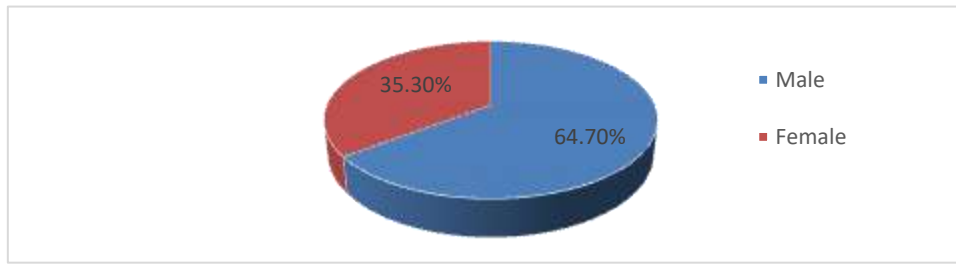
Figure 1. Gender of the Participants

Source: Field Data, 2018

Another important factor when describing the respondents in a study is age. As such, Figure 2 provides a summary of the characteristics of trading agents who participated in this study in terms of age in order to help readers understanding age composition of the respondents.
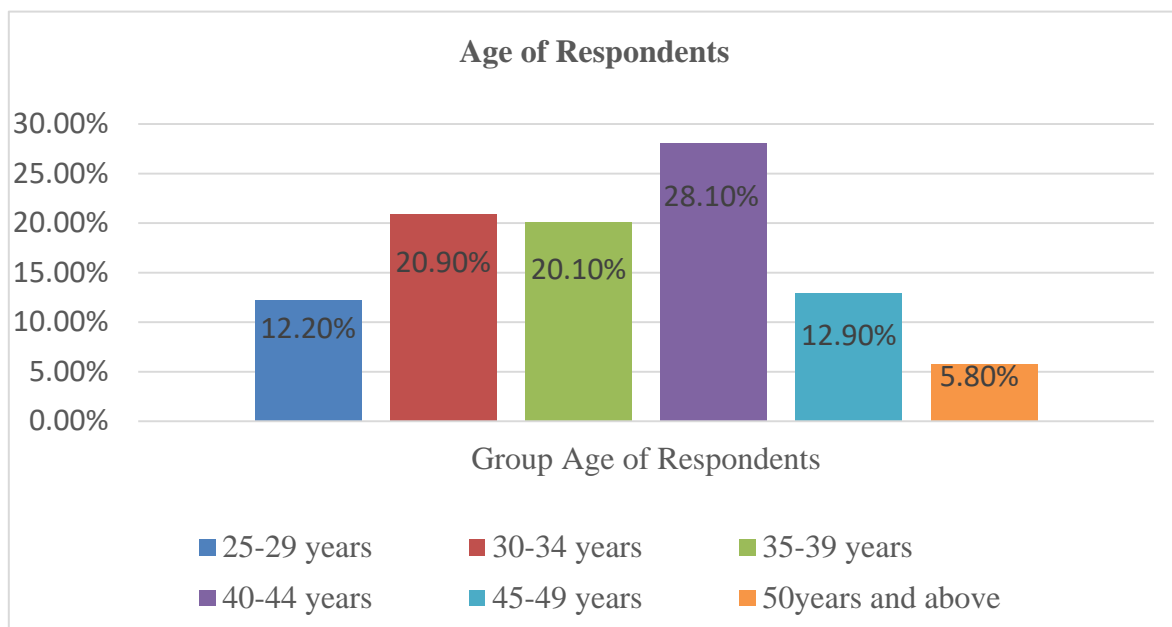

Figure 2. Age of the Participants

Source: Compiled from Field Data, 2018

Figure 2 provides an understanding that trading agents from various age groups involved in this study. Nevertheless, the respondents corresponding to 28.1% of all respondents, which is the age group with majority, were aged 40 to 44. The respondents corresponding to 20.9% were aged 30 to 34 followed by those aged 35 to 39. The respondents aged 25 to 29 and those aged 45 to 49 constitute 12.20% and 12.90% respectively. Few respondents (5.8% of all respondents) were aged 50 and above. These results therefore provide a clear understanding that most trading agents who participated in this study were in the adulthood.

Furthermore, different groups of respondents (trading agents) also use two corridors namely, Northern and Central Logistics Corridors in their activities. As such, the characteristics of

respondents were further defined in terms of group of trading agents and the corridor used in cross-border trading activities as presented in Table 2.

Table 2. Distribution of Respondents According to their Groups and Corridor used

Activity	Corridor			Total	Percent
	Northern Corridor	Central Corridor	Both of them		
Traders (Importers, Exporters/Both)	17	7	25	49	35.25
Transporters	12	2	16	30	21.58
Freight Forwarders	4	18	8	30	21.58
Clearing Agents	9	6	15	30	21.58
Total	**42**	**33**	**64**	**139**	**100.0**
Percent	**30.22**	**23.74**	**46.04**	**100.0**	

Source: Compiled from Field Data, 2018

According to Table 2, four groups of trading agents namely, traders, transporters, freight forwarders and clearing agents participated in the study. However, the group of traders has the largest number of respondents of 35.25% of all respondents. Each of the groups of transporters, freight forwarders and clearing agents has the same number of participants (21.58% of all respondents). This provides a clear understanding that the respondents were engaged in four different cross-border trade related activities namely, trading, transporting, freight forwarding and clearing. However, the traders (importers, exporters and both of them) dominated the study with the majority of respondents.

Moreover, Table 2 indicates that the trading agents use either Northern or Central Logistics Corridors or both of them in their trading activities. Those using Northern Logistics Corridor are 30.22% of all trading agents and those using Central Logistics Corridor are 23.74% of all trading agents. Nevertheless, the largest number of respondents corresponding to 46.04% of all respondents use both Northern and Central Logistics Corridors. These results provide evidence that trading agents from Rwanda use either of the ports of Dar-es Salam or Mombasa to move their goods to or from Rwanda though the majority use both ports.

Lastly, demographic characteristics of respondents were defined in terms of experience (duration) in cross-border trading activities. As presented in Figure 3, the majority of trading agents (32.40% of all respondents) have been engaged in cross-border trading activities for 7 to 9 years. The respondents who showed that they have been engaged in cross-border trading activities for 10 years and above correspond to 31.60% of all respondents while, those who showed that they have been engaged in cross-border trading activities for a period of 4 to 6 years correspond to 29.50%. The least proportion of 6.50% of all respondents have been engaged in trading activities for less than 4 years. In general, these results show that the experience of respondents can provide an understanding that they are knowledgeable enough about the aspects of trade facilitation, movement of goods and the operations of borders and customs posts. This allows them to provide information needed to achieve the objectives of this study.
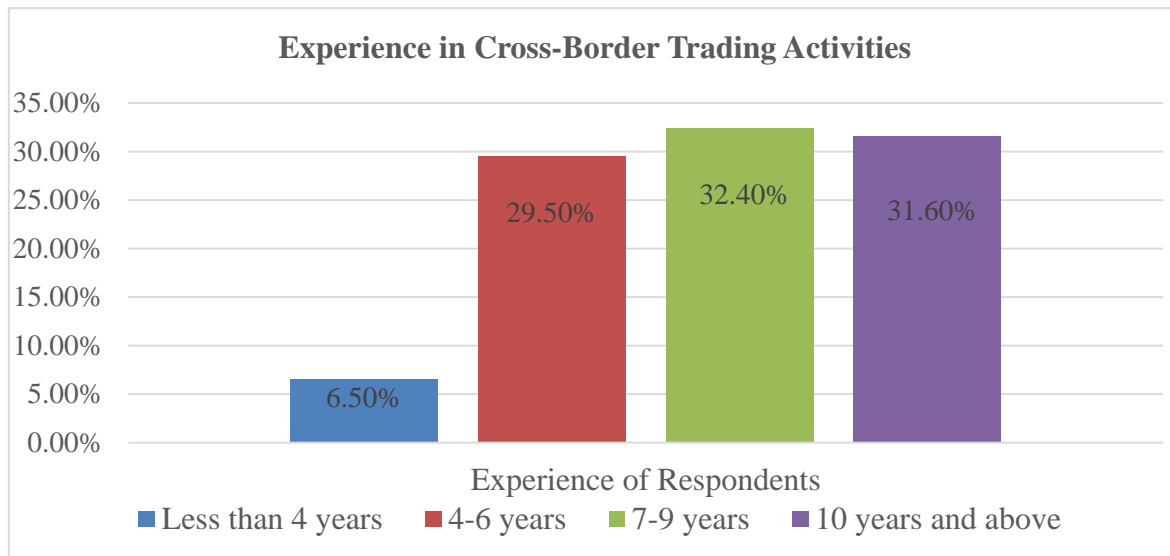
Figure 3. Experience of Respondents in Cross-Border Trading Activities

Source: Compiled from Field Data, 2018

After presenting demographic characteristics of respondents, data are analysed according to the objectives of the study. However, as explained in the section of methodology, qualitative data collected were quantified by computing the average scores of the relevant items through Statistical Package for Social Sciences (SPSS) before their analysis. It is also worth noting that descriptive statistics were applied to examine the implementation level of the EACSCT, to determine the level of trade facilitation and to establish the extent to which the movement of goods has been facilitated along the Rwandan customs posts.   For that reason in order to interpret the results, statistical ranges of mean and corresponding descriptive rating as suggested by Parilla (2013) and Saduak *et al.* (2017) were adopted. A mean of: 1.00–1.80 suggests a very poor/low level/extent; 1.81–2.60 suggests a poor/low level/extent; 2.61–3.40 suggests a moderate level/extent; 3.41–4.20 suggests a good/high level/extent; and 4.21–5.00 suggests very good/high level/extent.

5.2 Implementation Level of the EACSCT across the Rwandan Customs Posts

In order to examine the level of the implementation of the EACSCT across the Rwandan customs posts, descriptive statistics like mean, standard deviation, 95% confidence interval for mean and minimum and maximum means were adopted. A summary of the results is presented in Table 3.

Table 3. Implementation Level of the EACSCT across the Groups of Trading Agents

Trading Agents Group	N	Mean	Std. Deviation	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
Traders (Importers, Exporters)	49	3.9388	.94446	3.6675	4.2101	2.00	5.00
Transporters	30	4.0667	.82768	3.7576	4.3757	2.00	5.00
Freight Forwarders	30	3.9333	.73968	3.6571	4.2095	2.00	5.00
Clearing Agents	30	3.8000	.84690	3.4838	4.1162	2.00	5.00
Total	**139**	**3.9353**	**.85303**	**3.7922**	**4.0783**	**2.00**	**5.00**

Source: Compiled from Field Data, 2018

Refer to Table 3, the level of the implementation of the EACSCT along the Rwandan customs posts is rated differently by the various groups of trading agents (traders, transporters, freight forwarders and clearing agents). The level of the implementation of the EACSCT along the Rwandan customs posts is scored 3.938 by traders, 4.066 by transporters, 3.933 by freight forwarders and 3.80 by clearing agents. The maximum and minimum mean scores of the level of the implementation of the EACSCT along the Rwandan customs posts across all the groups of trading agents are 5.0 and 2.0 respectively. The aggregate mean score of the level of the implementation of the EACSCT along the Rwandan customs posts is 3.935.

These findings indicate that the level of the implementation of the EACSCT along the Rwandan customs posts is rated good in general and across the various groups of trading agents. This means that though there is still a need for improving on the level of the implementation of the EACSCT along the Rwandan customs posts, the latter has been successfully implemented along the Rwandan customs posts. The findings of this study are consistent with the available empirical literature which shows that while there are a number of challenges to the implementation of the EAC policies within member states, the EAC policies have been successfully implemented when compared to other Sub-Saharan African RECs (Mathieson, 2016). TradeMark East Africa (2015) also shows that the EACSCT has been almost fully implemented for maritime imports through the port of Mombasa to Rwanda.

5.3 The Level of Trade Facilitation across the Rwandan Customs Posts

The level of trade facilitation along the Rwandan customs posts was determined using descriptive statistics. Basically, those statistics include mean, standard deviation, 95% confidence interval for mean and minimum and maximum means. Table 4 then summarises the findings obtained in that regard.

Table 4. Level of Trade Facilitation across the Groups of Trading Agents

Trading Agents Group	N	Mean	Std. Deviation	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
Traders (Importers, Exporters)	49	4.3234	.22888	4.2576	4.3891	3.88	4.69
Transporters	30	4.4782	.24108	4.3882	4.5682	3.85	4.85
Freight Forwarders	30	4.4205	.20325	4.3446	4.4964	4.00	4.73
Clearing Agents	30	4.4218	.16395	4.3606	4.4830	4.04	4.73
Total	**139**	**4.3990**	**.21994**	**4.3621**	**4.4359**	**3.85**	**4.85**

Source: Compiled from Field Data, 2018

Refer to Table 4, the way the various groups of trading agents perceived the level of trade facilitation along the Rwandan customs posts does not provide a significant difference. The level of trade facilitation along the Rwandan customs posts is scored 4.32 by the traders, 4.47 by the transporters, 4.42 by the freight forwarders and 4.21 by the clearing agents. In terms of maximum and minimum means across the various groups of trading agents, the maximum mean scores of the level of trade facilitation along the Rwandan customs posts vary between 4.69 and 4.85 while, the minimum mean scores vary between 3.85 and 4.04. On the other hand, the overall average score of the level of trade facilitation along the Rwandan customs posts is 4.99 whereas, the overall minimum and maximum mean scores are 3.85 and 4.85 respectively.

The findings of these study provide an understanding that that the level of trade facilitation along the Rwanda customs posts is generally and across the various groups trading agents rated very high. These findings give an impression that the implementation of the EACSCT along the Rwandan customs posts has to a large extent improved the level of trade facilitation. This has been achieved through the simplification and harmonisation of the customs clearance procedures and formalities and reduction of number of documents required for moving goods along the transit corridor among other things. These findings then confirm existing literature that the customs procedures have been simplified and to a large extent harmonised between member states (Eberhard-Ruiz and Calabrese, 2017).

5.4 Extent to which the Movement of Goods has been facilitated along the Rwandan Customs Posts

Descriptive statistics namely, mean, standard deviation, 95% confidence interval for mean and minimum and maximum means were used to analyse the perceptions of various trading agents on the variables of the movement of goods in order to ascertain the extent to which the movement of goods has been facilitated along the Rwandan customs posts. Table 5 depicts the results found.

Table 5. Extent to which the Movement of Goods has been facilitated across the Groups of Trading Agents

Trading Agents Group	N	Mean	Std. Deviation	95% Confidence Interval for Mean		Min	Max.
				Lower Bound	Upper Bound		
Traders (Importers, Exporters)	49	3.7816	.34198	3.6834	3.8799	3.10	4.50
Transporters	30	4.0167	.41447	3.8619	4.1714	3.20	4.80
Freight Forwarders	30	4.0033	.31126	3.8871	4.1196	3.30	4.60
Clearing Agents	30	3.9033	.30567	3.7892	4.0175	3.50	4.80
Total	**139**	**3.9065**	**.35635**	**3.8467**	**3.9662**	**3.10**	**4.80**

Source: Compiled from Field Data, 2018

According to Table 5, the various groups of trading agents perceive differently the extent to which the movement of goods has been facilitated along the Rwandan customs posts. More specifically, the extent to which the movement of goods has been facilitated along the Rwandan customs posts was scored 3.78 by traders, 4.01 by transporters, 4.00 by freight forwarders and 3.90 by clearing agents. As regard the minimum and maximum means, Table 4 indicates that the minimum mean scores of the extent to which the movement of goods has been facilitated along the Rwandan customs posts range between 3.10 and 3.50 and the maximum mean scores range between 4.50 and 4.80. The overall average score of the extent to which the movement of goods has been facilitated along the Rwandan customs posts is scored 3.90 and the overall minimum and maximum average scores are 3.10 and 4.80 respectively.

The results in Table 5 therefore suggest that the extent to which the movement of goods has been facilitated along the Rwandan customs posts is in general and across the various groups of trading agents rated high. In short, these findings imply that the implementation of the EACSCT along the Rwandan customs posts facilitated the movement of goods by removing certain barriers like a high number of documents, complex customs procedures and time delays at the customs posts amongst others. In line with these results, existing literature shows that the EACSCT has significantly reduced the time to move or transport goods (Ombudo, 2014) along the transport corridors. More specifically, Rwanda's performance is particularly good on the time it takes to comply with import procedures (English *et al.,* 2016).

5.5 Extent to which the EACSCT affects the Movement of Goods

This section assesses the extent to which the EACSCT affects the movement of goods across the Rwandan customs posts. In order to estimate the effects of the EACSCT on the movement of goods, multi-level modelling was found appropriate due to the nested nature of data.   As explained in methodology section, four models of multi-level modelling with two levels were developed and their results are summarized in Table 6.

Table 6. Results of Multi-Level Modelling Analysis

Level and Variable	Model			
	Null	Random Intercept and Fixed Slope	Random Intercept and Random Slope	Cross-Level Interaction
Level 1 Effects				
Intercept (γ_{00})	3.920*(.04968)	-.867**(4.369)	-.767***(4.450)	-.448(1.983)
The predicted slope regressing the EACSCT on the movement of goods (γ_{10})	-	-.053**(.025)	-.057 (.036)	.136 (.490)
Level 2 Effects				
The level of change in the movement of goods associated with a 1-unit increase in the level of trade facilitation (γ_{01})	-	1.133* (.096)	1.114*(.095)	1.042**(.448)
Cross-Level Interaction				
Cross-level interaction effects (γ_{11})	-	-	-	-.018 (.111)
Variance Components				
Residuals/the within-group (L1) variance (σ^2)	.119182	.060	.058	.058
Intercept/the between-group (L2)variance (τ_{00})	.006335	.0003	.039	.044
Slope (L2) variance (τ_{11})	-	-	.003	.003
Intercept-slope (L2) variance (τ_{01})	-	-	-.010	-.011
Intra-class Correlation (ICC)	.05047	-	-	-
-2*log likelihood	102.940	4.44	3.49	3.470

Source: Field Data, 2018.

Values in parentheses are standard errors

* Significant at P < .01 level; ** Significant at P < .05 level; and ***Significant at P < .10 level

According to the results of null multi-level model in Table 6, the overall mean movement of goods across the groups of trading agents is estimated at 3.920; the within-trading agents' group variance σ^2 is estimated at 0.119182; and the across-trading agents' group variance in individual movement of goods τ_{00} is estimated at 0.006335. The total variance is hence equal to 0.119182 + 0.006335 = 0.125517. From these variances, we then measure the proportion of the total variation in the movement of goods across the Rwandan customs posts accounted for by the group differences. To do so, we need to compute the intra-class correlation (ICC) coefficient (ρ). This was computed as follows: $\rho = \tau_{00} / (\tau_{00} + \sigma^2)$

The ICC was found to be equal to 0.05047. This means that 5.04% of the variation or

differences is between-groups and 94.96% is within-group. The literature shows that the intra-class correlation values between .05 and .20 is common in cross-sectional multi-level modelling applications in social research studies (Peugh, 2010). The ICC found therefore provides strong evidence for applying multi-level modelling in this study. However, it is also necessary to carry out the likelihood ratio test (LRT) in order to test the significance of the group level effects. The LRT was carried out by comparing -2*log likelihood value in null multi-level model (Table 6) to the -2*log likelihood value in null single-level model (Table 7).

Table 7. Results of Null Single-Level Model

Level	Variable	Estimate	Std. Err.	Z	P>|Z|
Level 1 Effects	Intercept (γ_{00})	3.906475*	.0301165	129.71	.000
Variance Components	Residuals/the within-group (L1) variance (σ^2)	.1260732	-	-	-
	-2*log likelihood	106.611	-	-	-

Source: Field Data, 2018.

*Significant at P < .01

LRT is equal to 106.611 – 102.940 = 3.67 on 1 d.f. as there is only one parameter difference between the models. The 5% point of chi-squared distribution on 1 d.f. is 3.84. Therefore, comparing this critical p-value to the likelihood ratio value, it is noticed that there is strong evidence that there is no trading agents' group effects on the movement of goods. Hence, multi-level modelling with no trading agents' group effects is preferred.

Next, null multi-level model is extended to random intercept and fixed slope model to estimate the effects of the EACSCT on the movement of goods by allowing the intercept of regression of the level of trade facilitation to vary randomly across the groups of trading agents. As such, we are interested in estimating the factors that explain σ^2 and τ_{00}. Referring to Table 6 (random intercept and fixed slope model), the mean scores of the movement of goods across the groups of trading agents γ_{00} is estimated at -0.867. The predicted slope regressing the movement of goods on the EACSCT γ_{10} is estimated at -0.053. Hence, these results indicate that the implementation of the EACSCT along the Rwandan customs posts has effects on the movement of goods. Nevertheless, for the purpose of estimating the extent to which the EACSCT affects the movement of goods along the Rwandan customs posts, the relationship between the EACSCT and the movement of goods was moderated with the level of trade facilitation.

According to Table 6 (random intercept and fixed slope model), the amount of change in the scores of the movement of goods associated with a 1-unit increase in the level of trade

facilitation γ_{01} is estimated at 1.133. This means that a 1-unit increase in the level of trade

facilitation across the Rwandan customs posts leads to 1.133 points increase in the level of the movement of goods along the Rwandan customs posts. Besides, the results reveal that the effects of the EACSCT on the movement of goods across the Rwandan customs posts are significantly positive. This, therefore, allows for rejecting null hypothesis and accepting alternative hypothesis that the EACSCT has significant positive effects on the movement of goods across the Rwandan customs posts.

From the comparison of the results of random intercept and fixed slope model and those of null multi-level model, it is noticed that the addition of the scores of the implementation level of the EACSCT in the model has reduced the amount of variance at both levels, the group of trading agents and the individual trading agents. The within-group variance has reduced from 0.119 to 0.060, while between-group variance has reduced from 0.006 to 0.0003. In addition, by comparing within-group and between-group variances, it is also noticed that the between-group variances reduction is large. A large reduction in between-group variance suggests that the distribution of trading agents by the scores of the implementation level of the EACSCT differs from group to group.

Random intercept and fixed slope model is further extended to random intercept and random slope model to allow both intercept and slope to vary randomly across the groups of trading agents. This then permits testing whether the effects of the EACSCT vary across the groups of trading agents. As such, it is important to carry out LRT as the difference between the -2*log-likelihood ratio for null single-level model in Table 7 and the -2*log-likelihood ratio for random intercept and random slope model in Table 6. The LRT is then found to be equal to 106.611 – 3.49 = 103.121 on 2 d.f. This, therefore, suggests that there is strong evidence that the group effect differs across the groups of trading agents.

Refer to Table 6, the results of random intercept and random slope model indicates that the

effects of the EACSCT for the group *j* is estimated at -0.057 + u_{1j} and between-group

variance in the slopes is estimated at 0.003. Thus, for the average group, a decrease of 0.057 points in the factors that make the movement of goods complex and unpredictable is predicted for each increase in the level of trade facilitation across the Rwandan customs posts. Additionally, a 95% coverage interval for the group slopes is estimated at -0.057 $\pm$ 1.96$\sqrt{0.003}$ = -0.157 to 0.043. Hence, assuming a normal distribution, it is predicted that the middle 95% of groups to have a slope between -0.157 and 0.043.

The results of random intercept and random slope model in Table 6 also reveal that the

covariance between groups' intercepts and slopes or off-diagonal term τ_{01} is estimated at

-0.010. This, therefore, suggests a weak relationship of the EACSCT and the movement of goods along the Rwandan customs posts. On the other hand, a negative covariance indicates that the two variables move in opposite directions, meaning an inverse relationship. An increase in the level of the implementation of the EACSCT will reduce factors deterring the

movement of goods along the Rwandan customs posts. It is predicted that a 1-unit increase in the level of the implementation of the EACSCT will lead to 0.053 point or 5.3 percent decrease in the barriers to the movement of goods along the Rwandan customs posts.

As regard the cross-level interaction model, we are basically interested in identifying whether the level of trade facilitation moderates the relationship between the implementation of the EACSCT and the movement of goods across the Rwandan customs posts. The results of cross-level interaction model in Table 6 indicates that the slope regressing the EACSCT on the movement of goods (γ_{10}) is estimated at -0.136 while, the cross-level interaction effects also known as the interaction term between the level of the implementation of the EACSCT and the level of trade facilitation (γ_{11}) is estimated at 0.018.

This interaction term indicates the level of the implementation of the EACSCT and the level of trade facilitation are positively related to the movement of goods along the Rwandan customs posts. A positive amount of the cross-level interaction effects implies that the relationship between the EACSCT and the movement of goods across the Rwandan customs posts will become stronger as the level of trade facilitation along the Rwandan customs posts is increased by a 1 unit. In addition, the greater the level of trade facilitation, the stronger the relationship between the level of the implementation of the EACSCT and the movement of goods across the Rwandan customs posts.

Accordingly, the results of this study indicate that the improvements in the level of the implementation of the EACSCT across the Rwandan customs posts will remove the factors that make the movement of goods more complex and unpredictable. In addition, the improvements in the level of the implementation of the EACSCT will enhance the level of trade facilitation. The results of this study are consistent with the findings that the implementation of SCT has reduced the number of declarations and removed duplicate processes at the point of entry and at final destination in EAC (TradeMark East Africa, 2016) and reduced clearance time from Mombasa to Rwanda (EAC, 2016). Besides, the implementation of the EACSCT along the Rwandan customs posts has also improved time taken for moving goods (Eberhard-Ruiz and Calabrese, 2017), time required to export and import (World Bank Group, 2019) and improved efficiency in clearance procedures (Chimilila *et al.*, 2014).

6. Conclusions and Recommendations

6.1 Conclusions

This study assessed the effects of the EACSCT on the movement of goods across the Rwandan customs posts. However, the study was guided by four specific objectives. In terms of the first objective, the level of the implementation of the EACSCT along the Rwandan customs posts was on average rated good by various trading agents. As regard the second objective, the findings show that the level of trade facilitation is on average very high, shown by various trading agents. This means that the implementation of the EACSCT has considerably improved the level of trade facilitation along the Rwandan customs posts.

Concerning the third objective, the extent to which the movement of goods has been facilitated along the Rwandan customs posts was rated high by various trading agents.

In line with the fourth objective, the extent to which the implementation of the EACSCT affects the movement of goods along the Rwandan customs posts was found significantly positive as revealed by the estimates from multi-level model. Hence, providing strong evidence to reject null hypothesis and accepting alternative hypothesis that the EACSCT has significant positive effects on the movement of goods across the Rwandan customs posts. These findings provide an understanding that the implementation of the EACSCT along the Rwandan customs posts has significantly reduced or removed the factors that make the movement of goods complex and unpredictable by improving the level of trade facilitation.

6.2 Recommendations

Basing on the findings, the following recommendations are made. Government border crossing agencies and other stakeholders have to work in synergy and get involved in the implementation and consultations to continue streamlining the implementation of the EACSCT. The customs and border authorities should also endeavour to improve the way customs laws and procedures are disseminated to the customs users. Further study can be done in other EAC partner states or in the EAC as a whole to cover a bigger geographical scope in a regional context to diversify the findings and develop common trends.

As regard the contribution, this study contributes to the knowledge in different ways. First, this study engages various trading agents who are directly affected by the operations of customs authority and knowledgeable about the aspects of single customs territory, trade facilitation and movement of goods along the Rwandan customs posts to gather fresh data. Secondly, this study used a holistic approach embracing both qualitative and quantitative methods and multi-level modelling for estimates to provide a comprehensive assessment of the extent to which the EACSCT affects the movement of goods. Hence, the findings of this study provide government customs agencies, practitioners, policy makers and other stakeholders with clear understanding of the relationship of SCT and movement of goods. This would then help policy makers to come up with appropriate policies.

Due to the scarcity of quantitative secondary data on the variables of the study, primary data collected on the perceptions of trading agents through a questionnaire across the different groups of trading agents were used. As such, the study may be subject to some limitations. A replica study involving repeated observations over a long period of time is hence recommended. In addition, though the EACSCT is a trade facilitation initiative adopted at the level of the EAC community, the study covers only the Rwandan customs posts due to various reasons including available time. There is therefore a knowledge gap which may be filled by conducting a similar study including other partner states of the EAC.

Conflict of Interest

Author declares that no conflict of interests exist.

References

Adedeji, A. (2002). *History and prospects for regional integration in Africa*. Addis Ababa: African Development Forum.

Arvis, J. F., Smith, G., & Carruthers, R. (2011). *Connecting landlocked developing countries to markets: Trade corridors in the 21st century*. Washington DC: World Bank. https://doi.org/10.1596/978-0-8213-8416-9

Chimilila, C., Sabuni, C., & Benjamin, A. (2014). Trade facilitation in EAC Customs Union: its achievement and implementation in Tanzania. *Journal of Economics and Sustainable Development*, 5(25), 1-15.

Daniel, W. W., & Cross, C. L. (2013). *Biostatistics: a foundation for analysis in the health sciences. (*10th ed.). Hoboken: John Wiley & Sons.

EAC (2014). *Single Customs Territory Procedures and Manual*. Arusha: East African Community.

EAC (2016). *East African Community Trade and Investment Report 2015*. Arusha: East African Community.

Eberhard-Ruiz, A., & Calabrese, L. (2017). Would more Trade Facilitation lead to Lower Transport Costs in the East African Community? *ODI Policy Briefing*. London: Overseas Development Institute.

English, P., McSharry, P., & Ggombe, K. (2016). Raising exports and attracting FDI in Rwanda. *IGC Policy Note*, (*38402)*. London: International Growth Centre.

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: answers to selected exercises.* A Simple Guide and Reference. Boston, EEUU: Allyn and Bacon.

Grainger, A. (2007). Customs and trade facilitation: from concepts to implementation. *World Customs Journal*, *2*(1), 1-30.

Lesser, C., & Moisé-Leeman, E. (2009). Informal cross-border trade and trade facilitation reform in Sub-Saharan Africa. *OECD Trade Policy Papers*, No. 86. Paris: OECD Publishing.

Marteau, J. F., Raballand, G., & Arvis, J. F. (2007). *The cost of being landlocked: logistics costs and supply chain reliability*. Washington DC: World Bank. https://doi.org/10.1596/1813-9450-4258

Mathieson, C. (2016). *The Political economy of regional integration in Africa. The East African Community Report.* Mestreech: European Centre for Development Policy Management. Retrieved from http://ecdpm.org/peria/eac

Mohabe, N. (2011). The Past, Present and Future of Integration in East Africa. *African Integration Review*, *5*(1), 1-31.

OECD (2017). *Aid for trade - case story template. Survey Monkey*. Retrieved from https://www.oecd.org/aidfortrade/casestories/casestories-2017/CS-71-TMEA-Busia-one-stop-

border-post.pdf

Ombudo, K. A., Echandi, R., Kusek, P., & Polanco, R. J. (2014). *East African Common Market Scorecard 2014: Tracking EAC compliance in the movement of Capital, Services and Goods.* Arusha: East African Community.

Parilla, E. S. (2013). Level of Management Practices of Micro and Small Businesses in Ilocos Norte. *International Journal of Academic Research in Business and Social Sciences, 3*(7), 439-466. https://doi.org/10.6007/IJARBSS/v3-i7/67

Peugh, J. L. (2010). A practical guide to multilevel modelling. *Journal of school psychology*, *48*(1), 85-112. https://doi.org/10.1016/j.jsp.2009.09.002

Programme for Infrastructure Development in Africa–PIDA (2016). *One-Stop-Border-Posts Sourcebook.* (2nd Ed.). Addis Ababa: African Union Virtual PIDA Information Centre. www.au-pida.org/download/one-stop-border-post-sourcebook-2nd-edition/

Saduak, W., Poungsuk, P., Phonpakdee, R. and Deeying, S. (2017). Problem condition in the Agricultural Learning Center using at Praibuengwittayakom School, Srisaket Province, Thailand. *International Journal of Agricultural Technology*, *13*(7.2), 2117-2124. Retrieved from http://www.ijat-aatsea.com.

TradeMark East Africa (2015). *Trading Across Borders: Final Report*. Nairobi: TradeMark East Africa.

TradeMark East Africa (2016). *Trade Mark East Africa Annual Report 2015-2016*. Nairobi: TradeMark East Africa.

Uganda Revenue Authority (2016). What is Single Customs Territory? *Frequently Asked Questions, 1(2)*, FY 2016/17, Kampala.

World Bank Group (2019). *Doing Business Report 2019 Regional Profile East African Community*. Washington D.C: World Bank.

Woudsma, C. (2001). Understanding the movement of goods, not people: issues, evidence and potential. *Urban Studies*, *38*(13), 2439-2455. https://doi.org/10.1080/00420980120094605