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Foreword

The Economic Policy Research Network (EPRN Rwanda) is a membership-based Research and Training Institution registered in 2018 by the Rwanda Governance Board as a local NGO. Key EPRN partners include the University of Rwanda, Ministry of Finance and Economic Planning, National Institute of Statistics of Rwanda, National Bank of Rwanda, the Deutsche Gesellschaft für Internationale Zusammenarbeit, International Food Policy Research Institute, United Nations Development Programme and the United Nations Economic Commission for Africa. EPRN mission is to contribute to the evidence based economic policy making by providing high quality research, building capacity and creating networking opportunities.

In February 2020, EPRN in collaboration with partners organized a 6th Research Conference under the theme: “Building Productive Capacities for Structural Economic Transformation”. The conference held at Lemigo Hotel under support of the GIZ, IFPRI and UNDP.

This publication contains four working papers developed by EPRN members and presented during the conference.

The paper on: Analysis of Causes of Business Failure in Rwanda: Learning from Small and Medium Enterprises (SMEs) analyzes the causes of business failure in Rwanda and to prescribes an ideal path for business sustainability in Rwanda. Key identified factors are cash flow management, poor market research, lack of business plan, expense management and revenue management.

The paper on: effect of short-term bank loan financing on financial performance of manufacturing Small and Medium Enterprises (SMEs) in Rwanda, selects a sample of 196 SMEs from 382 manufacturing SMEs operating in Kigali and comes up with a conclusion that loan financing is a powerful tool to finance manufacturing firms. The paper also reveals a prevalence of limited awareness of financial services by SMEs and recommends policy makers to enhance financial literacy especially to SMEs.

The paper on: Analysis of recent evolution of economic sectoral output, employment and structural economic transformation in EAC: Spatial panel data approach (1991-2018); devotes to the recent evolution of the sectoral output level and employment in East African Community countries. The paper assesses the causes and covariates that are correlated and which might help us to predict output across countries and over time in EAC.

The paper on: Effect of EAC single customs territory on trade facilitation in Rwanda concludes that to further improve the cross border services and continue to facilitate the cross border traders, some recommendations have been proposed like the fact that tax incentives are needed mostly to traders who export goods to Rwanda from EAC members.

EPRN Rwanda expresses its gratitude to reviewers of these papers: Dr. Charles Ruranga, Dr. Marceline Kamande and Prof Herman Musahara.

Seth Kwizera
Executive Director

Chapter One

Analysis of Causes of Business Failure in Rwanda: Learning from Small and Medium Enterprises (SMEs)

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Abstract

The Rwandan government has come up with different strategies in order to transform its economy since the year 2000, these includes Vision 2020 in the year 2000 which was broken down into strategies (EDPRS1 and 2) and currently the National Strategy for Transformation (NST1). One of the key objectives of the NST 1 is the improvement of the business sector in order to be able to contribute fully to the structural transformation of the economy. Despite implementing different strategies to enhance the private sector, studies show that the private sector and SMEs in particular are growing at a very low rate and 50% of the businesses that are started do not exceed 5 years of lifespan. The study analyzed the causes of business failure in Rwanda and to prescribe an ideal path for business sustainability in Rwanda. A combination approach composed of positivism and phenomenology coupled with a multi-method strategy was used by the researchers. Data was collected from different business organizations using questionnaire and documentation. Qualitative factors were analyzed using descriptive statistics and chi-square method. The quantitative factors were analyzed using multivariate discriminant analysis. The findings revealed that business failure is as a result of both qualitative and quantitative factors where quantitative factors contribute 85%. Based on the findings, the researchers concluded that business success or failure is a function of both qualitative and quantitative factors. Key identified factors are cash flow management, poor market research, lack of business plan, expense management, and revenue management. The researchers recommend that there should be a program of mentorship to the young entrepreneurs, training of entrepreneurs in market research and business plan preparation.

Key words: Business environment, business failure, structural transformation, Growth

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1. Introduction

Economic development entails changes to the quantity and quality, including the composition, of economic value added. It is generally characterized by economic growth, rising per capita incomes and a shift in the composition of value added and employment, first from agriculture to manufacturing, and finally to an economy dominated by the services sector. The goal of any country is to ensure that the social and economic wellbeing of its people is improved. The government must therefore make a tremendous investment in the structural transformation of its economic activities in order to improve the well-being of its population. If a country is to improve its economic activities, improving the business environment is not choice but mandatory. The environment in which the business operates is a key factor in structural transformation.

According to Harris and Gibson (2006), small businesses are generally regarded as the engine that drives economic growth, job creation, and poverty reduction in developing countries. They are the means through which accelerated economic growth and rapid industrialization can be achieved. Schumpeter's theory of economic development consider entrepreneur as the key figure in the process of development (Schumpeter, 1961). Schumpeter recognizes the role of entrepreneurs in transformation through innovations of new products. Although the Schumpeter's theory lays a foundation of structural transformation through recognition of entrepreneurship in the economic development, his conclusion cannot be generalized in the structural transformation of developing countries for many reasons; firstly, for entrepreneur himself is a product of social environment, which compels him to innovate or get eliminated, because of the forces of competition. Despite this fact, credit goes to Schumpeter who has emphasized the role of an entrepreneur in the capitalist development. Secondly, the theory was developed many years ago and many things have changed since then. Thirdly, theory was developed for an economic environment that is different from that of Rwanda.

Recognizing the fact that the private sector is the engine of structural transformation of the economy, the government of Rwanda have made a tremendous investment in creating a conducive environment in which businesses operates. Policies such one stop center for easy registration of business, simplification of construction permits, easy access to electricity, registration of property, getting credit, protecting the minority investors, paying taxes contract enforcement and cross borders trading were initiated. With this investment in different policies, the Government of Rwanda has been ranked as the second country in Africa for having good environment of doing business and 29th in the world.

Despite the fact that small businesses contribute significantly to development and growth, entrepreneurs face many obstacles that limit their long-term survival and development. Research on small-business development has shown that the rate of failure in developing countries is higher than in the developed world (Arinaitwe, 2002). Studies in small-business sustainability in countries

like Rwanda are of great importance. It is important to understand the problems facing small-business development in Rwanda and develop a sustainability path for the small business.

Businesses continue to be at the forefront of socio-economic development in virtually all economies today. The private sector is the biggest employer in Rwanda where more than 90% of the population are employed in the private sector (MINICOM, NISR, MIFOTRA and PSF (2017). The informal sector in Rwanda constitutes 90.8% of the total establishments. This implies that the informal sector is one of the leading sectors in contribution to the GDP. The private sector contributes 80% to the GDP. This, therefore, means that if the country is to transform its economic activities from the tradition to modern economy, it must look at how to improve the business environment (MINICOM, 2017).

Recognizing the indispensable role of small businesses and private sector enterprises in general economic development, many countries have instituted enterprise support networks and structures to fuel the development of these enterprises and Rwanda is no exception. Despite the various strategies put in place to improve the environment for the private sector, the private sector struggles to survive. The study by MINICOM, NISR, MIFOTRA and PSF (2017), show that half (50%) of the businesses that are started in Rwanda do not exceed five years' life, even those which exceed five year, only a fraction remains in operation in the next decade. The effect of business discontinuation is very dangerous and devastating as it leads to loss of jobs and assets as well as family relationships and other unethical social behaviors.

With nearly 76% of the workforce still in agriculture, the potential for productivity gains from structural transformation, urbanization and industrialization is significant. Agriculture has not reached its full potential and investments in climate resilient techniques for farming coupled with improvements in value chains is expected to yield significant future gains in both growth and poverty reduction. Improving the business environment for structural transformation is not a choice but a mandatory. However, studies solely focusing on improving business environment and structural transformation in developing countries particularly in Rwanda seem to be very limited and scarce. It is within this context, that researchers want to explore the factors that affect business operations and how to improve the business environment.

Research objective

The purpose of this study is to explore how the business environment can be improved in order to enhance structural transformation along the following objectives

- Examine the causes of business failures in Rwanda
- Prescribe an ideal model for small business sustainability path in Rwanda

2. Literature Review

This study is underpinned by the Schumpeter's theory of growth. From his theory, a new look of structural transformation which is business inclusiveness theory has been sought of. A large research literature, both empirical as well as theoretical, has been devoted to describe measure and explain this pattern of structural change and its relation to economic growth.

Schumpeter's theory of development

The theory puts paramount role to the entrepreneur and innovations as a ground stone to the structural transformation. According to Schumpeter, the process of production is marked by a combination of material and immaterial productive forces. The material productive forces arise from the original factors of production, viz., land and labour, while the immaterial set of productive forces are conditioned by the 'technical facts' and 'facts of social organization'.

The Schumpeter theory provides that, the rate of growth of the output depends upon the rate of growth of productive factors, the rate of growth of technology and the rate of growth of investment friendly socio-cultural environment. Schumpeter held that the alterations in the supply of productive factors can only bring about gradual, continuous and slow evolution of the economic system. On the other hand, the impact of technological and social change calls for spontaneous, discontinuous change in the channels of output flow. Thus taking into account these two types of distinct influences Schumpeter distinguished two components in the economic transformation which are (a) the "growth component" which brings about gradual, continuous and slow evolution due to the changes in the factor availability, (b) the "development component" which brings about spontaneous and discontinuous change in the channels of output flow due to changes in the technical and social environments

Schumpeter regarded land to be constant and therefore, the growth component will include only the effects of changes in population and of increase in the producer goods. But Schumpeter further maintains that there is no any a priori relationship between the changes in population and the changes in the flow of goods and services. In other words, Schumpeter considers the population growth to be exogenously determined. Now, the increase in producer goods results from a positive rate of net savings.

Business inclusiveness model

The literature on structural transformation as put forward by Schumpeter have specifically focused on the role of entrepreneurship and have been silent on how to improve the environment in which entrepreneurship is practiced. For instance, do economic agents choose between wage employment and being an entrepreneur? How do entrepreneurs overcome start-up obstacles, such as problems related to access to finance and other factors in the environment? Second, there is a theoretical scholarly disconnection, between a substantial literature on entrepreneurship takeoff and the

sustainability of entrepreneurship most especially the micro, small and medium enterprises (MSMEs).

Although there is a significant contribution of Schumpeter in stressing the role of the entrepreneur in innovation as a key activity in facilitating structural economic change, their literature of moving from agriculture to manufacturing and then to service does not look at the role played by the MSMEs in the transformation of the economy. According to Liedholm and Mead (1999) small businesses are widely seen to play an important, if sometimes disputed, role in economic development.

In addition to that, it is theoretically challenging to integrate the Schumpeter model in this current research due to the stylized fact of structural economic change. Thus, is it entrepreneurs that drive structural changes, or vice versa? As development economics is concerned with both economic growth and structural change, the interdependence between the two is of importance.

More to that, the relative neglect in development economics in the formal modeling of factors affecting entrepreneurship development and how the factors can be improved in order to enhance structural economic change is a shortcoming. The empirical evidence linking entrepreneurship with structural transformation supports governments and other development agencies policies to stimulate entrepreneurship as a way to further structural economic development and growth (Arinaitwe, 2006).

Consequently, striving for consistency between insights from Schumpeter growth theory, wherein entrepreneurial ability can be highlighted, as engine for the structural transformation, business improvement is an obvious though neglected research agenda in this field. The economists have provided differing views about structural transformation of an economy. Their conclusion about structural transformation of an economy can neither be completely ignored nor uprooted nor plant in their current form in the Rwandan environment.

For example, the economic view of moving from the agriculture economy to industrialized economy has got a lot of loopholes. Although this is the wish of any economy, but it is not a mere jumping from one step to another step. Moving from agriculture to manufacturing requires analysis of the environment and involvement of the different stakeholders. In addition to that, abandoning the agriculture sector may have negative consequences on the economy. Therefore, the issue should not be moving from agriculture to manufacturing, but improving agricultures to move with the manufacturing sector.

The authors have sought of another approach of transforming the economy through business inclusiveness. In this model, the authors recognize that introducing a policy requires involvement

of different stakeholders, therefore, if the business environment is to be improved, all stakeholders in the business should be involved.

This brings us to this study, whose broad objective is to make a modest contribution to extend the formal modeling of entrepreneurship in development economics by analyzing the factors that affect the business operations by involving the entrepreneurs.

Causes of business failures

Based on the Ansoff's model, business environment is affected by administrative, operating and the strategic challenges. Administrative problems include personnel, finance, and management issues. Operating problems deal with allocating resources in an efficient manner and are more common in the functional areas of a business. Examples include marketing, operations, and inventory management. Strategic problems involve the ability of small-business owners to match their product or service with the demands of the external environment (Harris and Gibson, 2006)

Administrative problems have been cited as a major cause of failure for small businesses. A study by Kiggundu (2006) revealed that poor recordkeeping and a lack of basic business management experience and skills were major contributors. Researchers also identified inexperience in the field of business, particularly a lack of technical knowledge, plus inadequate managerial skills, lack of planning, and lack of market research (Eeden et al., 2004). However, these researchers have not identified which management problem or group of problems contributes most to the failure of small business in Africa in general and Rwanda in particular.

Other negative factors that have been identified include corruption, poor infrastructure, poor location, failure to conduct market research (Mambula, 2002; Eeden et al., 2004). For example, Kiggundu (2002) identified illicit, improper, or illegal business conduct that are used to criminalize entrepreneurial activities so those in positions of control and influence can make fast and illegal money. In addition to undermining the legal framework, national integrity, and regulatory system, corruption also undermines the trust and confidence of business owners (Pop, 2002).

3. Methodology

The current research is mainly based on two objectives which are to analyze the causes of business failures in Rwanda and to prescribe an ideal model for small business sustainability path in Rwanda. Based on these objectives, the researcher used combination approach composed of positivism and phenomenology approach. According to Saunders et al (1999) positivism approach is good when the emphasis of the study involves developing some theories and phenomenology approach is good when the study involves explaining some theories. Because this study involved both developing and explaining theories, a combination approach is preferred. A Positivism approach is used where the study involves developing a theory and then designs a research strategy to test the hypothesis (Saunders et al., 1999). This was done by testing the known constraints of

doing business in Rwanda. Whereas a Phenomenology approach is used where the researcher has to correct data and develop the theory as a result of the data analysis (Saunders et al., 1999).

A multi-method strategy which used both qualitative and quantitative research approaches was adopted. Case study and survey strategies were used for triangulation purposes. According to Bryman and Bell (2003), a multi-method strategy occurs when more than one research strategy and data source are used in the study of social phenomena. A multi-method approach can be undertaken within a single research strategy by using multiple sources of data across research strategies (Bryman and Bell, 2003; Marlow and Carter, 2006).

The combination of qualitative and quantitative design strategy has been recommended and used by studies in situations where one of the approaches is insufficient to reveal all that is required to be known about a phenomenon (Bryman et al. 1996). The importance of using different sources of primary and secondary data, and other methodological approaches, was emphasized by Yin, (1994), Saunders et al (1999), and Kothari (2000). These stipulate that, the rationale for using multiple sources of data is to triangulate evidence in order to increase the data reliability in the process of data collection so as to be able to collaborate, the data gathered from different sources. According to Sanders et al (1999), a research study can be classified into exploratory, descriptive, explanatory and multi-method approach. The latter approach was used for the study, which enabled the study to triangulate with other research classification approaches.

Study Population and Sampling method

The study targeted 300 business owners/managers selecting 100 businesses from each of 3 districts of Kigali city. The probability sampling approach was adopted in the study in order to enable the researchers to make generalizations of the research findings to the study population using a sample of the respondents. Probability sampling can be achieved either through simple random sampling, systematic random sampling, stratified random sampling or cluster sampling (Kothari, 2004). In this, a simple random sampling was used. This enabled the researchers to give equal chances to every respondent.

Data collection

In order to address the objectives of the study, primary data was collected using one set of questionnaire which was given to the business owners and/or managers. Secondary data was collected from the financial statements using on desk research.

Data analysis

The survey data that was generated from the questionnaires was analyzed using both exploratory and confirmatory statistical techniques. After receiving the completed questionnaires from the field, a data entry capture template was designed in the Statistical Package for Social Sciences (SPSS) which was used for data entry. After data entry and cleaning up, exploratory statistical data

analysis was conducted using frequency distribution tables to summarize and display the respondents' views on the questions under study.

A confirmatory factor analysis of the factors affecting small business in Rwanda was performed to ascertain if a resolute set of problems or factors existed. The significance of qualitative factors was analyzed using a Chi-square test. The factor was considered significant if the P-value is $\leq 5\%$. The quantitative factors were analyzed using the multivariate discriminant analysis (MDA). The factors were considered significant if the P-value is $\leq 5\%$.

Analytical model

The quantitative factors were measured by cash flows management (operating cash flows) (CM), working capital management (current assets and liabilities) (WCM), asset management (sales/total assets) (AM), revenue management (sales) (RM), expense management (expenses) (EM). The business status (BS) measured by either success or failure. The researchers used the Altman model of corporate failure. Following Beaver, Altman (1968) proposed 'multiple discriminant analysis' (MDA). This provided a linear combination of ratios which best distinguished between groups of failing and non-failing companies.

$$BS = \beta_0 + \beta_1CM + \beta_2WCM + \beta_3AM + \beta_4RM + \beta_5EM + \alpha$$

4. Results and Discussions

This section discusses the causes of business failure based on the findings collected from the primary data as presented in the table below:

Qualitative factor analysis

Table 4. 1: Opinion of the respondents on the following business activities

Statements	Strong agree		Agree		Disagree		Total	
	Frq	%	Frq	%	Frq	%	Frq	%
You carry out a market research for your business	30	12	20	8	190	80	250	100
You prepare a business plan	60	24	50	20	140	56	250	100
Projects are evaluated before investing	68	27.2	52	20.8	130	52	250	100
You formulated business goals and objective to guide your business	45	18	20	8	185	74	250	100
Business goals and objectives are monitored	40	16	15	6	195	78	250	100
Family members are always briefed and engaged in the business operations	48	19.2	32	12.8	170	68	250	100
The business maintains proper books of accounts	110	44	80	32	60	24	250	100
You have a tax advisor to help you in the tax management	120	48	50	20	80	32	250	100

Source: Survey data 2020



In the table 4.1, the respondents expressed their opinion on whether they carry out the above mentioned business activities. The results show that 12% of the respondents strongly agreed that they carry out business research, 8% agreed whereas 80% disagreed. The results therefore revealed that majority of the respondents do not carry market research for their business activities as evidenced by 80% of the respondents. The respondents were further asked on whether they prepare a business plan for their business activities, the results show that 24% of the respondents strongly agreed that they prepare a business plan, 20% agreed whereas 56% strongly disagreed. The results further revealed that majority of the respondents do not prepare business plan.

On whether projects are evaluated before investing, the results show that 27.2% of the respondents strongly agreed that they evaluate their projects before investment, 20.8% agreed whereas 52% disagreed. This, therefore, means that majority of respondents just invest without prior evaluation. The respondents were also asked on whether they formulate business goals and objective. The results further show that 18% of the respondents strongly agreed, 8% agreed whereas 74% disagreed. This, therefore, means that majority of the respondents do not formulate business goals and objectives. On whether business goals and objectives are monitored, the results show that 16% strongly agreed, 6% agreed whereas 78% disagreed. The results revealed that majority of the respondents don't monitor their business goals and objective.

Majority of business are family owned, therefore maintaining a good family relationship is a key to the success of business. Family members need to be briefed or and engaged in the operations of the business. The respondents were asked whether the family members are briefed on the business operations. The results from the survey show that 19.2% of the respondents strongly agreed, 12.8% agreed whereas 68% disagreed. The results revealed that majority of the respondents do not engage or brief their family members about the business operations. The respondents were further asked whether they maintain proper books of accounts, the results show that 44% strongly agreed, 32% agreed whereas 24% disagreed. This, show that majority of the respondents prepare and maintain proper books of accounts. On whether tax businesses have tax advisors who advises them on tax issues, the results from the survey show that 48% of the respondents strongly agreed, 20% agreed whereas 34% disagreed.

Table 4.2: Qualitative factors affecting business failure in Rwanda

Statements	High		Medium		Low		Total	
	Frq	%	Frq	%	Frq	%	Frq	%
Lack of financial support from banks and other financial institutions	160	64	60	24	30	12	250	100
Inaccurate evaluation of the projects to invest in	80	32	120	48	50	20	250	100
Lack of trust among business partners/family members	130	52	70	28	50	20	250	100
Poor market research	180	72	60	24	10	4	250	100
Poor management	60	24	120	48	70	28	250	100
Lack of business plan	145	58	55	22	50	20	250	100
Failure to have business goals	150	60	87	34.8	13	5.2	250	100
Poor cash flow management	134	53.6	66	26.4	50	20	250	100
Too much expectations	141	56.4	79	31.6	30	12	250	100
Failure to monitor business goals and business plan	153	61.2	54	21.6	43	17.2	250	100
Poor family relationship	107	42.8	81	32.4	62	24.8	250	100
Quitting too soon	85	34	100	40	65	26	250	100
Not seeking professional advise	118	47.2	79	31.6	53	21.2	250	100
Lack of customer care	165	66	55	22	40	16	250	100
Poor keeping of accounting records	176	70.4	34	13.6	40	16	250	100
Failure to control cost	114	45.6	76	30.4	60	24	250	100
Failure to comply with the tax policy	146	58.4	84	33.6	20	8	250	100

Source: Survey Data 2020

The results in the table 4.2 show how various factors in the environment causes business failures in Rwanda. The factors were ranked from high, medium and low based on their personal experience in the business operation. On lack of financial support from the financial banks and other financial institutions, the results show that 64% of the respondents ranked this factor high, 24% indicated medium and 12% indicated low. Although there is great work done by the government of Rwanda to ensure high coverage of financial inclusion, access to finance to support the growth is a major challenge affecting business success.

On how inaccurate evaluation of the project to invest in causes, 32% of the respondents ranked high, 48% ranked medium and 20% ranked low. The results revealed further that 52% ranked high lack of trust among the business partners/family members as another factor causing business failure, 28% ranked medium whereas 20% ranked low. Lack of doing a market research is another factor causing a business failure. Regarding this factor, 72% of the respondents ranked high, 24%

ranked medium and 4% ranked low. The results further show that lack of business experience is another factor causing business failure as 52% of the respondents ranked it high, 28% ranked medium and only 20% ranked it low.

Poor management is another factor that was considered in the success of the business. The result from the survey show that 24% of the respondents ranked high, 48% ranked low and 28% ranked medium. The results revealed that poor management is not among the key factors causing business failures in Rwanda, although a concern need to be taken into the account of the 24% of the respondents that are looking at it as one of the factors. Lack of business plan is another factor that was examined regarding the causes of business failure in Rwanda. The results from the survey show that 58% of the respondents ranked high, 22% ranked medium and 20% ranked low. This, therefore, means that lack of proper business plan is one of the key factors causing business failure as reflected by majority of the respondents.

Business goals are road map to the business. Failure to have business goals is another factor that was examined on how it affects business failure in Rwanda. The results from the survey show that 60% of the respondents ranked high, 34.8% ranked medium whereas 5.2% ranked low. This, therefore, means that failure to have business goals leads to business failure. The results further revealed that 53.6% of the respondents ranked high poor cash flow management as one of the factors causing business failure in Rwanda whereas 26.4% ranked medium and 20% ranked low. The results revealed that majority of the respondents ranked this factor high.

Having too much expectation about the business is another factor that was examined on how it affects business failure in Rwanda. Most business entrepreneurs enter business with too expectation, if the expectations are not met, they end up leaving the business. The respondents were asked to rank on how this factor affects business failure in Rwanda. The results from the survey show that 56.4% ranked high, 31.6% ranked medium whereas 12% ranked low. Failure to monitor the business goals and business plan is another factor that was examined. The results from the survey show that 61.2% ranked high, 21.6% ranked medium whereas 17.2% ranked low. The results from the survey revealed that lack of monitoring of the business goals and business plan is one of the key factors leading to business failure in Rwanda as evidenced by the majority of the respondents.

The respondents were asked to rank on how poor family relation leads to failure in Rwanda. The results from the survey show that 42.8% of the respondents ranked high, 32.4% ranked medium whereas 24.8% ranked low. Quitting too soon is another factor that was examined leading to business failure in Rwanda. The results from the survey show that 34% of the respondents ranked this factor high, 40% ranked low whereas 26% ranked low. Although the factor was not considered much by many respondents, business requires persistence by expecting the unexpected and overcoming the unexpected. The researchers also examined lack of customer care another factor

affecting business failure in Rwanda. The results show that 66% of the respondents ranked high, 22% ranked medium whereas 16% ranked low. This therefore means that lack of customer care is a critical factor causing business failure as evidenced 66% of the respondents.

Not seeking professional advice is another factor that was examined by the researchers on how it affects business failure. 47.2% of the respondents ranked high, 31.6% whereas 21.2% ranked low. Poor keeping of accounting records is another factor that was examined by the researchers on how it causes business failure in Rwanda. The results from the survey show that 70.4% of the respondents ranked high, 13.6% ranked medium whereas 16% ranked low. This, therefore, means that keeping proper accounting records is a key factor to the business success. The researchers also examined how failure to control cost causes business failure. The results from the survey show that 45.6% of the respondents ranked high, 30.4% ranked whereas 24% of the respondents ranked low. The researchers also analyzed on how failure to comply to tax policies affect causes business failure. The results from the survey show that 58.4% of the respondents ranked low.

Table 4.3: Test of the significance of each factor to the business failure

Factors	Mean	t	Sig
Lack of financial support from banks and other financial institutions	4.37	- 2.464	0.017
Inaccurate evaluation of the projects to invest in	2.85	-0.477	0.712
Lack of trust among the business partners/family members	3.84	-2.321	0.019
Poor market research	4.54	-2.876	0.013
Poor management	1.28	0.462	0.761
Lack of business plan	4.32	-2.331	0.018
Failure to have business goals	3.87	2.195	0.028
Poor cash flow management	2.93	1.673	0.081
Too much expectations	3.31	2.225	0.023
Failure to monitor business goals and business plan	4.12	-2.354	0.018
Family relationship	4.56	2.871	0.011
Poor location	1.52	0.543	0.542
Lack of focus	2.76	1.694	0.073
Quitting too soon	3.11	1.892	0.047
Not seeking professional advise	3.46	-2.071	0.038
Lack of customer care	3.57	2.121	0.042
Poor keeping of accounting records	3.87	2.215	0.039
Failure to control cash	2.95	0.893	0.321
Failure to comply with the tax policy	4.01	2.341	0.018

Source: Survey Data 2020

The results show that there are a number of factors that affect the success of business. The results revealed that the most significant factors which leads to business failure include the following lack of financial support, lack of experience in business, poor market research, government policies, lack of clear business plan, failure to formulate business goals and objectives, wrong expectations about the business, failure to monitor the business goals, quitting soon, not seeking professional advice, lack of customer care, failure to control cost, failure to comply with the tax policies.

Quantitative Factor Analysis

Table 4.4 Pooled Within-Groups Matricesa

		Profit management	Working capital management	Assets management	Expense management	Revenue management
Correlation	Cash flow management	1.000	-.431	.137	-.085	.121
	Working capital management	-.431	1.000	.091	.387	.220
	Assets management	.137	.091	1.000	-.272	-.276
	Expense management	-.085	.387	-.272	1.000	.44
	Revenue management	.121	.220	-.276	.44	1.000

a. The covariance matrix has 33 degrees of freedom.

Source: Survey Data 2010

The results in table 4.4 test the correlation between the study variables in order to assess the multicollinearity between variables. The results show that there is a weak correlation between the study variables with a lowest correlation between expense management and profit management and high correlation exist between expense management and revenue management. This, therefore, implies that there is no multicollinearity between the study variables.

Table 4.5: Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Cash flow management	.997	4.092	1	33	.043
Working capital management	.870	4.924	1	33	.033
Assets management	.799	8.326	1	33	.007
Expense management	.290	80.907	1	33	.000
Revenue management	.325	68.561	1	33	.000

Source: Survey Data 2020

Table 4.5 tests the significance of the study variables in predicting the business failure among SMEs in Rwanda. The results from the survey show that at 5% level of significance, all the tested variables are statistically significant. The most significant variables in predicting business failure include revenue management and expense management with P-values = 0.0000, these are followed by asset management, working capital management and cash flow management.

Table 4.6: Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	2.595a	100.0	100.0	.850

a. First 1 Canonical discriminant functions were used in the analysis.

Source: Survey Data 2020

Table 4.6 tests the correlation between the study variables. The correlation was tested using the canonical discriminant function. The results from survey show that there is a high correlation between the study variable as represented by 85% and R-square of 72.3%.

Table 4.7: Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	Df	Sig.
1	.278	39.028	5	.000

Source: Survey Data 2020

The results in table 4.7 tests the model fit in predicting business failure or success. The results from the survey using Wilk's Lambda show that the model is significant in predicting business failure of success as the P-value is less than 5%

5. Conclusion

Improving business environment is a very critical factor for the successful operation of businesses. The business environment is composed of both external and internal factors. The government of Rwanda had made a tremendous investment in ensuring that external factors do not adversely affect the business environment. With such investment, Rwanda is considered as one top countries of doing business in Africa and in the world. As per the World Bank report 2019, Rwanda is ranked 29th for ease of doing business in the world.

This study analyzed the causes of business failures among the SMEs. This was done by analyzing both the qualitative and quantitative factors in the business environment. The internal factors in the environment can be classified. The results from the survey indicated that the quantitative factors contribute 85% to the success or failure of a business. This means that failure to manage revenues, expenses, assets, cash flows and working capital will adversely affect the success of the business. The results further revealed that qualitative factors are also very significant in explaining business failure in Rwanda. A need to critically manage both qualitative factors and quantitative factors is a pillar and a cornerstone to the business success.

6. Recommendations

Based on the results from the findings, the following policy recommendations were suggested.:

- a. The results revealed a challenge in business plan, and market research. Therefore, entrepreneurs should be trained on how to prepare a business plan and carry out market research
- b. In addition, entrepreneur should be trained in tax management and cash flow management.
- c. The findings also indicated a concern for lack of advice in the business. A network of experienced entrepreneurs to mentor the young entrepreneurs should be sought of.

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Chapter Two

The effect of short-term bank loan financing on financial performance of manufacturing Small and Medium Enterprises (SMEs) in Rwanda

By Byombi Kamasa Vedaste² & Charles Ruranga³

Abstract

Short-term loan financing is one of ways used to fasten financial performance and growth of firms mainly those operating in manufacturing domain. It is an important source of finance to small and medium enterprises (SMEs) all over the World where it has financed almost half of the businesses done by SMEs in United States of America (USA), many businesses are financed by short-term loan European countries, Africa and Asia. Despite its importance all over the world, short-term loan financing in terms of line of credit and overdraft facilities have not been given much attentions in different literatures all over the World and mainly in Rwandan context. Being a great source of finance to SMEs, there is no clear indication about the level at which it contributes to the financial performance and growth of SMEs. At policy level there are not much rules, laws, regulations and guidelines about short term loan financing in Rwanda. Based on a population of 382 manufacturing SMEs operating in Kigali, a sample of 196 SMEs was drawn and a survey study was conducted using self-administered questionnaires to collect primary data from SME holders. The research was guided by the pecking order theory, which set an order of preferences between sources of finance. Descriptive and inferential statistics were used to analyze collected data. Using a binary logistic model, the findings revealed that there is significant and positive relationship between short term loan financing in terms of line of credit finance, overdraft financing facilities, contract finance, working experience and organization types financial performance of manufacturing SMEs in terms profit. In summary short term, loan financing is a powerful tool to finance manufacturing firms and it must inform policy makers in Rwanda to think about ways of empowering SMEs owners with financial literacy.

Key words: Overdraft facilities, line of credit, return on sales, and return on investment

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1. Introduction

Small and Medium Enterprises (SMEs) are important engine in the development of each country; they play a vital role in economic growth, and job creation (L. Castillo & Guasch, 2012). SMEs have become an important pillar in the African economy and served in fighting the everlasting problem of unemployment. Despite their importance SMEs operating environment is facing huge challenges related to finance. This paper aims to find out the importance of different short term bank loan debt finance on financial performance of manufacturing SMEs. Overdraft financing and line of credit are the key important source of finance which were examined to see their support for the growth and advancement of SMEs prospectively. Short term bank loan debt finance has been viewed as an important source to business finance and it has contributed to the growth and impacted positively SMEs performance (Eniola & Entebang, 2015)

SME Rwanda have found themselves with the challenges of accessing finance due to bank credits structural, viability, and maintainable quality. The country's industrial sector is dominated by small size organisation where 98% are SME, with a big number of micro enterprises which are not able to meet the requirement of financial institutions (Esho & Verhoef, 2018). On the supply side collateral guarantee is the main standards for loan approval. This process of loan application and collateral issues have abstracted SMEs to have access to needed finance. Small and Medium-sized financial establishments are not many, as far as the current state of affairs of financial establishments in relation to SMEs, and face numerous issues and challenges in its further advancement, hence are unable to content the SMEs. The not strong credit financing, and non-subjective or mortgage asset resources, considered by banks makes it more significantly challenging in raising financing provision. Likewise, the no third-party undertakings with enough credit rating assessment to offer guarantees, making it reliable for funds obtainable from banks (Eniola & Entebang, 2015)

The SMEs sector has been the focus of recent academic and policy debate. On the one hand, the SME sector has been the target of systemic and targeted intervention by governments and international aid organizations around the world. Supporting this view are findings from recent studies that emphasize the role played by SMEs in employment generation and recovery from recessions in developing countries. For instance, Ayyagari et al. (2014) find that SMEs in the formal sector account for 50 percent of employees in developing countries. They also find that SMEs create a greater share of jobs and highest sales growth and employment growth (Ayyagari et al., 2011). There is a strong positive association between the share of SME labor in the total manufacturing labor force of a country and GDP per capita growth (Ayyagari, Demirgüç-Kunt, & Maksimovic, 2019). It is important to understand the determinants of their access to credit because SMEs create the majority of jobs (Wit & de Kok, 2014).

All over the World, SMEs have contributed too much to the overall Gross Domestic Product (GDP) of countries. SMEs contributed 60% in china, 57% in Germany, 55% in Japan and 48 % in USA.

In the same way, they contributed to the creation of employment where SMEs account for between 55 per cent and 80 per cent of total employment in Western Europe, Japan and USA (Ngui & Thomas, 2013). In Kenya SMEs represent 90% of all enterprises, the GDP of 18% and employs 60% of the workforce (Muriithi, 2017). In Uganda SMEs employ more than 90 % of the private sector and contribute over 18% to total GDP (“Ministry of Trade, Industry and Cooperatives (Uganda),” 2018). While in Rwanda SMEs comprise 98% of the businesses and 60% of all private sector employment sectors, and contribute around 55% of the GDP. It has a potential to lower in Rwanda’s trade imbalance and generate off farm employment(Marc, 2016).

Access to finance has been identified as the first constraint of SME growth (Esho & Verhoef, 2018), SMEs have been portrayed as not able to access to bank credit because of conditions which are difficult to fulfill for most SMEs have been viewed as too small, risky, or costly for traditional commercial banks (Njue & Mbogo, 2017). Lack of access to finance has a great impact on firm growth and that the smallest firms were the most affected by lack of finance. Small firms identify access to financing as a severe obstacle compared to the percentage of large firms. Access to a targeted lending program show that many SMEs are credit-constrained and that expansion of credit leads to higher growth in sales and profit(Banerjee & Duflo, 2014)

Despite the importance of short-term bank loan debt finance, its influence on financial performance has not attracted the attention of researchers in Rwanda. There is also lack of short-term debt financing research because it is difficult to identify the times when short-term financing needs are high. Moreover, in spite of the support from the government of Rwanda a majority of SMEs are still facing internal and external challenges for their growth(van Klyton & Rutabayiro-Ngoga, 2018). SMEs operating in manufacturing have shown slow growth compared to those operating in services. They remained stagnant in the past decade and accounted for 14% of GDP in 2010 and shown a slow growth compared to their fellow in neighboring countries(Kamarudeen & Söderbom, 2013)

It is acknowledged that lack of access to finance is the most critical constraints to the growth of SMEs(Kamunge et al., 2014). Access to finance has been ranked number one challenge, which SMEs are facing in their development in Rwanda. SMEs are still financially disadvantaged due to lack of collateral required by financial institutions(van Klyton & Rutabayiro-Ngoga, 2018). Though a number of studies have been conducted in Rwanda there is still a shortage of research in the domain of debt financing and financial performance of SMEs. This creates an opportunity for the current study to fill in the information gap.

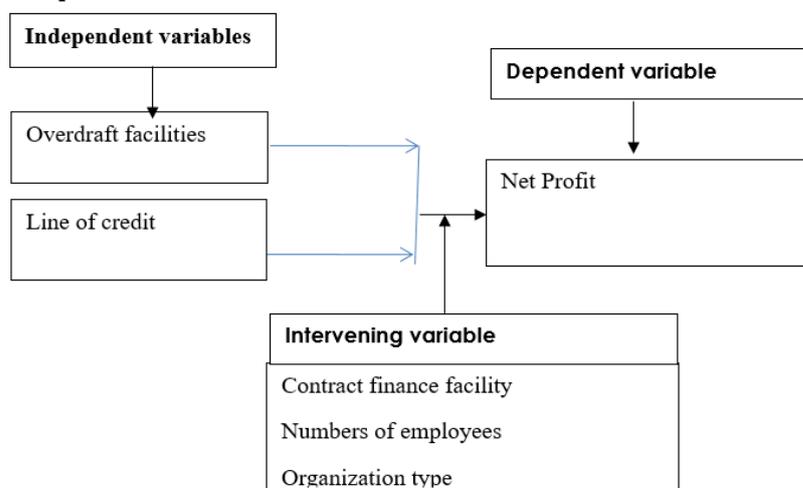
2. Literature review

Pecking order theory had been proposed by (Donaldson, 2012) and it was suggesting that the order of financing sources takes precedence over their weight. The introduction of an extended version of the theory where asymmetric information available to managers and investors causes adverse costs of selection (Myers, 1984). In 1984 the theory was developed in the way that it was suggested that internal financing must take precedence to other source of finance (Myers & Majluf, 1984). The preference for internal financing, followed by debt financing and equity issuance as a last resort, represents the “pecking order of financing” new projects, as firms recur to self-financing under asymmetric information conditions. It has been pointed out that firms have to identify the source of finance taking into account their life cycle, where young firms are willing to finance their operations into own capital and then capital market will come as the last option (Kira, 2013).

The concept of this theory lays in the principles of asymmetric information and it assumes that people do not have the same information, at a certain level lenders and managers have different information about the firm and access to finance. The theory posits that the firm will prefer internal financing and that, should external resources be necessary, it will select the appropriate financing methods based on the risk level involved. This being an issue many firms mainly SMEs prefer to use informal finance and then other debt finance. The buyer sees the average of the whole market while the seller has more intimate knowledge of a specific item.

Firms have different preference and can be informal debt to formal debt, short-term debt over long-term debt and debt over equity and this will have also to deal with the size of the firm. In some cases, if the firms issue no new security but only use informal debt finance to support the investment opportunities, the information asymmetric can be resolved. The theory is very much close to the work taking into account that for SMEs find themselves caught in the trap of using certain types of finance and in a certain way they have to make a certain journey from one source to another. Due to the information, asymmetric business people prefer to go to short-term bank loan debt finance instead of long-term finance. This theory alone deals with all the two objectives of this research and it shows the preference order of finance, from overdraft to line of credit.

The conceptual framework



Studying capital structure on financial performance of SMEs in Malaysia, it was found out that both long term debt finance and short term debt finance have a negative effect on financial performance of SMEs (Salim & Yadav, 2012). In the research on the effect of debt finance on firm's financial performance in Pakistan, it was found out that there is a nonlinear relationship between return on equity and debt ratio asset ratio (Tauseef et al., 2015). Short-term bank loan financing mainly has played a key role in the development of SMEs, Access to finance to SMEs is a very determinant element on the survival of organizations. In the study on the impact of bank loan on profitability, using empirical data and method of generalized moments in France, it was found out that debt does not have any impact on the profitability of SMEs (Kebewar, 2012). In the research on bank loan finance on financial performance of Sweden firms it was found out that trade credit, short term loan and long term loan affect negatively the performance of SMEs (Yazdanfar & Öhman, 2015). It was stipulated that the lower leverage level, the lower agency cost of external debt and the higher the profitability. In USA there has been a decrease of debt maturity where SMEs are willing to take loan with short term period maturity. New firms tend to use more short term debt than old firms and it is most affected by both supply and demand side (Custodio et al., 2012)

Access to finance is a fundamental challenge at the heart of a country's financial and economic development. Development theory emphasizes the role of finance in achieving growth and income equality. However, one of the most important issues facing SME is their difficulty in accessing finance. Given market imperfections, the role of state policy is critical from promoting an enabling environment to more active market interventions (World Bank Group 2019). Many other researchers on African continent have also carried their researches on debt bank loan finance and have found significant results which have contributed to the body of knowledge. In the research on debt bank loan on financial performance of SMEs; the missing role of debt maturity structure in Egypt it was found out that short term debt and long term debt have different results on financial performance of SMEs. It was found that long term finance affects positively the financial

performance of SMEs when short term debt finance affect negatively the financial performance of SMEs (Wahba, 2013). In the same way, in the research on the impact of debt structure on performance of Nigerian quoted firms using secondary data have found out that debt structure is negatively correlated with firm performance and that it contributed negatively to the firm performance(Nwude et al., 2016).

Debt financing and performance of small and medium size enterprises: Evidence from Kenya. The study used 4122 SMEs in Eldoret town. Stratified sampling technique was used to select a sample size of 50 SME firms. The study collected quantitative secondary data from SMEs' financial statements for three consecutive years (2011-2013). Multiple Regression analysis was used to test the study hypothesis. The findings revealed that Short-term debt ratio was negatively and significantly correlated to profit margin ratio, and return on asset and long-term debts had negative influence on performance and liquidity ratio, however, there was no evidence to suggest relationship between long-term debts, ROA and profit margin ratio. The conclusion was that long term and short-term loans reduce financial performance of SMEs(Githaiga, 2015). This study wants to investigate the case of Rwanda and see if there is a relationship between short term finance and SMEs profitability.

A research on the effect of access to finance on financial performance of manufacturing firms in Kenya shown that there was a positive influence on the financial performance of manufacturing firms and a significant linear relationship between access to finance and financial performance of manufacturing firms(Wamiori et al., 2016). In the same way in a research on the impact of debt bank loan financing on financial on productivity of SMEs in Zimbabwe found out that debt finance has played a big role in financial performance of SMEs(Dube, 2013). In their studies to examine the role of credit financing on performance of SMEs in Lira Municipality in Uganda, it was found out that providing credit to SMEs give them a room of a high-level productivity

The study on the role of access to finance for small and medium enterprises (SMEs) performance within a period from 2012-2015 using data from 2128 SMEs: stipulates that access finance improves profitability, improve firm efficiency, prevent liquidity problems, and improve firm solvency and increase of assets quality (Harelimana, 2016). Short-term debt financing had played a big role in funding many business projects in Rwanda and it was noticed loan bank are among the main source of finance to SMEs.

The study on the effect of debt financing on firm performance a comparative case study of I&M and Bank of Kigali: found out that there is positive relationship between debt level and profitability for both I&M Bank and Bank of Kigali since debt tends to be less expensive and increasing it with a relatively low interest rate which leads to the increase in profit levels and hence performance (Harelimana, 2017). In the same way Credit Terms, Credit Accessibility and Performance of Agricultural Cooperatives in Rwanda using a random sample of 196 active agricultural

cooperatives in different district in Southern Province, a correlation and regression model was used to test whether the performance of agriculture cooperative is affected by credit term and it was found out that there is positive and significant relationship between credit terms, credit accessibility and the performance of agricultural cooperatives. It was revealed that debt availability to SMEs is the catalyst of performance of agricultural cooperatives(Byaruhanga, 2012)

The study done on Small New Firms and the Return to Alternative Sources of Finance analysis the returns to alternative sources of finance, using data from 650 single plant independently owned firms in the north-east of England from 1970-1980: found out that various forms of finance used differ in terms of the return on capital employed they are associated with. Sources of bank finance for small new firms are associated with higher returns than other available sources of finance. It was found out that sources of bank finance for small new firms are associated with higher returns than other sources of finance. One interpretation of this result is that the various sources of finance are equally costly but not used with equal efficiency. If this interpretation is correct, then it implies that those small new firms depending on sources of finance other than bank finance will not perform as well as if bank finance had been used. This interpretation suggests that small new firms are more efficient in their use of funds when they are answerable to, and are monitored by, private sector banks (Keasey & McGuinness, 1990).

The study on the effect of bank loan to SMEs on manufacturing output in Nigeria for the period spanning 1992 to 2010, and employed an error correction modeling technique: observed that banks loan to the SME sector had insignificant impact on manufacturing output both in the long and short run. It was observed that the effect of bank loan to the SME sector on manufacturing output was insignificant both in the long and short run. This simply implied that the purpose and objective of this loan to stimulate output has not been successful. Based on the findings, the study recommended the need for greater deliberation and conscious effort by the government in ensuring that loans are given to ultimate users. There is also the need for moderation of collaterals and interest rate attached to banks loan to SMEs, to make it more attractive to stakeholders in the SMEs sector(Ifeakachukwu & Oseni, 2013).

In many countries, it has been discovered that bank overdraft is among external source of finance to SMES and it was pledged to contribute too much to the financial performance of SMES. They are looking at sectors of industry, SMEs in industry and construction consider bank overdraft more often relevant than SMEs in trade and services(Kwaak et al., 2014). Overdraft facility offered to firms mainly manufacturing one facilitate investment in research development which results in growth and productivity (L. L. Castillo & Guasch, 2012).

In the research on the effect of bank financing on financial performance of SMEs in Nairobi County from (2009-2013). It was found that SMEs bank financing in Nairobi County had a positive effect on the performance of the SMEs in Nairobi County since access to bank financing is an

important ingredient to the developmental and eventual growth and performance. The overdraft agreements and trade credits were also found to affect business operations. This was because the short term debt finance adapted easily to the firm's financial need, they required no collateral in order to obtain the funds and they were repaid over a short period thus no or minimal interest rate was charged. (Salim & Yadav, 2012).

It was again found that The bank' loans and overdrafts are the most widespread debt financing methods for SMEs, but that alternative sources like leasing and factoring have also a high relevance. Small and medium size enterprises (SME) are more financially constrained therefore they use less formal finance than larger firms. Reasons not only includes lack of collateral, credit history, credit rating, tax policies, high growth vulnerability, other formal requirement of lending institutes but also financial institutions. Performance of firms is of vital importance for investors, stakeholders and economy at large. For investors the return on their investments is highly valuable, and a well performing business can bring high and long-term returns for their investors. Furthermore, financial profitability of a firm will boost the income of its employees, bring better quality products for its customers, and have better environment friendly production units (Muchiri & Shukla, 2017).

It was noticed that SMEs, which used bank finance, had developed much better than others, which used other forms of finance, in spite of the fact that bank financing is more expensive in comparison to other sources of finance; it generates a higher rate of return for SMEs. It had been found out that bank finance is not only a byproduct of the development process but an engine propelling improving performance of small and medium enterprises (SMEs), (Mohd Shariff et al., 2010).

According to (Giang, Trung, Yoshida, & Que, 2019) in the Causal Effect of Access to Finance on Productivity of Small and Medium Enterprises in Vietnam found out that overdraft facility have a positive and significant impact on productivity of SMEs and improved between 12.3% and 15.7% of the value.

Quantitative measures of firm performance include profitability measures such as gross margin, net margin for example return on sales, return on equity, economic value added, return on equity less cost of equity and return on capital employed. Other measures of performance include cash flow measures such as free cash flow over sales and growth measures for example historical revenue growth. Ideally, forward-looking measures such as expected profitability, cash flow and growth should be used to measure a firm's performance (Kiaritha, 2015). Profitability refers to the ability of a company to earn income. Net income is the single most significant measure of profitability. These ratios include: gross profit margin which is equal to gross profit/net sales. Net operating income which is equal to operating income/net sales. Return on total assets (ROA) which is equal to net income/average total assets, return on equity (ROE) which is equal to net income/shareholders' equity, return on investment (ROI) which is equal to net income/average

total assets. When dealing with the financial performance of SMEs different measures must be used differently to those which can be used while assessing large firms, as pointed out by Van Horne & Wachowicz, (2010) SMEs due to their related problem like few resource, customers and not enough means play on the ground with different tactic to protect themselves against failure at the same time willing to attract a big number of customers. They must ensure that customer satisfaction remains high and that they can be flexible enough to respond rapidly to changes in the market(Horne & Wachowicz, 2010).

Return on sales (ROS) is computed by dividing profits by total operating revenue and thus it expresses profits as a percentage of total operating revenue or sales. Net profit on sales is determined by the ratio between net profit and net sales, and measures the difference between what the business takes in and what it spends in the process of doing business (Cohen, 1989). This measure will help the research predict the financial performance of SMEs in the reseach.

Profit can also be used to measure the performance of firms. Meaning that profit is used to measure the financial performance of the firms the same as promise for the company to remain a going concern in the business.

3. Methodology

The research design is a descriptive survey which uses both qualitative and quantitative methods for triangulation. The target population is all manufacturing SMEs operating in Kigali City meaning that all SMEs in the three districts of Gasabo, Kicukiro and Nyarugenge which equals to 382. These firms are classified according to their areas of operation. The selection of Kigali City was based on the evidence that it covers more than half of the total number of SMEs in Rwanda. Manufacturing SMEs were also selected because the sector has the biggest number of SMEs. The main repondents are SMEs owners and other people in the leadership position of the SMEs. The period of study was from 2012 to 2017 (NISR, 2018). The study used Slovin's formula of sample size determination, and stratified random sampling technique and simple random sampling to select a sample of 196 SMEs required by the research.

Data analysis was done by use of Pearson correlation coefficient and to determine the relationship between short-term debt finance and financial performance.

Linear multiple regressions were used to establish and explain the relationship between business domain, overdraft finance, line of credit and profitability (financial performance). The relationship between the study variables and SMEs financial performance was developed into binary logistic model.

The model was formulated as:

$$P = \frac{e^{\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5}}{1 + e^{-(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5)}}$$

$$= \frac{1}{1 + e^{\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5}}$$

Where P is the probability that the dependent variable is equivalent to 1, meaning high growth. Regression coefficients $\beta, i = 1, 2, \dots, r$. Y = SMEs Financial performance (profit) was a binary variable; β_0 = Intercept of the model, a constant. It is the value of Y when $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$, $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are the slopes of the model x_1 overdraft, x_2 line of credit x_3 contract finance, x_4 number of employees, x_5 type of organization, e: error term.

4. Findings and discussions

Discussion of the findings was done in three levels, first demographic analysis to give the general information about business activities, descriptive to show the mean and standard deviation and the estimation of the model to show the relationship between dependents and independent variables.

4.1 Demographic Statistics

Table 1: Position of respondents

Position	Frequency	%
Business owner	130	66.3
Manager	62	31.6
Chief accountant	3	1.5
Sales manager	1	.5
Total	196	100.0

Source: Research primary data (2019)

Frequencies have been generated to give explanation about the respondents and it was found out that 66.3% of the respondents were business owners, 31.6% managers, 1.5% chief accountants and 0.5% of the respondents were sales managers. This gives a positive result because more than 50% questionnaire was from the owners of the business and once these people answer the questionnaire they are likely willing to give the total information of the business because they do not fear to disclose information.

Table 2: Education level of respondents

Level		Total
Education	Informal (home based) education	1.5%
	Primary education	11.7%
	Secondary education	44.9%
	Undergraduate education	37.2%
	post graduate education	4.6%
Total		100.0%

Source: Research primary data (2019)

From the table above, a big proportion of interviewed persons had secondary level education (advanced level). 37.2% had university level at bachelor level.

Table 3: Experience and number of employees

Experience		Total
	1-5 years ago	63.3%
	6-10 years ago	22.4%
	11-15 years ago	5.1%
	16-20 years ago	6.6%
	21 years and beyond	2.6%
Total		100.0%

Source: Research primary data (2019)

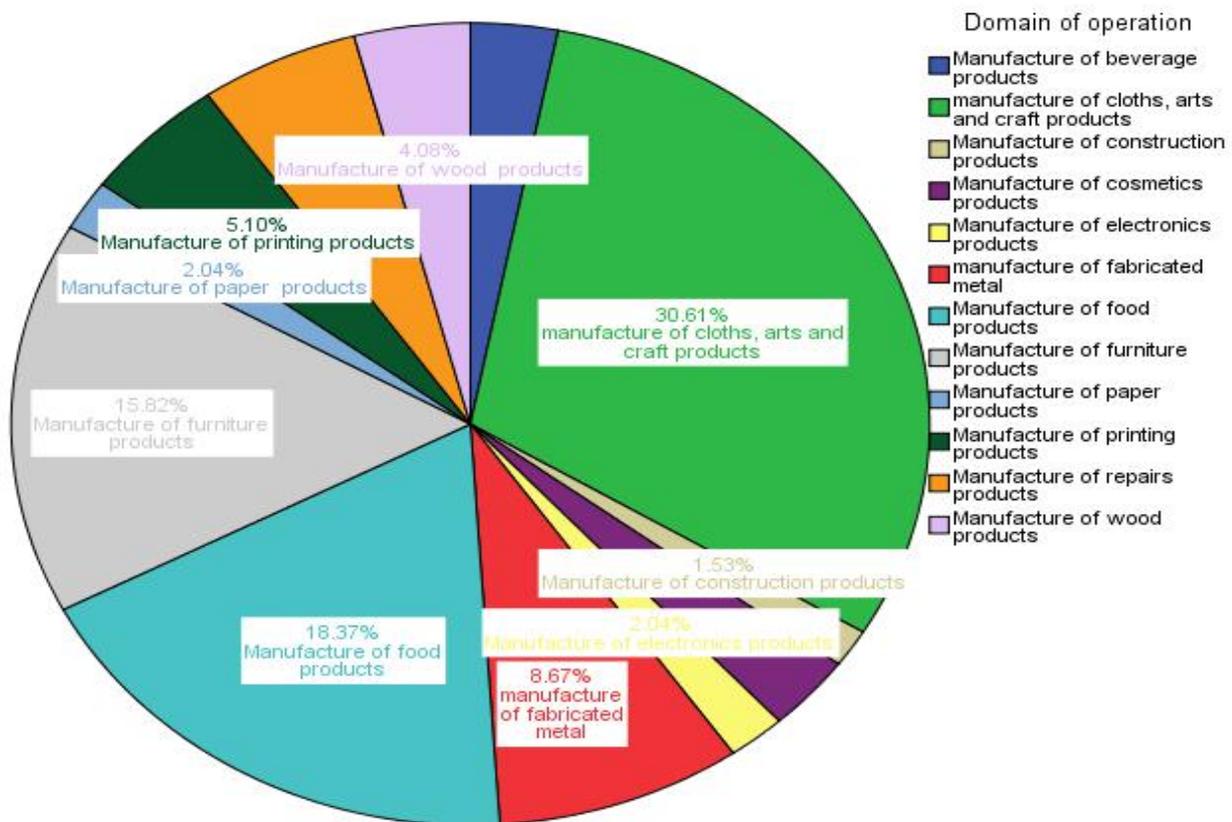
From the table above, 63.3% of the total respondents had a work experience of between 1 and 5 years. 2.6% had 21 years and beyond of working experience. This shows that SMEs employs more newly recruited staff.

Table 4: Organization type and number of employees.

Organizational types		Total
	Other limited companies	1.5%
	Cooperative	1.0%
	Sole proprietorship	90.8%
	Partnership	6.6%
Total		100.0%

Source: Research primary data (2019)

From the table above, most of SMEs visited, were with type of sole proprietorship, 6% were partnerships (Joint ventures) and 1% were cooperatives.



Graph 1: Sub sector of the surveyed manufacturing SMEs

Manufacturing domain where classified in different domains and 3.1% where manufacturing of beverages products and manufacture of cosmetics products, 30.6% were from manufacturing of cloths, arts and crafts products, 1.5% manufacturing of construction products, 2% manufacture of electronics and paper products, 8.7% of the respondents were from manufacture of fabricated metals, 18.4% were manufacture of food products, 15.8% of manufacture of furniture products, 5.1% of manufacture of printing products, 5.6% of manufacturing of repairs and 4.1% from manufacture of wood products. From the findings, it was clear that a big number of respondents were from manufacturing of cloths, arts, and crafts products, manufacturing of food products, and manufacturing of furniture products

Table 5: Level of use of the short term bank loan debt finance

	Frequency	%
Yes	93	47.4
No	103	52.6
Total	196	100.0

Source: Research primary data (2019)

From the findings 47.4% of the respondents claimed that they use short term bank loan debt finance in their activities and 52.6% of the respondents said that they do not use short term bank loan debt finance in their activities. As the result show less than 50% are those which use short term bank loan debt finance and it can be due to many reason, one being that SMEs finance from bank is very competitive and requirement are very high for small firms to qualify. Other reasons being that new and small firms prefer to use other sources of finance which are easily available in their area of operation.

Table 6: Descriptive Statistics

	N	Mean	Std. Deviation
Short term bank loan finance is important to your business	196	2.94	1.984
Short term bank loan finance is easy to access	196	2.93	1.983
Short term bank loan finance helps my business perform better	196	2.87	1.983
I receive overdraft finance from my financial institutions	196	2.66	1.956
Overdraft finance helps my business perform better	196	2.52	1.925
I receive a line of credit finance	196	1.30	1.011
The line of credit makes my business perform better	196	1.30	1.015
Valid N (listwise)	196		

Source: Research primary data (2019)

Findings reveals that short-term finance with the mean of 2.94 and the standard deviation of 1.984. It was also found that short-term finance is easy to find with the mean of 2.93 and 1.983 standard

deviation. Short-term finance help business perform better with the mean of 2.87 and the standard deviation of 1.983. Those who receive overdraft facility have a mean of 2.66 and the standard deviation of 1.956 and overdraft facility of 1.30 mean and 1.015 standard deviation.

Table 7: Overdraft facilities as a way of financing business activities

	Frequency	%
Strongly disagree	113	57.7
Neutral	1	.5
Agree	4	2.0
Strongly agree	78	39.8
Total	196	100.0

Source: Research primary data (2019)

Respondents were asked whether they receive overdraft finance from financial institutions and 57.7% respondents strongly disagreed that they do not receive any overdraft finance from bank, when 0.5% of the respondents manifested a neutral position to receiving overdraft finance from bank, this was justified by the fact that many employees while responding to the questions of the research, when it came to confidential information mainly related to cash and loan, they were in the position of being neutral fearing that providing company's information could result in some negative consequences. 2% of the respondents agreed that they received overdraft finance from the financial institutions, and 39.8% respondents strongly agreed that they receive overdraft finance from financial institutions.

Table 8: level of receiving line of credit from financial institutions

	Frequency	%
Strongly disagree	178	90.8
Disagree	3	1.5
Neutral	1	.5
Agree	2	1.0
Strongly agree	12	6.1
Total	196	100.0

Source: Research primary data (2019)

The findings reveal that 90.8% respondents strongly disagreed that they do not receive line of credit from financial institutions, 1.5% of the respondents disagreed that they do not receive line of credit from financial institutions, 0.5% of the respondents had a neutral position to receiving line of credit from financial institutions, 1% agreed that they receive line of credit from financial institutions, while 6.1% of the respondents strongly agreed that they receive line of credit from financial institutions.

4.2. Model estimation and interpretation of results

To estimate the relationship between the dependent variable and the independents variables, a binary logistic regression was designed to estimate the contribution of the model.

Bloc 0 Beginning bloc

Table 9: Classification Table^{a,b}

Observed		Predicted		
		Profit made through short term bank finance		Percentage Correct
		Yes	2	
Profit made through	Yes	0	54	.0
Step 0 short term bank finance	2	0	117	100.0
Overall Percentage				68.4

Source: Research primary data (2019)

The estimation of the model is equal to the null hypothesis (H_0) which the estimation before inserting any dependent variable. It supports the H_0 that financial performance in terms of profit 68.4% will not be to independent variables, which will be incorporated in the model. The developed model will be compared to the bloc 0 one and for it to be good; it has to increase the value of the existing model.

Table 10: Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	I receive overdraft finance from financial institutions	35.011	1	.000
		I receive line of credit finance from financial institutions	10.747	1	.001
	Overall Statistics		42.256	2	.000

Source: Research primary data (2019)

By checking the validity of independent variable vis-a-vis to the model, it is estimated that all variables with the P value less than 0.05 are statistically significant. From the table finding it is very clear that all values of both overdraft finance and line of credit are statistically significant to

the model. The omnibus test coefficient model with the P value also less than 0.05 show how strong the model will be.

Table 11: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	176.769 ^a	.192	.270
2	168.527 ^a	.230	.323

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Source: Research primary data (2019)

The Nagelkerke R square which similar to R square in the linear regression, which aims to show how dependent variable is affected by the independent variable. Show that 32.3% of the outcome have been predicted or affected by out predictor variables (Overdraft and line of credit). The research is consistent with previous researches (Custodio, Ferreira, & Laureano, 2012), (Wamiori, Namusonge, & Sakwa, 2016), (Dube, 2013), (Harelimana, 2017), (Muneza, 2016), (Ende, 2017), (IRENE, 2014), (McGuinness & Hogan, 2016), (Ifeakachukwu & Olasunkanmi, 2013), found that short term finance has contributed to financial performance of SMEs.

Table 12: Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	5.092	2	.078

Source: Research primary data (2019)

The Hosmer and Lemeshow test greater than 0.05 indicate the prediction of a good model, again the model has 0.78 which is the good indication of the model.

Table 13: Classification Table^a

Observed		Predicted		
		Profit made through short term bank finance	Yes	% Correct
Step 1	Profit made through short term bank finance	Yes	42	77.8
		2	34	70.9
	Overall Percentage			73.1

Source: Research primary data (2019)

The classification per table show us how our model predicted actual outcome. In the model, it clear that 73.1% of the outcomes was predicted by the model. Which great than the null hypothesis, which is 68.2%, meaning that 5% of the variable in the model was due to overdraft facilities and line of credit. To test the goodness of fit, by adding another variable to the model, which is contract finance to test the fitness of it, the model summary, moved from 32.3% to 41.6% and the classification of the model compared to the null hypothesis also was increased from 73.1% to 74.9%, this really is a good indication of the input of contract finance facility to the model. Work experience being also an intervening variable contributed to the model in increasing the value of the classification table from 74.9% to 78.9%. The closer the value is equal to 100% the better the model is. By adding the types of organizations, the value of the classification table moved from 78.9% to 79.5% which is really making the model very good.

5. Conclusion

Frequencies have been generated to give explanation about the respondents, the researcher wanted to find out who responded to the questionnaire and it was found out that 66.3% of the respondents were business owners. This give a positive result because more than 50% questionnaire was from the owners of the business and once these people answer the questionnaire they are likely willing to give the total information of the business because they do not fear to disclose information. The education level of the respondent, more that 80% have a level of education which beyond secondary education. Among respondents, 52.6% were male and 47.4% were female, as manufacturing is more about risk taking. Males are more risk takers than females and it can be seen in the ways they want to venture in new businesses. From the findings above it is very clear that a big number of respondents 63.3% have less than ten years of working experience in their business.

From the findings, it was clear that a big number of respondents were from manufacturing of cloths, arts, and crafts products 30.6%, manufacturing of food products 18.4%, and manufacturing of furniture products 15.8%. From the findings 47.4% of the respondents claimed that they use short-term debt finance in their activities and 52.6% of the respondents said that they do not use short-term debt finance in their activities. As the result show less than 50% are those which use short term debt finance and it can be due to many reason, one being that SMEs finance from bank is very competitive and requirement are very high for small firms to qualify. Other reasons being that new and small firms prefer to use other sources of finance, which are easily available in their area of operation.

Only 41% of the respondents who confirmed that they receive overdraft finance form financial institutions and 7.1% confirmed that they receive line of credit from financial institutions. It was found out with the null hypothesis of 68.3% there was an increase of 5% from it and it moved up to 73.2%. By adding other intervening variable, the model was good and classification values moved up to 79.5%. Which is a good sign about how independent variable are contributing to the

model. In general, short term finance facilities have contributed to financial performance of manufacturing SMEs in Rwanda.

6. Recommendations

- a. The study draws the following recommendations; government of Rwanda through the National Bank of Rwanda (BNR), the Ministry of Trade and Industry (MINICOM) and the Private Sector Federation (PSF) should set measures to strengthen financial literacy among SMEs.
- b. Financial institutions should put in place loan requirements, which are affordable to many people mainly start-ups and young firms

7. Limitations of the study

This study is limited by the fact that it took a one-dimensional measure firm financial performance hence, when dealing with financial performance the study only referred to profit and return on sales using primary data, there was also a need of using secondary in the research.

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Chapter Three

Analysis of recent evolution of economic sectoral output, employment and structural economic transformation in EAC: Spatial panel data approach (1991-2018)

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Abstract

This paper examines the effect of a variate of drivers of economic growth in East African Community (EAC) countries from 1991 to 2018. Different researches have been criticizing the reallocation of economic activities in different sectors of the economy in the southern hemisphere, especially in sub-African countries. This paper is devoted to the recent evolution of the sectoral output level and employment in East African Community countries, assessment of causes and covariates that are correlated, and which might help us to predict output across countries and over time in EAC. We have modeled sectoral output in EAC using the spatial panel approach. We have empirically illustrated spatial Durbin model using the space-time data for output (GDP per capita), sectoral employment share, labor force and final consumption expenditure over 28 years from 1991-2018, where the motivation for spatial dependence is a bootlegging effect (see Debarsy et al., 2010) where buyers either of agricultural products, manufactured products, and different services near country borders purchase in neighboring country if there is a price advantage to doing so.

Keywords: Economic sectors, Structural transformation, spatial panel approach

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1. Introduction

Sub-Saharan African continent in general since 2000, it has been seen high increase in commodity prices which led to high escalation in raw-materials exports revenues, high relocation of people from rural areas to urban regions, and construction booms (Busse et al., 2018) showing the significance of reallocation of economic activities in different sectors of the economy in economic growth of African countries.

East African community countries have too experienced such tremendous economic growth mainly driven by service and agriculture, for example, the average economic growth rate between 2008 and 2018, were 7.57 percent in Rwanda, 6.18 percent in Tanzania, 5.14 percent in Kenya, and growth from these countries were the highest among African countries.

Despite impressive economic growth in last decade, reallocation of economic resources across sectors of the economy is quite deficient among east African community countries, for example in 2018, from the composition of GDP in the region, service sector headed with 59.0 percent, followed by agriculture sector with 25.7 percent, and lastly industry sector with 15 percent, in addition to this the average share of manufactured exports was about 14.6 percent (African Development Bank [ADB], 2019).

To achieve sustainable economic growth in East African community countries, there is a need of strengthening the linkages running from agriculture sector through industry to service sector, Agriculture continues to be a key player in creating jobs, food security, and providing sources of inputs for large part of infant industries in East African region, on average 71.8 percent of labor force in Rwanda was working in agriculture sector between 2008 and 2018, all most the same percentage or lower in other countries in the region, 91.7 percent in Burundi, 70.8 percent in Uganda, 68.6 percent in Tanzania and 58.8 % in Kenya.

The main objectives of this paper were divided into two; the first one was to explain how the patterns of structural transformation in EAC countries regions have evolved and the second one was to assess causes and covariates that are correlated, and which might help us to predict output across countries and over time in EAC countries.

The next part of this paper is structured as follows. The following part provides a literature review on economic sectoral output and structural transformation from a global view to EAC countries. The data and methods of the study are delineated next. Thereafter, the analysis of the results forms the next part. Then, we conclude the paper with recommendations.

2. Literature Review: Empirical studies on economic sectoral output and structural transformation

Analysis of sectoral composition (agriculture, agro-processing, industry, and service) and its contribution to economic development has been examined thoroughly since the pioneering work on the economic growth of Adam Smith (1776). Adam Smith advocated freedom actions ideology of individuals in pursuing economic activities, and that free and independent actions of individuals would increase economic growth.

The wide function representing the relationship between inputs (like labor) and output (production) was developed jointly by Charles Cobb and Paul Douglas in 1928. From Giorno et al. (1995), the simplest Cobb-Douglas production function is of this form:

$$Y_t = A_t \cdot L_t^\alpha \cdot K_t^{1-\alpha}$$

Where Y , A , L , and K are real GDP, factor productivity level, labor input, and capital input respectively and $\alpha + (1 - \alpha) = 1$

According to Rodrik (2013), most low-income countries in the southern hemisphere (Africa) have experienced fractional economic growth between the 1960s and 1970s due to industrialization squeezes, other countries, have experienced such growth from 1990 due to commodity booms and improved governance with a limited reallocation of resources. Capital formation was found also to have a positive significant effect on economic growth (Dritsakis et al, 2006; Perkins et al, 2006; Bal Et Al., 2016).

Sectoral composition and shift of economic activity are key to understand economic growth and development of countries as well as economic imbalances in terms of wage inequality and the business cycle (Herrendorf et al., 2013). Structural transformation is not only linked to the economic development of countries but also the change in inequality and urbanization (Timmer and Akkus, 2008; Michaels et al., 2012). According to Herrendorf et al. (2013), structural transformation refers to “the reallocation of economic activity across the broad sectors agriculture, manufacturing and services”, and the most common measure of economic growth is GDP per capita, while there are three commonly measure of structural transformation of economic activity at sectoral level including final consumption expenditure shares, value-added shares, and employment shares.

Different authors argued that economic development gap between north hemisphere countries and south hemisphere countries comes from the fact that, south hemisphere countries are much less productive in agriculture and reallocation of economic activities in different sectors and high share of people working in agriculture sector (Caselli, 2005; Gollin et al., 2007; Restuccia et al. 2008).

Fisher (1935) and Clark (1940) affirmed the role of structural transformation to the economic growth of countries, as they have observed that reallocation of resources from the agriculture sector to services sector to be accompanied by higher GDP per capita (Kim, 2006).

Different authors have extensively claimed non-consideration of spatial interdependence across-countries would lead to model misspecification in understanding economic growth of countries, starting from Ramírez and Loboguerrero (2002) have modeled economic growth by considering cross-country interdependence based on 98 countries, and their results suggested that “spatial relationships across countries are quite relevant. A country economic growth is indeed affected by the performance of its neighbors and therefore it is influenced by its geographical position”, in additional Lima and Neto (2018) have included spatial independence across regions in their study on economic growth based on theoretical model Mankiw-Romer-Weil and have estimated Spatial Durbin Model with fixed effect for period between 1970 to 2010, as results they have found “a strong spatial dependence among Brazilian micro-regions, moreover, there was evidence that both investments in physical capital and investment in human capital matter not only for the growth of the economy itself but also the growth of neighboring economies.”, then, Hall et al., (2018), argued that “neglecting to account for spatial autocorrelation can bias estimation results and therefore inferences are erroneous” .

However, there is no conclusive research examining the causes and covariates that are correlated, and that might help us to predict output across countries and over time in EAC countries.

3. Data and Methods

The sample for our study covers panel observations for 5 East African Community (EAC) countries (Burundi, Rwanda, Uganda, Tanzania, and Kenya) throughout 1991 – 2018. Excluding South Sudan as it is recently admitted to EAC. The current paper only focuses on balanced panels, as we have used 28-time series and 5 countries, to have 140 observations. Panel Dataset used in this paper was composed from World Bank website; follow this link to get data: <https://microdata.worldbank.org/index.php/home>.

Figure 1: EAC Block excluding South Sudan



From Anselin et al. (2008), a spatial panel data model may be specified as the spatial lag model or the spatial error model, the first model, is when a spatially lagged dependent variable is stated, while in the second model is when a spatially autoregressive in the error term is stated, given that geographic data tend to be spatially dependent as prior assumption, and the third model was developed to include both a spatially autoregressive in the error term, and a spatially lagged dependent variable (see LeSage and Pace, 2009).

In this paper, we have adopted the Spatial Durbin Model (SDM) developed from the Manski model and tested it against other simplest models by imposing restrictions.

Assumptions:

- We have assumed that the output (measured here using GDP per capita) in-country in East African Community (EAC) might be related to the value of the output in a neighboring country ((LagY).
- The value of covariates in-country (Eg. Rwanda) might be related to the value of the output in a neighboring country (LagX). Eg. Tanzania.
- Residuals might be related through countries

Inclusion of spatial interaction effects from the standard panel model is from the facts that,

- Labors are expected to search jobs across countries (in the nearby country), legally or illegally, as long as they are getting better facilities, these can be salary advantages, transport facilities, high purchasing power
- The highly populated country is expected to have more emigrants to a neighboring country
- Free movement of capital across industries and countries.

The choice of SDM depends on two main factors (see Le Sage and Pace, 2009), in case there are omitted variables, which are spatially autocorrelated, the SDM limits the bias effect, and it combines a SAR and SEM model: global and local spillovers (in other words SDM spillover effects are flexible).

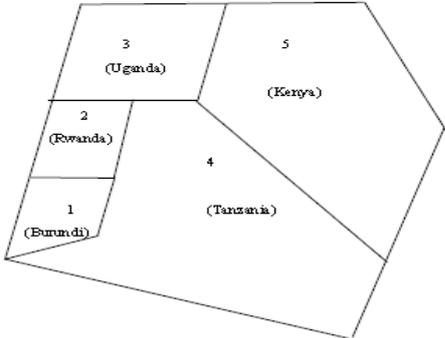
$$Y_{it} = \lambda WY_{it} + X_{it}\beta + XW\theta_{it} + \varepsilon_{it}, i = 1, \dots, N; t = 1, \dots, T, \dots \dots \dots (1)$$

Whereas GDP Per capita (Y_{it}) is the observation on the i^{th} country for the t^{th} period, λ stands for spatial autoregressive parameter, WY_{it} stands for the spatially lagged output on the i^{th} country for the t^{th} period accounting for various spatial dependencies (country and time) with W defined as (n x n) spatial weights matrix (see figure 2) as distance between major cities in East African Community Countries, λWY_{it} measures endogenous interaction effect, $XW\theta$ measures exogenous interaction effect, and ε_{it} is the regression disturbance.

In this paper, we have fitted both the Spatial Durbin model with country fixed effect and the Spatial Durbin model with country and time (two ways) fixed effect using Maximum Likelihood Estimation (ML), and random draws from a multivariate normal distribution were made from a variance-covariance matrix of the coefficients.

According to Lee & Yu (2010), spatial econometrics involves the application of econometrics techniques considering interactions of economic variables and physical units in space, space considered here are neighborhood countries in EAC (Figure 2).

Figure 2: Neighborhoods among EAC countries



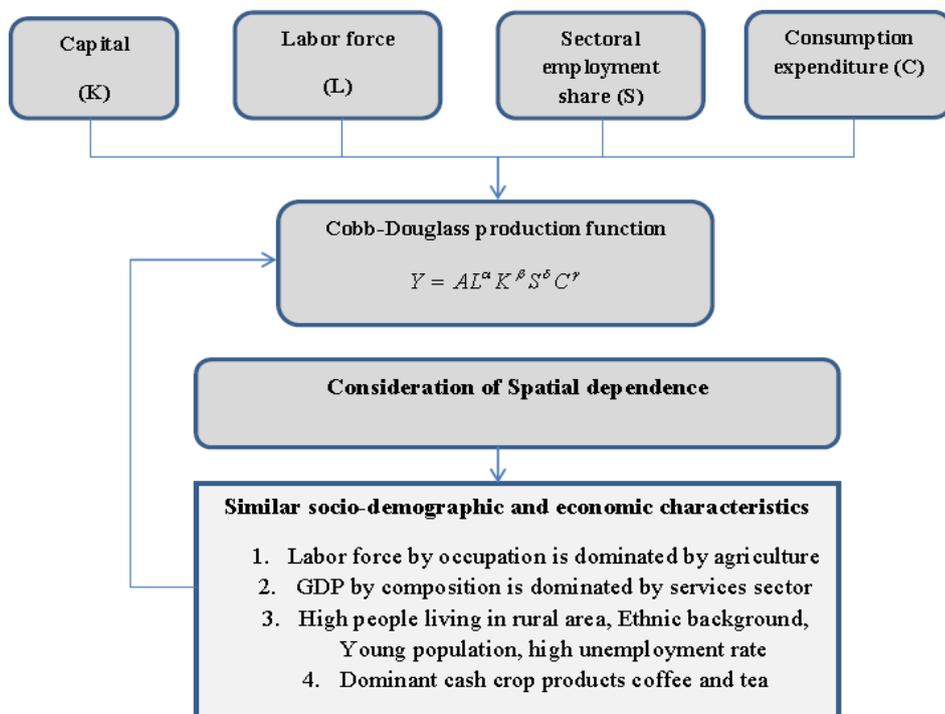
For a spatial Durbin panel data model, a change in country characteristics not only has a direct influence on the outflows and inflows from and to this country but also has an indirect effect on the flows to and from other countries in the economic growth across countries and time. Therefore, there is a need to quantify various responses in the model considering both local and global effects (Golgher and Voss, 2016).

The conceptual framework presents a double growth model that includes spatial dependence throughout the productivity term. We assume the traditional Cobb-Dougllass production function (Figure 3). Given the beliefs of spatial autocorrelation across countries in EAC, we first examined this belief through global Moran I for the GDP per capita.

$$I = \frac{n \sum_{i,j} w_{i,j} C_i C_j}{\sum_i \sum_j w_{i,j} \sum_{i=1}^n C_i^2}, i \neq j, \dots \dots \dots (2)$$

C_i and C_j represents deviations from the means and are the observations on a variable (y) for the country i and j , respectively, In this case y , is a country's GDP per capita, If $I \approx 0$, then there is no indication of residuals spatial autocorrelation, that is, residuals tend to move independently. If Moran's I statistic is greater than zero, there is a positive spatial autocorrelation, that is, areas with high residual values tend to be closer to areas with high residual values (and vice versa). Finally, if Moran's I statistic is smaller than zero, there is a negative autocorrelation; that is, places with high residual values are closer to neighboring places with low residual values, and vice versa(Resende, 2013).

Figure 3: Conceptual framework



Source: Researcher, 2020

Table 1: Description of variables

Variable	Description
GDP_per_capita	GDP per capita (Constant 2010 US\$)
Capital_formation	Gross capital formation (Constant 2010 US\$)
Employment_in_agriculture	Employment in agriculture (% of total employment)
Employment_in_industry	Employment in industry (% of total employment)
Employment_in_services	Employment in services (% of total employment)
Final_cons_exp	Final consumption expenditure (Constant 2010 US\$)
Labour_force	Total labor force

Source: World Bank, 2019

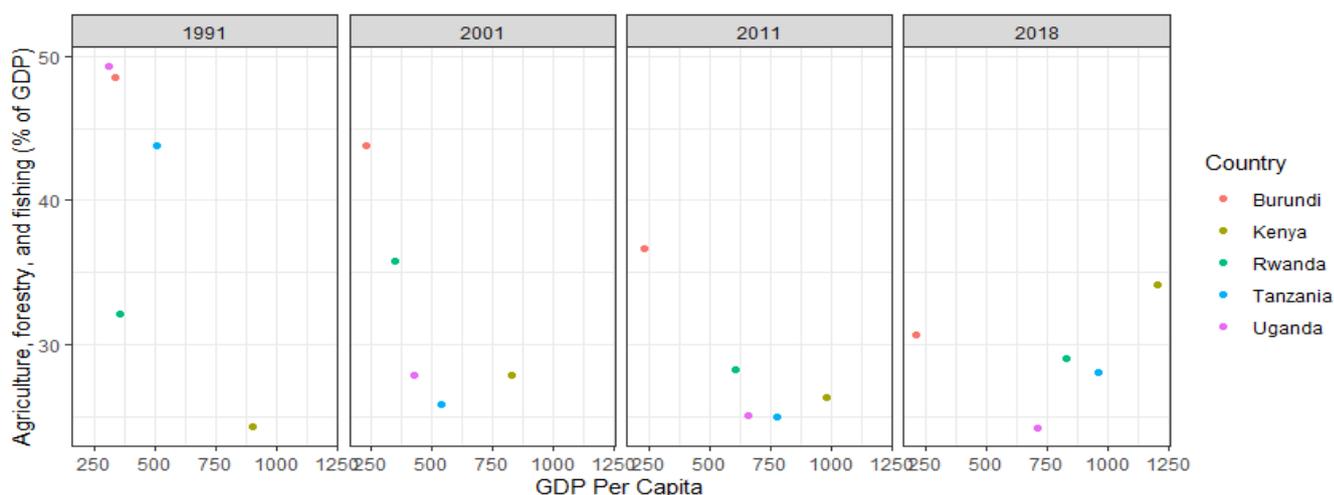
4. Results

4.1 Agriculture share of value-added and employment trend comparison in EAC countries, 1991 – 2018

Comparing East African Community peer group countries from 1991, Burundi and Uganda had a higher share of Agriculture, forestry, and fishing in GDP with percentages ranging between 48 and 49 with lower GDP per capita/year ranging between \$250 and 500\$ (Figure 4, Panel A), and higher percentage of people employed in agriculture with values between 75 to 95 (Figure 4, Panel B). Kenya had the lowest share of Agriculture, forestry, and fishing in GDP with 24 percent in EAC associated with higher GDP per capita/year more than \$875, with a lower percentage of people employed in the agriculture sector (46%). For the two main indicators of structural transformation presented- agricultural value-added and share of employment in agriculture, higher employment in agriculture and higher share of agriculture, forest, and fishing in GDP was associated with lower GDP per capita in 1991, these situations have shifted, for example in Kenya higher GDP per capita increased further to more than \$1200, and rest of East African countries have shifted from less than \$500 GDP per capita/year to more than \$500 GDP per capita/year except Burundi, from Figure 4, Panel A, it is clear that share of agriculture, forest, and fishing have been downward converging to Kenya as leading economy in EAC and employment in agriculture as percent of total employment has been reduced over time.

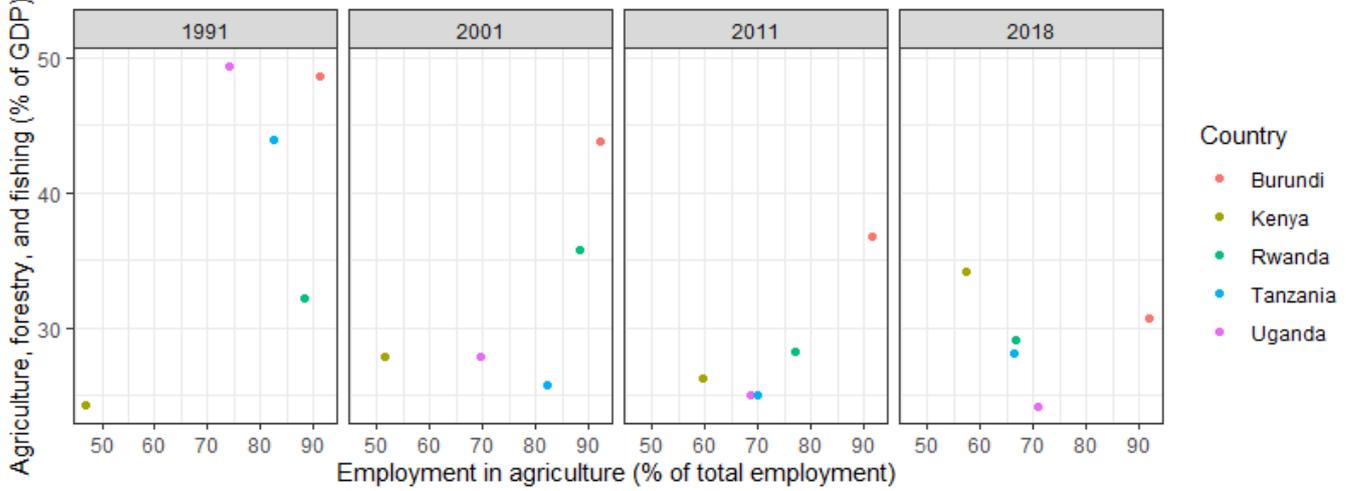
Figure 4: Agriculture share of value-added and employment trend comparison in EAC countries, 1991 - 2018

Panel A



Source: Researcher, 2020

Panel B



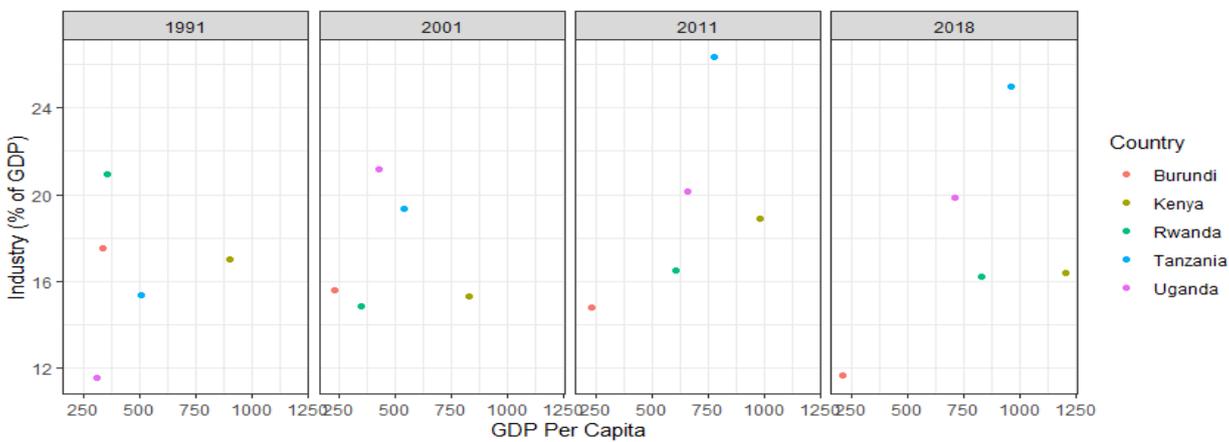
Source: Researcher, 2020

4.2 Industry share of value-added and employment trend comparison in EAC countries, 1991 – 2018

Comparing East African Community peer group countries from 1991, it is clear that share of services in GDP have been converging in center, meaning country like Kenya, it's contribution declined while countries like Tanzania and Uganda, their contribution increased from 1991 to 2018 (Figure 6, Panel A), and that the lower share of people working in the service sector was associated with a lower share of service in GDP in 1991, and a higher share of people working in the service sector was associated with a higher share of service in GDP in 2018 (Figure 6, Panel B).

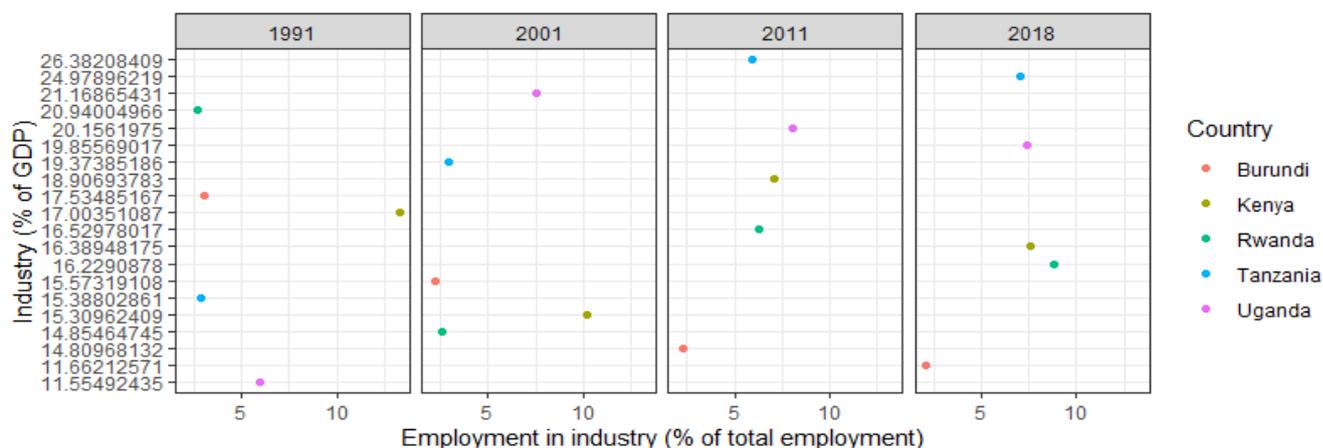
Figure 5: Industry share of value-added and employment trend comparison in EAC countries, 1991 - 2018

Panel A



Source: Researcher, 2020

Panel B



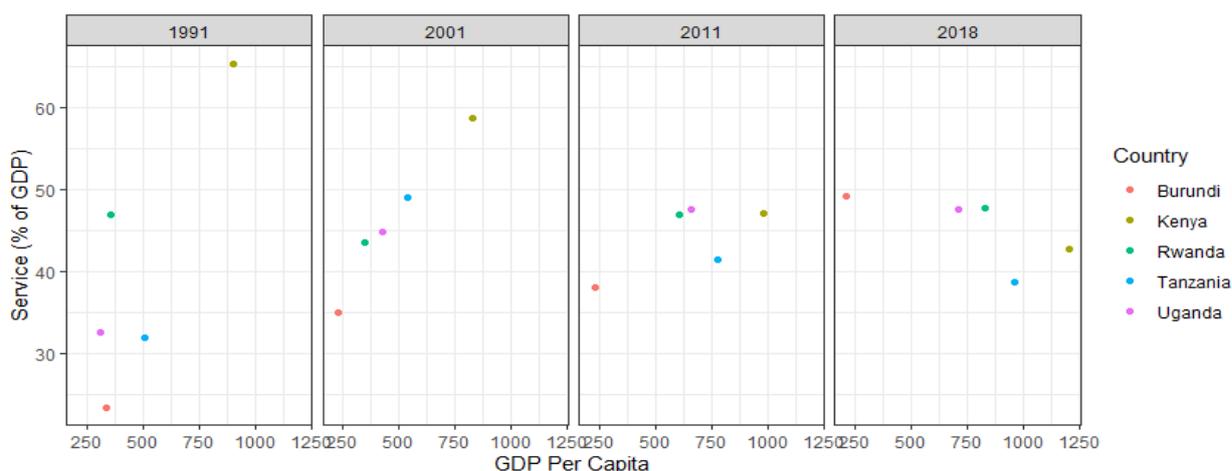
Source: Researcher, 2020

4.3 Service share of value-added and employment trend comparison in EAC countries, 1991 - 2018

Comparing East African Community peer group countries from 1991, it is clear that share of services in GDP have been converging in center, meaning country like Kenya, it's contribution declined while countries like Tanzania and Uganda, their contribution increased from 1991 to 2018 (Figure 6, Panel A), and that the lower share of people working in the service sector was associated with a lower share of service in GDP in 1991, and a higher share of people working in the service sector was associated with a higher share of service in GDP in 2018 (Figure 6, Panel B).

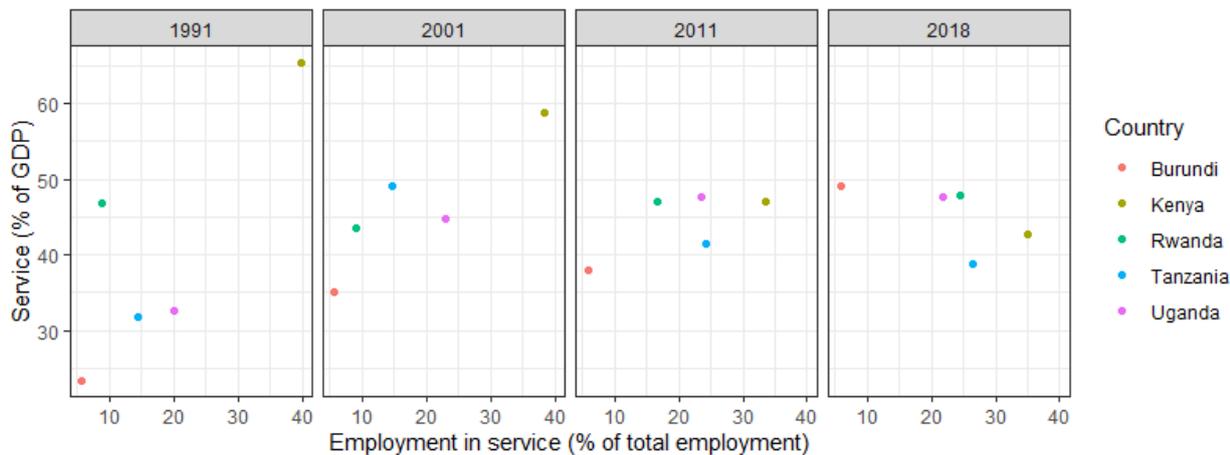
Figure 6: Service share of value-added and employment trend comparison in EAC countries, 1991 – 2018

Panel A



Source: Researcher, 2020

Panel B

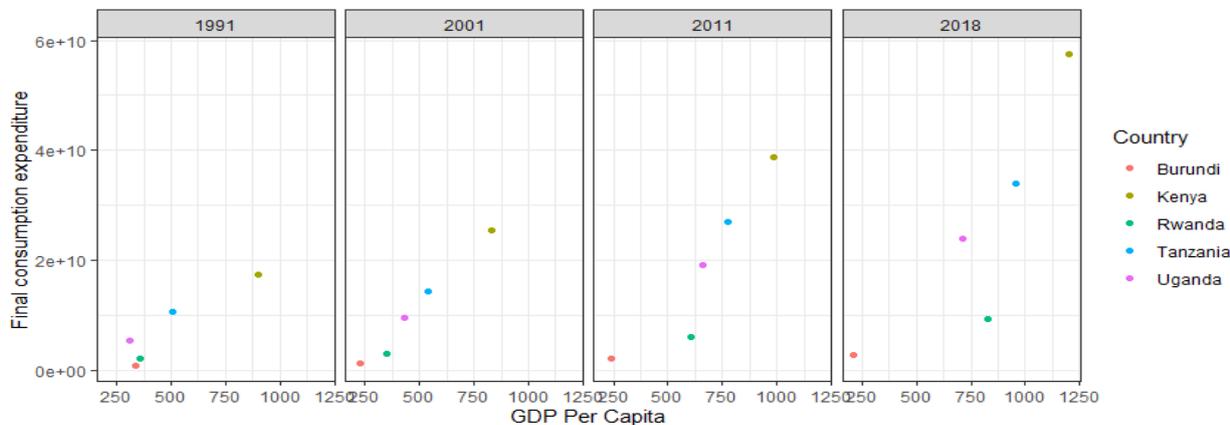


Source: Researcher, 2020

4.4 Final consumption expenditure trend comparison in EAC countries, 1991 – 2018

Comparing East African Community peer group countries from 1991, it was observed that final consumption expenditure in East African countries has shifted at the same pace but in the stair, format showing an acceleration in gap consumption between countries from 1991 to 2018 (Figure 7).

Figure 7: Final consumption expenditure trend comparison in EAC countries, 1991 – 2018



Source: Researcher, 2020

4.5 Spatial Durbin regression results

Table 2: Spatial Durbin model with country fixed effect (1) Vs Spatial Durbin model with country and time (two ways) fixed effect (2)

	Dependent variable: log(GDP_per_capita)	
	(1)	(2)
log(Capital_formation)	0.096349 (3.9601***)	0.073889 (3.0471**)
log(Employment_in_agriculture)	0.786510 (3.6755***)	0.095220 (0.3368)
log(Employment_in_industry)	0.623598 (9.4588***)	0.440219 (6.2883***)
log(Employment_in_services)	0.183087 (2.3171*)	0.291041 (2.4310*)
log(Final_cons_exp)	0.159908 (2.1820*)	0.087329 (0.263344)
log(Labour_force)	0.650811 (4.9886***)	0.957469 (3.9154***)
log(GDP_per_capita_lag)	0.043877 (0.3057)	-0.610104 (-1.6248)
log(Capital_formation_lag)	-0.020001 (-0.3459)	-0.035700 (-0.3443)
log(Employment_in_agriculture_lag)	-0.116612 (-0.1849)	-0.677955 (-1.1268)
log(Employment_in_industry_lag)	0.015298 (0.1235)	-0.072517 (-0.2943)
log(Employment_in_services_lag)	1.491347 (6.7259***)	1.802978 (4.6576***)
log(Final_cons_exp_lag)	-0.710816 (-4.1252)	-0.722559 (-2.5894**)
log(Labour_force_lag)	-0.020341 (-0.0812)	1.264986 (1.9517)
Observations	140	140
R²	0.9984232	0.9988142
Adjusted R²	0.9898266	0.9923492
LogLik	125.5189	144.6433
Akaike Criterion (AIC)	-211.0378	-197.2866
Scharz Criterion (BIC)	-152.205	-61.97105

Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1 Notes: All variables are in log form, t-statistics in parentheses

Source: Researcher, 2020

Table 2 reports the estimation results when adopting the spatial lag of output (GDP per capita) by considering, first, country fixed effect, then, second by considering both countries' fixed effect and time fixed effect. The second column presents the results of the spatial lag of GDP per capita model with country fixed effects, while the third column presents the results of the spatial lag of GDP per capita model with both country fixed effects and time fixed effect.

If we compare the results in the second column with those in the third, we see that the point estimate of the spatially lagged value of GDP per capita changes sign when controlling for both country and time-period fixed effects, but the coefficient estimate remains insignificant. These results c

correspond to the one obtained by Pintar et al., (2016) in studying outbound foreign direct investment in Europe.

Turning to the variables of major interest, we find the coefficient on the spatially lagged value of all explanatory variables to be negative and insignificant except employment in service (% of total employment) which was found to be positive and significant and the coefficient of the final consumption expenditure which was found to be negative and significant. The consequence of the interactions in SDM is that a covariate unit change in the spatial coefficient of the lagged response which is non-zero will have global spillovers impacts, so there is need of caution in interpreting the results, in this case, impacts should be interpreted rather than the regression coefficients, while in case of the spatial coefficient of the lagged response is zero a covariate unit change will have an impact on the response (Elhorst 2010; LeSage 2014). To avoid invalid conclusion, we have used direct, indirect and total impact from table 3 to report global spillovers impacts of employment in services as percent of total employment and the final consumption expenditure in EAC countries.

Table 3: Direct, indirect and total impacts on EAC countries growth

	Direct	Indirect	Total
log(Employment_in_services)	0.15304 (2.1702***)	0.24566 (2.754***)	0.3987 (5.47122***)
log(Final_cons_exp)	-0.12563 (3.453***)	-0.33412 (-1.2345)	-0.45975 (-1,768)

Source: Researcher, 2020

The numbers are obtained using the distance weight matrix, the standardized deviations and z values are obtained by assuming normal distribution and using simulation.

5. Conclusion and Recommendations

This paper examined the recent evolution of the sectoral output level and employment in East African Community countries for each 10 years (1991, 2001, 2011, and 2018), then it uses spatial Durbin model to estimate Cobb-Douglas model to predict output across countries and over time in EAC, in which a country's economic growth here measured using GDP per capita depends on the neighbors' economic growth and other covariates within country and neighbors. Based on a sample of 5 East African Community countries over 28 years (from 1991 to 2018) the paper finds some interesting results.

First, 1991, the majority of EAC countries (Uganda, Burundi, and Tanzania) were characterized by higher people employed in agriculture more than 75 percent of total employment coupled with higher share of agriculture sector in GDP (40 % to 50 %) but this has evolved and countries like

Rwanda, Tanzania, and Uganda in 2018, have seen their share of added-value of agriculture in GDP declined to less than 30 percent, and people employed by agriculture sector declined to less than 70%.

Nevertheless, the agricultural sector continues to employ most of the labor force in East African community countries; our results reveal that reallocation of economic activities have been from primary sector to services sector, implying wrong structural economic transformation. This result complete the one founds by Busse et al., (2018).

In order to revise this channel from reallocation of economic activities from primary sector to tertiary sector by strengthening manufacturing sector in between there is need of capacity building of small scare industries, More efforts in trainings at household level in creative skills (leather shoes, paper bags, bakery, paintings, agro-processing ...), and More efforts in free trade areas between East African Countries

Second, Comparing East African Community peer group countries from 1991, it was found out that EAC countries' share of services in GDP have been converging in middle, as country like Kenya has seen its contribution of services sector in GDP declined, while other countries like Tanzania and Uganda, have seen their contributions increase from 1991 to 2018.

Third, as policy implication, our results reveal that a country's economic growth is affected by the performance of its neighbors, where the results suggested the spillover effects from employment in service as a percent of total employment and the final consumption expenditure.

Even if we have found interesting results, our results need to be interpreted with caution, as the panel data period was very short, and second spatial panel approaches still have some limitations.

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Chapter Four

Effect of EAC single customs territory on trade facilitation in Rwanda

By Dr. Jean Paul MPAKANIYE⁵

Abstract

East African Community (EAC) is an organization of east African countries composed by 6 countries including Tanzania, Kenya, Uganda, Burundi, Rwanda and South Sudan. Single customs territory (SCT) was adopted as the stage towards full attainment of the customs union achievable by the removal of restrictive regulations of internal border controls on goods moving between the member states with an ultimate realization of free circulation of goods. This study intended to analyze the effect of EAC single customs territory on trade facilitation in Rwanda. Descriptive research design was adopted and both primary and secondary data were collected using documentation, interview and questionnaire. 372 cross-border traders were selected out of 5,313 traders who crossed the border. The major findings revealed that based on the regression results, R-square of 0.99 show 99% of the variation in the traders facilitated through the change on the administration costs, business costs, declaration agencies and repo rate. For further improve the cross border services and continue to facilitate the cross border traders, some recommendations have been proposed: government should increase many efforts on the policy of tax incentives on the investments for the traders who transfer the goods to Rwanda from EAC members.

Key words: EAC, single customs, trade facilitation

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1. Background of the study

In recent years, the East African Community (EAC) has sought to eliminate non-tariff barriers (NTBs) through a common reporting and inter-state resolution mechanism among its members Burundi, Kenya, Rwanda, Tanzania and Uganda. Some of the recent research shows that this mechanism has been particularly effective in identifying and removing those NTBs associated with customs and trade facilitation problems: More than 45% of NTBs which were identified and subsequently addressed since the monitoring mechanism's inception in 2009 belonged to this category (Calabrese & Eberhard-Ruiz, 2016).

During the same period, overall time required to move goods along the main transport corridors in the East African region were reduced by almost half, while transport rates charged by trucking companies along the same routes fell by a third. Although this decline in trucking prices appears to have been largely driven by lower fuel costs and a decrease in demand for transport services, the fact that these cost savings were passed on to users suggests a competitive market structure. Additional efforts to remove NTBs related to trade facilitation along the EAC's transport corridors could thus have a large impact in the form of lower regional transport costs. This policy briefing provides an overview of the causes of the decline in transport costs across the EAC in the context of trade facilitation efforts (Kandie et al., 2013).

The single customs territory (SCT) can be illustrated as the stage for full attainment of the customs union which is attainable by the removal of duties and other restrictive regulations and minimization of internal border customs controls on goods moving between partner states with an ultimate realization of free circulation of goods. The treaty for the establishment of the EAC was signed in November 1999 and entered into force in July 2000. According to article 5(2) of the treaty, the partner states undertook to establish a customs union (CU), a common market, a monetary union and ultimately a political federation in order to enhance their economic, social, cultural and political development and integration for their mutual benefit (EAC institutional Repository, 2014).

The EAC single customs territory is premised on the following pillars: Free circulation of goods; revenue management systems; port management systems; and regional legal and institutional framework. The scope of free circulation of goods with regard to the EAC covers treatment of imported goods in the EAC, intra-EAC transfer of goods, export of goods from Partner States to markets outside the EAC, port and border operations and trade facilitation (Kandie et al., 2013). Currently, when locally produced goods are transferred from one partner state to another they are declared for export in the country of origin and then entered for transit until they reach the partner state of destination. The goods are then entered for home use and domestic taxes paid. Goods which do not meet EAC rules of origin criteria are subject to import duties. The process of clearing locally produced goods at the internal borders although there are no import duties is the same as that goods imported from outside EAC (Kandie et al., 2013).

Interconnectivity of customs systems to facilitate seamless flow of information between customs stations and a payment system to manage transfers of revenues between EAC partner states, this is a stage towards full attainment of a customs union achievable by the removal of restrictive regulations or minimization of internal border controls on goods moving between the partner states with an ultimate realization of free circulation of goods. Implementation of this framework leads to the harmonization of standards for goods moved through the territory. To further enhance operations of the single customs territory, a single window system to enable exchange of information between cargo clearances agencies has been developed (EAC & FAO, 2017).

Improvements in trade facilitation along the EAC's Northern and Central Corridors, which link the region's hinterland with the ports of Dar es Salaam and Mombasa, have been at the forefront of the regional integration agenda. Customs procedures have been simplified and to a large extent harmonized between member states. A Single Customs Territory (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. In addition, several one-stop border posts have been established in recent years to minimize border crossing times and an agreement was reached to reduce the number of weighbridges along the corridors (Teravaninthorn & Raballand, 2016).

The extent to which continued trade facilitation efforts can be expected to result in lower transport costs depends crucially on the existence of a competitive market structure in the EAC transport industry. Combining the information from qualitative interviews with other sources of data, it is possible to estimate the evolution of annual revenue, operating cost and profit margins for running a single cargo truck in recent years and hence to shed light on the competitive nature of the EAC's transport sector (Calabrese & Eberhard-Ruiz, 2016).

2. Problem statement

The East Africa Community (EAC), with a goal of widening and deepening cooperation among partner states in economic, social and political spheres, derives her mandate from the treaty for its establishment signed in November 1999 and entered into force in July 2000 while the protocol establishing the EAC Customs Union (CU) was signed in 2004. The implementation of the EAC CU commenced on 1st January 2005 with a transitional period of 5 years. While the implementation of the EAC Customs Union has been gradual, recent impact studies show that it is having benefits to partner states. Specifically, there has been substantial increase in: intra-EAC trade; cross border and foreign direct investment; and government revenue (contrary to initial fears of revenue losses); simplified and harmonized customs procedures and formalities; a stable tariff regime has enhanced the predictability and planning of businesses; and the consultative pre/post-budget process ensures uniformity in tax measures on international trade (Smith, 2011).

Under the SCT arrangement, the EAC member states have adopted a destination model of clearance of imports whereby the assessment and collection of tax revenues on such consignments

are done at the first point of entry. This allows free circulation of goods within the single EAC market, with variations to accommodate exports from one Partner State to another. In this regard, Customs administrations in destination states retain control over the assessment of taxes. This crystallizes the gains of regional integration characterized by minimal internal border controls and more efficient institutional mechanisms for clearing goods out of Customs control (Chambers, 2014).

According to COMESA (2015), goods imported into the regional grouping are entered only once in the country of destination and released at the first port of entry to the destination member state; duty paid goods are not allowed to change destination into another member state except where permission is granted by both member states. Duty paid goods are released to the destination member state for home use and are subjected to customs controls through the Electronic Cargo Tracking System (ECTS).

As in October 2013, the Presidents of Uganda, Rwanda and Kenya agreed to implement a Single Customs Territory (SCT) between them as members of the East African Community. Tanzania and Burundi followed suit at the Summit in November 2013. “At a stroke (of the pen), the agreement removed multiple weighbridges, police and customs checks along the Mombasa-Kampala-Kigali route and introduced computerized clearance and electronic tracking and other innovations that have overturned many of the hurdles to free trade or Non-Tariff Barriers (NTBs) that the Northern Corridor was infamous for.” The phrase ‘single customs territory’ is fashionable in almost every discussion and media piece about regional integration. It is used in connection with measures to improve efficiency of the Northern Corridor and even with the planned standard gauge Mombasa-Malaba railway line. It is in the name of the single customs territory or SCT, as it is known, that investments are being made on the Central Corridor from Dar es Salaam to the landlocked countries (Lyimo, 2014).

The Single Customs Territory (SCT) has greatly improved trade and reduced the cost of doing business in the East African Community. Traders are saving a substantial amount of money and time, which has reduced final consumer prices (Both et al., 2007).

Despite the positives, congestion at borders and ports where there is no one-stop border post remains a challenge, with traders still facing problems because some states have not adjusted fully to the SCT system and there are other challenges like corruption and unmatching systems and breakdown have been cited as huge setbacks in the implementation of the EAC single Customs Territory.

Other different challenges faced customs union before SCT are difference in application of customs laws and instruments, multiple customs declarations at internal borders, multiple security bond regimes, application of varying valuation approaches, weak enforcement mechanisms, complex clearance procedures involving many governments (Memo, 2014).

Based on this study, few studies were done on the related topic such as Lyimo (2014) on the topic of Single customs territory; Calabarase & Eberhard-Ruiz (2016) on the study called “what types of non-tariff barriers affect the EAC but by observation there is no study on EAC Single customs on trade facilitation and there are different studies such Chimila et al., (20114), Kafeero (2008) and Portugal et al. (2009). Therefore, this study tends to complete the unfilled gap.

3. Objectives

The general objective of this study was to analyze the effect of EAC single customs territory on trade facilitation in Rwanda

Based on the above general objective, the following specific objectives were considered:

- To identify the benefits of EAC Single customs territory for trade facilitation in Rwanda.
- To establish the challenges faced by the EAC customs union before SCT for trade facilitation in Rwanda
- To assess the relationship between EAC single customs and trade facilitation in Rwanda.

4. Theoretical framework

This section emphasizes on the theory for which that help to understand very well all the elements that this study focused for such transaction cost theory, risk theory, time management theory and revenue maximization of a firm theory.

4.1. Transaction costs theory

In economics and related disciplines, a transaction cost which is the cost in making any economic trade when participating in a market. There are four factors that comprise transaction costs such as "measurement," "enforcement," "ideological attitudes and perceptions," and "the size of the market." Measurement refers to the calculation of the value of all aspects of the good or service involved in the transaction. Enforcement can be defined as the need for an unbiased third party to ensure that neither party involved in the transaction reneges on their part of the deal. These first two factors appear in the concept of ideological attitudes and perceptions, North's third aspect of transaction costs. Ideological attitudes and perceptions encapsulate each individual's set of values, which influences their interpretation of the world. The final aspect of transaction costs, according to North, is market size, which affects the partiality or impartiality of transactions (Douglas, 1992).

Transaction costs can be divided into three broad categories: Search and information costs are costs such as in determining that the required good is available on the market, which has the lowest price, Bargaining costs are the costs required to come to an acceptable agreement with the other party to the transaction, drawing up an appropriate contract and so on. In game theory this is analyzed for instance in the game of chicken. On asset markets and in market microstructure, the transaction cost is some function of the distance between the bid and ask and Policing and

enforcement costs are the costs of making sure the other party sticks to the terms of the contract, and taking appropriate action (often through the legal system) if this turns out not to be the case (Dahlman, 1999).

There are a great variety of arrangements in producing goods. In agriculture often most of the labor force works on a day-to-day basis. In other industries the labor force may be permanent, tied to the firm with long-term contracts. Repair services in some firms may be supplied by an internal organization; in others it is provided by specialized firms from outside. A firm is a system of long-term contracts that emerge when short-term contracts are unsatisfactory. The unsuitability of short term contracts arises from the costs collecting information and the costs of negotiating contracts. This leads to long term contracts in which the remuneration is specified for the contracted in return for obeying, within limits, the direction of the entrepreneur (Watkins, 2010).

Ronald Coase gives the origin of the Nature of the Firm as a course in the organization of the business unit which he taught in 1932. He noted that there are inconveniences of market transactions, but if transactions are not governed by the price system there has to be an organization. The object of a business organization is to reproduce the conditions of a competitive market for the factors of production within the firm at a lower cost than the actual market. But if an organization exists to reduce costs then why are there any market transactions at all? Coase gave two reasons: the costs of organizing additional transactions rise with scale and are equated with the costs of additional market transactions and the organization of bigger firms may not reproduce the effects of market conditions (Dahlman, 1999).

Based on the theories of transaction costs, in this study helped to identify different strategies to the constraints faced single customs territory as the way for the achievement of customs union where it comprised non-neutralized taxes and duties, differential cost of credit at international and domestic rate, differential cost of tariff at International and domestic rate and ground level transaction cost due to delays and charges in customs, ports, issuance of license, banks, refunds etc.

4.2.Risk theory

Exponents of the ‘risk society’ thesis also argue that in late modernity there is a trend towards individualization, or the progressive loss of tradition and social bonds as a means of structuring the life-course and forming personal identity. A major difference, they argue, in the ways in which we conceptualize and deal with dangers compared with individuals in earlier eras is the extent to which individuals are positioned as choosing agents. We now think of ourselves as exercising a high level of control over the extent to which we expose ourselves to danger and therefore as culpable for becoming prey to risk. Risk is primarily understood as a human responsibility, both in its production and management, rather than the outcome of fate or destiny, as was the case in pre-modern times (Hensen, 2001).

4.3. Time management theory

Time management is the process of planning and exercising conscious control of time spent on specific activities, especially to increase effectiveness, efficiency, and productivity. It involves a juggling act of various demands upon a person relating to work, social life, family, hobbies, personal interests and commitments with the finiteness of time. Using time effectively gives the person "choice" on spending/managing activities at their own time and expediency. It is a meta-activity with the goal to maximize the overall benefit of a set of other activities within the boundary condition of a limited amount of time, as time itself cannot be managed because it is fixed (Dahlman, 1999).

Time management may be aided by a range of skills, tools, and techniques used to manage time when accomplishing specific tasks, projects, and goals complying with a due date. Initially, time management referred to just business or work activities, but eventually the term broadened to include personal activities as well. A time management system is a designed combination of processes, tools, techniques, and methods. Time management is usually a necessity in any project development as it determines the project completion time and scope. It is also important to recognize that both technical and structural differences in time management exist due to variations in cultural concepts of time (Hensen, 2001).

The major themes arising from the literature on time management include the following: Creating an environment conducive to effectiveness, setting of priorities, carrying out activity around prioritization, the related process of reduction of time spent on non-priorities and incentives to modify behavior to ensure compliance with time-related deadlines. Time management is related to different concepts such as: Project management: Time management can be considered to be a project management subset and is more commonly known as project planning and project scheduling (Watkins, 2010).

Time management has also been identified as one of the core functions identified in project management, attention management relates to the management of cognitive resources, and in particular the time that humans allocate their mind (and organize the minds of their employees) to conduct some activities. Organizational time management is the science of identifying, valuing and reducing time cost wastage within organizations. It identifies reports and financially values sustainable time, wasted time and effective time within an organization and develops the business case to convert wasted time into productive time through the funding of products, services, projects or initiatives at a positive return on investment (Dahlman, 1999).

Time management theory helped to organize the clearance process in order to reduce time release as one of the benefits of single customs territory in facilitating customs clearing process.

4.4. Revenue maximization of a firm theory

Revenue maximization is a theoretical objective of a firm which attempt to sell at a price which achieves the greatest sales revenue. This would occur at the point where the extra revenue from selling the last marginal unit (i.e. the marginal revenue, MR, equals zero). If marginal revenue is positive, an extra unit sold must add to total revenue and revenue maximization will not have been reached. Only when marginal revenue is zero will total revenue have been maximized (Boumal, 2012).

Even if the EAC region is putting together all efforts to implement single customs territory in order to have easy trade among partner states, these cannot exonerate the respective revenue authorities their main responsibilities of assessing, collecting and account government revenues to finance national needs. These should still burden revenue authorities to maximize collections in their countries.

5. Empirical review

Chimilila et al. (2014) did a research on Trade facilitation in EAC customs Union where their study addressed trade facilitation in the East African Community Customs Union (EAC CU) by tracking the achievements and implementation using Tanzania as a case. The study uses descriptive research design and data for the study were mainly secondary data; unstructured interviews with key stakeholders complemented data for this study. The study found that as a result of implementation of trade facilitation initiatives, performance in trade, FDI inflows and trade taxes collection in all EAC countries have improved significantly. Tanzania performs better than other EAC countries in FDI inflows and contribution of export to the Gross Domestic Product (GDP). The study found a significant positive relationship between countries' trade facilitation and export performance. Facilitation was found to have no significant relationship on FDI flows. The major setbacks of trade facilitation are non-tariff barriers, transport infrastructure, inadequate human resources capacity, and low level of automation. Addressing these challenges will enhance EAC countries benefits from trade. Keywords: trade facilitation performance, trade facilitation and logistics indicators, EAC Customs Union.

Kafeero (2008) conducted the study on customs and trade facilitation where his article expounds and evaluates the contribution of Customs to trade facilitation within the East African Community (EAC). It is developed against the background of trade facilitation as understood by the World Trade Organization (WTO). Hence, it examines how and to what extent the trade facilitation-related aspects of the WTO are (or are not) reflected in the EAC customs law and administration. The World Customs Organization's Trade facilitation instruments, particularly the Revised Kyoto Convention, are also considered. After scrutinizing the EAC customs law and administration, suggestions are made for better coordination, harmonization and simplification of international trade/customs procedures within the EAC.

Portugal et al. (2009) did a research on Trade facilitation in Africa where they estimated the impact of aggregate indicators of soft and hard infrastructure on the export performance of developing countries. We derive four new indicators for more than 100 countries over the period 2004-07. Estimates shows that trade facilitation reforms do improve the export performance of developing countries. This is particularly true with investment in physical infrastructure and regulatory reform to improve the business environment. The findings provide evidence that the marginal effect of the quality of physical infrastructure improvement on exports appears to be decreasing in per capita income. In contrast, the impact of information and communications technology on exports appears increasingly important as a country becomes rich. We also find statistical evidence on the complementarity between hard infrastructure and soft infrastructure, as captured by our indicators. Finally, drawing on estimates, we compute illustrative ad-valorem equivalents of improving each indicator halfway to the level of the top performer in the region.

The study conducted by Flyvbjerg & Budzier (2011) conducted a study where he said that facilitation and customs increasingly feature in agreements with 3rd countries, covering such matters as: simplification of requirements and formalities in respect of the release and clearance of goods, including, collaboration on the development of procedures enabling the submission of import or export data to a single agency, improved working methods and ensuring transparency.

6. Research gaps

Based on the reviewing literatures, few studies were done to the related topic such as Lyimo (2014) on the topic of Single customs territory; Calabarase & Eberhard-Ruiz (2016) on the study called “what types of non-tariff barriers affect the EAC but by observation there is no study on EAC Single customs on trade facilitation. Chimilila et al. (2014) did a research on Trade facilitation in EAC customs Union where their study addressed trade facilitation in the East African Community Customs Union (EAC CU) by tracking the achievements and implementation using Tanzania as a case. The study uses descriptive research design and data for the study were mainly secondary data; unstructured interviews with key stakeholders complemented data for this study. Kafeero (2008) conducted the study on customs and trade facilitation where his article expounds and evaluates the contribution of Customs to trade facilitation within the East African Community (EAC). Portugal et al. (2009) did a research on Trade facilitation in Africa where they estimated the impact of aggregate indicators of soft and hard infrastructure on the export performance of developing countries but there is no study about EAC Single Customs Territory on Trade Facilitation.

7. Methodology

The study used correlation research design and both qualitative and quantitative method was used to analyze data. The questionnaire, interview and documentary techniques were used to collect data. 372 cross-border traders were selected out of 5,313 traders who crossed the border among

the declarants crossing different borders encountered Rwanda (Rusumo, Gatuna, Kagitumba and Cyanika).

The following formula suggested by Zuelueta and Clostales (2003) shows the number of respondents that is adequate to represent the population:

$$n = \frac{N}{1 + N * e^2}$$

Where;

n is sample size required

N is the size of the target population

e is the margin error which is 0.05 or 5%

The sample size was calculated as follow:

$$n = \frac{5313}{1 + 5313 * (0.05)^2} = \frac{5313}{1 + 5313 * 0.0025} = \frac{5313}{14.2825} = 372 \text{ people.}$$

Therefore, the sample size was equal to 372 respondents who are the importers and clearance agency representative from Rwanda to other EAC countries. To select these responders, the simple random and purposive sampling techniques were used. Stratified random technique was used to select the respondents of this where 358 are the traders and other 14 were the declaration agents. The data were collected by distributing questionnaire to the respondents and a face to face interview for some authorities on the borders.

The data collected were summarized, coded and tabulated. Before processing the responses, the completed questionnaires were edited and classified for the completeness and consistency. Primary data was then coded and tabulated to enable the responses to be grouped into various categories using Statistical Package for Social Science (SPSS version 22). Secondary data was analyzed using Excel content of analysis and specifically the analysis approach.

A multiple regression model was estimated by using OLS estimator.

$$Y = \beta_0 + \beta_1 AC + \beta_2 BC + \beta_3 RR + \beta_4 DA + \mu_t$$

Where;

Y represents the dependent variable (Number of traders facilitated by SCT)

β_0 denotes the intercept which is constant

$\beta_1, \beta_2, \beta_2$ and β_3 represent the marginal effect of the independent variables to dependent one

AC represents Administration costs

BC represents business costs

DA denotes the number of declaration agencies

RR represents the repo rate agreed by the EAC members

μ_t represent the error term

The expected sign was positive which illustrates the positive relationship between trade facilitation and single customs territory.

8. Results and discussion

➤ *Age of the respondents*

It was very important to know the age group of the respondents because it can help to have the information from the mature people. Therefore, fewer than 18 people cannot be considered by the study because they are not yet mature. The distribution of the respondents according to their age group was indicated on the following table.

Based on the results of table 1, the study respondents are in different group of age referring to how they filled research questionnaire where 256 people or 69% of the study respondents were in the group of age of 25-35 years, 70 people or 18.5% of the respondents were in the group of age of 35-45 years, 31 people equal to 8.5% of the respondents were in the group between 18-25 and other 15 people equal to 4% of the respondents were in the group of over 45 years. This is an indication that respondents were well distributed in terms of their age where many respondents of this are in the group between 25 and 35 years.

Table 1: Age of the respondents

		Frequency	Valid Percent	Cumulative Percent
Valid	18-25	31	8.5	8.5
	25-35	256	69	77.5
	35-45	70	18.5	96
	Over 45	15	4	100.0
	Total	372	100.0	

Source: Primary data, December 2018

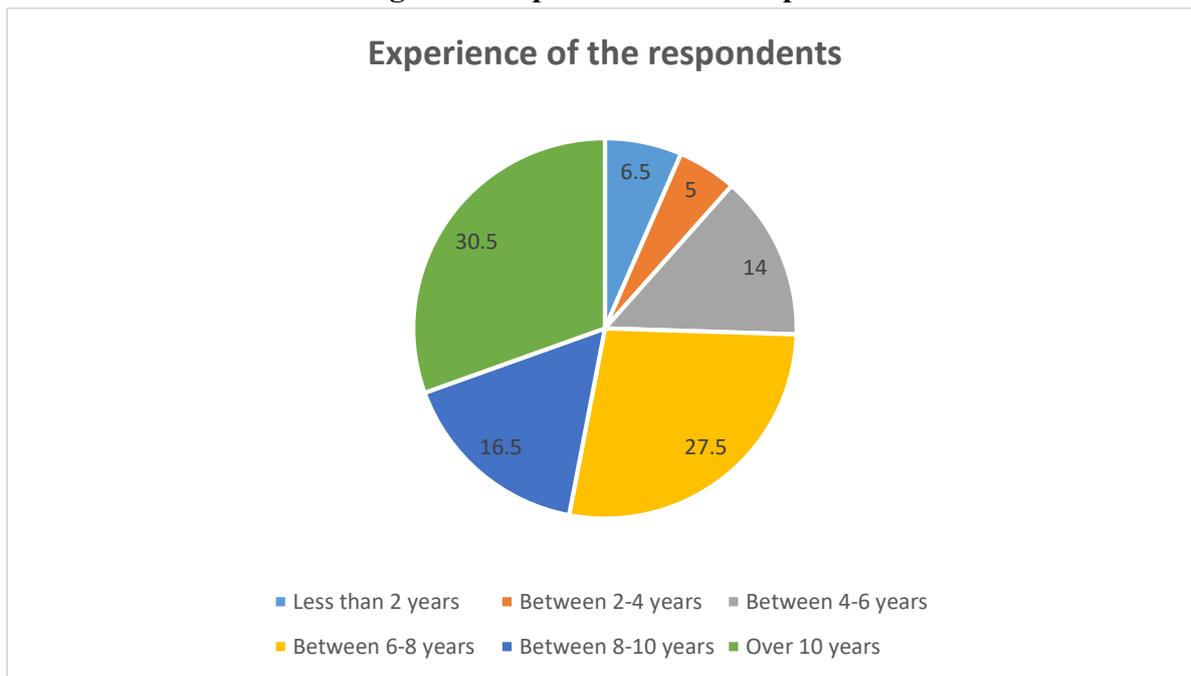
➤ *Experience of respondents in international business*

The experience level was also considered by this study in terms of importers and in terms of declaration agents. It helped to know if the respondents are experienced in international trade as well to know the determinants of SCT, benefit of Single customs territory, challenges of customs union for trade facilitation. Both declaration agents and importers were considered in this study.

Based on the results of figure 1, the study respondents have different experiences in international trade where 114 people equal 30.5% of the respondents have the experience over 10 years, 101 people equal to 27.5% have the experience of between 6-8 years, 61 people equal to 16.5% of the respondents have the experience between 8 and 10 years, 52 people equal to 14% of the

respondents have the experience between 4 and 6 years, 25 people equal to 6.5% of the respondents have the experience which is less than 2 years and other 19 people equal to 5% of the respondents have the experience between 2 and 4 years. Therefore, from the study findings, it can be deduced that respondents had experience on international business for both doing business and administrative.

Figure 1: Experience of the respondents



Source: Primary data, December 2018

Based on the results of figure 1, the study respondents have different experiences in international trade where 114 people equal 30.5% of the respondents have the experience over 10 years, 101 people equal to 27.5% have the experience of between 6-8 years, 61 people equal to 16.5% of the respondents have the experience between 8 and 10 years, 52 people equal to 14% of the respondents have the experience between 4 and 6 years, 25 people equal to 6.5% of the respondents have the experience which is less than 2 years and other 19 people equal to 5% of the respondents have the experience between 2 and 4 years. Therefore, from the study findings, it can be deduced that respondents had experience on international business for both doing business and administrative.

➤ ***Determinants of EAC Single customs territory to facilitate trade in Rwanda***

Based on the responses provided by the study respondents, they are different determinants of EAC Single customs territory to facilitate trade among traders in Rwanda as the following tables indicated.

As table 2 indicated, all study respondents (372) equal to 100% of the respondents who are both declaration agents and importers agreed that they know about the Single Customs Territory as the stage for full attainment of the customs union. This stage is attainable by the removal of duties and other restrictive regulations and minimization of internal border customs controls on goods moving between Partner States with an ultimate realization of free circulation of goods.

As Kandie et al. (2013) agreed, a single customs territory' is also fashionable in almost every discussion and media piece about regional integration. It is used in connection with measures to improve efficiency of the Northern Corridor and even with the planned standard gauge Mombasa-Malaba railway line. It is in the name of the single customs territory or SCT, as it is known, that investments are being made on the Central Corridor from Dar es Salaam to the landlocked countries.

Table 2: Respondents' knowledge of the Single Customs Territory

		Frequency	Valid Percent	Cumulative Percent
Valid	Yes	372	100	100
	No	0	0	100.0
	Total	372	100.0	

Source: Primary data, December 2018

According to the results of table 3, they are different elements that indicated how Single customs territory work especially in EAC members. Therefore, based on the responses from the table 3, the respondents have different knowledge on how single territory work such as: management of revenues transfers as confirmed by 369 people equal to 99% of the study respondents, enforce customs debts as agreed by 358 people equal to 96.5% of the respondents, easy payment system as agreed by 345 people equal to 93% of the respondents, enjoin partner as confirmed by 345 people equal to 93% of the respondents and legal provisions as agreed by 325 people equal 87.5% of the respondents.

Table 3: Respondents knowledge of how the single customs territory work

		Frequency	Valid Percent
Valid	Easy payment system	345	93
	Management of revenues transfers	369	99
	Legal provisions	325	87.5
	Enjoin partner	345	93
	Enforce customs debts	358	96.5

Source: Primary data, December 2018

As indicated in Table 4, all respondents of the study (372) who are 100% of the respondents in this study were agreed that there are different determinants of EAC single customs territory to facilitate trade among traders in Rwanda. Based on their responses there are several determinants as listed in the following table.

Table 4: Responses of the respondents on the determinants of EAC single customs territory to facilitate trade in Rwanda

		Frequency	Valid Percent
Valid	Yes	372	100
	No	0	0
	Total	372	100.0

Source: Primary data, December 2018

The results of Table 5 indicates that there are different ways in which the EAC Single customs territory to facilitates trade among traders in Rwanda such as Non-tariffs barriers which are trade barriers that restrict imports or exports of goods and services through mechanisms other than the simple imposition of tariffs as confirmed by all 372 people equal to 100% of the respondents.

Therefore, there are three policies of non-tariffs barriers as provided by the study respondents. First, protectionist policies which have the purpose of helping domestic firms and enterprises at the expenses of foreign enterprises. Second, assistance policies for the purpose of helping domestic firms and enterprises, but not at the expenses of other countries. Third, non-protectionist policies for the purpose of protecting the health and safety of people, animals and plants for protecting or improving the environment.

Table 5: How the EAC single customs territory facilitates trade in Rwanda

		Frequency	Valid Percent
Valid	Non-tariffs barriers	372	100
	Minimization of internal border controls	372	100
	Facilitation of seamless flow of information	325	87.5
	Interconnectivity of customs systems	345	93

Source: Primary data, December 2018

With the same line for the above results, a customs union consists of a group of countries that levy a common external tariff on trade with the rest of the world but normally has no import tariffs on trade among its Partner States. In a fully-fledged CU it is unnecessary to have internal border controls for customs duty purposes or to design and implement cumbersome and costly rules of origin that are necessary in a preferential trading area in which members have different external tariff structures and/or where there is overlapping membership (Helpman et al., 2008).

➤ ***Challenges faced by the single customs territory for trade facilitation among traders in Rwanda***

Before single customs territory adopted there were different challenges for the customs union policies but at the period where SCT started to be implemented the challenges were reduced but they are still there. This section emphasized on those different challenges and their proposed solutions.

Table 6 indicated that they are different challenges faced customs union and some of them were faced by single customs territory for trade facilitation in Rwanda, those challenges are: multiple weighbridges as confirmed by 356 people equal to 95.7% of the respondents, difference in application of customs laws as agreed by 345 people equal to 93% of the respondents, customs checkpoint and police roadblocks according to 325 people equal to 87.4% of the respondents, application of varying valuation approaches as agreed by 190 people equal to 51% of the respondents, congestion at the ports and border stations as confirmed by 160 respondents equal to 43%, multiple security bond regimes as 40 people agreed who are equal to 10.8% of the respondents and multiple declaration as confirmed by 10 people equal to 2.7% of the respondents.

According to the level of implementation of single customs territory where has reduced significantly the non-tariff barriers, customs checkpoint and police roadblocks is remaining in the

neighboring countries, duplicated procedures are already eliminated because of the single declaration and the multiple security bond regimes is also eliminated because of COMESA customs bond guarantee scheme popularly known as the RCTG CARNET which is the regional transit bond that secure goods cleared under SCT warehousing regime as they are moved within the EAC region. The congestion at the ports and border stations has been reduced because of the implementation of one stop border post (OSBP) and 24 working hours at the ports and main borders like Rusomo, Gatuna and Kagitumba.

According to the interview, different challenges as agreed by the respondents who filled the questionnaire were also related as follow: difference in application of custom laws and instruments’, multiple customs declarations at internal borders but this one was avoided ;multiple security bond regimes was also avoided ;multiple road blocks along the transit corridor application of varying valuation approaches; complex clearance procedures involving many government agencies and multiple weighbridges along the transit routes.

Table 6: Challenges faced by the single customs territory for trade facilitation among traders in Rwanda

		Frequency	Valid Percent
Valid	Difference in application of customs laws	345	93
	Multiple declaration	10	2.7
	Multiple security bond regimes	40	10.8
	Application of varying valuation approaches	190	51
	Multiple weighbridges	356	95.7
	Customs checkpoint and police roadblocks	325	87.4
	Congestion at the ports and border stations	160	43

Source: Primary data, December 2018

This is in support with the study done by Chambers (2014), there are still transmission challenges in terms of information and data sharing in all the Revenue and Port Authorities; non-compatibility and difficulties in data sharing under different Electronic Cargo Tracking Systems by Partner States; compatibility of Revenue Authorities IT systems with Port Authorities; fears and concerns by Clearing and Forwarding agents in Tanzania and Kenya of losing business and employment; absence of the EAC Regional Removable Bond to facilitate clearance of goods to warehouse and exempted goods; difficult processes by Revenue Authorities to grant access and rights to Clearing and Forwarding agents and Customs Officers and non-implementation of the EAC Common Market Protocol. For example, un-harmonized work permits' requirements in the EAC still hindering the business people to operate in any country of their choice.

➤ ***Relationship between EAC single customs territory and trade facilitation in Rwanda***

Based on regression analysis conducted using Microsoft Excel and data analysis using E-views, the study found that there is a relationship between EAC Single customs territory and trade facilitation among the traders in Rwanda. The following table put into consideration all indicators of that relationship based on data corrected.

Table 1: Regression analysis

Dependent Variable: TF				
Method: Least Squares				
Date: 02/13/20 Time: 08:46				
Sample: 2013 2018				
Included observations: 6				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-96918.25	23484.24	-4.126949	0.1513
AC	57.90792	33.12674	1.748072	0.0308
BC	68.69203	34.71225	1.978899	-0.2979
DA	230.9568	46.78947	4.936085	0.0273
RR	3473.875	1310.177	2.651454	0.0296
R-squared	0.990540	Mean dependent var		3232.667
Adjusted R-squared	0.952698	S.D. dependent var		2159.694
S.E. of regression	469.7100	Akaike info criterion		15.01702
Sum squared resid	220627.5	Schwarz criterion		14.84348
Log likelihood	-40.05105	F-statistic		26.17621
Durbin-Watson stat	2.523152	Prob(F-statistic)		0.145436

Source: Data analysis through E-Views

Table 16 showed the regression between Single customs territory in EAC and trade facilitation where there is a positive relationship between Administration Cost (AC), Business Cost (BC), Declaration Agencies (DA), Repo Rate (RR) among the EAC member countries and facilitation of cross border traders. These means that an increase of 1 cost to AC, to BC, an increase of

declaration agency and one rate increased to repo rate will increase the traders who cross the EAC border by 58; 68; 230 and 3473 respectively. R-square of 0.99 show 99% of the variation in the traders facilitated through the change on the administration costs, business costs, declaration agencies and repo rate.

International Chamber of Commerce considers trade facilitation as relating to improvements in the efficiency of administrative and logistic steps associated with the international trade of goods. Cutting short the list of examples, it is important to stress that many of the various definitions refer to reducing the time and costs of the trade transaction process (Kafeerro, 2008).

9. Conclusion

This study was aimed at analyzing the effect of EAC Single customs territory on Trade facilitation in Rwanda. Based on the findings of the study they are different determinants of Single customs territory that help in trade facilitation among traders in Rwanda for the purpose of international trade, those determinants as agreed by the respondents are non-tariffs barriers, minimization of internal border controls, facilitation of seamless flow of information and interconnectivity of customs systems. Based on these determinants, as the respondents said there are different benefits of SCT to trade facilitation such as time release, reduction of Administrative costs, reduction of doing business costs, efficient revenue management, reduction of the risks associated with non-compliance on transit of goods and enhance application of information technology and they are also different challenges faced a SCT or trade facilitation. Accordingly, all four specific objectives were achieved and help to verify and confirm all four research hypotheses.

10. Recommendations

For further improve the cross border services and continue to facilitate the cross border traders, some recommendations have been proposed:

➤ *Recommendations to government of Rwanda*

- a. The government should continue to engage partner states by eliminating non-tariffs barriers affecting trade within the region
- b. The government should increase the professionals in customs clearing agencies
- c. The government should continue to make awareness on tools facilitating trade under SCT clearance

➤ *Recommendations to the importers*

- a. They should all the time use the formal cross border trade and comply with the regulations in place
- b. They should choose the competent and professional clearing agents to facilitate their clearance process.

➤ *Recommendations to the future researchers*

This study analyzed the effect of EAC single customs territory on trade facilitation in Rwanda, possibly there is different gap need to be filled. Therefore, the following topics were suggested to the future researchers:

- a. Analysis of the determinants influencing people to entry in international trade among EAC members
- b. Effect of tax incentives on international investments among EAC member

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