

**DETERMINANTS OF EXPORT PERFORMANCE OF MAIZE FARMER
ORGANIZATIONS IN BUSIA DISTRICT, UGANDA**

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REQUIREMENTS FOR THE AWARD OF THE OF THE DEGREE OF MASTER OF
MANAGEMENT IN AGRIBUSINESS OF STRATHMORE UNIVERSITY**

MAY, 2025

DECLARATION

I affirm that this dissertation is authentic with no prior presentation to this or any other institution for the award of a degree. By my reckoning, the dissertation contains no material previously published or written by any other person except where due reference is made in the dissertation itself.

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Date: 17th May 2025

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My gratitude goes to God his guidance through this study and to my family for the support they have given me through this time.



DEDICATION

This study is dedicated to my family most especially my father and grandfather.



ABSTRACT

Export performance by farmer groups particularly in Busia district, Uganda has been hampered because they lack direct and legitimate access to export markets, Kenya in particular. The problem is further exacerbated by members' preference to sell through illegal channels because the organizations lack the capacity to facilitate this trade. The study therefore sought to gain insights into the contributions made by the farmer organizations to maize traded and the determinants of their export volumes to the main market. The paper was steered by the subsequent objectives which were: To establish the effect of farmer group capacity on the export performance of maize farmer groups in Busia district Uganda; To demonstrate the effect of middlemen on the export performance of maize farmer groups in Busia district, Uganda; To illustrate the effect of infrastructural development on the export performance of maize farmer groups in Busia district, Uganda; To establish the effect of import bans and tariffs on the export performance of maize farmer organizations in Busia district, Uganda. Guiding the study were two theories, the first being the Resource-Based View Theory (RBV) in which institutions are required to identify their competitive advantages and leverage those resources to contribute to novel growth opportunities. The paper was also guided by the Contingency Theory in which firms are required to analyze the environments in which they operate and respond with appropriate contingencies that benefit the growth or existence of the firm. The study focused on garnering responses from 201 respondents in maize farmer organizations in Busia district from the 67 registered and active farmer groups in the district. The cross-sectional survey design chosen was executed with structured questionnaires as the primary tools of data collection. The study made use of a census sampling technique and one of the limitations experienced was the unavailability of some respondents. The study used the quantitative approach and regression analysis to probe how much these factors determine the export performance of maize farmer organizations in Busia district. The outcomes showed that infrastructural development had the most significant positive impact on export performance followed by the effects of import bans and tariffs from importing countries while farmer group capacity and middlemen had minimal impact on export performance. The results suggest that improvement of infrastructural development and an improved trade environment particularly between Kenya and Uganda could significantly contribute to the growth and development of maize farmer organizations in Busia district, Uganda. The study contributed to the provision of insights into the inner workings of maize farmer organizations and enlightened policy makers, local government officials and educators on the kind of support required by maize farmer organizations in order for them to thrive in their exports. The study further identified areas for further investigation like exploration of technological advancements in improving the export performance of maize farmer organizations. The limitations of the study included; unavailability of some respondents, inaccessibility of some information, remoteness of some study areas.

Keywords: Export performance, middlemen, farmer organization capacity, infrastructure, import bans and tariffs

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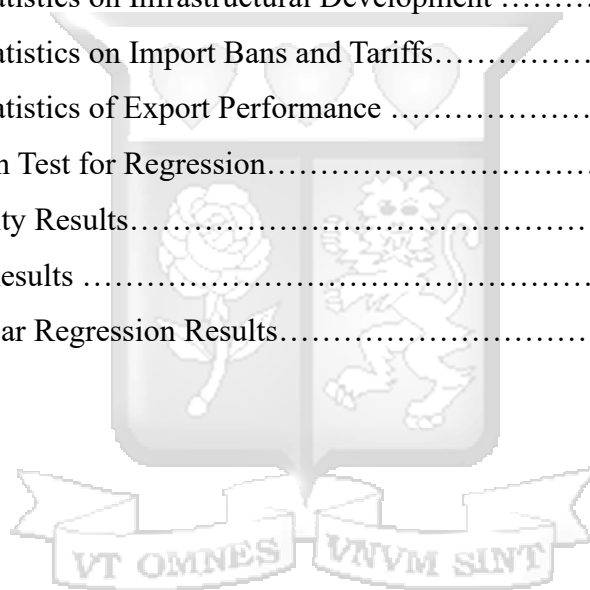
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ABBREVIATIONS AND ACRONYMS

CGIAR	Consultative Group for International Agricultural Research
COMCEC	Committee for Economic and Commercial Cooperation
EADEN	Eastern Archdiocesan Development Network
EP	Export Performance
EY	Ernst and Young
FAO	Food and Agriculture Organization
FEWS	Farmer Early Warning Systems
IFAD	International Fund for Agricultural Development
GDP	Gross Domestic Product
GFRAS	Global Forum for Rural Advisory Services
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
NPHC	National Population and Housing Census
RBV	Resource Based View
SME	Small and Medium Enterprises
UBOS	Uganda Bureau of Statistics
WTO	World Trade Organization

CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1 Background Information

Export performance is not a straightforward concept and needs to be defined in two angles according to (Shoham, 1998). The author suggests that the concept be viewed from two lenses that is from that of export and that of performance. Export is defined by the author as the global marketing decisions and activities of firms that are actively participating in a global marketplace. Performance is conceptualized differently at various levels firstly as being a key outcome from the implementation of international strategy, secondly from the way firms define it internally and thirdly through harmonizing the views of performance of both internal and external stakeholders of the firm. The author also stated that three main variables affect performance and these are organization structure, environment structure and strategy.

The phenomenon of export performance and how it is perceived or measured for countries has evolved over time according to (Gaglio, 2017) from traditional measures of export performance which were measured from the firm to sector to country export diversification where more of a specific product is produced and more resources are allocated to highly marketable products. The new measures of export performance however have come to include export sophistication, product space and economic complexity involving new classification and inter-connectedness of particular products as well as the global linkages that countries have to exploit the potential of these products.

In relation to firms (Westjohn & Magnusson, 2017) there are two adaptations to international marketing strategy which determine a firm's export performance. The two are mandatory adaptations and discretionary adaptations. In their study, the authors considered discretionary adaptations to be more significant because they were driven by choice which is internal rather than by authorities.

Export performance of maize in sub-Saharan Africa is still lackluster considering the projections of global demand expected to rise by approximately 1.6% per annum by 2027 due to the increase in the demand for feeds livestock and poultry (Michèle, 2018). Africa's exports in food only contributed to 4% of the world trade by 2016. The continent has massive potential to be the food basket of the world however, Africa is still a net importer of food, spending close to 35 billion US

dollars on the importation of food while holding up to 25% of the world's arable land (IFAD, 2017).

Africa's current production of maize is approximately 2 MT/ha but will need to more than triple if demand for the crop is to be met by 2050 according to (CGIAR, 2019). The reasons behind Africa's growing food import bill are several from low yields to lack of access to finance by smallholder farmers and, high dependence on rain fed systems which hampers all year round production as noted by (Christiaensen, 2020).

Africa's growing food import bill and poor export performance poses a direct threat to the population in both economic and food security terms. In an article by AfricaNews (2017), some of the consequences of Africa's rising food import bill are highlighted chief among them being the severe weakening of the African agricultural sector, food insecurity and declining exports. The article highlighted concerns by the African Development Bank on the food import bill continuing to rise up to 110 billion U.S dollars in the next three years.

Majority of the public sector in Africa has tried to intervene in the maize export performance through controlling prices and stocks as with state marketing boards in Kenya and Ethiopia, instituting export bans in Tanzania and import restrictions in Kenya according to (Yami et al., 2020). The study goes on to highlight the fact that many of the public sector interventions have done more harm than good for the trade in maize causing price volatility, uncertainty of profitability and disincentive for increased production in the entire maize value chain.

Civil society has also done its fair share in putting in place interventions to improve export performance of maize farmers. Kilimo Trust in collaboration with the National Agriculture Advisory Services organized the "INSPIRE" project where Farmer Field Schools were put together in Busia and Tororo districts in 2011 which resulted in farmers having better access to markets and processing facilities (Birachi & Owamani, 2011). The government of Uganda has chosen to intervene in this poor performance by starting the Operation Wealth Creation scheme to ensure that farmers are supplied with good quality, high yielding varieties of maize seeds (MAAIF, 2020).

Uganda's position as a leading exporter of maize and maize flour in Africa is unprecedented with majority of the crop's exports going to its neighbors South Sudan and Kenya. Anyang (2021) The

country's main export market for maize, which is Kenya, imported approximately 280,000 metric tonnes of maize in 2020 majority of this being from Uganda and Tanzania (Njeru, 2021). The demand for maize will continue to rise with international agencies projecting that demand for maize in Kenya will climb to up to 500,000 metric tonnes in the years to come (Saddler Demaree, 2021).

Uganda's maize export performance, therefore, still leaves a lot to be desired as the country has not achieved full export potential to match the projected demand. The maize sector in Uganda has been analyzed from different perspectives for example Yamano & Arai (2011) studies the maize farm-market price spread in the maize trade between Uganda and Kenya, slightly highlighting volumes of maize traded between the two countries. Other studies like that of Fred & Gabriel (2020) have focused more on collective marketing, collective action and the factors determining participation levels of farmers in these groups.

The gap that remains unaddressed is a deeper look into what determines the export performance of farmer organizations from sales of maize grain to major traders who export maize to Kenya thus determining their overall contribution to the exports of maize in Uganda.

This study will seek, therefore, to bring to light the causal factors of access to foreign markets of farmer organizations producing maize in the border district of Busia, Uganda and ultimately uncover the reasons why there is a scarce record of the potential of the farmer groups in the study area despite their proximity to the country's largest market for maize.

Farmer organizations producing maize in other districts and regions in Uganda have more noticeable and traceable performance in other regions of the country and are doing relatively better than those in Busia. The eastern region in Uganda is the poorest in the country rated at 35.7% above the national average of 21.4% according to (UBOS, 2019).

1.1.1 The determinants of export performance

UNCTAD (2005) in their Trade Development Index described at a macro-level the lenses through which export performance should be viewed. The global trade body established that export performance could not be merely considered to be about having the ability to produce goods which are highly sought after. UNCTAD stated in this index that only a combination of factors could enable

export performance as production does not happen on its own. The factors, both demand and supply driven, highlighted in this report included trade barriers, solid linkages to international markets, physical infrastructure and quality of institutions among others.

Imran et al.(2017) in their analysis on the level of foreign market access of SMEs in Pakistan uncovered four main factors that influenced export performance and these were business-building, transactional network, total quality management and export market orientation. The study concluded that Total Quality Management (TQM) was the key element in achieving optimal export performance for small and medium enterprises (SMEs) in Pakistan. The study described Total Quality Management as achieving at a low cost, the satisfaction of customers through the improvement of a firm's product, processes and services which in turn lead to higher performance. It can therefore be stated

According to Spasova (2019), export performance shows how well a firm has utilized its resources and potential in the global marketplace at a certain time. The author also noted in their study that external factors played a role in how well a firm performed in the global context. The internal factors or resources in this study included firm characteristics, business and institutional relationships, export knowledge and expertise, marketing mix, export strategy, advanced technology and quality of service as well as stewardship qualities. The outermost factors included export market features and domestic market features.

Omari (2015) in his study on the export performance of Kenya Tea Development Agency (KTDA) managed factories spelled out four determinants of export performance. The determinants were firm size, marketing strategy, market liberalization and technology. The study highlighted the fact that firm size plays the most significant role in the export performance of these factories. The volume of tea produced, number of bulking centres, number of suppliers and production lines in the factories contributed to the fact that higher volumes could be sold leading to higher earning ultimately influencing overall export performance.

In Vietnam, the causal factors of export performance in coffee and rice firms was explored by (Ngo-Thi-Ngoc & Nguyen-Viet, 2021) who concluded that export performance is affected by marketing

strategies, the characteristics and capabilities of firms, management characteristics, domestic market characteristics, foreign market characteristics and export barriers.

Export performance is not limited to macro-economics of a country but can also be measured for farmers groups or cooperatives. Tanzanian cashew cooperative, Tandahimba in the Mtwara region of the country, through their extensive training, brought to light the fact that through capacity building of the farmers and the institution, they can fetch higher prices for their produce and thus build the financial muscle to lend more to their farmers (Cholobi, 2023).

In Uganda, Karibwije (2023) states in his article that for cooperative export marketing to succeed, the leadership of the organization plays a massive role determined by their levels of transparency and drive to see the organization thrive which supports UNCTAD's previous argument on the quality of institutions. He also points to the fact that careful market reconnaissance needs to be considered before a cooperative can engage in a particular market which also supports UNCTAD's argument of having strong market linkages.

Organization capacity for cooperatives and farmer organizations is critical to their success as entities and for the overall success of their members. According to Onyilo & Adong (2019), there is not enough educational infrastructure to build the human resource for cooperatives in Uganda. In their study, they make a comparison to Tanzania which has four cooperative colleges as compared to one in Uganda. The authors also highlighted the poor information management systems and inadequate finance and capital and hindering their overall capacity.

Infrastructure is a key element in facilitating the export performance of maize farmer organizations as a whole. The infrastructure is key not only for transportation to the main markets but also for the transportation of inputs like seed, fertilizer and tools to their members' farms as stated by (Latynskiy & Berger, 2016)

Middlemen are one of the key elements affecting the performance of cooperatives. The middlemen often have better market information and can dictate the types of inputs that farmers use. These intermediaries also dictate the prices of the harvest which leaves farmers in a desperate position.

According to Ranjan (2017), farmers and their organizations are often in a weaker bargaining position because short of adhering to the standards and demands of the middlemen, their whole village or region could lose out on off-take for their produce leading to wastage and eventually loss of income. The power held over the farmer organizations by middlemen thus influences their export performance.

Import bans and tariffs have severely affected maize farmer organizations at different points in time in Busia district, Uganda. In 2023 maize traders and produce dealers made severe losses according to Egessa, (2023) of the New Vision News paper and correspondent operating in Busia district. The import bans from Kenya after signing a memorandum of understanding for Kenya to import Ugandan maize left farmers and traders stuck with no storage facilities with others resorting to smuggling to sell their produce. The import bans have a blanket effect not only on the export performance of maize farmer organizations but on all the players in the value chain in Busia district.

1.1.2 Export Performance for Maize

Globally, America is the largest exporter of maize contributing about 22% of the global export volumes. According to Tigchelaar et al.(2018), areas with highly intensive agriculture and with a relatively temperate climate contribute to the highest yields of maize worldwide. The same study confirms that only four countries, the U.S.A, Brazil, Argentina and Ukraine, produce just north of 50% of the world's maize.

The top importers of maize globally include Japan, Mexico, China and Republic of Korea. In 2020, Japan imported over three billion two hundred thousand (3.2Bn) U.S Dollars' worth of maize according to (Shahbandeh,2021). Mexico and China followed closely importing 3.09 billion US Dollars and 2.49 billion US Dollars' worth of maize respectively in 2020 according to the same author.

The position of the U.S.A has been unmatched as it has been a net exporter of maize occupying approximately 30% of the global maize export market share for the last ten years until 2019 according to trade website the Observatory of Economic Complexity. The same website states that the share of Africa's global maize exports has remained at just under 10% with South Africa, Zambia, Uganda and Tanzania leading the charge on African maize exports. South Africa has

dominated the maize exports with an average of approximately 2 million metric tonnes from 2000-2020.

Maize production and export globally especially in the United States and the Americas seem to face a different set of challenges from those in Africa or Asia. In the West, challenges like African Swine Fever, difficulty in negotiating trade agreements like the United States-Mexico-Canada Agreement alongside harsh tariffs seem to be the major impediments to the growth of maize exports according to (EY Americas, 2020).

In Africa, the challenges to maize production and export include over dependence on rain to facilitate agricultural growth, increased levels of intervention from governments for example export bans in Tanzania and import bans in Kenya. The import bans, as were seen in March 2021, in turn affect the export performance of Uganda seeing as Kenya imports over 95% of its maize from Uganda and Tanzania (Ngotho, 2021).

A few challenges like shortage of skilled professionals, poor quality seed, supply chain bottlenecks and the outbreak of COVID-19 latterly have been highlighted by the same site as the reasons for the slowed growth of this sector. Lee (2020) also highlights the fact that the sector faces a challenge of not living up to its full yield potential due to the subsistence nature of production by majority of the farmers, low uptake of technological advancements and climate change concerns.

Governments and private sector stakeholders across the globe have developed solutions to help address the challenges faced in maize production and the production of food in general. In Ethiopia for example, the government together with international partners has implemented a program to oversee agricultural growth which distributes resources to smallholder farmers evenly according to the agricultural potential of the regions they come from alongside a Productivity Safety Net Program which addresses concerns of food security in drought prone regions of the country (Research Institute, 2020).

The onset of the COVID-19 also presented its own set of challenges to previous trade policy with most governments across the world choosing to keep the global supply chain moving despite the challenges of depressed supply and increased demand alongside logistical challenges presented by lockdown restrictions. Most of the challenges included cross-border movements of products especially by trucks since truck drivers had to present negative COVID-19 tests each time they

crossed the border. Import bans such as the one seen in Kenya in 2021 and export bans by Tanzania were also temporary policy measures to enable countries take stock of their domestic demand and ensure sufficient food supply for their citizens (FAO, 2021).

1.1.3 Maize farming in Busia District

Busia district is situated along the border with the Republic of Kenya. According to the district's local government website, the population totals 360,200 individuals with females comprising 51.2% female and males 48.8%. The district is divided into three electoral areas: Samia-Bugwe North, Samia-Bugwe South and the Municipality with the majority of the residents located in the South as indicated in Appendix II. Due to its border location, the district is characterized by a cosmopolitan population comprising various ethnic groups. The predominant communities are the Samia and the Bagwe while other groups such as the Bagisu, Itesots, Japadhola, Karimojongs and Somali also reside in the area either originating from neighbouring districts or having migrated from across the Kenyan border. (UBOS, 2017)

According to the 2014 National Population and Housing Census (NPHC), Busia has a relatively youthful population with over half (57.6%) of residents aged between 0 and 17 years and a further 38.3% falling within the 18 to 59 age bracket which constitutes the primary focus of this study.

The same census reports that maize is the most widely cultivated crop in the district. Out of 64,769 households, 48,751 engage in crop farming as a source of income with 46,383 of these specifically engrossed in maize cultivation.

The main challenges faced by farmers of maize in Busia include poor soil nutrition, in a study by Lederer et al.,(2015), the soil in Busia district was deficient with 33kg deficiency of Nitrogen per hectare, 6kg deficiency of Phosphorous per hectare and 41kg deficiency of Potassium per hectare. The three nutrients are critical to the production of maize in the district. In terms of storage facilities, The main challenges in terms of pests and diseases are infestations from striga according to African Agricultural Technology Foundation (2009). Other challenges include poor organization capacity as well as infrastructure.

1.1.4 Farmer Organizations

Farmer organizations according to G.F.R.A.S (2016) are organizations which require people to be members that advocate for and address the concerns of farmers. The same study notes that farmer organizations are also labeled as producer organizations, rural organizations and farmers' cooperatives.

Developing economies have their agricultural industries heavily influenced in part by farmer organizations as stated by (COMCEC, 2015). The group also called attention to the fact that farmers can attain more through coordination and cooperation in farmer organizations (FOs) for increased remunerative benefits. Family farms with paltry sizes constitute the bulk of the farms universally and ironically this majority make up the bulk of the impoverished groups in rural areas. The revelation here, is that the global value food chains rest are sustained by these family farms and for them to effectively contribute to agricultural value chains, it is essential that they organize themselves into collective groups.

The significance of the situation and the critical role of farmer organizations have been emphasized by numerous multilateral and development agencies. Through the International Fund for Agricultural Development (IFAD), these organizations have identified farmer groups as essential mechanisms for enhancing farmers' access to markets, improving their access to key services, and creating a platform for their participation in policy dialogue.

In Busia, Uganda according to confidential information obtained from a local government official, sixty-seven (67) registered farmer groups exist in the district. The groups that are listed participate in a myriad of value chains including maize, cassava, fish and poultry, however the highest participation occurs in the maize and cassava value chains.

1.1.5 The Maize Value Chain

Maize holds a prominent position among crops in Africa serving nearly 1.5 billion people due to its dual role as a nutritionally rich and economically valuable food source. Its significance is particularly pronounced in sub-Saharan Africa, where it contributes substantially to food security across a region comprising approximately 300 million individuals. As a dietary staple in the majority of households in Eastern and Southern Africa, maize is extensively cultivated, covering more than 15.5 million hectares of land as reported by (Baffour & Fakorede, 2017).

Daly et al.,(2016) delineate the maize value chain into five distinct segments: input supply, production, aggregation, processing and marketing and distribution. Their report further underscores the economic significance of maize, noting that global revenues from the crop had reached approximately US\$219.5 billion in 2015. Additionally, the study highlights various end uses of maize, such as animal feed and ethanol production, though these applications vary depending on the geographic context and local food security priorities.

A study conducted by Baffour & Fakorede (2017) still re-emphasized that about 86% of countries in sub-Saharan Africa cultivate maize and only about 7 countries which are mostly coastal, desert or island countries do not grow it. The most cultivated crop on arable land in Nigeria is maize and it ranks in the top ten with land under maize followed closely by Tanzania and South Africa

In South Africa maize is one of the most important crops to ensure the country's food security while exporting only about 10% of it.

Maize is one of Uganda's top priority crops. In 2018 more than half of the smallholder households grew maize on approximately two and a half million hectares of land for both seasons. In 2018, maize production in Uganda reached 3.4 million tonnes, with a yield of 1.7 metric tonnes per hectare during the second planting season (UBOS, 2020). The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), in its 2019 report "Maize Training for Extension Workers" emphasized the importance of maize to smallholder farmers, describing it as a key crop for enhancing food security and supporting livelihoods of millions across the country. The report also noted a 43% increase in maize production between 2015 and 2017.

According to (Daly et al.,2016), Uganda holds a competitive advantage over its regional counterparts in maize cultivation. This edge is attributed to the country's ability to grow crops

twice annually, thanks to its abundant fertile land. The study also observed that the Eastern region, where Busia is located, contributes the largest portion of maize production, while the majority of processing facilities are concentrated around Kampala.

1.2 Statement of the Research Problem

The export performance of maize farmer organizations in Busia district remains poor due to limited and illegitimate access to the Kenyan export market. Many cooperative members prefer selling their maize through informal channels, such as smuggling, or directly to traders instead of engaging in collective marketing. This preference is largely attributed to the inability of cooperatives to store sufficient quantities of maize and provide timely payments to farmers, as evidenced by the case of Busiime Cooperative in Busia (Hajusu, 2018). Consequently, farmer organizations fail to aggregate adequate volumes of maize, leading to underutilized storage facilities and weak export performance. While Hajusu (2018) identifies financial and storage constraints as major barriers to cooperative participation, there is limited research on sustainable financial and logistical models that could enhance cooperatives' capacity to store maize and offer competitive payments to farmers.

The difficulty in securing direct and legitimate market access is not unique to Busia but is widespread among farmer organizations across Uganda. Vorley et al., (2012) noted that members of Busia District Farmers Association often prefer to operate independently, demonstrating skepticism towards collective marketing. Farmers perceive those mobilizing them for collective action with suspicion, which discourages their participation. Stating in their own report that in the Busia District Farmers Association, many of the farmers actually thrive on their own outside of their farmer association and are relatively suspicious about the motives of those who mobilize them to engage in collective marketing.

Lumonya (2019) from his research in the parish of Buyengo in Busia District, discovered that aside from facing problems with infrastructure, farmers in the area were discouraged from engaging in collective marketing in retaliation to the exploitation by middlemen due to class struggles between the elite and less fortunate farmers.

Export performance has further been adversely affected by import restrictions by trading partners like Kenya who cited quality concerns with the maize from Uganda ultimately causing a decline in maize exports from 5.4 million U.S dollars in March to 3.1 million U.S dollars in April (UBOS, 2021).

The reason behind these restrictions is that farmers are not participating enough in their farmer organizations to empower these organizations and build their capacities to enforce quality standards amongst their members. The result has been individual smuggling and trading with middlemen which in turn results in poor quality maize as stated above (RATIN, 2021).

In a macro view of the market systems for produce in Uganda, Chemonics International (2008) stated in a report on subsistence farming that in typical market conditions in Uganda, farmers barely have direct access to markets and have to off-load produce to middlemen.

Hill et al., (2021) noted in their study, that only 38% of transactions done by smallholder farmers are done through the farmer groups with the bulk of the transactions going to traders on spot markets. The study also highlighted the fact that the shortage of working capital in farmer organizations also limits the extent to which they can offer farmers cash on delivery for their produce which leads to low volumes of produce collected and sold.

The challenges highlighted above all negatively impact the strength of farmer organizations obstructing direct market linkages on the back of interference of middlemen who take advantage of these weaknesses and ultimately their export performance.

1.3 Research Objectives

1.3.1. General Objective

The overall purpose was to study the determinants of export performance of maize farmer groups in Busia District, Uganda.

1.3.2. Specific Objectives

- i. To establish the effect of farmer group capacity on the export performance of maize farmer groups in Busia district, Uganda.
- ii. To demonstrate the effect of middlemen on the export performance of maize farmer groups in Busia district, Uganda
- iii. To illustrate the effect of infrastructural development on the export performance of maize farmer groups in Busia district, Uganda
- iv. To establish the effect of import bans and tariffs on the export performance of maize farmer groups in Busia district, Uganda.

1.4 Research Questions

- i. What is the effect of farmer group capacity on the export performance of maize farmer groups in Busia district, Uganda?
- ii. What is the effect of middlemen on the export performance of maize farmer groups in Busia district, Uganda?
- iii. What is the effect of infrastructural development on the export performance of maize farmer groups in Busia district, Uganda?
- iv. What is the effect of import bans and tariffs on the export performance of maize farmer organizations in Busia district, Uganda?

1.5 Significance of the Study

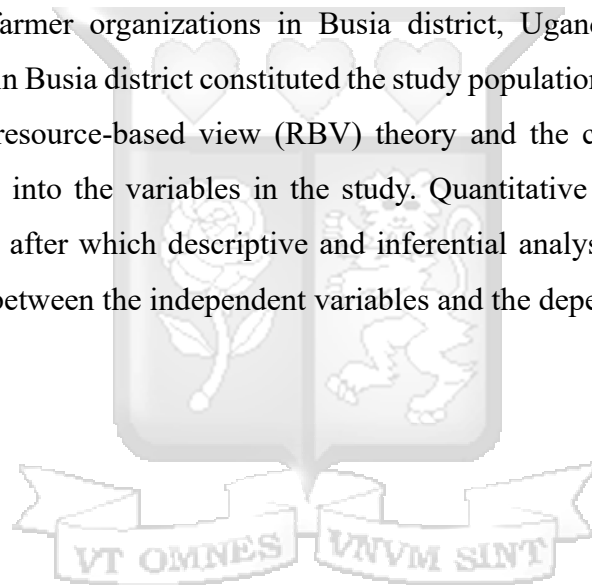
The discoveries from this particular study are bound to be of benefit to farmer organizations in Busia-Uganda. The farmer organizations will be cognizant of the importance of organizing themselves into groups but more importantly to actively participate in their farmer organizations to improve direct access to the export market of Kenya for their maize and eliminate the interference from middlemen.

The study will also benefit future researchers who will attempt to study the same topic for various farmer groups across the country and in the region on their export performance as organizations.

Finally, the study will benefit the Ministries, Departments and Agencies (MDAs) of the Government of Uganda, particularly the Ministry of Agriculture, Animal Industry and Fisheries, Ministry of Trade, Industry and Cooperatives and finally the Busia District Local Government which can draw critical insights to develop mechanisms to improve the capacity of farmer organizations and boost their export performance as cooperatives.

1.6 Scope of the Study

The paper delved into what elements determine the export performance of maize farmer organizations in Busia district, Uganda. The focus of this study was the effect of farmer group/organization capacity, middlemen, infrastructure and import bans and tariffs on the export performance of maize farmer organizations in Busia district, Uganda. The sixty-seven (67) registered farmer groups in Busia district constituted the study population. The theories that guided this study included the resource-based view (RBV) theory and the contingency theory which provided further insights into the variables in the study. Quantitative data was collected using structured questionnaires after which descriptive and inferential analysis was employed to shed light on the relationship between the independent variables and the dependent variable.



CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section examines relevant literature and explores the theoretical foundations and empirical studies connected to the research. It also highlights existing research gaps and synthesizes key findings. Additionally, it presents the conceptual framework and defines how the study's variables are measured and applied.

2.2 Theoretical Review

To identify the factors influencing export performance of farmer groups in Busia, two theoretical frameworks were applied: the Resource-Based View (RBV) of the firm and Contingency Theory.

The Resource Based View of a firm dwells on the fact that organizations set goals that need to be accomplished, however, the way in which they are accomplished is highly dependent on the resources that are available to that firm (Seriki, 2023). The RBV is also viewed from the point that resources belonging to a firm are immobile across firms and these organizations are considered to be a melting pot of inimitable capabilities, routines and other resources in the creation of value according to (Miller, 2019). The RBV, according to (Peteraf, 1993), goes on to show the leaders of organizations how best they can exploit the resources available to them to improve their position and competitive advantage.

The Contingency theory on the other hand, focuses on the fact that there are different approaches to organizational leadership or in the way firms are structured which are largely determined by both internal and external factors according to (Yusuf et al., 2023). Other proponents of the contingency theory such as Luthans (1973) point to the fact that adaptability is key for firms if they are to achieve their goals in ever changing internal or external environments. Shetty (1974) in his study stated that sticking to one form of management does an organization no good if it does not allow that organization to adapt itself to cope with challenges as well as opportunities that may arise.

The Resource Based View focuses on the internal resources that a firm possesses and how they are utilized to create value. In this study, the internal resources such as managerial capacity, financial

resources as well as internal infrastructural resources are going to be considered in uncovering the determinants of export performance of farmer organizations in Busia.

The Contingency theory looks more at the environment and situations in which a firm operates and, in this case, external factors like infrastructure, middlemen and the effect of import bans and tariffs from the main export market. Empirical literature analyzing the internal determinants focuses on the Resource Based View (RBV) approach and supports the concept that a firm's EP is governed by corporate regulation and the firm's administration. Both the RBV and contingency theory have the potential to provide better comprehension of export performance and export barriers faced by small and medium enterprises (Arsalan Safari, 2020).

2.2.1. The Resource Based View Theory

The Resource Based View (RBV) is one school of thought to achieve competitive advantage that emerged in 1959 by Edith Penrose in which untapped internal resources of a firm were seen as primary drivers for growth as well as inhibitors according to (Lowe & Teece, 2001). In 1984, after the work done by Birger Wernerfelt, the theory was further developed in which he argued that firms be looked at in terms of the resources they possess internally in order to achieve strategic objectives and goals as opposed to achieving those objectives with the products that they produce (Wernerfelt, 1984).

Prahalad (1993) in from his study is a key proponent to the point of view of the RBV theory stating clearly that the ability of a firm and its management to properly leverage the resources in the corporation is a necessity to contribute to the opening of new frontiers for growth for the business and this is a very similar view to the Resource Based View (RBV) theory of Wernerfelt.

A firm must look internally in order to uncover the assets and competencies that are valuable and nearly inimitable and find ways to leverage these so as to produce a sustained point of difference for their firms (Barney, 1995). The proponents for this theory Prahalad and Barney argue clearly that firms need to look internally and exploit resources to produce competitive advantage.

In a study of the Resource Based view (RBV) theory, Kennedy et al.(2020)asserted that for a firm to gain competitive advantage, they must take a deeper look at their strategic resources rather than group all their resources as one. The aforementioned pivotal components are those that are valuable

and not easy to imitate by other firms. Farmer organizations need to look at their strategic resources to understand where their competitive advantage will arise from.

Olthaar et al. (2019) stated that firms, especially farmer organizations or cooperatives, use their resources differently and the result is some firms do perform better than others. The study stated proper use of their internal resources like labour, storage facilities, direct market linkages and inputs allowed the organizations to gain a competitive advantage which is also critical to ensuring good export performance.

The Resource Based View (RBV) Theory is a solid theory to explain the export performance of maize farmer organizations in Busia District, Uganda because it necessitates internal reflection of the groups on the kind of resources that are in their possession and how those particular resources can be utilized to strengthen their commercial positions. The organizations can use this theory to analyze their capacities since the theory emphasizes internal reflection.

The other independent variables like the effect of middlemen, infrastructure as well as imports and tariffs are factors that are beyond the control of the organizations were reflected upon in the contingency theory in the next section.

2.2.2. The Contingency Theory

The earliest postulation originated Fred. E. Fiedler was from his work “The Contingency Model: A Theory of Leadership Effectiveness” in 1964 in which he studied the various leadership modes through which an organization can achieve its goals. He noted that as an organization takes shape and tasks become well-defined, leadership styles tend to shift from a more democratic and permissive style to more autocratic and task oriented (Fiedler, 1964).

The Contingency theory has since evolved from looking at leadership actions within an organization but rather into the strategic options that firms choose in order to respond the particular environments within which they operate. Core proponents of the theory like Golembiewski & Lawrence (2000) state that new firms or existing ones must analyze their environments in order to determine what kind of contingency to deploy. The authors also took note of the fact that despite the fact that business could opt for a certain level of rigidity to their current structure, the environment in which these entities will operate is never stable enough to maintain just one form of structure, the firms must continuously evolve with various contingencies.

Banalieva & Sarathy (2011) argued that for a firm to get its house in order, the environment in which it operates will be a dominant factor. There is no typical solution for organizing as some methods may be just as or even more effective than others and some scholars argue that each business or corporate strategy must be a contingency theory in one way or another.

The contingency theory is not free from criticism however since it was centred around the leadership styles of different kinds of leaders and how their preferences to working with associates at different levels in their organizations. Shala et al. (2021) critique the theory by noting that it is too focused on the relationships between individuals and holds onto the biases of different types of leaders towards their work associates that tasks are often not completed. The authors also note that more often than not, the theory is challenged.

The contingency theory makes it clear that the external environment heavily influences the performance of any firm. In this study, it has been determined the extent to which factors like middlemen, infrastructure and import bans and tariffs affect the export performance of the maize farmer organizations in Busia district.

2.3 Empirical Review

The empirical review followed the four study objectives which were; to establish the effect of farmer group capacity on the export performance of maize farmer groups in Busia district, Uganda, to demonstrate the effect of middlemen on the export performance of maize farmer groups in Busia district, Uganda, to illustrate the effect of infrastructural development on the export performance of maize farmer groups in Busia district, Uganda and, to establish the effect of import bans and tariffs on the export performance of maize farmer groups in Busia district, Uganda. The empirical review looked into the studies done by other authors relating to the independent and the dependent variables and is broken down into the following sections;

2.3.1 Middlemen and export performance

According to FAO & Shepherd (2007) in their study stated that farmers indeed need to be organized into groups to be able to benefit from linkages to markets and these can be done through lead farmers or traders. The study goes on to explain that market actors and buyers prefer to purchase

products from aggregators and traders who are able to collect and deliver produce to them as opposed to collections from individual farmers. The study also highlights the fact that middlemen and traders face significant challenges because of the cost of mobilizing the farmers and aggregating product. The issues of cash flow make it difficult to satisfy the needs of individual farmers who need cash upfront thus warranting the interventions of third parties such as NGOs or the Government to carry out the work of mobilizing farmers.

In their study ILO & UNCTAD (2013) stated that middlemen do play a critical role in the aggregation of produce from farmers for the export market, not only that but middlemen also play a critical role in the mobilization of labour as a critical resource for farm work by large commercial farmers as well as by farmer groups. The study however emphasizes the fact that policy interventions need to be put in place to ensure that farmers are the ultimate beneficiaries of high prices and not the middlemen.

According to Abebe et al. (2016), the clarity of the effect of these brokers in the improvement of livelihoods of smallholder farmers is debatable. The fact that middlemen have been critical in the development of agricultural economies is undoubted however, the ramifications on the upgrade of the economic outcomes of smallholders is a concept for debate as a majority of studies paint them in a negative light for example being a barrier between small holder farmers and new opportunities in the market.

Farmers engage market middlemen for the main reason that they hold the keys to market information. In the event that farmers opt to sell produce by themselves, they run the risk of earning higher prices especially at the beginning of the day for horticultural products. At the end of each market day the prices go lower and thus according to Chigusiwa et al. (2013) middlemen play a pivotal role in the market participation of farmers.;

Middlemen often make their margins from smallholder farmers through information asymmetry. The middlemen are aware that farmers are usually in remote areas and therefore barely have any information on pricing, not to mention the scarcity of ICT infrastructure that leads to this. In this case middlemen have the incentive to offer lower prices to farmers and getting rid of this could improve the livelihoods of the farmers. (Mitra et al., 2012). On the authority of the same author, the uppermost mechanism for vending potatoes in West Bengal involves local intermediaries. In the 2007 sample, 72% of farmers sold their potatoes to brokers, another 11% to major traders and

around 8% to money lenders. The study further indicates that these intermediaries serve as an expository reference point for market price information, with 62% of the sampled farmers reporting that they obtained potato price updates from them.

Middlemen play a rather exploitative role in the value chains according to (Amir, 2021). The author states that after harvest, farmers usually cannot get their produce to the market and have no option but to off-load their produce to middlemen who in turn sell it for a good margin in the market. In the event that farmers attempt the perilous journey to off-load their produce directly at the market, their lack of knowledge of market dynamics results in their produce fetching much lower prices. In Uganda, (Daily Monitor, 2021) reported that intermediaries, namely middlemen and processors have been importing low cost maize which is affecting farmers in both Uganda and Kenya. The low-cost maize from Uganda is mixed with local produce in Kenya and sold at much higher prices to Kenya millers. The end result of this is the farmers on the Uganda side also get much lower prices for their produce.

The study delved into the effect that middlemen actually have on the overall and export performance of maize farmer organizations in Busia district, Uganda.

2.3.2 The impact of infrastructural development on export performance

FAO (2002) stated in their study the importance of rural infrastructure in the development of trade and export markets for farmers across developing countries particularly in Africa. The study highlights previous involvement of government through produce marketing boards which have since declined across developing countries on the African continent. One of the recommendations in this study is that there needs to be intervention from the private sector presently and in the future to invest in state of the art storage, processing, value addition and marketing facilities.

Gayi et al. (2015) stated poor rural infrastructure in as being one of the biggest impediments to the development of well-functioning rural markets and ultimately affecting the productivity of smallholder farmers. The study also highlighted the fact that transport charges averaged up to 76% of the total marketing costs for maize in East Africa. The lack of proper storage and reliance of

open-air storage also affects quality of produce and reduction in marketability according to their study.

Infrastructure is a critical aspect in the development of rural agriculture and can especially be an important avenue for market accessibility for agricultural produce. Farmer organizations can more easily receive produce from farmers and farmers find it easier to transport their produce to cooperative stores. Infrastructure like telecommunications equipment fosters better communication between farmers and their groups as well as the market. It also allows for accessibility to finance meaning that even credit facilities can be made more available for these farmer organizations in formerly hard to reach areas according to (Llanto, 2012). The author also noted that other necessary infrastructure like water access points, energy and transportation allowed for the rapid development of rural agriculture alluding to the fact that all the farmers would have to focus on is production.

Roads, airports, ports and railway systems make up for any economy's hard infrastructure and it is not enough to have quantity, the quality of this infrastructure matters as well. Information Communications Technology (ICT) is also seen as hard infrastructure which allows for communication, availing and absorption of information. The key indicators for any economy involve usage, coverage and government prioritization. The soft infrastructure facilitates smooth trade through creating efficiencies in cross-border movements, increasing customs efficiency as well as easing of procedural matters. This kind of infrastructure is meant to promote a more transparent system which is corruption free and facilitate the smooth movements of goods between countries (Ismail & Mahyideen, 2015).

Engel et al. (2013) state that in order for agricultural production to improve, hard infrastructure like road network, communications networks and energy need to be upgraded which will in turn facilitate access to markets by farmers. The eventual curtailment of transaction costs between farmers and the export market will boost production as well as other factors of production like access to inputs as well as credit.

In Uganda, Bwireh (2012) did a study on the kind of the post-reaping challenges that growers face in Busia district, Uganda, which is also the geographical scope of this study. The author noted that lack of storage indeed drove up costs of putting produce together, he also noted that poor road network meant that farmers could not easily access the market and neither could traders. The lack

of storage and cleaning facilities meant that farmers dried their maize on the road side increasing the risks of contamination and in the end lower prices offered to the farmers. The disturbing headline of the Daily Monitor written by Awori (2023) cited that late in 2023, over 800 kilometres of roads were washed away by heavy rains leaving transportation costs for produce to go up by almost 185%.

In terms of ICT usage according to UBOS (2017) Busia Uganda has a low percentage of people using the internet between ages of 18-30 which comes up to 23%. In terms of ownership of mobile phones, only 50% of the people between 18-30 own at least one mobile phone. The low uptake of ICT in the district means that access to credit, mobile money services and even information on market prices is particularly low leaving room for farmers and their organizations to be exploited.

The infrastructure in a rural setting especially in telecommunications, water access, road network and storage facilities therefore has a first hand effect on the export performance of farmer organizations in Busia district, Uganda and was further investigated through this study.

2.3.3 Farmer Organization capacity and export performance.

USAID (2015) did a study in Tanzania amongst farmer groups to assess their capacity, the outcomes of their study exhibited that most of the leadership committees of the groups had the willingness and indeed followed the constitution pointing to good governance. The cooperatives need improvement in many other areas like human resource development, external relations and operations in order to fully develop their capabilities. The study goes to show that farmer groups need to have more than good will to exhibit good performance, critical capabilities in other areas also need development.

In 2008, the FAO supported a regional network of Caribbean farmers to enable them develop plans before engaging in any kind of cultivation. The support came from nine countries in the Caribbean. The project provided support to the local CaFAN affiliate, the Eastern Caribbean Trading and Agriculture Development Organization (ECTAD) in St Vincent and the Grenadines. Although ECTAD lacked experience in regional and export markets, the project played a key role in enhancing the organization's professionalism. A central focus was strengthening ECTAD's networking abilities with its members and equipping them with vital information and support with its members and equipping them with vital information and support services. Capacity building efforts included training in production technologies and improvements in business processes. Through ECTAD's market

connections, particularly, the United Kingdom, farmers were able to coordinate their efforts more efficiently and process their products before export, which led to a 100% increase in their earnings. This initiative demonstrates a strong link between the capacity of farmer organizations and their export performance, highlighting that building organizational capacity directly contributes to improved export outcomes.

According to Amani (2016), it was found that farmer organization capacity was not only about the functional capabilities of the organization but also entailed the technical capacity of their members, the physical capabilities, the governance structure and administration of the organization as well as the interactions of the organization with the macro-environment.

Farmer Organization maturity on the other hand was seen by the same study as how able the organization was to achieve the objectives that it sets out for itself.

Rwelamira (2015) stated in her paper that if farmers participated in market-oriented agriculture, their livelihoods would improve significantly. The paper also stated that better opportunities existed in the export markets for farmers than in the domestic markets if the farmers could organize themselves more effectively. The most effective way to take advantage of the export markets would be for the farmer organizations to formalize their operations to engage in bulk buying and collective marketing of their produce, the paper cited an example of the One Stop Centres by Sasakawa Africa that were enabling farmers to do this.

Over the years, the agricultural industry in Tunisia has had two major players namely the large agro-processing firms and the smallholder farmers with small land holdings who feed into these industries. A big majority (85-89%) of Tunisia's smallholders own less than 20 hectares of land and the average agricultural productivity per hectare is a little over 1,000 US dollars, which is slightly below the OIC average of 2013. The situation for the smallholder farmers is dire since there is no official recognition of who a smallholder farmer is with no form of identification from the state authorities. The "non-farmers" in Tunisia have started to benefit from the government support and subsidies meant for the smallholder farmers. The interference from the non-farmers has limited the amount of support that farmers can get from the government like loans and agricultural insurance which leads to more indebtedness to already burdened smallholder farmers. The overall productivity of the nation has thus

been affected since the smallholder farmers have moved on to participate in other economic activities (Hansen, 2015).

Uganda's maize export performance has suffered but her exporting experience in other industries like horticulture have not been as rosy either. Between 2014 and 2016, Uganda was the recipient of a number of warnings from the European Commission due to a very high number of interceptions of pepper containing banned pests like the false codling moth as well as the African citrus psyllid sucking the juice out of fresh curry leaves. In an effort to restore her reputation and market, the country made an action plan to address the fall-out and instituted a temporary ban on pepper exports. Aside from pepper, the trade in other fresh fruits and vegetables, were constrained because of poor efforts to handle difficult pests. The investigations on the causes of these interceptions were linked to the weakness of coordination and enforcement by the relevant institution, a shortage of adequate processing infrastructure as well as ignorance of the public and producers on the standards required in the various markets.

Agole et al. (2022) in their study on how smallholder groups perform in Uganda discovered that the main reason for their poor performance was that most of the farmers did not want to participate in collective activities. The participation in activities requiring the presence of every member to contribute to a particular product often left the group struggling in that area.

The focus of this paper therefore, sought to determine the scale at which farmer organization capacity affects export performance in Busia district, Uganda. The critical areas that were examined under capacity were the governance of the association, ability to pay farmers on spot, financial management as well as the presence and management of storage infrastructure.

2.3.4 Import Bans, Tariffs and Export performance

The import bans imposed by Kenya on Uganda's maize has led to significant losses for farmers in Uganda and the country's economy as a whole according to (FAO, 2023). In their study, they noted that food safety issues were the primary cause of Uganda's maize exports being banned by Kenya.

According to a report written for the FAO, Kenya is heavily dependent on maize as a staple food and large amounts are required to satisfy domestic demand. The country depends largely on imports from Uganda and Tanzania during lackluster harvests domestically and even goes ahead to import from the global market with domestic players jostling for the lifting of the import duty of 50% most of the time (Vitale et al., 2013). The maize imported by Kenya from EAC states like Uganda and Tanzania which have bans slapped on their maize most times without warning, result in unstable incomes for the farmers and traders ultimately leading to poor export performance of maize farmer organizations.

Donley (2018) iterated, that Argentinian farmers bumped up their forward sales for soybeans in the last quarter of 2019 in order to escape the gauntlet of increased taxes on exports according to the U.S Department of Agriculture. He also shone light on the figures released by the Ministry of Agriculture in Argentina showing that as of December 18th, 2019, exporters had lodged a more than 800% jump in forward sales for export of the 2019-20 soybean crop compared to the same time frame in 2018-2019.

Research conducted by Dewbre & Batisti (2008) on agricultural development in Cameroon, Ghana and Mali highlighted that there can be an up-tick in prices given to producers due to import tariffs imposed on the importation of goods that the country already has while export taxes have a dissimilar effect i.e a glut of the produce is left in the market with demand that does not have the ability to off-take the supply leading to miserable prices.

The authors further explained that lowering export taxes was a key objective for the three countries studied, as such taxes were hindering their economic growth. The study revealed that Cameroon initially imposed export taxes on its commodities but gradually phased them out, leaving only forestry product exports taxed by 2000. Additionally, the study noted that in Mali, cotton taxes were no longer collected directly by the government but by a government-partially owned marketing agency, which now also manages the pricing.

The statement above demonstrates that, beyond the East African Community (EAC) and Uganda, many countries have avoided, lowered or entirely removed export taxes. In cases where a country

maintains export taxation such as Argentina, farmers often use forward sales on commodity exchanges to bypass these taxes and protect their interests.

The maize export sector in Uganda has maintained a sense of independence due to the country's commitment to a liberal trade policy in the sector levying almost no maize export taxes, charges or levies. It therefore seen as prudent by importing countries that Uganda's maize is regulated (Ahmed & Ojangole, 2014) .

Import tariffs can have a positive effect on farmer performance and consequently influence the success of farmer organizations. According to a study by Umboh et al. (2014), raising maize import tariffs reduced the volume of imported maize, which decreased domestic demand for imports and resulted in higher prices for locally grown maize. However, the price increase caused a decline in demand for maize both for human consumption and animal feed. In response, farmers expanded maize cultivation by allocating more land to it, leading to increased local production. Thus, import restrictions that encourage higher domestic production can have beneficial effects.

Ndemera et al. (2023) noted in their study that Kenya banned imports of maize more than twice particularly from Uganda between the years 2018 and 2021 and ever since then, there has been uncertainty about the effect on maize prices and the overall impact on the farmers who might be stuck with produce should traders fail to purchase from them due to these import bans.

This study delved into the effect of these import bans and tariffs on the export performance of maize farmer organizations and sought to understand in what ways the farmers have been impacted by them over time.

2.4 Research Gaps Identified

Table 2.1: Table showing research gaps

Variable	Author	Title	Findings	Research Gap	Focus of the study
Middlemen	Abebe et.al (2016)	Are middlemen facilitators or barriers to improve smallholders' welfare in rural economies? Empirical evidence from Ethiopia	Farmers who off-loaded their produce at the market enjoyed much higher incomes than those who sold to middlemen	The study focused on the potato value chain for individual farmers in a particular region in Ethiopia	This study focused on maize in particular and focused on farmer groups in lieu of individual farmers in Busia district, Uganda
	Chigusiwa et.al (2013)	The Role of Market Middlemen in the Marketing of Smallholder Horticultural Products in Zimbabwe	Middlemen are pivotal to farmers being able to attain higher prices and sell off perishable produce on time	The study is based in Zimbabwe, largely focuses on individual horticulture farmers who do not have the luxury of waiting for better prices	This study focused on maize farmer organizations in Busia district, Uganda who had the ability to sell their produce without intermediaries.
	Mitra et.al, (2012)	Asymmetric Information and Middleman Margins: An Experiment with West Bengal Potato Farmers	Farmers were forced to sell their produce to middlemen due to information asymmetry on market prices	Middlemen are the only source of information and potatoes are the value chain of choice. The study is based in India	The study determined if information asymmetry was brought about by middlemen in the maize farmer organization in Busia district, Uganda.
	Amir (2021)	Small-holding farmers and the exploitative role of intermediaries	Intermediaries like middlemen create layers in value chains leading to lower prices for farmers and higher prices for consumers	The article is not a full blown study and takes a rather generalist approach and is not linked to any specific economy or value chain.	This dissertation focused more specifically on the maize value chain and maize farmer organization in Busia district, Uganda.
Infrastructure	Llanto (2012)	The Impact of Infrastructure on Agricultural Productivity	Rural agriculture develops more rapidly with improvement in infrastructure	The study was based in the Phillipines and there was no focus on particular farmer groups	This study zeroed in on the impact infrastructure has had on the maize farmer organization of Busia district, Uganda
	Ismail & Mahyideen (2015)	The Impact of Infrastructure on Trade and Economic	Improvements in transport infrastructure and ICT	The study focused on trade facilitators and not on infrastructure to boost production	This study looked at the impact of both trade facilitating infrastructure as well as

		Growth in Selected Economies in Asia	improved and enhanced trade flows	and enhance farmer group capacity	production and post-harvest handling infrastructure
	Engel (2013)	The history, impact and political economy of barriers to food trade in sub-Saharan Africa: an analytical review	Improvement in infrastructure will reduce transaction costs and facilitate improvement in agricultural production	The study focused on infrastructure and trade at a macro-level in Sub-Saharan Africa with no particular farmer groups being studied in any country	This study focused on farmer organization in Busia district, Uganda and how infrastructure has impacted their export performance
	Bwireh (2012)	Managing The Challenges In Post-Harvest Maize Value Chains In Busia District Uganda.	The need for the improvement of infrastructure is key to the improvement in post-harvest handling by farmers in Busia district, Uganda	The study did not discuss the impact of infrastructure on maize farmer organizations in Busia, district Uganda	This study delved into how on infrastructure affects maize farmer organization in Busia district, Uganda.
	UBOS (2017)	National Population and Housing Census 2014 Area Specific Profiles	ICT uptake in Busia Uganda is still very low	The census did not relate the low uptake of ICT to the effect on farmers or ordinary citizens	This study used this data to study the impact of poorly developed ICT infrastructure and low ICT uptake on the export performance of maize farmer organization in Busia district, Uganda
Farmer organization capacity	USAID (2015)	Organizational Capacity Assessment Of Farmers Associations in Morogoro, Dodoma and Manyara Regions NAFKA Activity	Farmer cooperatives require more than willingness of members to perform but they need to build other capabilities in management	The study focused more on cooperatives in a particular region of Tanzania	This study focused on cooperatives in Busia district, Uganda.
	Amani (2016)	Building and Assessing the Capacity of Farmers' Organizations: The Case of the United Nations World Food Programme's Purchase for Progress	Farmer organizations are able to enhance their reach to the export market and empower farmers	The study focused on farmer organizations in Ghana and Malawi	This study focused on maize farmer organization in Busia district, Uganda.
	Rwelamira, (2015)	Strengthening Farmers Organizations and Civil Society Organizations	Farmer organization need to be strengthened in order to fully exploit market opportunities	The study focused on sub-Saharan Africa particularly on the	This study focused on maize farmer organization in Busia district, Uganda.

				work of Sasakawa Africa	
	COMCEC (2015)	Improving Institutional Capacity: Strengthening Farmer Organizations In The OIC Member Countries.	Poor farmer participation, small client base, lack of access to market and lack of government support for farmer organization in member states	The study focused solely on cooperatives in member states including Uganda but picked only one organization in Uganda	This study discovered how farmer group capacity affects maize farmer organizations in Busia district, Uganda.
	Agole et al. (2022)	Determinants of Performance in Smallholder Farmer Groups in Determinants of Performance in Smallholder Farmer Groups in Uganda	Farmers generally avoided participating in collective activities	The study focused broadly on Eastern Uganda	The study focused on maize farmer organization in Busia district, Uganda.
Import bans and tariffs	FAO (2023)	FOOD SYSTEMS PROFILE- UGANDA	Ugandan smallholder farmers are largely subsistence and lack the capacity to improve agro-processing capacity leading to substandard output which is eventually banned from export markets	The study highlights the larger problem at a macro-level in Uganda and is not specific to Busia, district, Uganda	The study focused on maize farmer organizations in Busia district, Uganda.
	Vitale et al. (2013)	The East African Community Common External Tariff on cereals	Import bans imposed by Kenya are abrupt causing disruptions in trade flows	The study focused on stakeholder responses to the Common External tariff on rice, maize and wheat	The study looked specifically at how import bans affect the farmer organizations
	Donley(2018)	Argentina to reduce soybean export taxes	The Argentinian government would gradually reduce the export taxes on soybean	The study is based in Argentina and focuses on export tariffs of soybean	The study maintained its focus on how tariffs affect maize farmer groups particularly in Busia district
	Dewbre & Batisti (2008)	Agricultural Progress in Cameroon, Ghana and Mali: Why It Happened and How to Sustain It	Import tariffs can lead to increase in prices and countries are gradually scrapping export tariffs.	Cameroon, Mali and Ghana are being studied in this case	Busia district, Uganda was the focus of this study particularly farmer organizations in the district.

Ahmed & Ojangole (2014)	Analysis of price incentives for maize in Uganda 2005-2013	Ugandan maize exporters are largely affected by the tariff regimes of other countries and not by Uganda	The study does not analyze the effects of import bans by export markets	This study sought to analyze the effect that import bans are having on farmer organizations in Busia district, Uganda
Umboh et al. (2014)	Impact of Maize Import Tariff Policy Changes On Production And Consumption In Indonesia	Removal of import tariffs for maize decreased price of maize and stifled local production by farmers	The study focused on domestic import tariff policies in Indonesia and not on those of export markets	The study paid attention to how import bans by Kenya affect farmers in Uganda
Ndemera et al. (2023)	Economic Impact of Sanitary and Phytosanitary Measures on Regional Food Trade	Sanitary and Phytosanitary measures by importing countries led to increased informal trade and reduced revenue for exporters	The study looked into the effect of import bans in East Africa at a macro level for maize and livestock	The study revolved around the effect of import bans on maize farmer organization in Busia district, Uganda

Source; Researcher (2024)

2.5 Conceptual Framework

The export performance of maize farmer organizations in Busia District is guided by both internal and external factors, which determine their ability to access and compete in export markets. The **Resource-Based View (RBV)** suggests that internal resources such as financial capacity, infrastructure, and managerial expertise shape the competitiveness of farmer organizations (Barney, 1991). Meanwhile, **Contingency Theory** highlights how external environmental factors, including middlemen interference, trade restrictions, and infrastructure challenges, affect organizational effectiveness (Yusuf et al., 2023). These theories provide the foundation for understanding how key determinants impact the export performance of maize farmer organizations in Busia.

One of the critical factors affecting export performance is the role of **middlemen**, who provide farmers with immediate cash and flexible trading options. While this offers short-term financial relief, it discourages farmers from participating in cooperatives, thereby reducing the quantity of maize aggregated for formal export. The dominance of middlemen weakens farmer organizations' bargaining power, disrupts quality control efforts, and limits their ability to access direct and legitimate export markets. As a result, maize exports remain fragmented and inconsistent, leading to poor overall export performance (Amir, 2021).

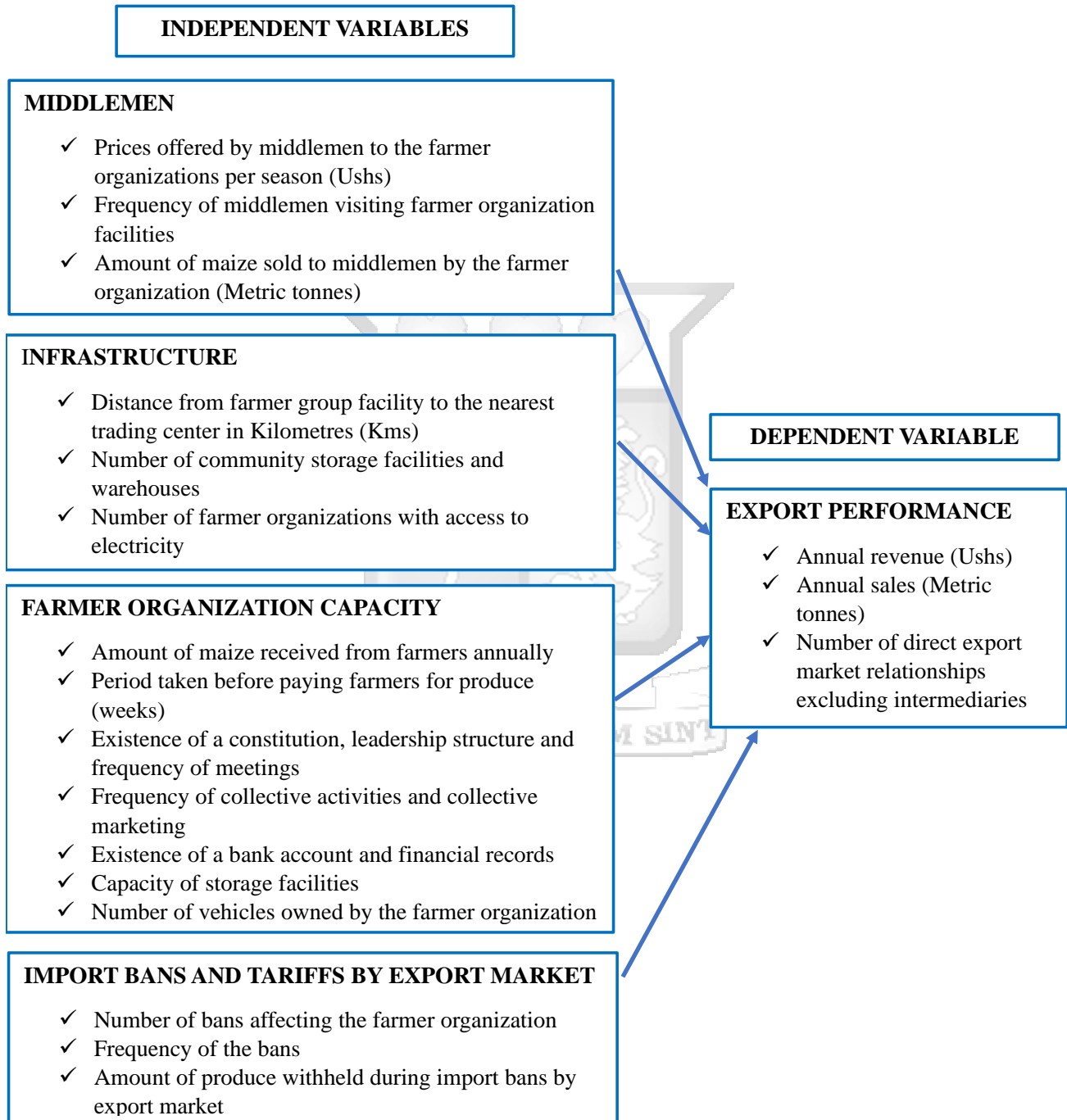
Infrastructure is another key determinant, as inadequate road networks and poor storage facilities hinder efficient maize aggregation and export. Weak transport systems increase costs and post-harvest losses, reducing the quality and quantity of maize available for export. Farmer organizations lacking proper storage capacity struggle to maintain supply consistency, further diminishing their competitiveness in export markets. Improved infrastructure is expected to enhance the efficiency of farmer cooperatives, reduce losses, and facilitate smoother cross-border trade, thereby improving export performance (Ismail & Mahyideen, 2015).

The **capacity of farmer organizations** also plays a crucial role in determining their export performance. Limited financial resources, weak governance structures, and inadequate managerial expertise prevent cooperatives from offering competitive payments to farmers, enforcing quality standards, and ensuring access to export opportunities. A shortage of working capital forces cooperatives to delay payments, pushing farmers toward middlemen and reducing collective maize aggregation. Strengthening farmer organization capacity is expected to increase farmer participation, enhance quality compliance, and improve overall export volumes (Rwelamira, 2015).

Furthermore, **import bans and tariffs** imposed by key trading partners such as Kenya significantly impact maize export performance. Trade restrictions create market uncertainty, reduce demand for Ugandan maize, and discourage investments in quality improvements. When bans are enforced due to quality concerns, farmer organizations struggle to access formal markets, leading to reduced export volumes and financial losses. Addressing regulatory challenges through improved quality assurance and stronger cooperative structures is expected to enhance market access and stabilize export flows (Egessa, 2023).

This **conceptual framework** (see **figure 2.1**) illustrates how these independent variables—middlemen, infrastructure, farmer organization capacity, and import bans—interact to influence the export performance of maize farmer organizations. While middlemen interference and trade restrictions negatively impact exports by diverting trade to informal channels and limiting market access, improved infrastructure and stronger organizational capacity are expected to enhance maize aggregation, quality control, and direct export market participation. By analyzing these relationships, this study seeks to identify practical strategies for improving the export competitiveness of maize farmer organizations in Busia District.

Figure 2.1: Conceptual model for the study.



Conceptual Framework; Author (2024).

The conceptual framework above shows that the independent variables which are middlemen, infrastructure, farmer organization capacity and import bans and tariffs have a direct impact on the export performance of maize farmer organizations in Busia district, Uganda.

2.6 Operationalization of Study Variables.

The figure in Table 2.2 below represents the operationalization of the study variables. The table also shows how each variable is measured, the data collection method as well as supporting literature.

Table 2.2: Operationalizing and Measuring of Variables

Variable	Type of Variable	Indicators	Measurement	Data Collection Method	Literature Support
Export performance	Dependent	<ul style="list-style-type: none"> Annual revenue in Uganda shillings Annual sales of maize in metric tonnes Number of direct export market relationships excluding intermediaries 	Continuous	Questionnaire	Tigchelaar et al.(2018), Ngotho (2021), Lee (2020)
Middlemen	Independent	<ul style="list-style-type: none"> Prices offered by middlemen to the farmer organization per season in Uganda shillings (Ushs) Frequency of middlemen visiting farmer organization facilities Amount of maize sold to middlemen by the farmer organization in metric tonnes (MT) 	Continuous	Questionnaire	Abebe et al. (2016), Chigusiwa et al. (2013), Mitra et al. (2012), Amir, (2021)
Infrastructure	Independent	<ul style="list-style-type: none"> Distance from farmer group facility to the nearest trading center in Kilometres (Kms) Number of community storage facilities and warehouses Number of farmer organizations with access to electricity 	Continuous	Questionnaire	Llanto (2012), Ismail & Mahyideen, (2015), Engel et al. (2013), Bwireh (2012), UBOS (2017)

Farmer Group capacity	Independent	<ul style="list-style-type: none"> • Amount of maize received from farmers annually • Period taken before paying farmers for produce (weeks) • Existence of a constitution, leadership structure and frequency of meetings • Frequency of collective activities and collective marketing • Existence of a bank account and financial records • Capacity of storage facilities • Number of vehicles owned by the farmer organization 	Continuous	Questionnaire	USAID (2015) Amani (2016), Rwelamira, (2015), COMCEC (2015), Agole et al. (2022)
Import Bans & Tariffs	Independent	<ul style="list-style-type: none"> • Number of bans affecting the farmer organization • Frequency of the bans • Amount of produce withheld during import bans by export market 	Continuous	Questionnaire	FAO (2023), Vitale et al. (2013), Dewbre & Batisti (2008), Donley (2018), Ahmed & Ojangole (2014), Umboh et al. (2014), Ndemera et al. (2023)

Source: Author (2024)

2.7 Chapter Summary

This section scrutinized different literature and the theoretical framework comprised of the Resources Based View theory as well as the Contingency Theory. The chapter also carried the empirical review which broke down each of the independent variables and through the conceptual framework highlighted them; middlemen, infrastructure, farmer organization capacity and import bans and in what way they influence or determine the dependent/output variable which is export performance. The chapter also operationalized the variables and identifies research gaps from various literature picked out by the researcher.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This segment highlights the modus operandi for gathering data by the researcher. The chapter is assembled into sections that explain the philosophy behind the methodology, it also delves into the area which is being studied, the way the research has been designed, the population that is being targeted, the procedures and tools for collection of data. The chapter also looks at how quality will be achieved, how data will be analyzed alongside ethical considerations.

3.2 Research Philosophy

A research philosophy is the guiding principle of a particular research study according to Tamminen & Poucher (2020). In other studies, the different types of research philosophy are highlighted. According to Žukauskas et al.(2018) the four categories of research philosophy are the positivist, interpretivist, realistic and pragmatist philosophies.

The positivist philosophy emphasizes objectivity and independent work removing one's personal values and bias from the research, in the interpretivist, the researcher immerses themselves in the study and it is more subjective and prone to the experiences of the study group.

The pragmatist philosophy uses what is currently, factually available, the research problem will determine the path that will be taken while the realism philosophy posits that both the positivist and interpretivist philosophies can be put together and uses both quantitative and qualitative techniques.

The positivist theory allowed for the author to objective in the study and base the study results on facts which were later analysed using quantitative and statistical analysis. The positivist research philosophy was the anchor of this study because it allowed for putting together the study findings..

3.3 The Study Area

Busia is a district located in Eastern Uganda covering an area of 736.4km². It shares its northern boundary with Tororo district and is bordered to the south by Lake Victoria. The district comprises

five sub-counties: Buyanga, Bulumbi, Sikuda, Busitema and Buteba with the latter being the most densely populated and situated along the border with Kenya.

According to Uganda's 2014 National Population and Household Census (NPHC) district's total population stands at 126,300 with females accounting for 51 percent. The district has approximately 23,795 domestic establishments, 80.1 percent of which are headed by males. The district also has a rather juvenile population with 58.7 percent aged between 0 and 17 years, the largest proportion compared to other age groups. In 2014, there were the district had 43,838 working individuals aged 16 to 64 within the district. Among them, 21,451 of the domestic establishments were involved in crop farming with 20,722 specifically engaged in maize cultivation, highlighting maize as the predominant crop in the district.

3.4 Research Design

The author made use of the descriptive cross-sectional survey design to investigate the determinants of export performance of farmer groups. Hunziker & Blankenagel (2024) state that cross sectional studies seek to highlight the relationships between certain elements and conditions that bring about those elements. Taris et al. (2021) states that the cross-sectional survey design has several advantages attached to it including being cost effective, reduction of the burden on respondents, simplicity as well as a shorter data collection period.

According to Lima (2011) descriptive research disregards matters of causality or alternative hypotheses shedding more light on the distribution of the variables that exist. Descriptive research also requires one to delve into the aspects of a particular phenomenon through observation or explore any correlation between two or more variables (Williams, 2007). The cross-sectional survey design was thus well-suited to this study because the questionnaires were the data collection instruments which allowed for the elucidation of the independent variables.

3.5 Target Population

A target population is part of a bigger population whose characteristics are of interest to a researcher (Mncedisi Willie, 2022). According to confidential sources within the Busia District Local Government and data seen by the researcher, there are 67 registered and active farmer groups in all the six sub-counties of Busia District which have maize as one of the primary crops they deal in.

The sources also highlighted the three most important contact points for each of those groups which are the Chairperson, Treasurer and the Secretary therefore the target population will be 201 respondents.

The reason the study targeted the three participants per group in particular is because they are the involved in the day-to-day operations and performance of the group and thus possess the relevant knowledge and information required. The interactions to collect this information and distribute questionnaires took place at the farmer groups' premises and other public meeting points.

Table 3.1: Target Population

Category	Target Size
Registered Farmer Organizations in Busia District	67
No. of respondents per farmer organization	3
Total No. of respondents	201

Source: Author (2024)

3.6. Sampling size

According to Turner (2020), sampling is done when a subset of a target population is picked out. Samples according to Kothari (2004) either bear probability or non-probability characteristics. The same author goes on to state that probability samples can be derived from systematic, simple random, stratified and cluster sampling, while non-probability samples are derived from convenience, judgement and quota sampling.

This paper took on the census sampling technique where the entire target population was included in the study. The justification for this is that 201 respondents were too few to pick a sample from. In each of the farmer groups, three people from the management of the farmer groups were to be engaged namely the Chairpersons, Secretaries and Treasurers of the groups. The selection of these particular respondents was to ensure accuracy of the data to be collected since they possessed adequate knowledge on the performance of each of their farmer groups.

3.7 Data Collection Procedures and Instruments

The source of data for this study was primary data which was collected from the Chairpersons, Secretaries and Treasurers of the farmer groups. Structured questionnaires were the principal data collection instruments administered to the participants from the farmer groups. The questionnaires were administered by the researcher and the research assistants. According to Jones et al.(2013), questionnaires are a valuable tool allowing researchers to gather information from populations with relative ease.

The questionnaires used a 5 likert rating scale such that the respondents could specify their levels of agreement with the assertions in the questionnaires. The Likert scale was used due to the fact that some of the information required would not be readily available on hand by the respondents and it also allowed for quantitative data to be collected.

The discussions in the questionnaire revolved around the capacity and operations of the farmer groups, the performance of the farmer groups over the last five years in terms of tonnage of maize sold as well as revenue collected over the same time frame, the agro-economy of Busia District, the functioning and production capabilities of maize farming groups, along with maize farmers' access to export markets. The author hired and trained two research assistants to hand out the questionnaires and to translate questions into the local dialect for those who were inarticulate in English and to collect the questionnaires as soon as the respondents had completed them.

3.8 Research Quality

3.8.1. Reliability

Siegle (2015) alludes to the fact that a test is only as reliable as its ability to measure what it measures consistently. The author also lists various measures to ensure internal consistency of research instruments like split-half, Kuder-Richardson formula and Cronbach's alpha. To guarantee that the research tool was reliable, the author utilized the Cronbach's alpha. The coefficient is useful in the development of new survey instruments according to (Frost, 2022). The same author posits that with the coefficient, it can be deduced whether a collection of variables consistently measure a characteristic. Goforth (2015) states that the coefficient runs from 0 to 1 with variables that are more independent of each other being closer to 0 while those with a higher dependency level are closer to 1. The study used a cut-off point of 0.7 which created the assurance that the measure for the questionnaire could be relied upon (Frost, 2022).

3.8.2. Validity

Validity of research instruments has been defined by Mohajan (2017) as the aptness of a research instrument to collect data and how well it does so. In this study questionnaires were used and the investigator ensured that the respondents had the required knowledge on the key objectives of the study to ensure validity. To ensure validity of the questionnaire, the researcher, in consultation with their academic supervisor, ensured validity both on face value and construct .

3.9 Data Analysis

Ashirwadani (2014) defines data analysis as organizing facts and figures to address a research question. The study made use of questionnaires to record data from each group. The questionnaires were thoroughly analyzed to ensure that information provided was complete, correct and free of error before being fed into the Statistical Package for Social Sciences (SPSS) for further analysis. Descriptive analysis summarized the variables of the study while inferential analysis showed how the variables were linked. The measures of centre were gauged using the mean while measures of dispersion helped to show how the details put together were scattered and their value. Tables were used to adduce the discoveries.

A multiple linear regression model was used to exhibit and to hypothesize the linkages amongst the variables. The model is illustrated below;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon_i$$

Where Y1 = Export performance (Dependent variable), X1 = Farmer Group capacity, X2 = Impact of middlemen, X3 = Infrastructure, X4 = Import bans & Tariffs, β_0 = Constant, ϵ_i = Error term.

The model illustrated above is also prone to various limitation some of which include heteroscedasticity and multi-collinearity. The diagnostic tests noted below Table 3 highlight how the model will be tested and adjustments made.

Table 3.2: Description of Variables and Analysis

Variable	Type of Variable	Indicators	Measurement	A priori expectation	Literature Support
Export performance	Dependent	<ul style="list-style-type: none"> Annual revenue in Uganda shillings Annual sales of maize in metric tonnes Number of direct export market relationships excluding intermediaries 	Continuous		Tigchelaar et al.(2018), (Ngotho, 2021), Lee (2020)
Farmer Group capacity	Independent	<ul style="list-style-type: none"> Amount of maize received from farmers annually Period taken before paying farmers for produce (weeks) Existence of a constitution, leadership structure and frequency of meetings Frequency of collective activities and collective marketing Existence of a bank account and financial records Capacity of storage facilities 	Continuous Continuous	+/-	USAID (2015) Amani (2016), Rwelamira, (2015), COMCEC (2015), Agole et al., (2022)

		<ul style="list-style-type: none"> Number of vehicles owned by the farmer organization 			
Import bans & Tariffs	Independent	<ul style="list-style-type: none"> Number of bans affecting the farmer organization Frequency of the bans Amount of produce withheld during import bans by export market 	Continuous Continuous	-	FAO (2023), Vitale et al., 2013), Dewbre & Batisti (2008), (Donley, 2018), Ahmed & Ojangole (2014), Umboh et al., (2014), Ndemera et al., (2023)
Middlemen	Independent	<ul style="list-style-type: none"> Prices offered by middlemen to the farmer organization per season in Uganda shillings (Ushs) Frequency of middlemen visiting farmer organization facilities Amount of maize sold to middlemen by the farmer organization in metric tonnes (MT) 	Continuous	-	Abebe et al. (2016), Chigusiwa et al., (2013), Mitra et al., (2012), Amir, (2021)
Infrastructure	Independent	<ul style="list-style-type: none"> Distance from farmer group facility to the nearest trading center in Kilometres (Kms) Number of community storage facilities and warehouses Number of farmer organizations with access to electricity 	Continuous Continuous	+/-	(Llanto, 2012), (Ismail & Mahyideen, 2015), Engel et al., (2013), , (Bwireh, 2012), UBOS (2017)

Source: Author (2023)

3.10 Testing the model

3.10.1 Diagnostic Tests

Diagnostic tests conducted for this paper entailed normality test, Test of Independence (non-autocorrelation), Multi-collinearity Test and Homoscedastic Test of Export Performance.

One of the diagnostic tests that was undertaken for the model was the multi-collinearity test. According to Sirigari (2020), the multi-collinearity test becomes relevant in multiple linear regression because a number of the variables may have high levels of correlation which can distort the regression model. Within this test, the Variance Inflation Factor (VIF) will be introduced to the regression model. (Frost, 2020) states that if $VIF=1$ then multicollinearity does not exist, however, at levels where $VIF>4$ then multicollinearity needs to be tested for. In the event that multicollinearity between particular variables is noticed, the researcher will then exclude those variables (Sirigari, 2020).

3.10.2 Multicollinearity Test

Multicollinearity arises in the event that there is a high level of association between two or more predictor variables in a regression model, causing instability in the regression coefficients and making it challenging to determine the individual effect of each predictor (Cooper & Schindler, 2011). Detecting multicollinearity can be achieved by examining variance inflation factors (VIF) or tolerance values. Generally, VIF values below 10 suggest no significant multicollinearity issues, while tolerance values above one further indicate the absence of multicollinearity concerns. The results of the multicollinearity analysis are presented in Table 4.9.

Table 3.3: Multicollinearity Results

Variable	Tolerance	VIF
Farmer Group Capacity	.463	2.162
Middlemen	.524	1.909
Infrastructural Development	.657	1.522
Import Bans and Tariffs	.770	1.299

Source: Author (2024)

The multicollinearity analysis reveals the relationship between the independent variables in the regression model, using variance inflation factors (VIF) and tolerance values to detect potential issues. For Farmer Group Capacity, the tolerance value is 0.463 and the VIF is 2.162. These figures indicate no significant multicollinearity, as the tolerance is well above the 0.1 threshold and the VIF is well below the threshold of 10. This suggests that Farmer Group Capacity is not highly correlated with other predictor variables, allowing for reliable estimation of its individual effect on the outcome variable.

Similarly, the Middlemen variable shows a tolerance value of 0.524 and a VIF of 1.909, further indicating no significant multicollinearity. These values suggest that Middlemen is not highly correlated with other variables in the model, ensuring the stability of its regression coefficient and accurate interpretation of its individual impact.

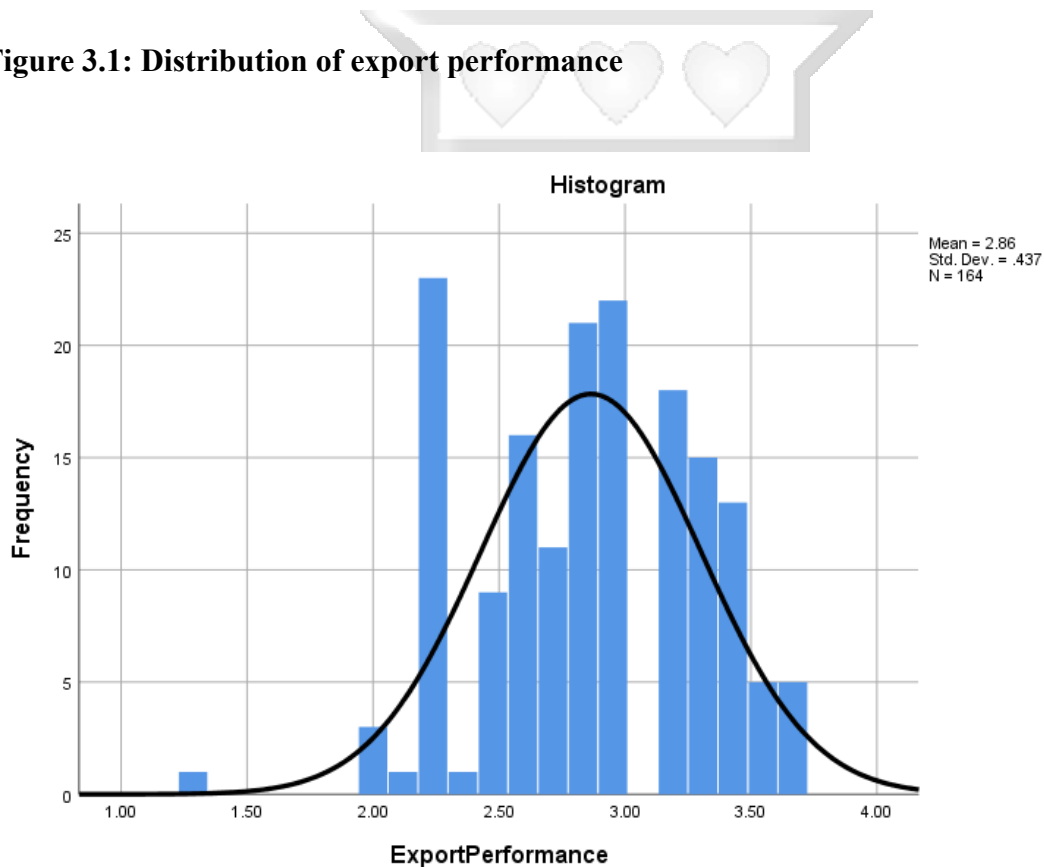
Infrastructural Development, with a tolerance value of 0.657 and a VIF of 1.522, also exhibits no significant multicollinearity issues. The higher tolerance value and lower VIF confirm that this predictor variable does not have a high correlation with others in the regression model, which supports the reliability of its individual effect estimation.

Lastly, Import Bans and Tariffs has a tolerance value of 0.770 and a VIF of 1.299. These values are well within acceptable limits, suggesting no significant multicollinearity. The absence of high correlation with other variables in the model ensures that the regression coefficients for Import Bans and Tariffs are stable and its individual effect can be accurately determined.

3.10.3 Normality Test

Statistical inaccuracies are common in research, particularly when using parametric techniques such as correlation, regression, analysis of variance, and t-tests, which assume a Gaussian or normal distribution. When this assumption is not met, drawing reliable conclusions becomes challenging. However, for larger sample sizes (over 30 or 40), deviations from normality are less problematic. According to Ghasemi and Zahedias (2012), in such cases, parametric methods remain viable because the distribution of the sampling means tends to approach normality, regardless of the initial data distribution. Ghasemi and Zahedias (2012) suggest conducting a visual assessment of normality, as demonstrated in Figure 2.

Figure 3.1: Distribution of export performance



The above histogram depicts the distribution of export performance scores among the respondents, with the frequency of scores on the vertical axis and the export performance scores on the horizontal axis. The histogram bars show that the data is somewhat skewed to the left, this implies a higher concentration of scores towards the lower end of the performance scale. The superimposed normal

curve illustrates the expected normal distribution for comparison. The mean export performance score is 2.86, with a standard deviation of 0.437, based on 164 observations.

Despite some deviations from perfect normality, the distribution appears reasonably symmetric, particularly given the sample size. This visual assessment supports the assertion by Ghasemi and Zahedias (2012) that parametric methods can still be utilized effectively with larger samples, as the central limit theorem ensures the distribution of sample means approaches normality. This histogram helps confirm the suitability of parametric statistical methods for analyzing this data set, provided the sample size and central tendencies observed.

3.10.4 Test of Independence (Non-Autocorrelation)

Independence of error terms, which hints at the independent state of observations, was evaluated through the Durbin-Watson test. The autocorrelation assessed that the residuals of the models were not serially correlated, since how independent the residuals are is one of the basic suppositions of regression analysis (Montgomery et al., 2001). The results are as shown in Table 4.8.

Table 3.4 Autocorrelation Test for Regression

Std. Error of the Estimate	Durbin-Watson
0.37526	1.688

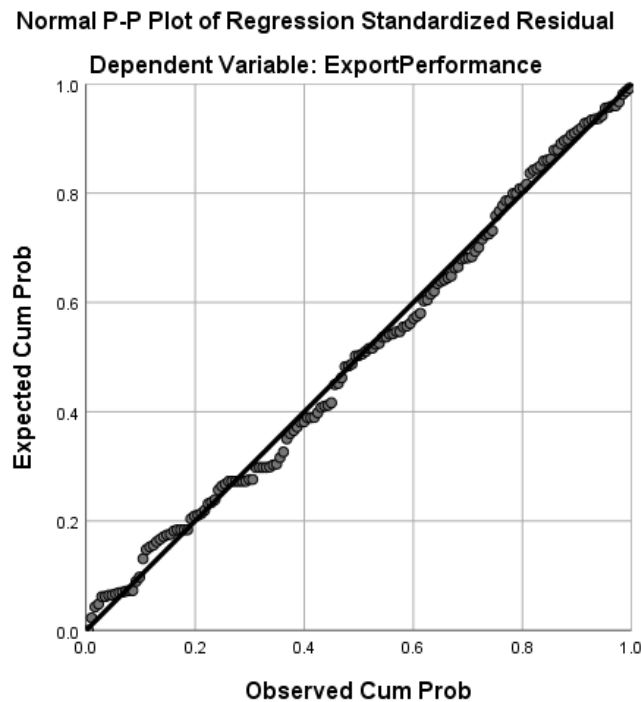
Source: Author (2024)

From Table 4.8, the results of the study gave Durbin – Watson coefficient value 1.688 which is between 1.5 and 2.5 they indicated that there was no autocorrelation in the data residuals.

3.10.5 Test for Homoscedasticity

Homoscedasticity test which assesses whether independent/predictor variables have equal variance if not then there will be heteroscedasticity problem (Garson, 2012). A test for homoscedasticity is a test for variance in residuals in a regression model. The probability – probability plot (P-P Plot) is homoscedasticity of data distribution (Park, 2008). Results are shown in Figure 3.

Figure 3.2: Test for Homoscedasticity



Source: Author (2024)

The figure above, which displays the expected cumulative probability versus the observed cumulative probability of the standardized residuals for the dependent variable Export Performance, is used to test for homoscedasticity in the regression model. Homoscedasticity indicates that the residuals have constant variance straddled through all levels of the independent/predictor variables, which is crucial for the validity of the regression analysis. The plot shows that the points closely follow the diagonal line, suggesting that the residuals are evenly distributed around the line of equality. This close alignment indicates that there are no apparent patterns or systematic deviations, which supports the assumption of homoscedasticity. Thus, based on the visual inspection of the P-P plot, it can be

concluded that the residuals exhibit homoscedasticity, denoting that the discrepancy of the residuals remains consistent straddled through different values of the independent variables, as recommended by Park (2008) and Garson (2012). This supports the reliability of the regression results, indicating that the model assumptions regarding variance are satisfactorily met.

The other diagnostic test that was undertaken was the homoscedasticity test represented on a p-p plot which displayed the expected cumulative probability versus the observed cumulative probability of the standardized residuals for the dependent variable. Homoscedasticity, according to Lani (2011) refers to the point in analysis where the error term is similar for all the independent variables in the regression. Zhou et al. (2015) state that homoscedasticity is one of the major assumptions in linear regressions and is unfortunately distorted often since error variances cease to be similar and thus are a result of other independent variables that may have not been considered and may need to be included in the study or regression.

Tables summarize the informants' views and feedback on their involvement in maize production and export which include the standard deviation, the means and the variance. Graphs, tables and other figures were utilized as an exhibition for the data that was scrutinized and devised for interpretation and drawing of inferences. The study was concluded by using the data analyzed to produce inferential and descriptive analysis from which the researcher made recommendations from the results.

3.11 Ethical Consideration

Ethical approval was sought for both in Kenya and Uganda from the Strathmore University Institutional Ethics Review Committee for ethics review and the National Commission for Science, Technology and Innovation (NACOSTI) for a research permit in Kenya. In Uganda, the ethical review was done by Mildmay Uganda Research Ethics Committee and the research permit was approved by the Uganda National Council for Science and Technology (UNCST). Participants were informed about the objectives of the research and the potential it would have in solving some of the challenges they faced. The participants' consent was also sought throughout the study and participants could voluntarily withdraw from the study. There were no incentives offered to any of the participants and the researcher ensured that there was no coercion of any kind.

The researcher properly acknowledged other publications cited from other authors and did not engage in any kind of plagiarism, falsification or fabrication.

The author also ensured that participant data was kept strictly confidential and that all documentation was original. The author also trained and equipped the research assistants in the matters of research etiquette to ensure effective data collection.



CHAPTER FOUR: DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.0 Introduction

This section encompasses demonstration, analysis and dispensation of the results pursuant to the research purposes of this paper as specified in chapter one. It entails the response rate, descriptive analysis, diagnostic tests, correlation analysis and furthermore regression analysis.

4.1 Response Rate

Initially, the study aimed to target 201 respondents. Of the questionnaires distributed, 165 were deemed suitable for analysis, yielding replies from 82.1% of all respondents. On the authority of Mugenda and Mugenda (2003), this grade is within the acceptable range for social research. Babbie (2010) categorizes a feedback rate of 50% as sufficient, 60% as favourable, and 70% as distinguished for analytical purposes, indicating that the rejoinder rate achieved in this study is up to par based on these benchmarks. While a higher response rate is preferable to mitigate the impact of non-random missing data, Fincham (2008) warns that a low response rate can introduce response bias, potentially affecting the study's generalizability. However, as noted by Dillman, Smyth, and Christian (2014), response rates of 50% or higher are generally sufficient for drawing reliable and valid conclusions. The details are presented in Table 4.1 below:

Table 4.1: Questionnaire Response Rate

Number of Questionnaires issued	Number Returned	% of Questionnaires returned
201	165	82.1

Source: Author (2024)

4.2 General Information of the Respondents

Table 4.2: Characteristics of respondents

Parameter	Frequency	%
Gender of the respondents		
Male	91	55.2
Female	74	44.8
Total	165	100.0
Education Level		
Primary	53	32.1
Secondary	79	47.9
Tertiary	18	10.9
University	10	6.1
No Education	5	3.0
Total	165	100.0
Category		
Chairperson	61	37.0
Secretary	56	33.9
Treasurer	48	29.1
Total	165	100.0

Source: Author (2024)

The researcher also sought data from the informants regarding the gender, age, years worked, education and job category. The outcomes are in table 4.1 above:

4.2.1 Gender Distribution

The data reveals a relatively balanced gender distribution among the respondents, with males representing 55.2% (91 respondents) and females accounting for 44.8% (74 respondents). This distribution indicates a slight male predominance within the sample. Understanding the gender distribution is crucial as it can influence the study's findings on group dynamics and decision-making processes within maize farmer organizations. Gender perspectives can shape attitudes toward collaboration, leadership, and resource allocation, which are essential factors in the performance of farmer groups. Research has shown that men and women may have different approaches and experiences in agricultural settings, influenced by societal roles and expectations (FAO, 2011). The nearly balanced gender representation in this research imparts an all-round view of the issues at hand but also underscores the importance of ensuring that both male and female perspectives are adequately considered in the analysis.

4.2.2 Education Level

The informants' education levels vary, with the highest representation at the secondary level, comprising 47.9% (79 respondents). This is followed by primary education at 32.1% (53 respondents), tertiary education at 10.9% (18 respondents), university education at 6.1% (10 respondents), and no formal education at 3.0% (5 respondents). The dominance of respondents with secondary education suggests that the bulk of them have attained a basic level of education, which is likely to influence their capacity to engage in and benefit from agricultural training and extension services.

The presence of respondents with tertiary and university education indicates a potential for higher-level decision-making and leadership skills within the farmer organizations. Conversely, the small percentage of respondents with no formal education highlights a segment that may require additional support to be fully included in and supported by the organization's activities and market opportunities. Education levels can significantly impact the adoption of new technologies, financial management practices, and overall productivity within the agricultural sector (World Bank, 2007).

4.2.3 Job Category

The study categorized respondents into three primary roles within the farmer organizations: Chairperson (37.0%, 61 respondents), Secretary (33.9%, 56 respondents), and Treasurer (29.1%, 48

respondents). The distribution indicates a well-represented leadership structure, with each category contributing significantly in the management and operation of the farmer groups. The Chairpersons, being the largest group, are likely the primary decision-makers and leaders, influencing strategic directions and policies. Secretaries, who form a significant portion, are essential for administrative and communication tasks, ensuring that organizational activities are well-coordinated. Treasurers, though the smallest group, play a crucial role in financial management, overseeing budgets, and ensuring financial transparency and accountability. This balanced representation across the different leadership roles suggests that the study’s findings will reflect an overarching view of the organizational dynamics and challenges faced by maize farmer groups in Busia District. Effective leadership within these roles is pivotal for the successful implementation of strategies to enhance export performance and organizational sustainability (Birchall & Simmons, 2010).

4.3 Descriptive Analysis

4.3.1 Descriptive Analysis of Farmer Group Capacity

The minimum, maximum, mean and standard deviation was computed from the informants’ responses using these descriptive statistics. Results are shown in Table 4.3.

Table 4.3: Descriptive Statistics on Farmer Group Capacity for 67 farmer groups

	Minimum	Maximum	Mean	Std. Deviation
The farmer organization has between 20-100 members	1	5	3.73	1.106
The farmer organization has more than 100 members	1	5	2.79	1.211
The governing council meets at least once a month	1	5	3.72	.826
The organization has storage facilities for the maize received from members	1	5	2.95	1.189
The organization has a bank account	1	5	3.44	1.122
The organization has a relationship with local government officials	1	5	3.91	.917
The organization has access to extension services	1	5	3.81	.860
The organization has more than 5 direct buyer relationships	1	5	3.14	1.103
The organization has the capacity to pay farmers on delivery of their maize	1	5	2.98	1.139

The organization pays farmers between 500-800shs per kilogram of maize delivered	1	5	3.02	1.178
Valid N (listwise)				

Source: Author (2024)

The descriptive statistics provide a detailed overview of informants' perceptions with regard to various aspects of farmer group capacity. This analysis includes the minimum, maximum, mean, and standard deviation for each item related to farmer group capacity. The developments are presented in Table 4.2.

4.3.1.1 Membership Size

The item "The farmer organization has between 20-100 members" has a mean score of 3.73 with a standard deviation of 1.106. There is a moderate consensus among respondents as indicated by this score that, their organizations have a membership size within this range. The standard deviation implies some variability in responses, showing that while many organizations may fall within this range, there are also instances of smaller or larger memberships. This finding is crucial as membership size can influence the resource pool, collective bargaining power, and overall operational capacity of the organization (Sanginga, Best, Chitsike, & Delve, 2009).

In contrast, the item "The farmer organization has more than 100 members" shows an average score of 2.79 with a standard deviation of 1.211. This lower average score indicates less agreement among respondents, suggesting that fewer organizations have memberships exceeding 100 members. The higher standard deviation reflects more significant variability in responses, highlighting the diverse sizes of farmer organizations within the study. This variability is crucial to deliberate over when advancing strategies for empowerment (Bachke, 2009).

4.3.1.2 Governance and Meetings

The mean score for "The governing council meets at least once a month" is 3.72, with a standard error of 0.826. This high average hints at a strong concurrence among respondents that their governing councils meet regularly, reflecting effective organizational governance. The relatively low standard deviation is indicative of a consensus among respondents, implying that regular meetings are a common practice across many organizations. Regular meetings are essential for maintaining effective communication, decision-making, and strategic planning within farmer groups (Birchall & Simmons, 2010).

4.3.1.3 Storage Facilities

"The organization has storage facilities for the maize received from members" has an average score of 2.95 and a standard deviation of 1.189. This mean score suggests a moderate level of agreement among respondents, indicating that while some organizations have adequate storage facilities, there is significant room for improvement. The variability in responses, as shown by the standard deviation, highlights disparities in the availability of storage facilities, which are crucial for maintaining the quality and marketability of maize (World Bank, 2011).

4.3.1.4 Financial Management

The item "The organization has a bank account" has a mean score of 3.44 with a standard error of 1.122. This mean score implies that a majority of informants concurred with their organizations having bank accounts, which is essential for financial transparency and management. However, the standard deviation suggests some variability, indicating that not all organizations have formal banking arrangements. Establishing bank accounts is critical for accessing financial services, managing funds effectively, and ensuring accountability (USAID, 2016).

4.3.1.5 Government Relations and Extension Services

"The organization has a relationship with local government officials" has an average score of 3.91 and a standard deviation of 0.917. This high mean indicates strong agreement among respondents, suggesting that most organizations have established relationships with local government officials, which can facilitate access to support and resources. The low standard deviation indicates consensus, reflecting consistent engagement with government officials across the organizations. Effective government relations can enhance organizational capacity and access to extension services (IFPRI, 2012).

"The organization has access to extension services" has a mean score of 3.81 with a standard error of 0.860. This elevated mean indicates strong agreement among respondents regarding their organizations having access to extension services, which are vital for improving agricultural practices and productivity. The low standard deviation indicates a general agreement among respondents,

highlighting the widespread availability of extension services. Access to these services is crucial for providing technical assistance and improving the skills of farmers (Anderson & Feder, 2007).

4.3.1.6 Market Relationships and Payment Capacity

The mean score for "The organization has more than 5 direct buyer relationships" is 3.14 with a standard deviation of 1.103. This moderate mean stipulates that while some organizations have established multiple direct buyer relationships, others may still be developing these connections. The standard deviation reflects variability in the number of buyer relationships, which is important for market access and negotiating better prices for maize (Barrett, Bachke, Bellemare, Michelson, Narayanan, & Walker, 2012).

"The organization has the capacity to pay farmers on delivery of their maize" has an average score of 2.98 and a standard deviation of 1.139. This mean score indicates moderate agreement, suggesting that not all organizations can pay farmers immediately upon delivery. The variability in responses highlights differences in financial liquidity among the organizations, which can affect farmers' willingness to participate and their financial stability (IFAD, 2015).

4.3.1.7 Payment Rates

The item "The organization pays farmers between 500-800 shs per kilogram of maize delivered" has a mean score of 3.02 with a standard error of 1.178. The mean score suggests that most respondents agree with the stated payment rates, but there is significant variability in responses. This variability may reflect differences in market conditions, organizational policies, and financial capacity. Ensuring fair and consistent payment rates is crucial for maintaining trust and participation among farmers (FAO, 2013).

4.3.2 Descriptive Analysis of Middlemen

The minimum, maximum, mean and standard deviation was computed from the respondents' responses using these descriptive statistics. Results are shown in Table 4.4 below:

Table 4.4: Descriptive Statistics on Middlemen

	Minimum	Maximum	Mean	Std. Deviation
Middlemen offer between 500-800shs per kilogram of maize per season	1	5	2.94	1.193
Middlemen give the farmer organization truthful information about the current market situation	1	5	2.54	1.177
Traders buy more than 1,000kg from the farmer organization	1	5	3.40	1.050
Middlemen help the farmer organization gain access to the market for their produce	1	5	2.89	1.092
Contracts are signed between the middlemen and traders with the farmer organization before purchase of produce	1	5	2.22	.910
Down payments are made for produce before it is accessed by the middlemen	1	5	2.78	.994
Middlemen offer assistance in grading the best quality grain for the market.	1	5	2.96	1.091
Valid N (listwise)				

Source: Author (2024)

4.3.2.1 Pricing by Middlemen

The item "Middlemen offer between 500-800shs per kilogram of maize per season" has an average score of 2.94 with a standard error of 1.193. This indicates that respondents moderately agree that middlemen offer prices within this range. The standard deviation suggests significant variability in feedback, indicating that the prices offered by middlemen can vary widely. This variability in pricing could impact the profitability and financial stability of farmer organizations, as consistent and fair pricing is crucial for maintaining trust and collaboration (Barrett et al., 2012).

4.3.2.2 Market Information

The mean score for if brokers are truthful with the information they provide to farmers about current market situations is 2.54 with a standard error of 1.177. This lower mean score indicates a general skepticism among respondents regarding the accuracy and reliability of market information provided by middlemen. The relatively high standard deviation reflects diverse opinions, suggesting that while some middlemen may provide accurate information, others may not. Accurate market information is essential for making informed decisions and optimizing market opportunities (Mitra et al., 2012).

4.3.2.3 Purchase Volumes

The item "Traders buy more than 1,000kg from the farmer organization" has a mean score of 3.40 with a standard deviation of 1.050. This mean score indicates that respondents generally agree that traders purchase significant volumes of maize from their organizations. The lower standard deviation suggests a consensus among respondents, indicating that large volume purchases are a common practice. This practice can enhance the farmer organizations' market presence and bargaining power (IFPRI, 2012).

4.3.2.4 Market Access Assistance

The mean score for the facilitation of market access for farmer produce by middlemen is 2.89 with a standard error of 1.092. The score points to a middling level of agreement across responses, indicating that middlemen play a role in facilitating market access but are not entirely reliable. The variability in responses, as indicated by the standard deviation, highlights differences in the perceived

effectiveness of middlemen in providing market access. Ensuring reliable market access is crucial for the sustainability and growth of farmer organizations (Barrett et al., 2012).

4.3.2.5 Contractual Agreements

The item on the signing of agreements between go-betweens and farmers before purchase of produce has an average score of 2.22 with a standard deviation of 0.910. This low mean score indicates that formal contractual agreements between middlemen, traders, and farmer organizations are not commonly practiced. The relatively low standard deviation demonstrates some agreement among respondents, reflecting the lack of formal agreements. The absence of contracts can lead to uncertainties and risks for farmer organizations, affecting their financial security and planning (USAID, 2016).

4.3.2.6 Down Payments

The mean score for whether brokers make deposits for produce before accessing it is 2.78 with a standard error of 0.994. This score shows a moderate level of agreement, suggesting that down payments are occasionally made but not consistently. The variability in responses, as shown by the standard deviation, highlights differences in the practices of middlemen regarding down payments. Ensuring down payments can improve the cash flow and financial stability of farmer organizations (FAO, 2013).

4.3.2.7 Quality Grading Assistance

The item relating to brokers reinforcing grading for quality grain for the market has a mean score of 2.96 with a standard error of 1.091. This mean score suggests a moderate level of agreement among respondents, indicating that middlemen sometimes assist in grading grain quality. The variability in responses reflects differences in the effectiveness and consistency of this assistance. Quality grading is critical for securing better market prices and enhancing the reputation of farmer organizations (IFAD, 2015).

4.3.3 Descriptive Analysis of Infrastructural Development

The minimum, maximum, mean and standard deviation was computed from the respondents' responses using these descriptive statistics. Results are shown in Table 4.5.

Table 4.5: Descriptive Statistics on Infrastructural Development

	Minimum	Maximum	Mean	Std. Deviation
Traders take one hour or less to access the organization premises	1	5	2.93	1.028
There are more than 10km from the organization premises to the major collection points	1	5	3.06	1.001
The organization has access to more than 12 hours of power supply per day	1	5	2.94	1.176
The organization has a storage capacity of more than 1,000kg	1	5	2.99	1.249
Valid N (listwise)				

Source: Author (2024)

4.3.3.1 Accessibility of Organization Premises

The item "Traders take one hour or less to access the organization premises" has a mean score of 2.93 with a standard deviation of 1.028. This indicates a moderate agreement among respondents that traders can access the organization premises within an hour. The variability in responses, as reflected by the standard deviation, suggests that while some organizations are easily accessible, others may face challenges related to travel time. Accessibility is crucial for timely transactions and efficient market operations, influencing the overall performance of farmer organizations (World Bank, 2011).

4.3.3.2 Distance to Major Collection Points

The average score for "There are more than 10km from the organization premises to the major collection points" is 3.06 with a standard error of 1.001. This score indicates that respondents generally agree that there is a significant distance between their premises and major collection points. The

standard deviation suggests some variability, indicating that while some organizations are situated far from collection points, others may be closer. The distance to major collection points can impact logistics, transportation costs, and the efficiency of moving produce to the market (IFPRI, 2012).

4.3.3.3 Power Supply

The item "The organization has access to more than 12 hours of power supply per day" has an average score of 2.94 with a standard error of 1.176. Respondents demonstrated a moderate level of alignment regarding the reliability of power supply based on this score. The higher standard deviation reflects considerable variability, suggesting that some organizations have better access to power than others. Reliable power supply is essential for operating storage facilities, processing equipment, and maintaining the quality of stored maize (FAO, 2013).

4.3.3.4 Storage Capacity

The mean score for "The organization has a storage capacity of more than 1,000kg" is 2.99 with a standard deviation of 1.249. This reflects a fair level of agreement among the participants, indicating that while some organizations have adequate storage capacity, others may not. The variability in responses, as shown by the standard deviation, highlights disparities in storage capacity among organizations. Adequate storage capacity is critical for preserving the quality of maize, reducing post-harvest losses, and improving market readiness (Bwireh, 2012).

4.3.4 Descriptive Analysis of Import Bans and Tariffs

The minimum, maximum, mean and standard deviation was computed from the respondents' responses using these descriptive statistics. Results are shown in Table 4.6.

Table 4.6: Descriptive Statistics on Import Bans and Tariffs

	Minimum	Maximum	Mean	Std. Deviation
The import bans from Kenya greatly affected the activities of the organization	1	5	4.02	1.068
More than 500kg of maize have been held by the organization due to import bans in Kenya	1	5	3.26	1.149
More than 100Mn Ushs has been lost due to import bans from Kenya	1	5	3.29	1.176
Import bans from Kenya have been effected unfairly	1	5	3.95	.990
Valid N (listwise)				

Source: Author (2024)

The descriptive statistics provide a comprehensive overview of informants' judgment regarding the impact of import bans and tariffs on the activities of maize farmer organizations.

4.3.4.1 Impact of Import Bans on Organizational Activities

The item "The import bans from Kenya greatly affected the activities of the organization" has a middle point of 4.02 with a standard error of 1.068. This high mean indicates bolstered unanimity among respondents that the import bans from Kenya have significantly disrupted their organizational activities. The standard deviation points to some variability in responses, stipulating that while most respondents perceive a severe impact, the extent of the effect may vary among different organizations. Import bans can severely hinder the export performance of farmer organizations by blocking access to critical markets, leading to financial losses and operational challenges (FAO, 2023).

4.3.4.2 Volume of Maize Held Due to Import Bans

The mean score for "More than 500kg of maize have been held by the organization due to import bans in Kenya" is 3.26 with a standard deviation of 1.149. This score indicates a moderate agreement among respondents, suggesting that a significant amount of maize has been affected by the import bans. The variability in responses, as shown by the standard deviation, highlights differences in the volume of

maize held across organizations. Holding large quantities of maize due to import restrictions can lead to storage issues, increased costs, and potential quality degradation (World Bank, 2011).

4.3.4.3 Financial Losses Due to Import Bans

The item "More than 100Mn Ushs has been lost due to import bans from Kenya" has a mean score of 3.29 with a standard deviation of 1.176. This indicates moderate agreement among respondents that their organizations have incurred substantial financial losses due to import bans. The variability in responses reflects differences in the extent of financial losses experienced by various organizations. Financial losses of this magnitude can threaten the sustainability and financial health of farmer organizations, reducing their ability to invest in infrastructure and other essential resources (IFAD, 2015).

4.3.4.4 Perception of Fairness in Import Bans

The mean score for "Import bans from Kenya have been effected unfairly" is 3.95 with a standard error of 0.990. This high average shows strong agreement among respondents that the import bans from Kenya are perceived as unfair. The relatively low standard deviation intimates a general agreement amongst respondents, indicating widespread dissatisfaction with the perceived fairness of the import bans. Perceptions of unfair trade practices can undermine trust and cooperation between trading partners, leading to strained relationships and further complications in trade negotiations (Vitale et al., 2013).

4.3.5 Descriptive Analysis of Export Performance

The minimum, maximum, mean and standard error was computed from the informants' feedback using these descriptive statistics. Results are shown in Table 4.7.

Table 4.7: Descriptive Statistics of Export Performance

	Minimum	Maximum	Mean	Std. Deviation
Maize trade is the only source of revenue for the organization	1	5	1.88	.844
The organization has consistent orders of more than 500Kg per season	1	5	2.98	.993
The farmer organization sells more than 500Kg of maize per season	1	5	3.51	.909
The farmer organization earns more than 10Mn Ushs per season from sales of maize	1	5	3.06	1.122
The amount of maize exported by the farmer organization has increased year on year.	1	5	2.84	1.147
The farmer organization sells its maize directly to Kenya	1	5	2.59	1.251
The organization sells its maize only on the local market	1	5	3.21	.998
Valid N (listwise)				

Source: Author (2024)

4.3.5.1 Revenue Sources

The item "Maize trade is the only source of revenue for the organization" has an average score of 1.88 with a standard deviation of 0.844. This low mean indicates a strong disagreement among respondents, suggesting that most farmer organizations have diversified their revenue sources beyond maize trade. The relatively low standard deviation suggests an agreement amongst respondents, showing that reliance solely on maize trade is uncommon. Diversifying revenue sources can enhance financial stability and reduce the risk associated with market fluctuations (World Bank, 2011).

4.3.5.2 Consistency of Orders

The mean score for "The organization has consistent orders of more than 500Kg per season" is 2.98 with a standard deviation of 0.993. The indication here is of a moderate level of agreement among respondents, suggesting that some organizations receive consistent orders, but this is not universal. The variability in responses, as reflected by the standard deviation, highlights differences in the consistency of orders across organizations. Consistent orders are essential for planning and sustaining operations (FAO, 2013).

4.3.5.3 Sales Volume

The item "The farmer organization sells more than 500Kg of maize per season" has an average score of 3.51 with a standard deviation of 0.909. This higher mean indicates that most respondents agree that their organizations sell significant volumes of maize. The relatively low standard deviation suggests a consensus among respondents, indicating that selling more than 500Kg of maize per season is a common practice. High sales volumes are indicative of strong market demand and efficient production (IFPRI, 2012).

4.3.5.4 Seasonal Earnings

The mean score for "The farmer organization earns more than 10Mn Ushs per season from sales of maize" is 3.06 with a statistical dispersion of 1.122. This moderate mean score indicates that earnings above 10Mn Ushs per season are common but not guaranteed for all organizations. The variability in responses suggests differences in earnings among organizations, which could be due to variations in productivity, market access, and pricing (IFAD, 2015).

4.3.5.5 Year-on-Year Export Growth

The item concerning how each year, the farmer organization has exported more maize than the last has an average score of 2.84 with a data variability of 1.147. This indicates a moderate level of agreement among respondents, indicating that while some organizations have experienced growth in exports, this is not uniform. The standard deviation reflects variability in export growth, highlighting differences in organizational performance and market conditions. Continuous growth in exports is a positive indicator of organizational success and market expansion (USAID, 2016).

4.3.5.6 Direct Sales to Kenya

The mean score for "The farmer organization sells its maize directly to Kenya" is 2.59 with a standard error of 1.251. This lower average indicates that direct sales to Kenya are less common among the organizations. The high standard deviation suggests significant variability, indicating that some organizations engage in direct sales while others do not. Direct sales to international markets can enhance profitability and market reach but require overcoming trade barriers and logistical challenges (Vitale et al., 2013).

4.3.5.7 Local Market Sales

The item "The organization sells its maize only on the local market" has an average score of 3.21 with a standard error of 0.998. This moderate mean score indicates that many organizations rely on local markets for their sales. The variability in responses reflects differences in market strategies, with some organizations focusing exclusively on local markets while others explore both local and international opportunities. Selling on local markets can reduce logistical challenges but may limit growth potential (World Bank, 2011).

4.4 Correlation Analysis

The study sought to determine the robustness and orientation of the relationship between the different independent variables and export performance. This was achieved through Pearson Correlation analysis.

Table 4.8: Correlation Results

Variable	1	2	3	4	5
1. Farmer Group Capacity	1				
2. Middlemen	.645**	1			
3. Infrastructural Development	.533**	.488**	1		
4. Import Bans and Tarrifs	.388**	.105	.326**	1	
5. Export Performance	.423**	.308**	.460**	.313**	1

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

Source: Author (2024)

4.4.1 Correlation Analysis of Farmer Group Capacity and Export Performance

The correlation analysis between Farmer Group Capacity and Export Performance reveals a notable positive relationship with a Pearson correlation coefficient of 0.423, significant at the 0.01 level (2-tailed). This suggests that as the capacity of farmer groups increases, their export performance also improves. The capacity of a farmer group encompasses various elements such as organizational structure, governance, financial management, and access to resources. These factors collectively enhance the ability of farmer groups to manage their operations more effectively, thereby boosting their export performance.

For instance, effective governance and financial management enable farmer groups to access better markets, negotiate favorable terms, and ensure quality control, which are critical for successful exports (USAID, 2015). Additionally, strong organizational capacity allows farmer groups to aggregate larger volumes of produce, ensuring consistent supply to meet export demands.

This finding lines up with existing literature that emphasizes the noteworthiness of organizational capacity in improving agricultural productivity and market access (Birchall & Simmons, 2010). Hence, strengthening the capacity of farmer organizations is crucial for enhancing their competitiveness in international markets and ensuring sustainable export growth.

4.4.2 Correlation Analysis on Middlemen and Export Performance

The analysis of the relationship between Middlemen and Export Performance shows a significant indisputable relationship with a Pearson correlation coefficient of 0.308, significant at the 0.01 level (2-tailed). This stipulates that middlemen beneficially give rise to ameliorated export performance of farmer groups, albeit to a moderate extent. Middlemen often act as intermediaries who facilitate access to markets, provide necessary market information, and assist with logistics and transportation (Mitra et al., 2012). Their role is particularly crucial in regions where farmer groups may lack direct access to export markets or face logistical challenges. By bridging these gaps, middlemen help ensure that farmer groups can sell their produce at competitive prices and in larger volumes, thereby improving their export performance.

However, the moderate strength of this correlation also suggests that while middlemen are beneficial, they may also introduce some inefficiencies or additional costs. For example, middlemen may take a significant share of the profits, which can reduce the overall income of farmer groups. Therefore, while leveraging middlemen can enhance export performance, it is also important for farmer groups to develop direct market linkages and improve their own market access capabilities to maximize their export potential and profitability (Amir, 2021).

4.4.3 Correlation Analysis on Infrastructural Development and Export Performance

The correlation analysis between Infrastructural Development and Export Performance conveys a positive linkage, with a Pearson correlation coefficient of 0.460, significant at the 0.01 level (2-tailed). This strong correlation highlights the critical role that infrastructure plays in enhancing the export performance of farmer groups. Adequate infrastructure, including transportation networks, storage facilities, and access to reliable power and water supply, directly impacts the efficiency and effectiveness of agricultural operations (World Bank, 2011).

For instance, good road networks reduce transportation costs and time, allowing farmer groups to deliver fresh produce to markets more quickly and reliably. Similarly, proper storage facilities help in maintaining the quality of produce, reducing post-harvest losses, and ensuring that larger volumes of high-quality maize are available for export (Bwireh, 2012).

Access to electricity and water is also vital for processing and preserving agricultural products, further enhancing their marketability. This finding matches with previous studies that emphasize the importance of infrastructural development in supporting agricultural productivity and market access (IFPRI, 2012). Therefore, investing in infrastructure is essential for improving the export capabilities of farmer groups, ensuring they can compete effectively in international markets and achieve sustainable growth.

4.4.4 Correlation Analysis on Import Bans and Tariffs and Export Performance

The correlation analysis between Import Bans and Tariffs and Export Performance shows a significant indisputable relationship, with a Pearson correlation coefficient of 0.313, significant at the 0.01 level (2-tailed). This suggests that even though import bans and tariffs are generally perceived as barriers to trade, they can also have a nuanced impact on export performance. In some cases, import bans and tariffs may compel farmer groups to improve their standards and compliance with export regulations, thus enhancing the quality and competitiveness of their produce (FAO, 2023).

For instance, when faced with import bans due to quality concerns, farmer groups might invest in better farming practices, post-harvest handling, and certification processes to meet international standards, which can ultimately improve their export performance. Additionally, these trade barriers can incentivize farmer groups to explore alternative markets and diversify their export destinations, reducing dependency on a single market and spreading risk (Vitale et al., 2013).

However, the positive correlation also underscores the resilience and adaptability of farmer groups in navigating the challenges posed by import bans and tariffs. By developing strategies to overcome these barriers, such as forming alliances with local government bodies or engaging in advocacy for fairer trade practices, farmer groups can enhance their export performance and sustainability in the global market.

4.5 Multiple Linear Regression Analysis

Multiple linear regression is a framework for forecasting the outcome of one output variable based on two or more input variables. This was run for the independent variables on export performance and out-turn are shown in table 4.11 below:

Table 4.9: Multiple Linear Regression Results

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.514 ^a	.264	.245	.37526

a. Predictors: (Constant), Import Bans and Tarrifs, Middlemen, Infrastructural Development, Farmer Group Capacity

b. Dependent Variable: Export Performance

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.787	4	1.947	13.824	.000 ^b
	Residual	21.687	154	.141		
	Total	29.474	158			

a. Dependent Variable: Export Performance

b. Predictors: (Constant), Import Bans and Tarrifs, Middlemen, Infrastructural Development, Farmer Group Capacity



		Coefficients^a				
		Unstandardized		Standardized		
		Coefficients		Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.405	.208		6.756	.000
	Farmer Group Capacity	.140	.081	.175	1.724	.087
	Middlemen	.012	.060	.020	.209	.835
	Infrastructural Development	.222	.062	.306	3.586	.000
	Import Bans and Tariffs	.082	.043	.150	1.908	.058

a. Dependent Variable: Export Performance

Source: Author (2024)

The multiple linear regression analysis aims to predict the export performance of maize farmer organizations based on four independent variables: Farmer Group Capacity, Middlemen, Infrastructural Development, and Import Bans and Tariffs. The model abridgement divulges that the regression model has an R value of 0.514, signifying a moderate correlation amidst the independent variables and export performance. The R Square value of 0.264 implies that roughly 26.4% of the variance in export performance can be elucidated by the combined effect of the four independent variables. The Adjusted R Square, which modifies for the dimensionality of the input data, is slightly lower at 0.245, indicating that the model is fairly robust but there is still a considerable portion of the variance unexplained by these variables.

The ANOVA table provides further insights into the model's overall fit. The regression model is of major importance, with an F value of 13.824 and a significance level (Sig.) of 0.000. This indicates that the model significantly predicts the dependent variable, export performance, suggesting that at least one of the predictor variables is significantly related to export performance. The sum of squares for the regression is 7.787, compared to a residual sum of squares of 21.687, highlighting that while the model explains a portion of the variance, there remains a substantial amount of unexplained variability, which could be accredited to other factors not incorporated in the model.

The coefficients table provides detailed enlightenment on the benefaction of each independent variable to the prediction of export performance. The constant (intercept) has a significant unstandardized coefficient (B) of 1.405, indicating the baseline level of export performance when all predictors are zero. Among the independent variables, Infrastructural Development has the most significant positive impact, with a standardized coefficient (Beta) of 0.306 and a t value of 3.586 ($p < 0.001$), hinting that enhancements in infrastructure are strongly kindred with more desirable export performance. Import Bans and Tariffs also have a positive but marginally significant effect ($B = 0.082$, $Beta = 0.150$, $p = 0.058$), indicating that while import restrictions can challenge farmer organizations, they might also drive efforts to enhance export strategies.

Farmer Group Capacity shows a positive impact ($B = 0.140$, $Beta = 0.175$), but its significance is slightly above the conventional threshold ($p = 0.087$), suggesting a potential but less robust effect. Middlemen, however, do not show a noteworthy effect on export performance ($B = 0.012$, $Beta = 0.020$, $p = 0.835$), indicating that their role may be less direct or more variable.

The equation that relates the independent variables infrastructure development, middlemen, import bans and tariffs as well as organization capacity and export performance of maize farmer organizations in Busia district, Uganda can be represented as

$$Y = 1.405 + 0.140X_1 + 0.012X_2 + 0.222X_3 + 0.082X_4$$

4.6 Chapter Summary

This section scrutinized the response rate did a descriptive analysis, correlation analysis and furthermore regression analysis. The chapter also carried the empirical review which broke down each of the independent variables and analyzed the level of their relationship with the dependent variable which was export performance. The independent variables were; middlemen, infrastructure, farmer organization capacity and import bans.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section gives the outline of major discoveries of the study, inferences, recommendations and the suggested areas for additional investigation.

5.2 Summary of the Findings

This study aimed to look into the causal factors of overseas sales performance of maize cultivator organizations in Busia district, Uganda. The study was steered by four major objectives which were to demonstrate the outcomes of farmer group capacity, middlemen, infrastructural development and import bans and tariffs on the ability of maize farmer organizations to effectively participate in international trade in the border district.

The study's first intention was to manifest the upshot of farmer group capability on the overseas sales performance of maize farmer groups in Busia district, Uganda. The Pearson correlation analysis divulged a considerably affirmative tie-in, with a correlation coefficient of 0.423, indicating that higher farmer group capacity is associated with better export performance. In the multiple linear regression analysis, Farmer Group Capacity had an unstandardized coefficient (B) of 0.140 and a standardized coefficient (Beta) of 0.175, with a probability value of 0.087, suggesting a positive but not statistically significant effect at the conventional 0.05 level. The lesser significance of farmer group capacity signifies that aspects like membership size, availability of storage facilities, government relations, financial management and market relationships were not large obstacles in determining the export performance of the groups. The aspects were not of great importance to the groups despite World Bank (2011) highlighting storage facilities being important for marketability and quality of maize as well as IFAD (2015) stating that financial liquidity among the organizations can affect farmers' willingness to participate and their financial stability. These results posit that while there is a notable positive correlation connecting farmer group capacity and export performance, the regression analysis indicates that this effect is less robust when controlling for other variables. Overall, the discoveries highlight the noteworthiness of farmer group capacity in shaping export performance, supported by both correlation and regression analyses.

The second intention of the investigation was to demonstrate the effect of middlemen on the export performance of maize farmer groups in Busia district, Uganda. The correlation analysis indicated a significant positive relationship between the role of middlemen and export performance, with a Pearson correlation coefficient of 0.308, suggesting that middlemen pitch in on enhancing the international marketing performance of these groups. Middlemen are instrumental in facilitating market access, providing critical market information, and assisting with logistics and transportation, which are vital for the efficient movement of maize from producers to export markets. However, the multiple linear regression analysis presented a different perspective. The regression results showed that the ramifications of middlemen on export performance was not statistically significant, this was due to the fact that there we mixed opinion with some groups looking at middlemen as an avenue to bigger markets and off-loading large volumes of maize rather than an obstacle. Therefore, with an unconventional coefficient (B) of 0.012 and a probability value of 0.835 the results suggest that when controlling for other factors such as infrastructural development and farmer group capacity, the specific contribution of middlemen to export performance becomes less pronounced.

The third objective of the study was to illustrate the effect of infrastructural development on the export performance of maize farmer groups in Busia district, Uganda. The correlation analysis revealed a noteworthy indisputable tie-in, with a Pearson correlation coefficient of 0.460, indicating that better infrastructural development is strongly associated with improved export performance. This suggests that key infrastructural elements such as transportation networks, storage facilities, and reliable power supply play crucial roles in enhancing the efficiency and effectiveness of maize farmer groups' operations. The multiple linear regression analysis further confirmed the importance of infrastructure, with infrastructural development showing constructive impact on export performance. It had an atypical coefficient (B) of 0.222 and a standardized coefficient (Beta) of 0.306, with a probability value of 0.000. This highlights that improvements in infrastructure significantly contribute to better export outcomes by reducing transportation costs, minimizing post-harvest losses, and ensuring consistent and timely delivery of maize to export markets.

The fourth aspiration was to establish the effect of import bans and tariffs on the export performance of maize farmer groups in Busia district, Uganda. The correlation analysis showed a weighty positive linkage, with a Pearson correlation coefficient of 0.313, indicating that import bans and tariffs have a notable impact on export performance. This suggests that while import restrictions pose challenges,

they also drive farmer groups to improve their practices and explore alternative markets. The multiple linear regression analysis provided further insights, revealing that import bans and tariffs have a positive but marginally noteworthy effect on export performance, with an atypical coefficient (B) of 0.082 and a probability value of 0.058. These results imply that while import bans and tariffs can create obstacles by limiting market access and causing financial losses, they may also prompt farmer groups to enhance their quality standards and diversify their export strategies, potentially leading to improved performance in the long run.

5.3 Conclusions

The study worked towards investigating the factors affecting the export performance of maize farmer groups in Busia district, Uganda, focusing on farmer group capacity, the role of middlemen, infrastructural development, and the impact of import bans and tariffs. The findings revealed that infrastructural development had the most compelling positive impression on export performance, followed by the adaptive response to import bans and tariffs. Farmer group capacity showed a positive but less robust effect, while the role of middlemen was found to be statistically insignificant. These results underscore the critical importance of enhancing infrastructure and developing effective strategies to mitigate the adverse effects of trade barriers to ameliorate the export performance of maize farmer groups.

The paper demonstrated that middlemen are a supportive pillar in the export accomplishment of maize farmer groups in Busia district, evidenced by a significant positive correlation. However, the multiple linear regression analysis divulged that the effect of middlemen was not statistically significant when other factors were considered. This indicates that while middlemen facilitate market access and logistics, their impact on export performance is secondary to other variables such as infrastructural development and farmer group capacity.

The paper illustrated the significant effect of infrastructural development on the fulfilment of international trade obligations of farmer groups in Busia district, Uganda. Both correlation and regression analyses demonstrated that improvements in transportation networks, storage facilities, and reliable power supply are strongly associated with enhanced export performance. The findings underscore that well-developed infrastructure is critical for reducing operational costs, minimizing

post-harvest losses, and ensuring efficient market access, thereby substantially boosting the competitiveness and sustainability of maize farmer groups in international markets.

The study found that import bans and tariffs significantly affect overseas sales of maize farmer groups in the border district. The correlation and regression analyses indicated that while these trade restrictions pose considerable challenges by limiting market access and causing financial losses, they also compel farmer groups to improve their practices, meet higher quality standards, and diversify their markets. This dual impact underscores the importance of adaptive strategies in overcoming trade barriers and enhancing export performance.

5.4 Recommendations

To enhance the sales of maize farmer groups in Busia district to external markets, it is recommended to focus on strengthening the organizational and management capacities of these groups. This can be achieved through targeted training programs that enhance governance, financial management, and operational efficiency. By building stronger farmer groups, they can better manage their resources, negotiate more favorable terms, and improve their overall competitiveness in export markets.

To optimize export performance, maize farmer groups should focus on building direct market linkages and reducing dependency on middlemen. Establishing cooperative marketing strategies and enhancing direct relationships with international buyers can mitigate the costs and inefficiencies associated with middlemen. Additionally, providing training to farmer groups on market negotiation and export logistics can further enhance their self-sufficiency and export capabilities.

To further enhance the export performance of maize farmer groups in Busia district, it is recommended that policymakers and stakeholders prioritize substantial investments in infrastructural development. This includes upgrading transportation networks to reduce logistics costs and travel time, expanding storage facilities to prevent post-harvest losses, and ensuring a reliable power supply to support processing and storage operations. These infrastructural improvements will enable farmer groups to deliver high-quality maize to export markets more efficiently and consistently, thereby increasing their competitiveness and ability to meet international market demands.

It is recommended that maize farmer groups develop and implement adaptive strategies to mitigate the adverse effects of import bans and tariffs. This includes improving product quality, seeking certification to meet international standards, and exploring alternative markets. Additionally, engaging in policy advocacy for fairer trade practices can help reduce the frequency and impact of such trade restrictions.

5.5 Limitations of the study

The fact finder experienced some constraints during the study as recounted below;

Unavailability of some respondents: The researcher experienced difficulties in reaching some informants, chiefly, some of the Chairpersons on account of incessant truancy withal their diligent involution in physical inquisitions encompassing the district. This impeded the assemblage of cogent knowledge collocations in time. The researcher prevailed over this limitation by ensuring that appointments were set at the fore and pursued to warrant the handiness of the respondents. The administrators of these clusters were also alerted beforehand since they were persistently traversing the district mingling with farmers.

Obscurity of information: A caboodle of the informants were half-hearted in relaying information regarding the accomplishments of their establishments or even their functions despite the researcher having all relevant permissions and introductory letters from Strathmore University, NACOSTI as well as the Uganda National Council of Science and Technology.

The far-flung nature of some study areas: Infrastructural encumbrances stalled the researcher's maneuvers to zones where critical information was to be collected. The predicament of dreadful roads and bridges were the run of the mill.

5.6 Suggestions for Further Research

Predicated on the facts unearthed in this indagation, an assortment of areas warrant further investigation to deepen understanding and enhance the export performance of maize farmer groups in Busia district, Uganda.

First, future research could traverse the bit part of technological advancements in ameliorating the export performance of farmer groups. Specifically, examining the impact of digital tools and platforms for market access, financial management, and agricultural practices could provide valuable insights into how technology can bridge gaps and enhance efficiency.

Second, a scrupulous probe of the socio-economic facets shaping farmer group capacity would be beneficial. Understanding how variables such as education levels, access to training, and social capital contribute to the organizational capacity and overall performance of farmer groups could inform targeted interventions and policies aimed at strengthening these groups.

Third, longitudinal studies that track changes in export performance over time in response to infrastructural improvements and policy changes would provide a supplemental dynamic eyeshot of the factors affecting export success. Such studies could help identify the long-term effects of infrastructural investments and policy adjustments, offering a clearer picture of their sustainability and effectiveness.

Fourth, exploring the gender dynamics within farmer groups and their impact on export performance could shed light on important equity issues. Investigating how gender roles and relations affect decision-making, resource allocation, and access to markets could help develop more inclusive strategies that harness the potential of all members within farmer groups.

Fifth, similar studies betwixt disparate regions or countries could offer broader insights into best practices and successful strategies. By comparing the experiences of maize farmer groups in Busia district with those in other regions or countries with similar contexts, researchers could identify successful approaches and potential areas for improvement.

Finally, examining the ramifications of climate change on maize production and export performance is crucial. Understanding how changing climate patterns affect crop yields, quality, and marketability could help farmer groups develop adaptive strategies to mitigate risks and sustain their export performance in the face of environmental challenges.

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APPENDICES

APPENDIX I: QUESTIONNAIRE FOR PRIMARY DATA COLLECTION

Dear Respondent,

The justification of this interview is to gain insights on “**Determinants of Export performance of maize farmer organizations in Busia District.**” Kindly respond to the questions below with utmost honesty. It is important to note that the safety of your data is of utmost importance and therefore your identity shall be protected only used for this study.

Part A: Demographic Data

<p>1. Please state your gender</p>	<p>Male <input type="checkbox"/></p> <p>Female <input type="checkbox"/></p>
<p>2. Education level</p>	<p>Primary <input type="checkbox"/></p> <p>Secondary <input type="checkbox"/></p> <p>Tertiary <input type="checkbox"/></p> <p>University <input type="checkbox"/></p> <p>Post Graduate <input type="checkbox"/></p> <p>No education <input type="checkbox"/></p>
<p>3. Under which category do you fall?</p>	<p>Chairperson <input type="checkbox"/></p> <p>Secretary <input type="checkbox"/></p> <p>Treasurer <input type="checkbox"/></p>

Part B: Farmer Organization Capacity

This section seeks to discover the influence of farmer organization capacity on export performance.

Kindly tick under the number you agree with the most. (Scale 1 to 5)

Statement	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
Your farmer organization has between 20-100 members					
Your farmer organization has more than 100 members					
The governing council meets at least once a month					
The organization has storage facilities for the maize received from members					
The organization has a bank account					
The organization has a relationship with local government officials					
The organization has access to extension services					
The organization has more than 5 direct buyer relationships					
The organization has the capacity to pay farmers on delivery of their maize					
The organization pays farmers between 500-800shs per kilogram of maize delivered					

Part C: Import Bans & Tariffs

This section seeks to find out the influence of import bans and tariffs on export performance. Kindly tick under the number you agree with most. (Scale 1 to 5)

Statement	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
The import bans from Kenya greatly affected the activities of the organization					
More than 500kg of maize have been held by the organization due to import bans in Kenya					
More than 100Mn Ushs has been lost due to import bans from Kenya					
Import bans from Kenya have been effected unfairly					

Part D: Infrastructural Development

This section seeks to discover the influence of infrastructural development on export performance. Kindly tick under the number you agree with the most. (Scale 1 to 5)

Statement	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
Traders take one hour or less to access the organization premises					
There are more than 10km from the organization premises to the major collection points					
The organization has access to more than 12 hours of power supply per day					

The organization has a storage capacity of more than 1,000kg					
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Part E: Middlemen

This section seeks to find out the effect of middlemen on the export performance of farmer organizations in Busia district. Kindly tick under the number you agree with the most. Scale (1 to 5)

Statement	Strongly Disagree 1	Disagree 2	Neither Disagree nor Agree 3	Agree 4	Strongly Agree 5
Middlemen offer between 500-800shs per kilogram of maize per season					
Middlemen give the farmer organization truthful information about the current market situation					
Traders buy more than 1,000kg from the farmer organization					
Middlemen help the farmer organization gain access to the market for their produce					
Contracts are signed between the middlemen and traders with the farmer organization before purchase of produce					
Down payments are made for produce before it is accessed by the middlemen					
Middlemen offer assistance in grading the best quality grain for the market.					

Part F: Export Performance

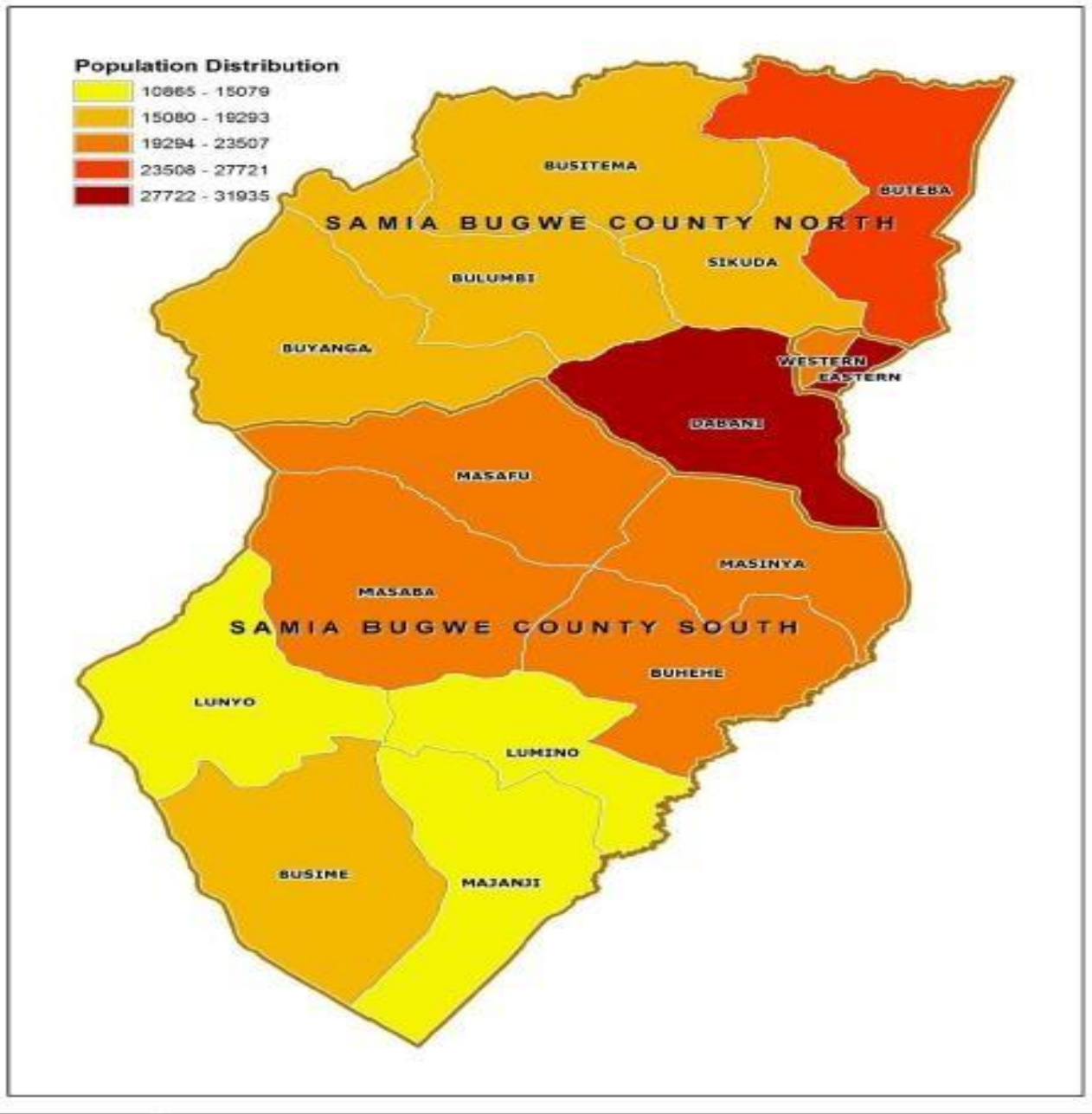
This section delves into the extent to which farmer organizations participate in formal export trade. Please tick under the number you agree with the most. (Scale 1 to 5).

Statement	Strongly Disagree 1	Disagree 2	Neither Disagree nor Agree 3	Agree 4	Strongly Agree 5
Maize trade is the only source of revenue for the organization					
The organization has consistent orders of more than 500Kg per season					
The farmer organization sells more than 500Kg of maize per season					
The farmer organization earns more than 10Mn Ushs per season from sales of maize					
The amount of maize exported by the farmer organization has increased year on year.					
The farmer organization sells its maize directly to Kenya					
The organization sells its maize only on the local market					

Thank you for Participating

*****End*****

APPENDIX II: MAP OF BUSIA DISTRICT, UGANDA.



Source: National Population and Housing Census (2014)

APPENDIX III: Letter of Approval from Strathmore University Institutional Research Ethics Committee



4th April 2024

Mr Awori Emmanuel,
emmanuel.awori@strathmore.edu

Dear Mr Awori,

RE: Determinants of Export Performance of Maize Farmer Organizations in Busia District, Uganda

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC2087/24**. The approval period is from **4th April 2024 to 3rd April 2025**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
- iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
- v. Clearance for the export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and obtain other clearances needed.

Yours sincerely,

**Mr Ambrose Rachier,
Chairperson; SU-ISERC**




APPENDIX IV: RESEARCH PERMIT FROM NACOSTI, KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

REPUBLIC OF KENYA

Ref No: **253004**

RESEARCH LICENSE




This is to Certify that **Mr. Emmanuel Stryoyi Awori** of **Strathmore University**, has been licensed to conduct research as per the provision of the **Science, Technology and Innovation Act, 2013 (Rev.2014)** in **Busia** on the topic: **Determinants of export performance of maize farmer organizations in Busia district, Uganda.** for the period ending : **03/April/2025.**

License No: **NACOSTI/P/24/33832**

Applicant Identification Number: **253004**

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

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APPENDIX V: MildMay Research Ethics Committee Ethical Approval



Research Ethics committee (MUREC)

22/03/2024

To: Emmanuel Awori

Strathmore University
+256787648584

Type: Initial Review

Re: **MUREC-2024-379: Determinants of export performance of maize farmer organizations in Busia district, Uganda**

I am pleased to inform you that at the 141st MUREC meeting convened meeting on 22/03/2024, the Mildmay Uganda REC (MUREC) meeting voted to approve the above referenced application. Approval of the research is for the period of 22/03/2024 to 22/03/2025.

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for re-review and approval **prior** to the activation of the changes.
3. Reports of unanticipated problems involving risks to participants or any new information which could change the risk benefit: ratio must be submitted to the REC.
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by participants and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Continuing review application must be submitted to the REC **eight weeks** prior to the expiration date of 22/03/2025 in order to continue the study beyond the approved period. Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.
7. You are required to register the research protocol with the Uganda National Council for Science and Technology (UNCST) for final clearance to undertake the study in Uganda.

The following is the list of all documents approved in this application by Mildmay Uganda REC (MUREC):

No.	Document Title	Language	Version Number	Version Date
1	Informed Consent forms	English	1.0	2024-03-22
2	Protocol	English	1.0	2024-03-22
3	Dissemination Plan	English	1.0	2024-03-15
4	Informed Consent forms	English	1.0	2024-03-15
5	Community Engagement plan if applicable to your study	English	1.0	2024-03-15
6	COVID-19 & EBOLA risk management plan for the study	English	1.0	2024-03-15
7	Protocol with Plagiarism report	English	1	2024-03-07
8	Data collection tools	English	1	2024-03-07

Yours Sincerely



Susan Nakubulwa
For: Mildmay Uganda REC (MUREC)

APPENDIX VI: RESEARCH PERMIT FROM UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY



Uganda National Council for Science and Technology

(Established by Act of Parliament of the Republic of Uganda)

Our Ref: A440ES

30 May 2024

Emmanuel Awori
Emmanuel Awori Siryoyi
Kampala

Re: Research Approval: Determinants of export performance of maize farmer organizations in Busia district, Uganda

I am pleased to inform you that on **30/05/2024**, the Uganda National Council for Science and Technology (UNCST) approved the above referenced research project. The Approval of the research project is for the period of **30/05/2024** to **30/05/2025**.

Your research registration number with the UNCST is **A440ES**. Please, cite this number in all your future correspondences with UNCST in respect of the above research project. As the Principal Investigator of the research project, you are responsible for fulfilling the following requirements of approval:

1. Keeping all co-investigators informed of the status of the research.
2. Submitting all changes, amendments, and addenda to the research protocol or the consent form (where applicable) to the designated Research Ethics Committee (REC) or Lead Agency for re-review and approval **prior** to the activation of the changes. UNCST must be notified of the approved changes within five working days.
3. For clinical trials, all serious adverse events must be reported promptly to the designated local REC for review with copies to the National Drug Authority and a notification to the UNCST.
4. Unanticipated problems involving risks to research participants or other must be reported promptly to the UNCST. New information that becomes available which could change the risk/benefit ratio must be submitted promptly for UNCST notification after review by the REC.
5. Only approved study procedures are to be implemented. The UNCST may conduct impromptu audits of all study records.
6. An annual progress report and approval letter of continuation from the REC must be submitted electronically to UNCST. Failure to do so may result in termination of the research project.

Please note that this approval includes all study related tools submitted as part of the application as shown below:

No.	Document Title	Language	Version Number	Version Date
1	Informed Consent forms	English	1.0	22 March 2024
2	Community Engagement plan if applicable to your study	English	1.0	15 March 2024
3	COVID-19 & EBOLA risk management plan for the study	English	1.0	15 March 2024
4	Data collection tools	English	1	07 March 2024
5	Project Proposal	English	1.0	
6	Approval Letter	English		
7	Administrative Clearance	English		

Yours sincerely,



Hellen Opolot

For: Executive Secretary

UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

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