



MAKERERE UNIVERSITY BUSINESS SCHOOL

AGRIBUSINESS, EXPORT PERFORMANCE, AND YOUTH

UNEMPLOYMENT IN UGANDA

BY

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**A DISSERTATION SUBMITTED TO MAKERERE UNIVERSITY BUSINESS SCHOOL
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DECLARATION

I Mufuumula Jude, declare that to the best of my knowledge, this Dissertation is my original work and has never been published and/or submitted for any award in any other University/ Institution of Higher Learning.

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APPROVAL

This dissertation by Mufuumula Jude has been written under our guidance and it is hereby submitted for the degree award with our approval as supervisors.

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DEDICATION

I dedicate this study to everybody that contributed to its successful completion.

TABLE OF CONTENT

DECLARATION	i
APPROVAL	ii
ACKNOWLEDGEMENT	iii
DEDICATION	iv
LIST OF FIGURES	viii
LIST OF TABLES	ix
ABSTRACT	x
CHAPTER ONE	1
INTRODUCTION	1
1.0 Introduction	1
1.1 Background to the Study	1
1.2 Statement of the problem	3
1.3 Purpose of the study	3
1.4 Objectives	3
1.5 Questions	4
1.6 Scope of the study	4
1.6.1 Geographical scope	4
1.6.2 Time scope	4
1.6.3 Content scope	4
1.7 Significance of the study	4
1.8 Conceptual Framework	4
CHAPTER TWO	6
LITERATURE REVIEW	6
2.0 Introduction	6
2.1 Theoretical Literature Review	6
2.2 Empirical Review of Literature	7
2.2.1 The effect of Export performance on Youth Unemployment	7
2.2.2 The effect of Agribusiness on Youth Unemployment	8
CHAPTER THREE	11
METHODOLOGY	11

3.0 Introduction.....	11
3.1 Research Design.....	11
3.2 Data Type and Sources.....	11
3.3 Model specification	11
3.4 Model Estimation Techniques	12
3.4.1 Statistical Test	12
3.4.2 Stationarity Test	12
3.4.3 Cointegration Test	13
3.5 Diagnostic Tests.....	13
3.5.1 Normality test.....	13
3.5.2 Serial Correlation	13
3.5.3 Heteroscedasticity test	14
3.5.4 Multicollinearity test	14
3.6 Determinants of Youth Unemployment	14
3.6.1 Vector Error Correction Model (VECM)	15
3.7. Causal Relationship between Agribusiness and Youth unemployment.....	15
3.7.1 Granger Causality Test	15
CHAPTER FOUR.....	16
PRESENTATION AND INTERPRETATION OF FINDINGS	16
4.0 Introduction.....	16
4.1 Pre-estimation diagnostic tests.....	16
4.2 Stationarity tests on the model variables	16
4.3 Cointegration test	17
4.3.1 The Johansen Cointegration test	17
4.4 Residual Tests	18
4.4.1 Testing for normality of residuals	18
4.4.2 Testing for Autocorrelation.....	19
4.4.3 Testing for Heteroskedasticity	19
4.5.1 The test for multicollinearity	20
4.6 The Vector Error Correction Model.....	20
4.6.1 The short run results of the VECM	21

4.6.2 The long run results of the VECM	22
CHAPTER FIVE	24
DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS.....	24
5.0 Introduction.....	24
5.1 Discussions	24
5.1.1 The effect of agribusiness on youth unemployment growth in Uganda.....	25
5.1.2 The effect of Exports on youth unemployment in Uganda.....	25
5.1.3 The causal direction between Agribusiness, exports and youth unemployment rate in Uganda.....	26
5.2 Conclusions from the study	26
5.3 Recommendations	27
5.4 Limitations of the study	27
5.5 Areas recommended for further research	27
REFERENCES	28

LIST OF FIGURES

Figure 1: Conceptual Frame Work Linking Agribusiness, Export Performance and Youth Unemployment.....	5
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LIST OF TABLES

Table 4. 1: ADF test results	17
Table 4.2: Trace statistic results from the Johansen test for cointegration	17
Table 4.3: Results from the Shapiro – Wilk Normality test	18
Table 4.4: Results from the Breusch-Godfrey Serial Correlation LM Test	19
Table 4.5: White Test results for Heteroscedasticity	19
Table 4. 6: VIF Results	20
Table 4. 7: Results from the Vector Error Correction Model (Short run).....	21
Table 4.8: Results from the Johansen normalization restriction.....	22
Table 4.9: Granger causality test result.....	23

ABSTRACT

This study investigated the effect of Agribusiness (AGRIB) and export performance on Youth unemployment in Uganda. The specific objectives of the study included establishing the effects of agribusiness, export performance on youth unemployment. Employing the Vector Error Correction Model (VECM), the study used time series data that spanned a period of 31 years ranging from 1991 to 2021. The results of the study showed that, in the short run, both agribusiness and export performance had a negative effect on youth unemployment. However, these coefficients were found not to be significant in the short run thus not affecting youth unemployment. In the long run, agribusiness and export performance have negative and significant effect on youth unemployment. The granger casualty test indicated a uni-directional causation running from export performance to youth unemployment. It however indicated no directional causation between agribusiness and youth unemployment at 5% level of significance in Ugandan. The study recommends that the Government needs to boost inflow of modern efficient agricultural technology to quicken and expand agro-output. It also recommends for government-private partnership in training and equipping the youth with entrepreneur skills that are required to fully explore the potentially available opportunities in agribusiness and export sector. Trade barriers should be done away with and new and sustainable trade relations should be sought with other countries.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This study is focused on youth unemployment, its importance, consequences and how it can be mitigated in Uganda through agribusiness, and exports performance.

1.1 Background to the Study

According to the International Labour Organisation statistics, there are about 1.12 billion youth aged 15–24 globally as of 2022 accounting for about 16% of the global population. This is an increase of about 300 million youth population since 1999 (ILO, 2022). Thus, this has made the youth unemployment crisis a huge and steady concern of government and policymakers in developing countries since the 1960s, and youth development has become central to national development strategies (Bennell, 2007). More worrisome is the fact that the world youth unemployment rate has risen lately to 14.6% in 2020 up from 13.1% pre-covid 19 (ILO, 2021). This caused young people to disproportionately suffer from economic fallout, (Banett, 2021). The rates are higher in middle income countries for the 15 - 25 with 23.7% men and 29% unemployed as of end of 2020, (ILO, 2020).

The rise in youth unemployment rates is higher in emerging economies, which is at 30% and 12% in Northern and sub-Saharan Africa respectively. Similarly, Uganda's youth unemployment rate stood at 15.6% as of June 2022 with agriculture sector employing over 50% of the youth between 15 - 35 years of age in Uganda, against the overall national unemployment of 9.2% (CIA world fact book, 2022). The high unemployment rates force many youths to engage in insecure often low productivity jobs for income. The resulting labour underutilization combines unemployment and potential labour force into one indicator hence doubling the rates in Africa, (ILOSTAT, 2021). It is critical to curb youth unemployment as employment provides more than economic benefit by providing youths with a purpose and a sense of status and belonging. This contributes to the possibility of better aggregate consumption, peace, stability and progress in their communities (Mercy Corps, 2020).

While several aspects affect youth unemployment, the focus for this study was on agribusiness and export performance due to their significant contribution to GDP and inclusiveness in Africa.

In Africa, Export performance, agribusiness and agro-industries account for more than 33% and 30% respectively of national income as well as the bulk of export revenue and employment (International Trade Administration, 2022; Carlos, 2014). Additionally, the agribusiness sector is observably significant over other sectors such as manufacturing, service, and oil industry due to its uniqueness in entrepreneurship and self-employment. The profession's requirement for energy, creativity, and innovation makes it suitable for the 15–35 age group (Brooks, Zorya, Gautam, & Goyal, 2013). However, this may not guarantee full youth participation in the sector because of its subsistence nature and due to minimal access to initial productive resources such as land that is likely to hinder young people's agribusiness engagement even when it's perceived to be profitable (Naamwintome & Bagson, 2013).

Similarly Trade economists have long known that there is no straightforward answer to the question of whether export growth leads to more or less unemployment. Of course, as exports grow, employment increases in the firms that are producing and exporting more. This is almost mechanical, as output grows employment increases in those firms. Given the fact that Uganda's export composition is led by agricultural produce which account for 32% of all exports (UIA, 2021), one would expect that improvement in export performance results in more opportunities for the majority young Ugandans. But whether aggregate youth unemployment declines or not, is a more complex question that this study intends to answer with empirical evidence.

The Government of Uganda has undertaken several steps including plan for modernization of agriculture, NAADS, NUSAFU model farms, creating of the Uganda Exports Promotion Board to promote exports, Uganda Investment Authority to boost investment. Furthermore, development partners like USAID, SIDA, SNV, ENABLE, TradeMark East Africa to mention but a few have supported government, civil society and private sector to promote agribusiness and export promotion. However, while there is theoretical evidence of the existence of these initiatives, youth unemployment has continued to be challenge with growing magnitude, and there is a scarcity of empirical evidence on how they influence youth unemployment, making it more difficult to inform evidence-based policy making and improvement of the implemented interventions. This implies that there is need to practically explore this research area to establish how agribusiness and exports performance influence the youth unemployment levels.

1.2 Statement of the problem

Youth unemployment has for decades remained a serious policy issue in many African countries and particularly in Uganda. This is because its poor management has enormous negative political and socio-economic consequences such as high crime rate, hunger and malnutrition (Mercy Corps, 2020). At the center of all potential strategies to reduce youth unemployment stands the agribusiness sector which continues to be the highest employer of labor force in Uganda (nearly 70%), and which also provides great prospect for job creation, particularly for young people (Munishi, Mgelwa, & Guan, 2017; Nyabam, Tarawali, & Ijie, 2018). It is believed that youth engagement in agribusiness will not only help to reduce unemployment among youths but, has great implication on poverty eradication, food security and economic development (Yami et al., 2019).

There has been a growing commitment from the government of Uganda and development partners towards engaging youths in agribusiness (MoFPED, 2022). These commitments are reflected in several programs which have been implemented over the years such as rural farmers' scheme, seed capital, NAADS, NUSAFU model farms, creation of the Uganda Exports Promotion Board to promote exports among others. Despite the presence of these initiatives, Youth unemployment (% of total labor force ages 15-24) has continued to grow overtime for example from 2.7% to 2.9 % and 4.33% in 2013, 2018 and 2021 respectively (ILO, 2022). Additionally, there is a dearth of empirical evidence for Uganda on how agribusiness sector and export performance affects the youth unemployment levels. The study therefore aims to examine the effect of agribusiness and export performance on youth unemployment in Uganda and how the two independent variables maybe used to avert youth unemployment.

1.3 Purpose of the study

The study aims to examine the effects of agribusiness and export performance on youth unemployment in Uganda.

1.4 Objectives

- (i) To examine the effect of agribusiness on youth unemployment
- (ii) To examine the effect of export performance on youth unemployment
- (iii) To examine the casual relationship between agribusiness and youth unemployment.

- (iv) To examine the causal relationship between export performance and youth unemployment.

1.5 Questions

- (i) What is the effect of export performance on youth unemployment in Uganda?
- (ii) What is the effect of agribusiness on youth unemployment in Uganda?
- (iii) Does agribusiness cause youth unemployment in Uganda?
- (iv) Does export performance cause youth unemployment in Uganda?

1.6 Scope of the study

The scope of this study was threefold namely; geographical scope, time scope and content scope.

1.6.1 Geographical scope

The study used data aggregated at a national level for Uganda.

1.6.2 Time scope

The time span for this study ranged from 1991 – 2021 covering 31 years.

1.6.3 Content scope

The study focused on the effect of agribusiness and export performance on youth unemployment rate in Uganda in both the short run and the long run.

1.7 Significance of the study

The intention was to create a base for policy makers to integrate the above regressors in policy formulation for example NDP 3 Reviews and NDP 4 to curb youth unemployment.

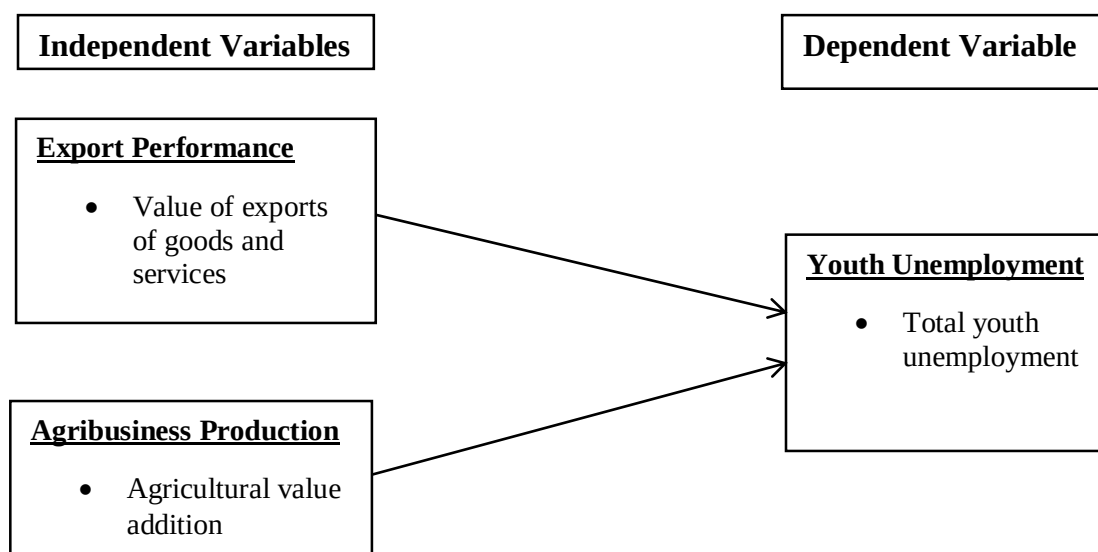
The study findings will inform policy experts on the necessary interventions after revealing the short run and long run effects of agribusiness on youth unemployment.

The study findings will help to fill the information gap by providing empirical evidence to the broader understanding of the causal effect of agribusiness and export performance on youth unemployment in Uganda.

1.8 Conceptual Framework

The conceptual framework of the study gives a visual representation of the study variables.

Figure 1: Conceptual Frame Work Linking Agribusiness, Export Performance and Youth Unemployment



Source: Osabohien *et al.* (2018)

Youth participation in agribusiness programs is critical for agricultural development and can enhance the livelihood of youth, thereby reducing unemployment and promoting food sufficiency. It has been argued that most educated youth (including those from rural areas) aspire to have formal employment and dislike venturing into farming or any agricultural-related entrepreneurial jobs (Elias, et al., 2018). The perception of youth on agriculture as a dirty or aged rural individual occupation would change when they are well informed on the prospects and opportunities in agriculture, as well as receiving training/empowerment that could create employment for the youth.

According to Osabohien et al. (2018), the volume and value of agricultural export can increase the share of agricultural export and decrease the portion of non-agricultural export and agricultural imports in global trade. Classical models of trade suggest that openness generates growth-enhancing dynamic benefits, including productivity gains, technology transfer and learning-by-doing. Since these models assume full employment, they predict that trade

liberalization would create changes in employment levels across industries, but no change in the aggregate.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents and discusses the literature of the study. The chapter begins with theoretical underpinnings for the study and then later discusses the empirical deductions.

2.1 Theoretical Literature Review

According to the classical theory, unemployed are those who are not willing to work at the prevailing wage rate (they are voluntary unemployed). Meanwhile, according to Keynesian unemployment occurs due to unfairness of the report and offer. Meanwhile, Sukirno (2010) states that unemployment is a condition in which a person belonging to the workforce wants to get a job but they cannot get the job and according to Sumarsono (2009) unemployment occurs because of a mismatch between demand and supply in the labor market. Forms of labor market nonconformity. According to Sukirno (2010) unemployment is divided into 3 types: (a) Frictional unemployment (the worker leaves his job and seeks a better or more desirable job). (b) Structural unemployment (unemployment due to structural changes in the economy). (c) Conjuncture unemployment (unemployment due to reduction in aggregate demand).

The theoretical postulation on the relationship between trade and employment dates back to the work of classical economists. Ricardo (1817) proposed the theory of comparative advantage that a country should specialize in the production and export of commodities for which it has comparative advantage and import those for which it has comparative disadvantage. However, the Ricardo formulation entailed certain limitations. First, it failed to consider the role and impact of the structure and composition of trade in the development process. Second, it ignored other factors required in production, such as capital and technology, considering only labour value. Subsequently, Heckscher (1919) and Ohlin (1933) (HO) proposed an extension of the Ricardo formulation by postulating exogenous differences in factor endowments as the basis for trade. The implication of HO, then, was that (African) developing countries would specialize in producing primary products in which they have a comparative advantage due to the abundance of land and unskilled labour. Indeed, an important thrust of what later became the Heckscher-Ohlin-

Samuelson (HOS) framework was that employment would ultimately be re-distributed from the import-substituting sector to the export sector as a country specialized in the production and export of primary commodities. If trade could induce growth, then it might increase employment via derived demand.

It is commonly agreed that the transformation of an economy from a fundamentally agrarian, subsistence mode to an urbanized, integrated, and enterprise-dominated mode is the essence of economic development, and the wellspring of continuous improvement in economic welfare (Herrendorf et al, 2013).

Given the shortage of wage jobs in low-income economies, the real challenge for employing youth is to help them gain a foothold in the informal sector, either in farming or non-farm household businesses. The objective of such an intervention would be livelihood development, not firm growth. Since these youth will have to find an economic opportunity and exploit it, interventions such as training, apprenticeship, or access to finance might be justified. In this case displacement is rarely a concern, so the key issues are the cost effectiveness of the intervention, and who should finance it. In sum, the opportunities for youth are a function of the overall set of employment opportunities in a country. The labor market model shown in Figure 3 suggests that failure to consider this point can lead to strategies which are at best not cost-effective and ignore the situation and prospects of most youth. In the next section, a systematic review of recent impact evaluations of programs for youth employment in developing countries is presented, using the lens of structural transformation

2.2 Empirical Review of Literature

2.2.1 The effect of Export performance on Youth Unemployment

Exports are critical to market democracies as they provide people and businesses with access to larger markets for their products (Economic Times, 2022). Logically these lead to inflows that in return sustain the production process by rewarding the factor inputs of capital and labour used in the production. Rewards on capital creates investment hence more requirement for labour input, while the reward on labour creates jobs which reduce unemployment in return.

Yolanda (2017) studied the impact of export development on unemployment in Indonesia, the study results concluded that export development has a positive and significant effect on

unemployment. Export of goods and services are seen as a driver and fundamental source of economic and social development through their power to influence 1) economic growth, reduce unemployment, offer a source of foreign exchange inflow to cope with imports (Sayuf, 2019).

Just like many developing countries, Uganda has been characterized by liberalization of foreign trade, achieving a number of free trade agreements to integrate into the world economy (Mabrouki, 2019). Agreements like AfTA, EAC, COMESA, AGOA among other offering a great opportunity for Uganda to grow its exports.

Governments must take deliberate effort to promote exports. Government of Uganda has undertaken to have dedicated organs towards the promotion of exports like Uganda Exports Promotion Board, Uganda Free Zone Authority plus offering several incentives like tax holidays, removal of export duty and offering land to investors that export led. These are supposed to create jobs and reduce the unemployment burden in return.

Export instability may however accrue to a country due to price uncertainty, health concerns and geopolitical risk (Ghosh, 1994). Take for example the current global inflation, erratic restrictions by Kenya, avian flu outbreak, and USA sanctions on Russia all playing out at the same time. All these have the potential to negatively affect the gains made in earnings and job creation hence growing unemployment instead.

Diversification of the export base by developing countries should be a long-term solution towards the goal of self-insurance but should not be counter to the country's comparative advantage (Ostry, 1994). Diversification in terms of market and product. Export stability is critical for the gains to maintain and turn curb unemployment sustainability.

2.2.2 The effect of Agribusiness on Youth Unemployment

Agribusiness is a combination of the words "agriculture" and "business" and refers to any business related to farming and farming-related commercial activities. Agribusiness involves all the steps required to send an agricultural good to market, namely production, processing, and marketing. Agribusiness as the sum total of all operations involved in the manufacture and distribution of farm supplies; production operations on the farm; and the storage, processing, and distribution of farm commodities and items made from them. (Davie, 1957).

In 1956 the term “agribusiness” had not been used prior to that time; agricultural economists had been making significant contributions on issues related to agribusiness for many years. As early as 1913, Charles J. Brand (1913) noted that the farmer needed “suitable and convenient arrangements for securing credit” and “assistance in the establishment of a marketing system which will return him the true value of the particular qualities of the various crops that he produces, minus reasonable charges for handling, transportation and the legitimate profits of middlemen.” Agribusiness management is concerned with decision making within the organizations that comprise the food system.

According to Bello et al. (2021) variables such as educational attainment, access to training, non-agricultural activity, membership in a youth organization, access to credit, productive resources, and youth location are significant and positively influence youth decision to participate in the Agribusiness programs. Furthermore, participation in the youth agribusiness programs has a significant positive impact on gainful employment among the youth.

Among other proponents of the strategy to invest further in the agricultural sector as a way to improve employment outcomes for rural young people in Africa, and to spur wider economic growth are Yeboah and Jayne (2018). By studying nationally representative livelihood surveys in multiple Sub Sahara African countries, Yeboah and Jayne (2018) found that despite a decreasing employment share, agriculture remains in aggregate the largest sector of employment for young people (15-34) (their survey included Ghana, Nigeria, Rwanda, Tanzania, Uganda, and Zambia). Secondly, they argue that with proper policies and public expenditures that can help make agriculture less arduous and more remunerative, the agricultural sector can absorb the ‘unprecedented growth’ of young people entering the labour market in Africa (Yeboah & Jayne, 2018). They argue that young people are turning their backs on poverty, rather than on farming per se. In their view, a more productive agricultural sector can provide decent agricultural employment and continue to spur the all-important growth in the nonfarm sector to boost livelihoods across rural areas, and across Africa more widely.

Further studies also find that most rural Africans are employed in the agricultural sector (Fox & Thomas, 2016; IFAD, 2019; Elder, De-Haas, Principi, & Schewel, 2015). Fox and Thomas (2016) report that the vast majority of young people in SSA aged 15-16 (90 percent) and 24 or older (80 percent) are involved in agriculture at least as one of their economic activities. IFAD

(2019) reports that rural young people in SSA (aged 15-24) spend 70 percent of their working time in farming, with those aged 15-34 spending 60 percent of their working time in the agri-food system (though no exact breakdown is provided on the exact nature of these activities, e.g. whether in production or otherwise). Elder et al. (2015) also found that for eight surveyed SSA countries, the majority of rural youth (aged 15-29) were involved in agriculture (52.3 percent)

Agribusiness implies additional complexities, such as the risk emanating from the biological processes, the role of buffer stocks and the different farm and at-farm-gate market structures (Sporleder and Boland, 2011). These complexities create the need for the factor input of labour hence offering job opportunities. Most of the African youth live in rural areas and have limited opportunities for gainful employment (Allen et al., 2016). However, they have untapped potential to transform the agricultural sector through innovation and entrepreneurship (Betchman et al 2015). Agriculture holds considerable potential to provide gainful employment opportunities to a large number of youth if it is supported with increased investment and conducive legal and policy frameworks (Filmer & fox 2016).

Fast growing economies that can cut poverty create meaningful jobs particularly for the youth, require political will from leaders and huge injection of investment in agriculture (Busani.B, 2014). The immediate future is around agriculture as the main force in social and economic transformation of the African continent (African Union, 2014). Africa's lack of competitiveness in agriculture is a drag on efforts to boost employment and boosting rural development through value chain addition to agriculture products providing necessary infrastructure as the solution (Mandivamba, 2014). Innovations in agriculture could unlock vast employment opportunities. The rice sector alone has the potential to employ many of the 17 million young people that enter the job market in sub Saharan Africa each year (Busani.B, 2014).

Agriculture is a sector of opportunity for young people in Africa, as the largest employer and has potential to absorb millions of new job seekers (World Bank, 2013). The above conclusion is also true for Uganda. In particular, agribusiness, a term used to mean farming plus all the other industries and services that constitute the supply chain from farm production through processing to wholesaling and retailing, can create job opportunities and generate incomes (Filmer & fox 2016)

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the methodology that was used in this study. The Methodology section comprises of Research design, Data type and sources, Data estimation Techniques and Model specification.

3.1 Research Design

The study employed a longitudinal research design of a time series data with a quantitative approach. The design helps to establish relationships between variables and allows the testing of the effects of variables against each other. This kind of research design facilitated a proper fulfilment of the objectives of the study.

3.2 Data Type and Sources

Annual time series data of all variables was used for the analysis in this study. The data type to be used in this study is secondary data because the variables studied are aggregated at national level, and their data is already captured at the national databases. This include data on Agribusiness, Uganda's Exports and youth unemployment. This data covered the period between 1991 and 2020. This period covers the time when the government of Uganda increased its commitment to invest in agricultural programs and initiatives to curb youth unemployment. The data was extracted from World Bank database (World Development Indicators).

3.3 Model specification

The main variables of interest are Youth unemployment which is the dependent variable, Agribusiness and Export performance as the independent variables. The study modified the youth unemployment function modeled by Osabohien et al. (2018) to include variables important for this study as follows;

$$YUEMP = f(AGRIB, EXP) \dots\dots\dots (1)$$

Where; YUEMP is Youth Unemployment, referring to the share of the labor force ages 15-24 without work but available for and seeking employment (International Labor Organization, 2018).

AGRIB is Agribusiness and it was measured by agriculture value addition. EXP is Export performance.

The model in equation one can be expressed in econometric form as equation two below;

$$\ln YUEMP_t = \beta_0 + \beta_1 \ln AGRIB_t + \beta_2 \ln EXP_t + \varepsilon_t \dots \dots \dots (2)$$

Where; t represents time, the β s are parameter estimates and ε is the error term of the model. Ln is for natural log.

3.4 Model Estimation Techniques

3.4.1 Statistical Test

The statistical test in the study included stationarity test and cointegration tests. The stationarity test was carried out using Unit Root test while cointegration test was carried out in the study using maximum Likelihood test. The details are indicated below.

3.4.2 Stationarity Test

According to Gujarati and Porter (2008), non-stationary series produce spurious or meaningless model estimates. It is therefore important to test the order of integration of each variable in a model, to establish whether it is non-stationary and how many times the variable needs to be differenced to derive stationary series. Stationarity of each individual data series was estimated in this study using Augmented Dickey Fuller (ADF) test. A unit root null hypothesis was tested against a stationary alternative. The null hypothesis of the test cannot be rejected if the test-statistic (t-statistic) is lower than the associated critical value at 5% level of significance. If found non-stationary, the data is differenced in order to yield its stationarity. The stationarity test in the study used regressions of a time series data analyzed against a constant. These regressions can be expressed as follows;

$$Y_t = a + \beta_t + \varepsilon_t \dots \dots \dots (3)$$

$$dY_i = a + \beta_t + \sum_{i=1}^n \lambda dY_{t-i} + \delta Y_{t-i} + \varepsilon_t \dots \dots \dots (4)$$

The stationarity of residuals (ε_t) was tested. Lag length (p) of ADF (dY_{t-i}) equations was selected using Schwarz Information Criterion (SIC).

3.4.3 Cointegration Test

The procedure that is adopted by this study to test for cointegrating relationship within endogenous variables is based on Maximum Likelihood (LM) test and unrestricted Vector Auto Regression (VAR) test. Cointegration rank r (number of cointegrating vectors) was tested using trace statistics and Maximum Eigen Statistics (MES). The trace statistics test null hypothesis that there are at most r cointegrating vectors against alternative of r or more cointegrating vectors, while the MES test null hypothesis of r cointegrating vectors against alternative of $r+1$ cointegrating vectors.

3.5 Diagnostic Tests

The residual tests in this study include, normality test, serial correlation test, heteroskedasticity test and multicollinearity test. The details are indicated below.

3.5.1 Normality test

Most of the statistical procedures are based on the assumption that the population from which the samples are taken are normally distributed (Field, 2009), specifically the Ordinary Least Square (OLS) assumption is that the residuals should be normally distributed, for when this assumption does not hold, it is impossible to draw accurate and reliable conclusions about reality (Oztuna, Elhan, & Tuccar, 2006). Therefore, normality test was carried out in this study to determine whether the data series that has been estimated in the study are normally distributed or not. If the residuals are normally distributed, the histogram is bell-shaped and the Jarque-Bera statistic should not be significant.

3.5.2 Serial Correlation

Autocorrelation/Serial correlation is the relationship between a given variable and a lagged version of itself over various time intervals. Serial correlations are often found in repeating patterns, when the level of a variable affects its future level. Autocorrelation also known as serial correlation or lagged correlation and is used to determine the strength of relationship of a variable with its own past and present values, or in another words, it can be explained as correlation of the error term in the present with the error term in the past (Penzin & Oladipo, 2021). Autocorrelation can happen whether in the time series data or cross-sectional data. In order to test the autocorrelation problem, Breusch-Godfrey serial correlation Lagrange multiplier test was used to check for the presence of the problem. The LM test has a better explanation on the higher AR model which is the AR(2) and Durbin Watson h-test is biased for the

autoregressive moving average models so it is a chance that the autocorrelation is underestimated in the first place (Roberto & Jodiney, 2019). The Breusch-Godfrey test examines the null hypothesis that there is no serial correlation (Anjum, 2020). The null hypothesis cannot be rejected if the p-value associated with the chi-square exceeds the 5% significance level.

3.5.3 Heteroscedasticity test

Heteroscedasticity refers to the state of systematic changes in the spread of residuals or error term of the model. The presence of residual variance in a model shows that the scattering of the model is dependent on at least one independent variable, this creates a scenario of deviation of the model from effective and actual results (Riya & Chetty, 2020). The Ordinary Least Square (OLS) assumption is that the variance of the residuals is constant. Therefore, Heteroscedasticity test is done to examine whether the variance of the residuals is constant. The study used Breusch-Pagan test for Heteroscedasticity to examine whether the variance of the residuals was constant. The test examines the null hypothesis that there is no Heteroscedasticity (Iyke, 2019; Williams, 2020). The null hypothesis cannot be rejected if the p-value exceeds 5% significance level.

3.5.4 Multicollinearity test

Multicollinearity exists if there is high correlation between independent variables. Correlations between the independent variables must not perfectly exceed 0.8 since any higher correlations are problematic (Schober, Boer, & Schwarte, 2018). The study used a pairwise correlation coefficients between the independent variables as well as the Tolerance value and Variance Inflation Factor (VIF). Tolerance value is an indicator of how much of the variability of the specified independent variable is not explained by the other independent variable in the model. If this value is very small (less than 0.2), it indicates that the multiple correlation with other variables is high, suggesting the possibility of Multicollinearity. VIF values above 10 indicate Multicollinearity.

3.6 Determinants of Youth Unemployment

The second objective in this study estimates the determinants of Youth unemployment in the period under the review. The study used Vector Error Correction Model (VECM) to estimate the determinants of youth unemployment in the period under the review.

3.6.1 Vector Error Correction Model (VECM)

The analysis of vector error correction model was carried out in this study to determine whether there exists any short run or long run causal relationship within variables in the model specified. The presence of cointegrating relationship within endogenous variables is a necessary condition for estimating vector error correction model. The general form of the vector error correction model that will be estimated in this study is as follows;

$$\Delta X_t = \sum_{t=1}^n \beta_t \Delta X_{t-1} + \sum_{i=1}^r \gamma_i ECT_{t-1} + V_t \dots \dots \dots (5)$$

Where X_t is an $n \times 1$ matrix and $n = 4$ vectors of dependent variables, ΔX_{t-1} , β and γ are parameters, while V_t is a residual. Error correction mechanism is evidence in the Error Correction Term (ECT_{t-1}). There are as many error correction terms as there are cointegrating vectors (r).

Parameter γ_i associated with ECT_{t-1} measures proportion of adjustment back towards equilibrium that can be completed within a single period. If parameter γ_i is not significantly different from zero, then there is no error correction process working within the model. Parameter β_t on the other hand, indicates the presence of a short-term lag from one variable to another and it measures short term adjustment back towards equilibrium.

3.7. Causal Relationship between Agribusiness and Youth unemployment

The third objective in this study was to estimate the causal relationship between Agribusiness and Youth unemployment in the period under the review. The study used granger causality test to estimate the causal relationship between these study variables in the period under the review.

3.7.1 Granger Causality Test

The Granger pair wise test was carried out in this study to examine the causal relationship between Agribusiness, export growth and Youth unemployment in the period, 1991-2021. Granger causal relationship is said to exist if variable X_t helps to improve forecast of another variable, say Y_t . The forecast of Y_t can be denoted as $Y_{t+h}|\Omega$ for optimum h -step at origin t , based on set of all relevant information in the universe (Ω_t). X_t is said to be Granger non-causal for Y_t if and only if $Y_{t+h}|\Omega = Y_{t+h}|\Omega/[X_{t,s}|x \leq t]$, $h=1,2,3,4,\dots$ (6)

X_t can be non-causal for Y_t if removal of past information from X_t does not change optimal forecast horizon. In turn X_t Granger causes Y_t if (5) does not hold for at least one h and therefore a better forecast of Y_t can be obtained from some forecast horizon by including past information on X_t in the information set. The optimum lag length in the Granger causality test can be determined by information criteria.

CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF FINDINGS

4.0 Introduction

This chapter presents the results of study and their interpretations. Descriptive as well as inferential analyses are presented following the objectives of the study as earlier stated.

4.1 Pre-estimation diagnostic tests

Pre-estimation diagnostics are statistical tests carried out before model estimation to ensure that the selected variables are fit to be included in the model to be estimated.

4.2 Stationarity tests on the model variables

The study proceeded to conduct stationarity tests on model variables, using the Augmented Dickey Fuller (ADF) test as one of the most commonly used stationarity tests in academic literature. The ADF test is based on establishing the presence of unit roots by testing the null hypothesis that a unit root is present in a given time series sample. If the test-statistic (t-statistic) within the ADF is lower than its associated critical value (at 5% significance level), then the null hypothesis cannot be rejected. The study checked for unit roots at both the variables' levels and their first differences as presented in table 4.1 below

Table 4. 1: ADF test results

Variables	ADF		
	Levels	First difference	Integration
LnYUNEMP	0.260	-4.183***	I(1)
LnAGRIB	-1.928	-6.076***	I(1)
LnEXP	-1.997	-5.371***	I(1)

Source: Researcher's computation using secondary data

The results in table 4.1 indicate that all the variables were non-stationary in levels. However, differencing the variables one time yielded their stationarity and so all the variables became stationary at first difference. The stationarity at first difference was confirmed at 1% level of significance. Variables that become stable after being differenced once are ranked as being integrated of order one; that is, I (1). Thus the study concluded that the model variables were I(1) variables.

4.3 Cointegration test

The non-stationarity of the variables in levels is an indicator that they could have some long run associations called cointegrations. The Johansen cointegration test was used to check for presence of these long run relationships among the variables.

4.3.1 The Johansen Cointegration test

The trace statistic within the Johansen test was computed to determine the rank of the model. The rank of the model are the number of cointegrating vectors within the model (Kilicarslan, 2018). The trace statistic tests a null hypothesis of r (number of cointegrating vectors) cointegrating vectors against the alternative hypothesis of $r+1$ cointegrating vectors. The null hypothesis is rejected whenever the trace statistic exceeds a corresponding critical value at 5% significance level. The results of the test are shown in the table below.

Table 4.2: Trace statistic results from the Johansen test for cointegration

Null Hypothesis	Eigenvalue	Trace statistic	5% critical
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			value
$r \leq 0$		46.5645	29.68
$r \leq 1$	0.59733	22.0041	15.41
$r \leq 2$	0.45276	2.7268*	3.76
$r \leq 3$	0.19112		

Note: * indicates non-rejection of null at 0.05 level. Trend: constant. Sample: 1988 - 2019. Number of obs = 32. Lags = 2. Source: Author's computation based on World Bank data

The results in table 4.2 above indicate that there are two cointegrating equations. This is because the null hypothesis of 2 cointegrating equations ($r \leq 2$) cannot be rejected since the trace statistic falls short of the corresponding critical value at 5% level of significance (i.e., $2.7268 < 3.76$). The confirmation of cointegration among the study variables leads to the conclusion that they have among them, a linear combination that yields a stable long run relationship. The study thus proceeded to the model (VECM) estimation as indicated in the earlier chapter.

4.4 Residual Tests

Residual tests carried out in this study include; Normality test, Serial Correlation test and Heteroskedasticity test. The normality test was carried out using Shapiro-Wilk (SW) test for normality. The test for serial correlation was carried out using LM serial correlation test while Heteroskedasticity test was carried out in the study using Breusch-Pagan-Godfrey test. The details are indicated below.

4.4.1 Testing for normality of residuals

The Skewness & Kurtosis test for normality was used to check whether residuals in the model were normally distributed. The null hypothesis in the SW test is that the residuals are normally distributed (Das & Imon, 2016). If the chi-square value, as well the skewness and kurtosis values are not significant at 5% significance level, the null hypothesis cannot be rejected, else it is rejected. The results are shown in table 4.3 below

Table 4.3: Skewness & Kurtosis test for Normality results

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
Residuals	29	0.7676	0.3465	1.04	0.5955

H0: Normality. Source: Author's computation based on World Bank data.

The results in table 4.3 indicate that the chi-square value and the associated skewness and kurtosis values are not significant at 5% level, thus they exceed the 5% threshold level of significance. The study thus cannot reject the null hypothesis of this normality test and therefore concluded that the error terms in the model are normally distributed.

4.4.2 Testing for Autocorrelation

The Breusch-Godfrey serial correlation test was conducted to test for relationships between residuals and the lagged versions of themselves because it is stronger than other serial correlation tests (Anjum, 2020). Presence of serial correlation would render model estimates no longer minimum variance estimators (Epaphra, 2016). The Breusch-Godfrey test examines the null hypothesis that there is no serial correlation (Anjum, 2020). The null hypothesis cannot be rejected if the p-value associated with the chi-square exceeds the 5% significance level.

Table 4.4: Results from the Breusch-Godfrey Serial Correlation LM Test

Lags (p)	Chi-square	df	Prob > F
1	3.627	1	0.0569

Ho: no serial correlation. Source: Author's computation based on World Bank data.

The results in table 4.4 indicate that the p-value (0.0569) is greater than the significance level of 0.05, implying that the null hypothesis of no serial correlation cannot be rejected. Thus, it can be concluded that the residuals in the model are not serially correlated.

4.4.3 Testing for Heteroskedasticity

The Breusch-Pagan test for Heteroscedasticity was used to examine whether the variance of the residuals was constant. The test examines the null hypothesis that there is no Heteroscedasticity (Iyke, 2019). The null hypothesis cannot be rejected if the p-value associated with the chi-square exceeds 5% significance level. The results are presented in the table below.

Table 4.5: White Test results for Heteroscedasticity

Chi2(20)	Prob>Chi
0.06	0.8062

Ho: no Homoskedasticity. Source: Author's computation based on World Bank data.

The results in table 4.5 indicate that the p-value (0.8062) exceeds the 5% significance level implying that the null hypothesis of no Heteroscedasticity cannot be rejected. Thus, it can be concluded that the variance of the residuals was constant.

4.5.1 The test for multicollinearity

Multicollinearity is an econometric problem that exists whenever an independent variable is highly correlated with one or more of the other independent variables in a multiple regression equation. Presence of multicollinearity in a model undermines the statistical significance of the affected variables. To test for multicollinearity, this study generated the variance inflation factor (VIF) for each of the independent variables. The results are indicated as follows;

Table 4. 6: VIF Results

Variable	VIF	1/VIF
AGRIB	1.00	0.999806
EXP	1.00	0.999806
Mean VIF	1.00	

Source: Researcher's computation using secondary data from Bank of Uganda 2012-2022

According to Suleiman (2019), VIF values need to be lower than 10 and tolerance values to be above 0.2 for there not to be a threat of severe multicollinearity in the model. From the results of table 4.6, it is evident that the VIFs for all the variables are lower than 10 and all the tolerance values higher than 0.2. The study thus concluded that the variables could be included in the model together and not cause severe multicollinearity.

4.6 The Vector Error Correction Model

Given that the model variables were found to be integrated of the same order I(1), the VECM was estimated since it is considered to yield better results when all variables are integrated of order one (Meyer & Hassan, 2020). The results of VECM are presented in the table below

4.6.1 The short run results of the VECM

Table 4. 7: Results from the Vector Error Correction Model (Short run)

Variables	Coefficient	Standard Error.	Probability
_ce1 L1.	-0.0265311	0.298277	0.374
LnYUNEMP	0.2756439	0.1856633	0.138
LnAGRIB	-0.0601794	0.0395459	0.128
LnEXP	-0.0151578	0.0186372	0.416
_Cons	0.005868	0.0360264	0.871

Note: Dependent Variable: LnYUNEMP. ***, **, * imply significance at 1%, 5% and 10% levels respectively. Source: Author's computation based on World Bank data

The results in table 4.7 above indicate that the coefficient of the error correction term is negative though statistically insignificant at 5% level. This implies that any previous shocks in the dependent variable resulting from the independent variables and cause deviation from long-term equilibrium path are corrected in the current period. This is because; the negative sign of the coefficient of the error correction term indicates long run cointegration between the independent and the dependent variables whereas the magnitude of the coefficient itself indicates the speed of return to the long-term equilibrium. Thus, the coefficient of the error correction term in table 4.7 indicates that about 2.65% of previous year variations in youth unemployment growth due to variations in the independent variables (in the previous year) are restored in the current year.

The results also indicate that the coefficients of previous year values of Youth unemployment growth rate had positive and insignificant coefficient while the coefficient for previous year Agribusiness (AGRIB) and Exports (EXP) was negative although not significant.

A specific interpretation of the results shows that, a percentage increase in previous year youth unemployment growth leads to a 0.28 percentage increase in the current youth unemployment growth rate. On the other hand, a percentage increase in previous year Agribusiness leads to a 0.06 percentage decrease in youth unemployment growth rate while a percentage increase in Exports leads to a 0.02 percentage decrease in youth unemployment growth rate, albeit these coefficients are not significant.

The results also indicate that the constant term is not significant. This could be taken to mean that the level of youth unemployment growth rate when all the independent variables in the model are zero does not differ significantly from zero. The details are summarized in the equation below;

$$\Delta(YUNEMP) = 0.006 - 0.06\Delta(AGRIB) - 0.02\Delta(EXP) \dots \dots \dots (7)$$

4.6.2 The long run results of the VECM

The study used the Johansen normalization from the VECM to establish the long run effects of the variables under study. The results are presented in table 4.8 below

Table 4.8: Results from the Johansen normalization restriction

Variables	Coefficient	Standard Error	Probability
LnAGRIB	-0.7091379**	0.3258108	0.030
LnEXP	-0.5936013***	0.1455544	0.000
_cons	0.2747121		

Note: Dependent Variable: LnYUNEMP. ***, ** indicate significance at 1% and 5% levels respectively. Source: Author's computation based on World Bank data

The results in table 4.8 indicate that in the long run, a percentage increase in Agribusiness, leads to a 0.71 percentage decrease in youth unemployment growth rate and vice versa, keeping other factors constant and the coefficient is significant at 5% significance level. Similarly, a percentage increase in Exports leads to a 0.59 percentage decrease in youth unemployment growth rate keeping other factors constant, and it's significant at 1% significance level. The details are summarized in the equation below;

$$\Delta(YUNEMP) = 0.27 - 0.71\Delta(AGRIB) - 0.59\Delta(EXP) \dots \dots \dots (8)$$

4.7 The test for Granger Causality

Subsequent to setting up the existence of long-run connection amongst the variables using the Johansen approach, the study interested itself in the determination of the direction of causality. Presence of cointegration in data series envisages the existence of Granger causality, but cointegration does not indicate the direction of the causality relationship. The study investigated the causal relationships within a VAR framework using the pairwise Granger causality test.

Table 4.9: Granger causality test result

Null Hypothesis	Chi2	Prob > chi2
LnAGRIB does not granger cause LnYUNEMP	3.966	0.138
LnYUNEMP does not granger cause LnAGRIB	4.0893	0.129
LnEXP does not granger cause LnYUNEMP	0.29598	0.862
LnYUNEMP does not granger cause LnEXP	19.259***	0.000

Notes: Sample period = 1991 - 2021, Number of observations = 31. Source: Researcher's computation using secondary data.

The results of the granger causality test show that in equation one, the null hypothesis *LnAGRIB does not granger cause LnYUNEMP*, is not rejected because the associated chi2 value is found to be insignificant at 5% significance level. This implies that agribusiness does not granger cause youth unemployment in Uganda. The same applies in the second equation, the null hypothesis *LnYUNEMP does not granger cause LnAGRIB* cannot be rejected because the associated chi2 value is not significant. This result implies that youth unemployment does not granger cause agribusiness. The results of this granger causality test show that there is no directional causality running between agribusiness and youth unemployment.

Secondly, the result also show that the null hypothesis *LnEXP does not granger cause lnYUNEMP*, cannot be rejected since the chi2 value was found not to be significant at 5% level of significant. This therefore implies that export growth does not granger cause youth unemployment. However, the null hypothesis *LnYUNEMP does not granger cause LnEXP*, can be rejected as the chi2 value is found to be significant at 5%. The results of this granger causality test show that there is a uni-directional causality running from youth unemployment to export growth in Uganda.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter of the study discusses the findings in the previous chapter and makes conclusions basing on the study objectives. The chapter also gives policy recommendations from the study findings

5.1 Discussions

This study set out to achieve four major objectives that were to be achieved through hypothesis testing. The objectives of the study were to examine the casual relationship between agribusiness and youth unemployment, to examine the causal relationship between export performance and youth unemployment, to examine the effect of export performance on youth unemployment and to examine the effect of agribusiness on youth unemployment. Hypotheses were to be tested by looking at the associated p-values of the respective parameter estimates as specified in the

empirical model in equation 1 of chapter three. The findings of the results are discussed as below;

5.1.1 The effect of agribusiness on youth unemployment growth in Uganda

Objective three of this study was to establish the short run and long run effect of agribusiness on youth unemployment growth in Uganda. The study established that there is a significant effect of agribusiness on youth unemployment growth in Uganda in the long run. The nature of this effect is negative for the long run period, implying that in Uganda, when agribusiness increases, youth unemployment growth reduces in the long run. This is due to the fact that the agribusiness sector is largely labour-intensive, especially during the processing and post-harvest phases, and mainly requires less skilled labour (Schaefer & Abebe, 2015). These results thus indicate that growth in agribusiness sector in Uganda creates more job opportunities which can absorb the majority unemployed youth. This is what is predicted by the Heckscher-Ohlin-Samuelson (HOS) framework. In establishing a negative effect of agribusiness growth on youth unemployment rate, this study is in agreement with Wossen and Ayele (2018) who established that the growth in number of agribusinesses generate more jobs for youth in Ethiopia. In the short run, the effect of agribusiness on youth unemployment was found not to be significant. This can be understood to indicate that the changes in the growth of agribusiness in the short run does not affect youth unemployment rate in Uganda.

5.1.2 The effect of Exports on youth unemployment in Uganda

The second objective of this study was to examine the effect of export growth on youth unemployment rate in Uganda and the corresponding hypothesis was that *Exports significantly affects youth unemployment rate in Uganda*. In the VECM model, export growth was established to have a negative effect on youth unemployment rate in the long run at 1% significance level. Thus, the null hypothesis could not be rejected. This negative effect implies that when exports increases, youth unemployment rate reduces and vice versa. Part of the expanding exports are agriculture commodities both in their processed form as well as the raw form. Expanding export volumes indicate expanding markets for local goods and services and so they motivate more production hence increasing the need for more factor inputs such as labour to be employed. The study results agree with that of Gyimah-Brempong, and Baah-Boateng (2021) who established an inverse and significant effect of service exports on youth unemployment in Africa. The results

however diverted from the findings by Ebeinstein *et al.* (2009) and Pierce and Schott (2013) who established no impact of trade on unemployment. In the short run however, the effect of export growth on youth unemployment was found not to be significant. This can be understood to imply that in the short-term, increase in the exports volume does not influence short term youth unemployment rate in Uganda.

5.1.3 The causal direction between Agribusiness, exports and youth unemployment rate in Uganda

Objective three of this study was to establish the causal direction between agribusiness and youth unemployment growth. The results indicated no directional granger causality between agribusiness and youth unemployment rate. Since this study has already established that the relationship between agribusiness and youth unemployment is not statistically significant in the short run, it can be confirmed that there is no causal relationship between these two variables in the short run. Similar results have been found by Olowu, Olasehinde-Williams and Bein (2019) who established no causal relationship between agricultural value added and unemployment in some of the southern African countries such as Malawi, Botswana among others.

Similarly, the fourth objective of the study was to examine the casual direction between export growth and youth unemployment in Uganda. The granger causality test in this study established a uni-directional causality running from youth unemployment rate to export growth at 5% level of significance. This can be a reflection that as more youth get engaged in productive sectors, it has a significant impact on export growth and vice vasa.

5.2 Conclusions from the study

This study set out to establish the effects of agribusiness and export growth on youth unemployment rate in Uganda. Finding that the study variables showed the same level of integration after first differentiation, the study chose the VECM framework for testing the set hypotheses. The study observed that agribusiness affects youth unemployment rate negatively only in the long run while short run effect was found not to be significant. Similarly Export growth was observed to negatively affect youth unemployment rate in long run but with no significant effect in the short run. The study also established no casual direction between the agribusiness, export growth and youth unemployment at 5% significance level.

5.3 Recommendations

The study recommends that government and policy makers boost inflow of modern efficient agricultural technology to quicken and expand agro-output. The negative effect of 0.71% that agribusiness has on youth unemployment rate in the long run indicates how efficient agribusiness activities can create more descent job opportunities and ultimately reduce youth unemployment rate. Government can boost this by channeling new investors into the agricultural sector so that the sector benefits from technology transfer. For instance, government can use the international events such as trade Expos, conferences among others, to attract certified agro-investors who would invest in agro processing.

The study recommends that government should partner with private investors to train and equip the youth with entrepreneur skills that are required to fully explore the potentially available opportunities in agribusiness and export sector. Deliberate and sustainable trade agreements that guarantee cross-border trade should be implemented to do away with any trade barriers that have recently been observed. Although some of these are already in existence, recently they have been threatened when Uganda's exports to Rwanda, Kenya and even Tanzania were blocked at the borders. Trade barriers should be done away with and new and sustainable trade relations should be sought with other countries like the Democratic Republic of Congo. Growth in exports generate additional employment absorption either directly or indirectly.

5.4 Limitations of the study

This study employed annual data that was short in supply and therefore formed a short study period. The small size of the study period may not be enough to fully understand the long-term dynamics of youth unemployment rate.

5.5 Areas recommended for further research

Future studies could focus on using quarterly data in studying how the youth unemployment rate is affected by agribusiness and the other factors including Export growth.

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