RELATIONSHIP BETWEEN YOUTH UNEMPLOYMENT AND ECONOMIC GROWTH IN KENYA

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DECLARATION

This research proposal is my original work and hasn't been presented to any other institution for any award

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DEDICATION

To my family who has been a great motivation

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The enormous gratitude goes to God for according me the grit, to complete the project. His guidance, strength, grace, and wisdom has enabled me to take this project to the final step and helped me to believe in my abilities

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TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

ADF	Augmented Dickey-Fuller
ERS	Economic Recovery Strategy
GDP	Gross Domestic Product
GOK	Government of Kenya
ILO	International Labor Organization
KIPPRA	Kenya Institute of Public Policy Research and Analysis
KKV	Kazi Kwa Vijana
KNBS	Kenya National Bureau of Statistics
KYEP	Kenya Youth Empowerment Project
MSE	Micro and Small Enterprise
MW	Minimum Wage
NYS	National Youth Service
OLS	Ordinary Least Squares
TIVET	Technical Industrial Vocational Entrepreneurship and Training
VIF	Variance Inflation Factor
YEDF	Youth Enterprise Development Fund

OPERATIONAL DEFINITION OF TERMS

Unemployment   A condition where individuals are vigorously looking for a job.

Economic growth   An upswing in a country's capacity comparing two consecutive years.

Capitalist system   Private ownership of the production means and profit operations in an economy.

Proletariat   Working-class people regarded collectively.

Youth unemployment   A situation where individuals aged 18-35 are earnestly seeking gainful employment to no avail.

ABSTRACT

Employment opportunities have been the most significant priority by the Kenyan Government, where various policies have been put in place to cater for it. Economic growth is reckoned to be essential since a positive growth rate will encourage inward investment and improve revenues, which can be spent on long-term public sector works. However, youth unemployment is a consistent problematic element in Kenya, affecting the economy to a large extent. The general objective of this study was to examine the relationship between youth unemployment and economic growth in Kenya. The specific objectives of the study were to investigate the causal relationship between youth unemployment and economic growth in Kenya and to analyze the effect of economic growth on youth unemployment in Kenya. The theories studied include the theory of surplus-value, Solow-swan model, Okun's law, and Keynesian theory, which explain the aspects of unemployment and economic growth. Secondary data was collected and used to illustrate the relationship between the variables, while the methodology used was the Granger causality test and the OLS method. A unidirectional causal relationship existed linking the two variables, where the lags of economic growth granger cause youth unemployment, and the coefficient between the two variables was positive. Hence Okun's law coefficient didn't apply when it comes to youth unemployment as opposed to the overall unemployment. However, the coefficient was statistically significant, indicating that even though the economy grew, the youth unemployment levels didn't decline in high variations. It is plausible since a substantial number of individuals who are counted to be unemployed and actively looking for a job are usually the last to be employed as new jobs typically go to the privileged or the well-connected few individuals. The study suggested the County and National Government, in collaboration with the vision 2030 board should come up with viable policies to curb unemployment and at the same time, invest in the informal sector to drastically scale down youth unemployment.

1.1 Background of the Study

1.1.1 Youth Employment Challenge

Although the current generation of Africans entering the labor force is the most educated ever, many are finding that their prospects for employment and earnings differ very little from those of their parents. In a few countries, they are worse (Filmer & Fox, 2014).

The most affected youth group is in the rural areas and small towns since they are poor and less educated than their counterparts in urban areas as they struggle to find pathways to adulthood and supporting their struggling families. The challenge of youth employment in Africa may appear daunting, yet Africa's vibrant youth represent an enormous opportunity, particularly now, when populations in much of the world are aging rapidly. Youth not only need jobs but also create them. Africa's growing labor force can be an asset in the global marketplace. Realizing this brighter vision for Africa's future, however, will require a clearer understanding of how to benefit from this asset. Meeting the youth employment challenge in all its dimensions—demographic, economic, and social—and understanding the forces that created the problem, can open potential pathways toward a better life for young people and better prospects for the countries where they live (Filmer & Fox, 2014).

Sub-Saharan Africa today faces an unprecedented opportunity. Half of the population is under 25 years of age. Each year between 2015 and 2035, there will be half a million more 15-year-olds than the year before. Meanwhile, the population in the rest of the world is, or will soon be, aging (United Nations, 2011).

Africa's youth bulge offers a range of opportunities. First, working-age labor produces the world's goods and services. Sub-Saharan Africa can be the leading supplier of the world's workforce, either by creating products and services in the region or by sending workers to areas with a shortage of workers (World Bank, 2008).

Kenya's constitution defines youth as persons between the ages of 18 to 35. Kenya's population is predominantly young, where the youth constitute 35 percent of the population (The Republic of Kenya, 2018). Youth unemployment is a situation where individuals aged 18-35 are earnestly

seeking gainful employment to no avail. It is a significant concern since individuals who become unemployed in the first year of work become detrimental to society. At the same time, it is problematic not only for the persons unemployed but also for the economy as a whole (Salvador & Killinger, 2008). It is strenuous to envision how the youth can break even on their own in a country wherein their age they are expected to take care of oneself through valid income-generating ventures. KNBS survey indicated that seven million Kenyans are unemployed whereby, 1.4 million have been hopelessly looking for a job, while others have given up on job search with some going back for further studies.

To fully understand youth employment difficulties, one has to focus on the entire scope of activities which the youth may engage once they have gained knowledge to the point school is no longer the only choice. They may choose to take part in domestic activities or look for a well-paying job. Once they switch their mindset from school to job search, the economy is bound to have a high level of unemployed youth due to the period it takes for them to be absorbed in the labor market (Omolo, 2010).

During the period 1998 to 2005, the overall unemployment declined from 15 percent to 12.5 percent. But the allotment on youth unemployment shot up from 60 percent to 72 percent. The joblessness gauge was almost 40 percent for the youth, which was double that of adults, which stood at 21 percent (The Republic of Kenya, 2006). In 2005/06, KNBS indicated that youth unemployment rate for the youth ages 15-24 was 24 percent against the overall unemployment rate of 12.7 percent, it further stated the most affected were the young females.
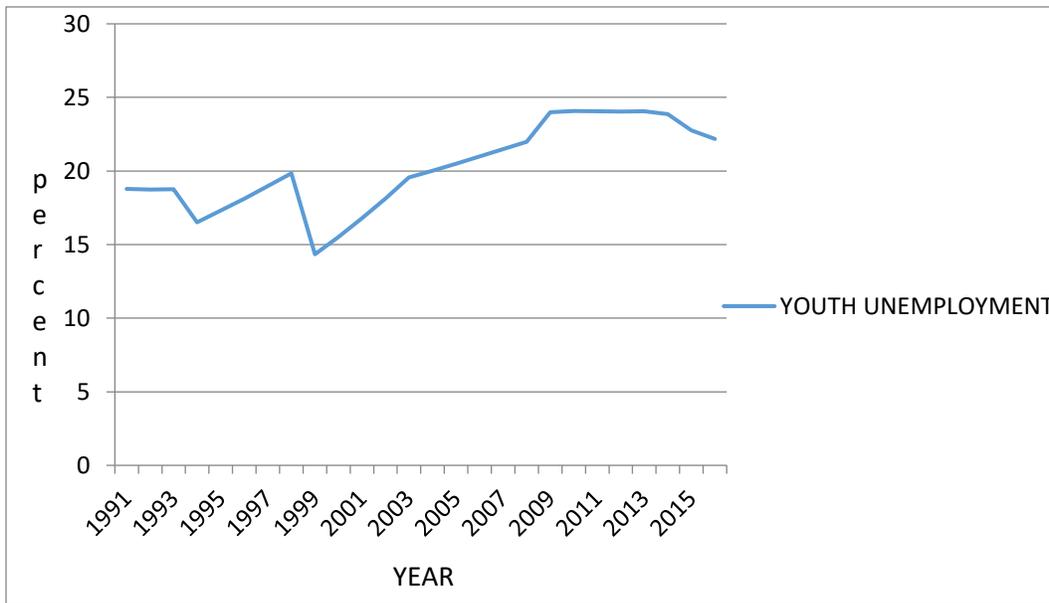
Figure 1.1 Youth Unemployment in Kenya

Source: Government of Kenya, Economic Surveys

From the figure above, the unemployment rate declined from the year 1993 to 1994. It is because of the policies in place and individuals focusing on informal employment. In 1998, there was an introduction of the *Jua kali* voucher program. Since the year 2000, the youth unemployment rate has been on the rise. The society has many graduates seeking employment, but only a hand full are lucky to get the opportunities. The youth also face barriers in the labor market due to insufficient service record (Omolo, 2010) and (Coenjaerts, Ernst, Firtuny, & Rei, 2009)

To policymakers, the high youth unemployment rate is an area of interest for various reasons. First, high youth unemployment implies inefficient use of unrecoverable resources. Secondly, high youth unemployment lowers consumption, which in turn harms the current growth, thereby harming human capital and private investment and in the long run, harming future production capacities. Thirdly, high youth unemployment leads to human capital erosions. Youth become incompetent for staying long without work as their skills become outdate due to rapid technological changes and swift changes in the job market (Pissarides, 1992).

Communication skills barrier and the desire for quick money with less effort are a few of the obstacles in the act of reducing youth unemployment. Danner, Makau, and Nebe (2016) declared that all these do not paint real-life skills that can constructively prone the youth to employment opportunities and success in entrepreneurship. Therefore, the youth don't have mastery over the

basic working ethics necessary for prosperous employment and entrepreneurship. These upheavals, together with the rigid labor market, don't provide adequate employment and favorable employment opportunities, forcing the youth to pursue other sources of livelihood through self-employment, such as owning a hand-cart (Danner, Makau, & Nebe, 2016).

It is the responsibility of everyone to improve the Youth employment opportunities in the country by influencing change in the Entrepreneurial sector. The youth employment challenge can be blamed on the government as well as the political leaders together with the employers, not to forget the youth themselves. Situational factors such as corruption, nepotism, tribalism, and a poor education system cause catastrophic youth unemployment. For instance, the education system doesn't churn graduates with the right skills for the job market (Danner, Makau, & Nebe, 2016). In consideration of the link between weak economic conditions and high youth unemployment, the study will determine the relationship between economic growth and youth unemployment

1.1.2 Policies on unemployment

The Kenya government has since independence come up with policies to curb unemployment in the Kenyan economy. The Kenyanization policy was among the first policies to be introduced by the Kenyan government, whereby it barred foreigners from the agricultural sector and rural trade (Republic of Kenya 1983). The fiscal and monetary policies suitable to curb unemployment were stated under the Sessional paper No 2 of 1985, whereby it encouraged the promotion of manufactured exports that were locally assembled and promoted favorable habitat for the broadening of the informal sector, which play a crucial role in creating employment

The National Youth Service (NYS) was a vital institution for youth skills development. It was inaugurated in 1964 to train the youth on the skills required in the job market by instilling in them professional skills by attending technical and vocational institutes. It was an agreement between Kenya and the United Arab Emirates to provide 100,000 new job openings, youth between the ages of 18 to 22 were trained on suitable skills to gain access to the labor market. Furthermore, it was used by the government for the enrollment of the youth to the Kenya defense army. It provided rehabilitation and training to the poor and orphaned youth (The Republic of Kenya, 2008b).

One of the most relatively prosperous policy was the Kenya Jua kali voucher program. In 1997, its focus was to mold a training system to work better for the youth. The youth got training on

micro and small enterprise projects, and it addressed market failures during the training by availing information, providing credit, and reducing location related barriers.

Gitonga's (2008) study had numerous policies. For example, the development of the Jua Kali program as well as micro and small enterprises. These would create wealth and employment opportunities. The policies were from to the Sessional Paper of 1992 and 1995. The main emphasis was on providing credit and expanding non-financial promotional programs. Moreover, Sessional Paper number 7 of 2005 laid emphasis on vocational training, apprenticeship, and internship programs to be installed into the education system. To aid in adjusting the change from school to the job market. The youth would also acquire the necessary experience.

In 2009 the Kazi Kwa Vijana program was launched to employ 300,000 youth yearly in areas of isolation and the civilized regions on labor-intensive public works projects (The Republic of Kenya, 2010). Some of the projects done in the rural areas include, but not limited to, the construction of dams, renovation of roads, digging boreholes, and planting trees. Constructing the kiosk, developing, and implementing waste management systems were some of the projects in the urban areas.

Kenya youth empowerment project (KYEP), which was proposed to enhance the *Kazi Kwa Vijana* voucher program by providing internship and youth training, was introduced in 2010. Its focus was to identify projects that would encourage community participation, institute clearer criteria in project selection, and develop a detective and evaluation system on elevating the labor content for the KKV program.

The Sessional Paper No. 10 of 2012, advocated for the rehabilitation of youth by training them on micro and small enterprises through the Technical, Industrial, Vocational and Entrepreneurship Training institutions, by providing training on skills that are consistent with the emerging technologies. The YEDF, together with the Uwezo fund, had the objective to advance loans to the young entrepreneur and render grants and interest-free loans to the women and youth. However, the two programs are yet to be effective. The expectation is that the initiative will have a positive and significant impact on unemployment amongst the youth.

Despite various policy proposals put in place to curb unemployment that deals with the demand and supply side of the economy, they are usually not executed. When enacted upon, no effort has been made to assess their worthiness (Wambugu, Munga, & Onsomu, 2009). But in one way or

another, different policy interventions had their successes and failures. However, youth unemployment continues to be the biggest challenge for Kenya. Thus there is a need to address youth employment challenge and bring into light how it's related to economic growth

1.1.3 Economic growth in Kenya

The Kenyan economy experienced a downfall as the 20th century concluded, in 1995/1996 the GDP dwindled from 4.9 percent to 2.4 percent in 1996/1997 and further declined to 1.8 percent in 1997/1998, this worsened in 1998/1999 where it dropped to 1.4 percent and fell more also to 0.3 percent in 1999/2000 (GOK, 2009a). It was because of the international aid freeze and lending, which in turn harmed commodity prices. As a result, it exhausted Kenya's current account and worsened the condition. On the positive side, the economy grew from a low of 2.8 percent in 2003 to 5.9 percent in 2005 It further inclined in 2006 and 2007 by increasing from 6.4 percent to 7.0 percent, respectively, which was the highest since the 1970s, where it grew at a mean of 7.2 percent. The improvement in the Kenyan economy was due to the execution of the economic and structural reforms under ERS performance.
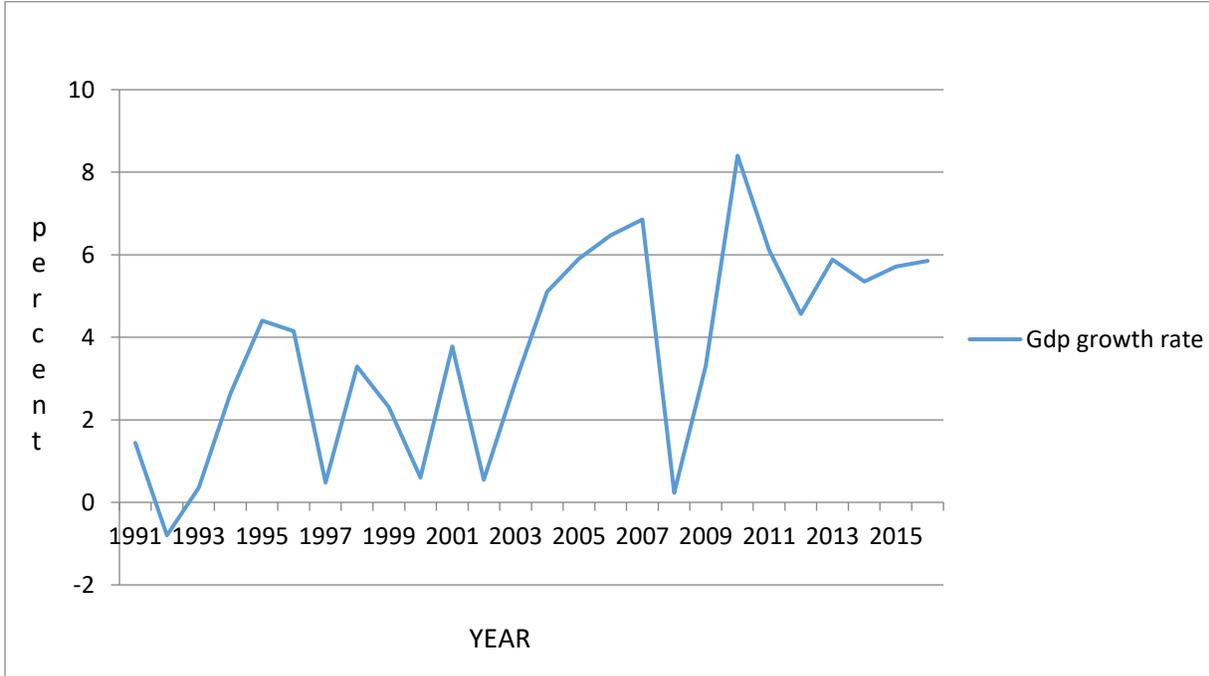
Figure 1.2 GDP growth rate for Kenya

Source: World Bank

6

Kenya vision 2030 provides the political, social, and economic blueprint that is to be attained by the year 2030. The main goal under the economic plan was for the real GDP to grow in 2008 by 4.5 percent, in 2009 by 7.9 percent, in 2010 by 8.7 percent, and in 2011 by 9.1 percent and reach 10 percent by 2012 and be maintained at the 10 percent (The Republic of Kenya, 2008b). However, this failed because the economy grew at 1.5 percent in 2008 and 2.6 percent in 2009. It was due to the post-election violence of 2007-2008. Though in 2010 the economy grew at 5.6 percent, the growth was below par under the Kenya vision 2030.
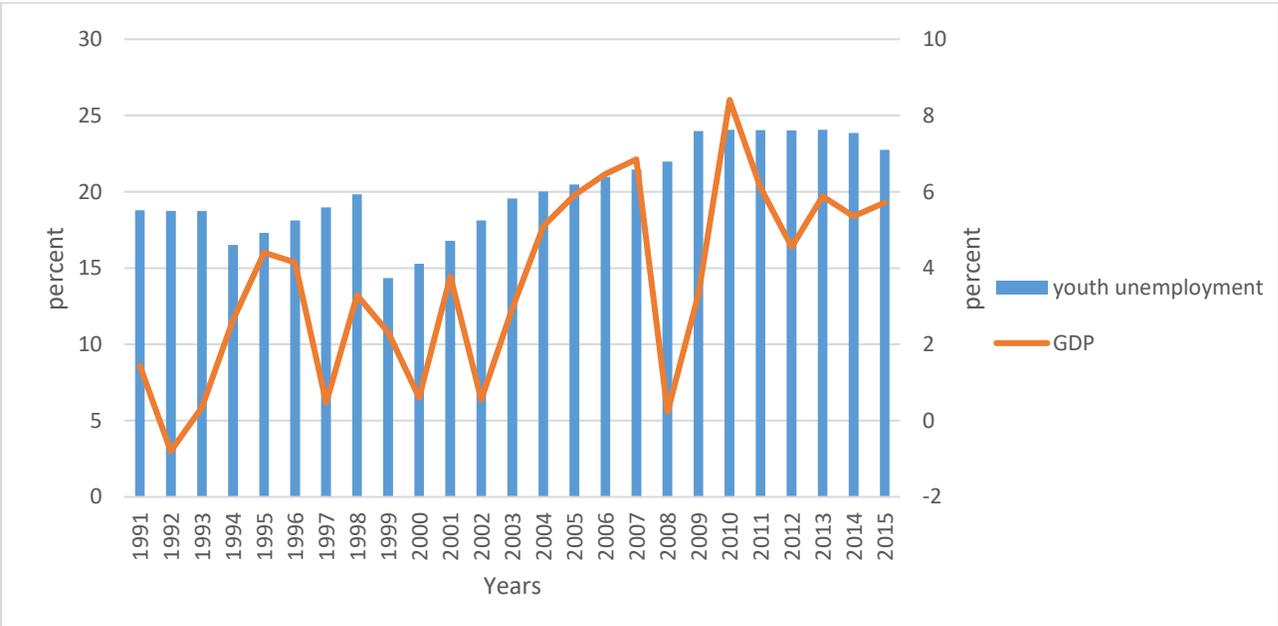
Figure 1.3 Youth Unemployment and GDP growth trend rate

Source: Republic of Kenya (Economics Surveys, various)

Youth unemployment and GDP growth aggressiveness show a distinctive nexus between improving economic growth and youth unemployment reduction is at its very best delicate. It is evident in figure 1.3. Regardless of the rational increase in economic growth observed under the years in review to the labor force growth, it outgrew employment growth, bringing about a surge in youth unemployment, which is due to the high level of waged society and improved labor involvement. In 2003-2007 GDP grew mainly because of the strategies adopted by the Kenyan government, as stated under the sessional paper 2003, which dealt with economic recovery for

7

employment and wealth creation (GOK, 2003). In 2007 the magnification seen on GDP was associated with the efficiency gain in the market.

High youth unemployment leads to liquidity constraints, thereby confining labor migration and resulting in lower economic growth (Andrienko & Guriev, 2004). With elevated and unwavering unemployment levels, it would lead to the young person having low self-esteem and life expectations and thereby, diminishing their belief in the society at large (Ochsen & Welsch, 2011). Some of the effects towards the youth on having lower confidence and experiencing socio-economic hardship include social disconnections leading to dispute disagreement, therefore, diminishing the market performance (Mares & Sirovatka, 2005). The outcome being a diminishing long-run growth.

Growth in labor supply will equally increase in output in the case where the new workforce is recruited with the unavailability of productivity growth. In the situation where job created can't conform to the job seekers, it can be articulated to the fall of the GDP underneath the rate of the labor force, implying unemployment will rise (Toosi, 2012). Unemployment will fall in a situation where the output growth exceeds labor force growth. Employers will seek to fulfill the market demand, and to do so; they will have to pull resources from the pool of unemployed youth.

There are various policies to curb youth unemployment, and there still exist high levels of youth unemployment. Moreover, the Kenya vision 2030 economic blueprint not been attained since the inauguration, and the country has consummated stunted economic growth in the contemporary years. It is essential to scrutinize the relationship between youth unemployment and economic growth.

1.2 Statement of the Problem

Kenya's greatest challenge is youth unemployment, and the youth are the most valuable asset Kenya has and will continue to have in the future. Even so, various studies conducted and published indicate that there are numerous challenges faced by the youth despite the high levels of unemployed youth. A pile-up on Youth unemployment has been on the rise since the year 2000. The unemployment rate was 25 percent and 24 percent for the youth ages 15-24 and 20-24, respectively, twice the overall unemployment, which stood at 12.7 percent for the whole group (Munga & Onsomu, 2014).

Policies to curb youth unemployment, such as the Sessional Paper of 1992, 2005, and 2012 haven't been much sufficient as there persist high levels of youth unemployment. Furthermore, the technical education and vocational training institutes developed for the youth to train and gain skills to ease access to the labor market haven't assisted much in the reduction of youth unemployment. It encompasses a significant challenge.

Economic growth targets set under Kenya vision 2030 medium-term plan haven't been attained. For instance, the economy achieved a growth of 6 percent in 2006 and was to attain and maintain an increase of 10 percent by 2012/2013. However, this wasn't achieved. Studies investigating the correlation between unemployment and economic growth have found different relationships existed between the variables. For instance, a research in Central and Eastern Europe by Karatekin, Gocer and Yazar (2015) on the relation between youth unemployment and economic growth established that, exclusive economic growth would not be sufficient in reducing youth unemployment in the situation it is found to be very severe, implying non-existence relationship between the variables. Edward's (2007) study on the United States of America's economy found that when GDP grew, the rate of unemployment fell. However, when the GDP slowed down the unemployment rate continued to fall. Seyfried (2004) found that, when an economy grew due to capital accumulation, employment increased and the living standards improved therefore reducing unemployment in the long run.

Okun's law indicates that a one percent surge in unemployment is due to a negative growth of two percent in GDP. A study on Kenya by Moses (2019), found that the coefficient of the two variables to be 0.12 instead of 0.3 as indicated in the Okun's law. Considering that the latter study focused on the overall unemployment, this study will be focusing specifically on youth unemployment and determine if the coefficient by Okun still stand, therefore, examine the causal relationship between youth unemployment and economic growth.

1.3 Research Questions

This study seeks to provide answers to the following questions

I.   What is the causal relationship between youth unemployment and economic growth in Kenya?

II.   What is the effect of economic growth on youth unemployment in Kenya?

1.4 Objectives of the Study

The general objective of this study is to analyze the causal relationship between youth unemployment and economic growth in Kenya. However, the specific objectives of the study are

I. To examine the causal relationship between youth unemployment and economic growth in Kenya.

II. To analyze the effect of economic growth on youth unemployment in Kenya.

1.5 Significance of the study

Benefactors will be the policymakers, such as the various bodies of the government, in coming up with lasting policies and recommendations that will improve the problem of unemployment. Furthermore, in studying the relationship between youth unemployment and economic growth, the study will provide essential insights towards achieving the macroeconomic target of Kenya vision 2030 such as increasing the annual GDP growth rate to an average of 10 percent as well as meeting the social pillar target on youth employment and sustainable livelihoods by implementing agribusiness development among the youth and establishing of business incubation centers.

1.6 Scope and limitation of the study

This study focuses on the causal relationship between youth unemployment and economic growth, and its geographical scope is Kenya. The period to be covered will be from 1991 to 2015, the reason being the economic performance started improving as per *figure 1.2* and due to the fact that youth employment became a significant discussion towards economic development in the 1990s, as the effects on youth opportunities of the extended recession caused by the various currency and debt crises started to attract attention (Fox*,* Senbet and Simbanegavi, 2016)

1.7 Organization of the Study

The project has five chapters; the first chapter brings out the picture of the study at hand as well as the knowledge gap, the second chapter explains the theories that the research focuses on, together with other scholar's views on the theories. The third chapter reveals ways to achieve the objectives of the study. The fourth chapter entails the test carried out as well as a result. The fifth chapter provides the summary, conclusion, and further areas of study

2.1 Introduction

This Section accords a brief assessment of unemployment and economic growth theories, scholar's reviews on the theories and the possible relationships between economic growth and unemployment

2.2 Theoretical Literature Review

2.2.1 Surplus Value Theorem

According to Karl Marx (1863), the theory explained the quantity of value produced by a worker beyond the necessary time. The price of any product decides the amount of labor it took to produce it, which led to exploitation, which in turn led to wealth accumulation in surplus by the capitalist, subsequently dividing the society into rich and poor. With the increasing exploitation of labor by the capitalist, the profit accumulated, whereas the working class has nothing. The capitalist pampered themselves with their riches, whereas the poor working-class became poorer and poorer. Due to the exploitation and inhuman working condition, the workers became more and more alienated. Work for them was no longer the expression of the human himself. The worker became external to his work, more and more estranged from himself and the product. The worker then was alienated even from his fellowmen and from the community itself

The periodic crisis of mass unemployment was within the unstable capitalist system. It stated that with an unstable capitalist system, unemployment was an inherent and regular crisis of mass unemployment. A reserve army of labor was provided by the proletariat in the capitalist system to create downward pressure on wages. Unemployment was inherent because profits didn't increase, but on the flip side it was profitable to the capitalist because it lowered wages which were a burden to the prospective owners

From that point of view, lower wages were advantageous to the capitalist system since it diminished the economic rents but didn't benefit the worker. The capitalist unjustly manipulated the labor market by prolonging unemployment, which lowered the fair wages.

By abolishing capitalism and introducing a socialist or communist economy, it would lead to the elimination of unemployment and the improvement of wages provided to workers. Hence the capitalist system proved to be an invaluable tool to attain full employment.

2.2.2 Solow-Swan Model

The model was instituted in the 1950s by Robert Solow and Trevor Swan to explain growth economics. The model gives the production function as $Y = A_t F(K, L)$ where Y is real output K is capital, L is the labor input, and A_t is a measure of technology which is exogenous and taken to depend on the time.

$$Y = F(K, L) \quad \text{(2.1)}$$

Equation (2.1) satisfies Inada condition, all values of $K > 0$ and $L > 0$, $F(\cdot)$ exhibits positive but diminishing marginal returns for both capital and labor, that is, $\frac{\partial F}{\partial K} > 0, \frac{\partial^2 F}{\partial K^2} < 0, \frac{\partial F}{\partial L} > 0, \frac{\partial^2 F}{\partial L^2} < 0$. The production function exhibits a constant return to scale, such that $F(\lambda K, \lambda L) = \lambda Y$ that is, raising inputs by λ will also increase aggregate output by λ. Letting $\lambda = \frac{1}{L}$ yields $\frac{Y}{L} = F\left(\frac{K}{L}\right)$. This assumption implies that (2.1) can be jolted down as (2.2) where y=output per worker (Y/L) and k=capital per worker (K/L)

$$y = f(k) \text{ Where } f'(k) > 0 \text{ and } f''(k) < 0 \text{ for all } k \quad \text{(2.2)}$$

In a situation where an economy experiences a steady state, the output increases once productivity increases with continuous technological progress. When productivity increased at a constant rate, output also increased at an equivalent steady-state rate. The ramifications include growth in the model that occurred in two ways, widening the allotment of GDP invested or through technological advancement. Nonetheless, even with widening the allotment of GDP invested, capital ultimately converges constantly, abandoning the rate of growth of the output to emanate from technological advancement. With the availability of technology to the world and its advancement at a persistent momentum, all countries experienced a similar constant rate of growth. The share of GDP invested determined the GDP of a country. But the growth of the economy across the country was at a similar rate. In this model, wealthy nations were the ones that had infused the top allotment of GDP for a long time. Deprived nations became wealthy by adding the allotment of the GDP they invested. One cardinal prognosis of this model, largely conveyed out by this data, was that of

"conditional convergence." The idea was that deprived nations would grow swiftly, therefore, leveling up to the wealthy nations. Still, the nations would need to have homogenous investment rates and access to similar technology.

It was viewed as an exogenous growth model since it didn't explain as to why different allotment of GDP in the capital invested by different countries and the persistent technological improvement over time. The technological improvement and investment rates were found to be exogenous. The value of the model was that it predicted the design of economic growth given the two rates.

2.2.3 Okun's Law

Okun's law (1962) determined the statistical relationship between the unemployment rate of a nation and its economic growth. The law described a statistical relationship that estimated a regression of unemployment and economic growth. Okun's law explained that an increase in the cyclical unemployment rate by one point resulted in a two-point negative growth in real GDP. The relationship between unemployment and real GDP growth varied with different countries and the span reviewed. The model was given by

$$\Delta U_t = a - b * \Delta GDP_t \quad \text{...(2.3)}$$

Where ΔU_t is the change in unemployment level, ΔGDP_t is the change in real gross domestic product, b is the Okun's coefficient which explains elasticity of unemployment rate in regards to gross domestic product

Okun's law implied a surge in the magnitude of the workforce or an improvement in labor productivity meant real gross domestic product grew without the net unemployment rates falling. Furthermore, the gross domestic product depended on the mass of labor employed in the production process. Therefore, a positive relationship existed between employment and real GDP. Given that the total employment population is from deducting unemployed population from the labor force, a negative relationship existed between output and unemployment

2.2.4 Keynesian Theory

John Maynard, during the 1930s, came forth with a theorem with the desire to interpret the great depression. It recommended an increase in government disbursement and stunting the taxes to

trigger demand and draw the economy from depression. The theory was viewed to be focusing on the demand-side since it anchored on short-run changes in the economy.

The classical economies preceded the Keynesian and held that cyclical swings in employment and economic output would be unpresuming and automatic. The classical indicated that a fall in price and wages would be due to a decline in aggregate demand, which would result in a deficiency in production and job market. A fall in inflation and improved stipend motivated the workers to make a capital investment and employ more individuals, therefore improving the employment levels and economic growth

On the flip side, the Keynesian theory was against lowering wages to the point of it inducing employers to employ because with demand being lower, the employer can dare to employ individuals to produce goods that would not be consumed. Furthermore, the poor business condition harmed companies leading to reduced capital investment, rather than companies taking full precedence of the situation to invest in new plants. In the long run, the effect would be a reduction in the overall expenditure and employment. The classical argued that the economy would return to a steady state, but this was put to the test under the great depression, where the output was low, and unemployment was at high levels.

2.3 Empirical Literature

Javeid (2005) did a study to establish the association between GDP growth and the unemployment rate to ascertain the short-run behavior of the GDP growth model. Whereby the method used was the Error Correction Mechanism and Engle-Granger co-integration technique, the outcome was a dismissive correlation between the variables, but the variables had a long-run relationship. Moreover, the GDP growth rate in the long run adjusted swiftly towards the equilibrium.

Biyase and Bonga-Bonga (2010) did research using the OLS technique to determine the South Africa paradox on growth and found that the relationship between growth and employment was contradicting. It implied that unemployment was an element for an output performance, which wasn't adequate to generate jobs, alternatively, leading to a gush in labor force participation rates. Furthermore, a study was done by Irfan *et al*. (2010) on the rational of Okun's law in Asian countries from the year 1980- 2006 using time series data, confirmed a long-run relationship between the two variables existed.

Stephen (2012), undertook a study in Nigeria to prove the correlation between urban unemployment crisis and economic growth. It integrated extraneous variables that included investment and inflation. The results indicated the existence of a negative correlation between the two variables. Moreover, in examining the relationship between employment and economic growth in Nigeria using the OLS technique, Sodipe, and Ogunrinola's (2011) study indicated that a positive and notable relationship existed between the employment levels and GDP growth rate.

Aliyu (2012), examined the output and unemployment dynamics in Nigeria. The research estimated the Okun's law coefficient using the transitory and permanent components of the real output series from the year 1970 to 2010. In the short run, there existed a negative correlation, while in the long-run, it was positive.

A study undertook by Al-habees and Rumman (2012), in Jordan and Arab countries for the period 2006-2011 in determining the link between economic growth and unemployment, using the comparison stimulation approach. It established that a feeble relationship existed between the two variables for Arab countries and a strong relationship in Jordan, as high growth rates resulted in a relative decline in the unemployment rate for the period studied.

Utilizing the co-integration and error correction model approach in examining the correlation that linked unemployment and productivity in Nigeria for the span expanding from 1986-2010, Amassoma and Nwosa (2012) undertook a study, whose outcome was the unit root and Johansen technique showed two different results. With one indicating the variables were co-integrated of different orders and the latter indicating the variables were co-integrated. Therefore the short-run and long-run models revealed the variables had insubstantial dominance over the period studied.

A study done by Shaari, Hong, and Shukeri5 (2012), examined the relationship of FDI on the unemployment rate and economic growth in Malaysia. The span studied was from 1960 to 2010. The analysis technique used was OLS. It established that FDI was significant in the reduction of unemployment and improving the GDP. The outcome revealed that a 1 percent incline in FDI resulted in a slump on unemployment by 0.009 percent, and the GDP grew by 1.219 percent.

To explore economic growth and employment relationship, Ozel, Sezgin, and Topkaya (2013) did a study on the G7 countries from the year 2001-2007 and later from 2008-2011. The panel regression analysis indicated that productivity and economic growth had a notable and vigorous significance in the depletion of unemployment for the period 2000-2007 and became irrelevant for

the period 2008-2010, though the outcome of economic growth had a diminishing reaction over unemployment.

The Toda Yamamoto technique was used by Leshoro (2013) to establish the causality direction between employment and economic growth from quarter one of 2000 to the third quarter of 2012 in South Africa. The result indicated the non-existence of causality between the variables. Bankole, Adiodun, and Fatai (2013) did a study in Nigeria, estimated the Okun's law coefficient, and scrutinized Okun's law credibility. It used the regression model and Engle granger for the period 1980-2008. The study found that the coefficient to be positive; hence, Okun's law didn't apply in the Nigerian economy.

A research done in Nigeria by Ditimi and Ifeakachukwu (2013), estimated the impact of unemployment on productivity growth. Time series data used spanned from 1986 to 2010; some of the extraneous variables included were inflation and government expenditure. The study exerted co-integration and error correction techniques. It discovered that unemployment had a beneficial effect on economic growth, and inflation had a positive and trivial effect on economic growth.

Yaumidin (2014) evaluated Okun's law on output and unemployment in the Indonesian economy, and the span covered was 1980 to 2013. Long term results indicated an inelastic employment market demand existed mainly during the financial crisis. It implied that the Indonesian economy required high economic growth to make the labor demand elastic and absorb many more in the labor force, meaning the Okun's law was invaluable in Indonesia.

In Macedonia, Murat, Alit, and Luljeta (2014) estimated the link between economic growth and unemployment rate by executing the Okun's law. Four different models aided in estimating Okun's coefficient, which was, differencing model, dynamic model, error correction model, and VAR estimation approach. The data used was quarterly for the period 2000-2012, the study found the Okun's laws didn't apply, and there was non-existence of a causal correlation between the variables.

Karatekin, Gocer, and Yazar (2015) probed the relation between youth unemployment and economic growth utilizing panel data analysis and co-integration for the period 2006-2012. Exclusive economic growth was not sufficient in reducing youth unemployment in the situation. It was found to be very severe, implying the non-existence relationship between the variables.

Applying VECM, granger causality and co-integration test, Eze, Emeka and Nwigboji (2016), probed the existence of a correlation linking unemployment and economic growth in the Nation Nigeria for the span 1980 to 2013. It mainly centered on the influence of unemployment on economic growth. The findings indicated a long-run relationship between the variables whereby, a unidirectional relationship between unemployment and economic growth existed.

Banda (2016) determined the relationship between unemployment and economic growth in South Africa for the span of 1994 to 2012. Using the Johansen co-integration technique, a long-run relationship among the variables was acknowledged. The results exhibited a positive correlation linking the two variables.

Eze, Emeka, and Nwigboji (2016) investigated the relationship between unemployment and economic growth in Nigeria. The study included the co-integration test, vector error correction model, and granger causality, where the period covered was 1980-2013. The study found that there exists a unidirectional correlation linking the two variables, which run from economic growth to unemployment.

The relationship between the youth unemployment rate and economic growth in low-income countries in sub-Saharan for the period 1991-2013 was by Orobosa, Asekome, and Ozemhoka (2017). The panel least square method and the OLS technique were applied to estimate the model. An inverse correlation existed under the panel results with positive results in some countries, hence contradicting the Okun's law.

Makaringe and Khobai (2018) investigated the trends and impact of unemployment on economic growth in South Africa over the period 1994 to 2016 quarterly. The autoregressive distribution lag bounds test was used to compel the presence of a long-run correlation between the variables. The study suggested that there existed a long-run relationship among the variables.

2.4 Overview of Literature

The empirical literature on unemployment and economic growth cast doubt on whether there exists a defined nexus on the two variables. Because empirical results by various scholars show, there are cases of high unemployment which don't lead to low economic growth and vice versa.

The majority of the studies reviewed tend to look at the direct relationship between unemployment and economic growth and not considering extraneous variables. The study by Stephen (2012)

integrated investment and inflation in determining the relationship between unemployment and economic growth. Shaari *et al.* (2012) integrated FDI to bringing out the relationship between unemployment and economic growth. The variables were integrated into the studies. The aspect of wages wasn't considered on its effect on unemployment and economic growth, which is seen to have a significant impact according to the surplus-value theorem. In consideration of Kenya, low economic growth affiliates with elevated unemployment levels, the study has co-integrated extraneous variables wages, investment, and inflation in determining the relationship between economic growth and youth unemployment as opposed to the general unemployment.

Furthermore, data from 1991 to 2015 was used to comprehend the current changes and incorporate other factors to avoid biasness from the exclusion of variables and foster unviable results.

<div align="center">

CHAPTER THREE

METHODOLOGY

</div>

3.1 Introduction

This Section accords other factors that cause unemployment and if there prevails a relationship linking them with unemployment and economic growth.

3.2 Research Design

The study was non-experimental, quantitative, and conclusive. Furthermore, the causal research design was adapted to look at the cause-effect relationship of the variable economic growth and unemployment.

3.3 Theoretical Framework

The main concern of this research was to determine the relationship between youth unemployment and economic growth. Okun's law (1962) indicated that an increase in the cyclical unemployment rate by one point resulted in a two-point decline in real GDP. However, the relationship varied depending on the nation and span considered. Consider equation (3.1)

$$\Delta U_t = a - b * \Delta GDP_t \quad\text{...}(3.1)$$

By incorporating investment as foreign direct investment and inflation, which were stated by Stephen (2012) as key contributors towards unemployment and economic growth, and taking into account wages under the theory of surplus-value whereby the level of unemployed persons inclined with low wages. Changing the variable unemployment represented by U_t to be youth unemployment (YU_t) equation 3.1 changed to;

$$YU_t = \alpha_0 + \alpha_1 G_t + \alpha_2 W_t + \alpha_3 I_t + \alpha_4 FDI_t + \mathcal{E}_t \quad\text{...}(3.2)$$

Where YU_t is the Youth unemployment rate in Kenya, G_t is GDP measuring economic growth in Kenya, W_t is the wage employment levels in Kenya, I_t is the inflation rate in Kenya, FDI_t is the foreign direct investment levels in Kenya, $\mathcal{E}_t$ is the error term

3.4 Empirical Model

To attain the first objective of establishing the causal relationship between youth unemployment and economic growth. Granger causality test was carried out by lagging the variable of youth unemployment up to lag ρ and later lagging the variable of economic growth

$$YU_t = \alpha_0 + \sum_{i=1}^{p} \beta_i \, YU_{t-1} + \alpha_1 G_t + \alpha_2 W_t + \alpha_3 I_t + \alpha_4 FDI_t + \varepsilon_t \quad\text{...(3.3)}$$

$$YU_t = \alpha_0 + \sum_{i=1}^{p} \beta_i \, YU_{t-1} + \sum_{i=1}^{p} \beta_{1i} \, G_{t-1} + \alpha_2 W_t + \alpha_3 I_t + \alpha_4 FDI_t + \varepsilon_t \quad\text{..........................(3.4)}$$

Equation 3.4 showed that youth unemployment was a function of its past values and those of economic growth. It was used to determine whether economic growth Granger causes youth unemployment. The null and alternative hypothesis tested was;

$$H_0: \beta_{1i} = 0$$
$$H_1: \beta_{1i} \neq 0$$

By rejecting the null hypothesis, it would imply that the economic growth Granger causes youth unemployment. Youth unemployment and economic growth were the dependent variables, while inflation, wages, and foreign direct investment were the independent variable. To express economic growth as the dependent variable in its lagged form and the lagged form of youth unemployment;

$$G_t = \lambda_0 + \sum_{i=1}^{p} \lambda_i \, G_{t-1} + \sum_{i=1}^{p} \ell_i \, YU_{t-1} + \rho_2 W_t + \rho_3 I_t + \rho + \varepsilon_t \quad\text{...(3.5)}$$

$\ell, \gamma, \lambda, \beta, \alpha$ are parameter estimates, and ρ is the number of lagged observations.

Equations 3.5 was used to determine whether youth unemployment granger causes economic growth. The null and alternative hypothesis investigated was;

$$H_0: \ell_i = 0$$
$$H_1: \ell_i \neq 0$$

By rejecting the null hypothesis, it would imply that youth unemployment granger causes economic growth

The following equation attained the second objective on the effect of economic growth on youth unemployment;

$$YU_t = \alpha_0 + \alpha_1 G_t + \alpha_2 W_t + \alpha_3 I_t + \alpha_4 FDI_t + \varepsilon_t \quad\text{...(3.6)}$$

3.5 Definition and Measurement of Variables.

Table 3. 1 Definition and Measurement of Variables

Variable	Definition	Measurement
Youth Unemployment (YU_t)	A situation where individuals aged 18-35 are earnestly seeking gainful employment to no avail.	Percent of Youth unemployment rate growth annually
Economic growth (G_t)	An upswing in a country's capacity comparing two consecutive years	Percent of GDP growth rate annually
Foreign direct investment (FDI_t)	An annual investment from other countries to a specific country	Percent of FDI inflows annually
Inflation (I_t)	A relentless upswing in the general price of an economy over a period	percent of Inflation rate annually
Wages (W_t)	A regular payment to an employee based on a contract	percent of the general sector wage employment rate annually

3.6 Data Type and Source

The research used secondary data from various published journals by KNBS and KIPPRA, examples include the 1998/99 integrated labor force survey report, and Kenya integrated household budget 2005/2006.

3.7 Data Analysis

Data were collected from published books and journal in KNBS to show the relationship between youth unemployment and economic growth. To examine the causal relationship between the variable economic growth and youth unemployment, granger cause analysis (1981) was used to determine whether youth unemployment causes economic growth or vice versa. Granger causality was tested using lags of the variable under the empirical model and used to ascertain the correlation if it was either bi-directional, unidirectional feedback, or no causation between the two variables.

The OLS technique was used as youth unemployment as the dependent variable while economic growth as the independent variable, while the other variables were extraneous variables to analyze the effect of economic growth on youth unemployment. The main reason for using the OLS was that it minimized the sum of squared errors.

3.8 Diagnostic Test

Diagnostic tests were executed to inspect the consistency and efficiency of the coefficient estimates and determine the adequacy of the data collected

3.8.1 Normality Test

This test was carried out to verify if the error terms are normally distributed. The study used the Jarque-Bera test to evaluate whether the residuals exhibited normal distribution since it is more conclusive than the Anderson-Darling test.

3.8.2 Autocorrelation

The Breusch-Godfrey test was applied to test the presence of serial correlation omitted from the model structure. Considering the Durbin-Watson test is plausible in non-stochastic regressors, the Breusch-Godfrey test was better.

3.8.3 Multicollinearity

It is the case where the independent variables in a model are highly correlated, and if present, the statistical inference made about the data may not be reliable. The study used the variance inflation factor (VIF) method to identify the correlation between the independent variables and the soundness of the relationship.

3.8.4 Stationarity Test

Stationarity was tested to circumvent spurious results; unit root was tested using the augmented dickey fuller (ADF) technique. This test was appropriate in exploring the extended character of the variables.

3.8.5 Co-integration Test

It was done to validate whether there was a long-run causal correlation between dependent and independent variables. Johansen test was executed using the Eigenvalue test and trace test since it allowed multiple co-integrating relationships as opposed to the Engle-Granger technique. The

Eigenvalue test and trace test were undertaken to affirm the existence of a long-run relationship between the variables.

CHAPTER FOUR

EMPIRICAL FINDINGS AND DISCUSSION

4.1 Introduction

This Section accords the findings of the study. The first presentation includes analysis of the time series data and the results on the diagnostic test. After that, the illustration of the empirical findings on the relationship between the variables.

4.2 Descriptive Analysis of Data

Descriptive statistics was exerted to portray the cardinal characteristics of the data used in the study. It helps in displaying the data sample in a meaningful manner and describing it using measures of central tendency and variability. Table 4.1 shows the outcome

Table 4. 1 Variable Descriptive Statistics

	Youth unemployment	Gross Domestic Product	Inflation rate	Minimum wage	FDI (% of GDP)
Mean	20.11480	3.600489	11.50272	10.52000	28.03715
Median	19.84000	3.779906	9.377767	11.00000	24.21996
Maximum	24.07000	8.405699	45.97888	30.00000	63.37692
Minimum	14.34000	-0.799494	1.554328	0.000000	17.18241
Std Dev.	2.944770	2.480806	9.872693	6.539113	11.19007
Observations	25	25	25	25	25

Source: Authors computation

Table 4.1 indicates that the mean for GDP over the period 1991 to 2015 stood at an average of 3.6 percent, while the standard deviation was 2.48 percent. The highest GDP growth rate was 8.40 percent, which was in 2010, while the lowest was -0.79 percent in 1992. It was due to the suspension of program aid to Kenya by bilateral and multilateral donors.

The youth unemployment rate over the period under the study had a standard deviation of 2.94. The highest and lower values of youth unemployment were 24.07 and 14.4 percent, respectively. The emphasis on job creation in the informal sector had a significant impact on the depletion of youth unemployment. Inflation, on the other hand, had a mean of 11.50 percent with the highest value of 45.97 percent in 1993 just after the general election period, coupled with a shrink on agricultural production. The lowest amount of 1.55 percent in 1995 was due to modest exchange

rates and low prices on manufactured goods by removal of the price controls (Economic Survey, 1996)

The minimum wage had a mean of 10.52 with the maximum value standing at 30 percent in 1993, this was due to the high levels of inflation, and the minimum amount was zero percent. FDI had a standard deviation of 11.19 with a mean of 28.04 percent, the highest and lowest values for FDI were 63.38 percent and 17.18 percent, respectively. FDI has the largest standard deviation of 11.19 around its mean, with GDP having the lowest standard deviation of 2.48 percent around its mean. It means that the values tend to vary over the years. From the descriptive analysis of the data, the variables exhibit variability given the variance in the specified basic descriptive statistics. Meaning that the data can be subjected to further statistical analysis.

4.3 Diagnostic test

Diagnostic tests were done to determine the statistical soundness of variables. The residual-based tests and the findings are below.

4.3.1 Normality test

Jarque-Bera test was used to check for normality to ensure that the residuals in the regression model behaved well. The null hypothesis was that the residuals are normally distributed. The results for the test are as in figure 4.1
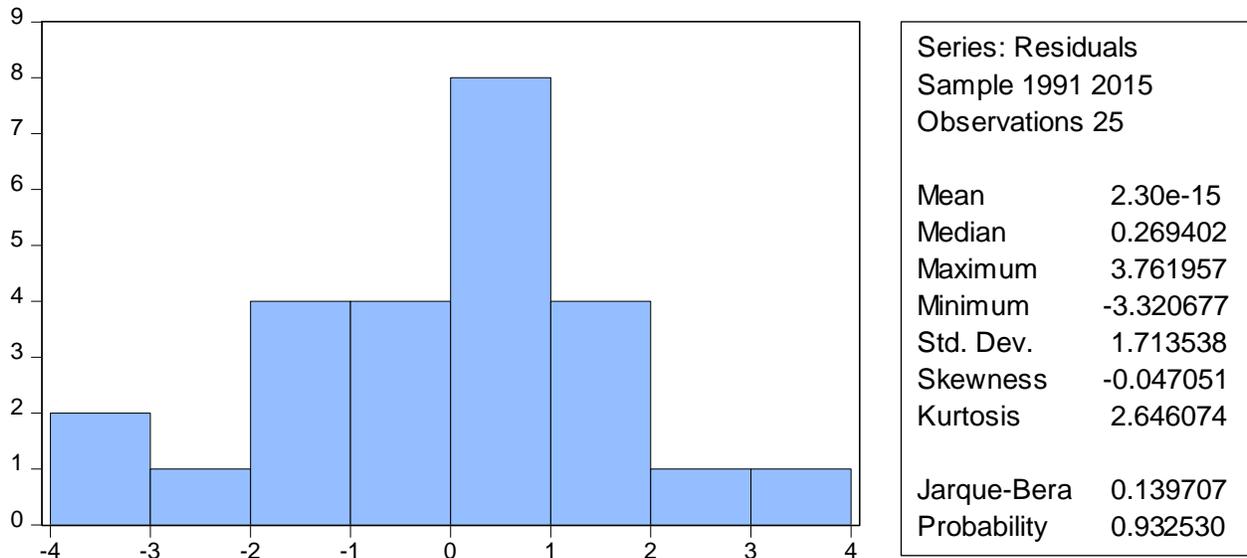
Figure 4.1 Normality Test (Source: Authors Computation**)**

The Jarque-Bera test Prob value will be more than 0.05 for the data to be normally distributed. If it is less than 0.05, it's not normally distributed. From the figure above, the probability was 0.932530>0.05, implying the data was normally distributed.

4.3.2 Autocorrelation

The Breusch-Godfrey test was constructed to uncover the existence of autocorrelation. The null hypothesis in the Breusch-Godfrey test is that there exists no serial correlation. The table below presents the outcome.

Table 4. 2 Breusch-Godfrey serial correlation LM test

F-statistics	2.620508	Prob f(1,19)	0.1220
Obs * R-squared	3.030118	Prob chi-square (1)	0.0817

Source: Authors computation

From the table, the probability for the F-statistics was 0.1220 >0.05. Hence the null hypothesis of no serial correlation wasn't rejected. Thus the residuals didn't exhibit any form of serial correlation.

26

4.3.3 Multicollinearity

The variance inflation factor method was used to test for Multicollinearity. A variance inflation factor that is greater than 10 indicates trouble with Multicollinearity. The outcome was as per the table below

Table 4. 3 Variance Inflation Factor Test for Multicollinearity

Variable	VIF	1/VIF
Economic growth	1.454114	0.687704
Inflation	2.680186	0.373108
Minimum wages	1.954855	0.511546
FDI	2.441672	0.409555
Mean VIF	**2.13279675**	

Source: Authors computation

The results indicated by table 4.2 shows that all variables had a variance inflation factor of less than 10 (VIF<10), indicating the absence of Multicollinearity. Hence, the null hypothesis of no Multicollinearity wasn't rejected.

4.3.4 Stationarity Analysis

The stationarity test was executed using the unit root test under the first difference. Later on, the co-integration of the variables. The t-statistics absolute values compared to the absolute critical values at all levels. If found to be higher than the critical values, then the null hypothesis of stationarity none existence will be rejected.

Table 4. 4 Unit Root test for Stationarity

Variable	Form of Test 1st difference (Test statistic)	Conclusion
Youth unemployment	-4.714761	Stationary
Gross domestic product	-5.883444	Stationary
Minimum wage	-6.537301	Stationary
Inflation rate	-8.134799	Stationary
FDI	-10.47822	Stationary
Critical value at 1%	-3.769597	
5%	-3.004861	
10%	-2.642242	

Source: Authors Computation

By undertaking the unit root test on the variables first differenced values, the table indicated that each variable had a high absolute value of t-statistics compared to the critical levels. Hence, the

study will not accept the null hypothesis of no stationarity. In this case, the study will further test for co-integration to determine the relationship between the variables.

4.3.5 Co-Integration

The co-integration test was carried out using the Johansen technique of co-integration. The Trace test and Eigenvalue test statistical values compared to the 0.05 critical value. If found to be less that than the critical value of 0.05, the study will reject the null hypothesis stating none existence of co-integration. The results are as shown in table 4.5

Table 4. 5 Johansen Technique for Co-integration

Hypothesized No. of co-integration	Trace statistics	0.05 critical value	Max Eigen Statistics	0.05 Critical value
None*	85.90201	69.81889	51.18357	33.87687
At most 1	34.71844	47.85613	16.49266	27.58434
At most 2	18.22578	29.79707	9.850750	21.13162
At most 3	8.375031	15.49471	7.978449	14.26460
At most 4	0.396582	3.841466	0.396582	3.841466
* - Denote reject of the null hypothesis at the level of 0.05				

Source: Authors Computation

The trace statistics and the max Eigenvalue statistics are below the 0.05 critical values in all the hypothesized co-integration except that for none*. Therefore, the study will fail to reject the null hypothesis implying the existence of no co-integration

4.4 Causality between Youth Unemployment and Economic Growth

The first objective of the study was to determine the causality between youth unemployment and economic growth in Kenya. The granger causality test was carried out and the results summarized in Table 4.6

Table 4. 6 Granger Causality Test

Null Hypothesis	F statistics	Probability
The economic growth rate does not granger cause youth unemployment	0.03854	0.8463
Youth unemployment does not granger cause the economic growth rate	4.90449	0.0380

Source: Authors Computation

The outcome indicates that the lags of economic growth granger cause youth unemployment since the probability is 0.0380<0.05, while the lags of youth unemployment don't granger cause

economic growth since the probability is 0.8463>0.05. It indicates that economic growth lags directly influence youth unemployment while youth unemployment lags don't influence economic growth. As a conclusion, a unidirectional relationship between youth unemployment and economic growth exists. It was in support of Eze, Emeka, and Nwigboji (2016) study. It implies that the causal effect relation points in one direction, that is, the reduction of youth unemployment in Kenya is dependent on economic growth. That is, when there is an economic growth upsurge, there will be untapped resources resulting in a demand for labor in the private and public sectors, which will lead to a hiring spree. The outcome being a decline in youth unemployment. With the existence of a causal relationship between the variables, the study investigated whether the coefficient is positive or inverse and statistically significant.

4.5 Effect of economic growth on youth unemployment

The second objective of the study was to examine the effect of economic growth on youth unemployment. The OLS estimation technique was employed, taking into consideration that all variables were stationary at first difference. The OLS estimated the lags of both unemployment and GDP. The results are as in table 4.7**.**

Table 4. 7 OLS Regression Results

Variables	**Coefficients**	**t-statistics**	**Probability**
Economic growth rate	0.708084	3.801890	0.0011
Inflation rate	0.179336	2.822544	0.0105
FDI	-0.233791	-4.369566	0.0003
Minimum wages	0.124711	1.522260	0.1436
Adjusted R-squared 0.661401			
F statistics 9.766750 Prob value 0.000151			
Breusch Godfrey stat: F statistics 2.620508 Prob value 0.1220			

Source: Authors Computation

The variations among youth unemployment are explained by the experimental variables variation R-squared value of 66.14 percent. The R-squared of more than 50 percent is an indicator of a good fit model and explains the changes in Youth unemployment. 33.86 percent excluded from the R-square explains the variation in youth unemployment attributed by variables not expressed in the equation. The F-statistic has a value of 9.766750 with a Prob of 0.000151, meaning that it is statistically significant at 0.05 percent. It implies in explaining the variations in youth

29

unemployment; the model is perceived to be of significance. The Breusch Godfrey test F-statistic is 2.620508, with a Probability of 0.1220>0.05, implying there is no autocorrelation among the variables.

The results for the co-efficient between youth unemployment and economic growth rate is 0.7804, which is positive hence in support of the study by Aliyu (2012), Banda (2016), Ditimi, and Ifeakachukwu (2013). It implies Okun's law coefficient doesn't apply when it comes to youth unemployment, as opposed to the overall unemployment. It is demonstrated further by the fact that as the economy grows and labor demand exceeds the labor supply, the new job opportunities are for individuals who previously were not looking for a job. It is plausible since a significant number of individuals who are counted to be unemployed and actively looking for a job are usually the last to be employed as new jobs typically go to the privileged. However, it is statistically significant since the probability is 0.0011<0.05, implying that economic growth is significant in explaining the variation on the youth unemployment rate in Kenya.

The coefficient for FDI is negative and statistically significant at one percent, which is in support of the study by Shaari *et al.* (2012). It implies that an increase in FDI would lead to a decline in youth unemployment by 0.23 units. FDI leads to increased efficiency and productivity, which in turn improves the level of human and physical capital, thereby prompting job opportunities available and directly lowering youth unemployment levels.

For the case of wages, the coefficient is positive. But the probability is 0.1436>0.05. Hence, it is statistically insignificant in predicting the trends of youth unemployment, rendering the theory of surplus-value invaluable in the Kenyan economy. The study further found that the coefficient between inflation and youth unemployment is positive, which is the inverse of Stephen's (2012) study, but it is statistically significant with Prob of 0.0105<0.05. It would indicate that any attempt to control inflation would result in the reduction of youth unemployment though minimal.

CHAPTER FIVE

SUMMARY CONCLUSION AND POLICY IMPLICATIONS

5.1 Introduction

This Section accords the summary, conclusions, and policy implications of the study findings. With the last section of the chapter presenting areas for further studies.

5.2 Summary

Several studies have determined the relationship between economic growth and unemployment in various countries (Javeid, 2005) and (Biyase & Bonga-Bonga, 2010). Some studies have investigated the effect of economic growth on unemployment, and others have determined the effect of unemployment on economic growth. These studies have indicated that there is an inverse relationship between the two variables. However, the case of youth unemployment and economic growth in Kenya is yet to be attained. This study analyzed the relationship between youth unemployment and economic growth in Kenya by investigating the causality between the two and further went ahead to determine the effect of economic growth on youth unemployment in Kenya.

The study applied Okun's law (1962) that stated; there exists an inverse relationship between economic growth and unemployment. The study added other extraneous variables explained both in the theoretical and empirical literature. They include inflation, minimum wages, and foreign direct investment. OLS estimation was applied to determine the effect of economic growth on youth unemployment. The descriptive test showed that most of the variables are highly volatile. The FDI was found to be unpredictably followed by inflation, minimum wages, youth unemployment, and GDP.

Numerous diagnostic tests were carried out. Such as the test for normality, stationarity, autocorrelation, and multicollinearity. The variables were normally distributed, stationary after first difference, not serially correlated, and do not exhibit multicollinearity.

The study further undertook the granger causality test between youth unemployment and economic growth. Where the values were modified by lagging the differenced values and found economic growth Granger causes youth unemployment and youth unemployment doesn't Granger cause economic growth, implying there was a unidirectional causality between two variables. OLS was estimated where all the values were at levels, and the study found the coefficient between youth unemployment, economic growth and inflation, and minimum wages were positive while that of

foreign direct investment was negative. However, the variables were statistically significant, except for the minimum wages.

5.3 Conclusion

This study concludes that the Okun's law isn't evident within the Kenyan economy for the case of youth unemployment since the coefficient between youth unemployment and economic growth was established to be 0.708 as opposed to 0.03 under the Okun's law. Furthermore, the inverse relationship exhibited by Okun didn't hold in the case of youth unemployment and economic growth. However, the coefficient between the two variables was statistically significant since the probability was $0.0011 < 0.05$.

Furthermore, it concludes that since the relationship between youth unemployment and FDI was inverse, implying that with an incline in the flow of investment from overseas job opportunities will be created for the youth, thereby reducing the youth unemployment by 23 percent, which is significant considering the p-value was 0.003.

The study also concludes that minimum wages aren't statistically significant in the depletion of youth unemployment since the probability value was $0.1436 > 0.05$. However, the inflation probability value was $0.0105 < 0.05$. Hence it was statistically significant though its impact may not be noticeable due to the positive coefficient between the two variables.

5.4 Policy Implications

The study suggests the need to pursue policies to curb youth unemployment in Kenya. It is following the findings that the lags of youth unemployment granger cause economic growth, and economic growth doesn't have an impact on youth unemployment. Both the National and county government, together with the vision 2030 Board, need to implement long term policies that ensure a reduction in youth unemployment in the country. It is attained by focusing more on the informal sector. The government should take action in tapping into the informal sector, which will help in the reduction of youth unemployment. Moreover, the government and policymakers should come up with policies that are aimed towards structural changes and reforming the labor market.

The government should put more emphasis on the manufacturing sector in the creation of new job opportunities but at the same time, have robust policy frameworks for it to succeed. In promoting the agro-processing and textile industries, the youth unemployment levels will decline drastically,

and a plus to it will be an improvement in economic growth from the investment of the output in the manufacturing sector.

In restructuring the education system in the country, the youth unemployment rate will decline since most of the employers shun from investing finances in inducting university students, and they opt for the polytechnic students who have vast skills.

Furthermore, the government should encourage more foreign investment from the likes of NGOs, which would promote youth employment. Also, the central bank of Kenya, in collaboration with the monetary policy committee, should manage the fluctuations in the consumer price index so that the cost of production doesn't shoot up, whose outcome would be laying off the laborers. With the inflation rate controlled, the minimum wages would be affordable to the formal sector hence encouraging the absorption of the excess labor in the economy, resulting in a declined youth unemployment rate.

5.5 Areas for Further Research

There exist numerous areas that require further studies in the line of unemployment and economic growth and their nexus. Though there are studies that focus on youth unemployment in Kenya, there is a need for a comprehensive look at the various types of unemployment (urban, rural, cyclical, and structural) with economic growth. Furthermore, the response of youth unemployment to different economic disturbances can also be investigated. Moreover, economic growth is not a sufficient variable in explaining the variations in youth unemployment. Hence other variables should be investigated to explain the changes in youth unemployment clearly.

REFERENCES

Al-Habees & Rumman. (2012). *The Relationship Between Unemployment & Economic Growth in Jordan & Some Arab Countries.*

Aliyu, R. S. (2012). *Macroeconomic Policy, Output & Employment Dynamics in Nigeria: Is There Evidence of Jobless Growth.*

Amassoma & Nwosa. (2012). *The Impact of Unemployment Rate on Productivity Growth in Nigeria: An Error Correction Modelling Approach.*

Andrienko, Y., & Guriev, S. (2004). Determinants of Interregional Mobility in Russia: Evidence from Panel Data. *Economics of Transition*, 1-27.

Banda. (2016). *The Impact of Economic Growth on Unemployment in South Africa (1994-2012).*

Bankole, Adiodun, S., & Fatai, B. (2013). Empirical Test of Okun's Law in Nigeria. *International Journal of Economic Practices & Theories*.

Biyase & Bonga-Bonga. (2010). *The Effect of Unemployment on Economic Growth in South Africa (1994-2016).*

Coenjaerts, C. E., Ernst, C., Firtuny, M., & Rei, D. (2009). *Youth Employment.*

Danner, Makau, & Nebe. (2016). *Youth Unemployment in Kenya: A Time Ticking Bomb.*

Ditimi, A., & Ifeakachukwu, N. P. (2013). The Impact of Unemployment Rate on Productivity Growth in Nigeria: An Error Correction Modelling Approach. *International Journal of Economics & Management Sciences*, 1-13.

Edward, S. (2007). How Useful is Okun's Law? *Economic Review*, 73-103.

Eze, Emeka, & Nwigboji. (2016). *The Relationship Between Unemployment & Economic Growth in Nigeria: A Granger Causality Approach.*

Filmer, D., & Fox, L. (2014). *Youth employment in sub-Saharan Africa.* The World Bank.

Gitonga. (2008). *State of Youth Unemployment in Kenya.* Brookings Institution.

Irfan et al. (2010). *Test of Okun's Law in Some Asian Countries: Co-integration Approach.*

Javeid. (2005). *The Validity of Okun's Law: Empirical Evidence from Jordan.*

Karatekin, Gocer, & Yazar. (2015). *The Relationship between Youth Unemployment & Economic Growth in Central & European Countries: An Empirical Analysis Leman ERDAL.*

Leshoro. (2013). *Does Economic Growth Lead Employment in South Africa.*

Makaringe & Khobai. (2018). *The Effect of Unemployment on Economic Growth in South Africa (1994-2016).*

Mares, P., & Sirovatka, T. (2005). Unemployment, Labour, Marginalization & Deprivation. *Czech Journal of Economics & Finance*, 54-67.

Max, K. (1863). *Theories of Surplus Value.* Progess Publishers.

Moses, V. (2019). Does Okun's Law on Cyclical Unemployment Apply in Kenya? *International Journal of Current Research*, 1765-1770.

Munga & Onsomu. (2014). *State of Youth Unemployment in Kenya.*

Murat, Alit, & Luljeta. (2014). *Econometric Estimation of the Relationship between Unemployment Rate & Economic Growth of FYR of Macedonia.*

Ochsen, C., & Welsch, H. (2011). The Social Costs of Unemployment: Accounting for Unemployment Duration. *Applied Economics*, 3999-4005.

Omolo, J. O. (2010). *The Dynamics & Trends of Employment in Kenya.* Nairobi: Institute of Economic Affairs.

Orobosa, Asekome, & Ozemhoka. (2017). *Youth Employment & Economic Growth: Lesson from Low-Income Countries in Sub-Saharan Africa.*

Ozel, Sezgin, & Topkaya. (2013). *Investigation of Economic Growth & Unemployment Relationship for G7 Countries using Panel Regression Analysis.*

Pissarides, C. (1992). Loss of Skill During Unemployment & the Persistence of Employment Shocks. *Quarterly Journal of Economics*, 1371-1391.

Salvador & Killinger. (2008). *An Analysis of Youth Unemployment in the Euro Area.*

Seyfried, W. (2004). Examining the Relationship Between Employment & Economic Growth in the Ten Largest States. *Southwestern Economic Review*, 1-12.

Shaari, M. S., Hong, T. H., & Shukeri, S. N. (2012). Foreign Direct Investment & Economic Growth Evidence. *International Journal of Business & Social Science*.

Sodipe, O. A., & Ogunrinola, I. O. (2011). Employment & Economic Growth Nexus in Nigeria. *International Journal of Business & Social Science*.

Stephen. (2012). *Employment & Economic Growth Nexus in Nigeria.*

Toosi, M. (2012). Labor force growth projections to 2020: A more slowly growing labor force. *Monthly Labor Review*, 443-464.

United Nations. (2011). *World Population Prospects: The 2010 Revision.* New York: Department of Economic & Social Affairs, Population Department.

Wambugu, Munga, & Onsomu. (2009). *Unemployment in Kenya: The Situational Analysis.*

Yaumidin. (2014). *Output & Unemployment: Testing Okun's Law in Indonesia.*

APPENDIX 1: DATA USED IN THE STUDY

TABLE A1: RAW DATA

year	youth unemployment	GDP	Inflation rate	Minimum Wage	FDI (US Dollars)
1991	18.78	1.44	19.6	4	18,830,976.80
1992	18.74	-0.8	27.33	12	6,363,133.10
1993	18.75	0.35	45.98	30	145,655,517.10
1994	16.51	2.63	28.81	20	7,432,412.50
1995	17.3	4.41	1.55	12	42,289,248.50
1996	18.12	4.15	8.86	10	108,672,931.60
1997	18.97	0.47	11.36	12	62,096,809.80
1998	19.84	3.29	6.72	15	26,548,246.00
1999	14.34	2.31	5.74	7	51,953,456.00
2000	15.28	0.6	9.98	6	110,904,550.40
2001	16.79	3.78	5.74	7	5,302,622.90
2002	18.13	0.55	1.96	7	27,618,447.10
2003	19.56	2.93	9.82	11	81,738,242.60
2004	20.02	5.1	11.62	11	46,063,931.50
2005	20.49	5.91	9.9	7	21,211,685.40
2006	20.98	6.47	6	12	50,674,725.20
2007	21.47	6.85	4.3	0	729,044,146.00
2008	21.98	0.23	15.1	0	95,585,680.20
2009	23.99	3.31	10.5	18	116,257,609.00
2010	24.07	8.41	4.1	10	185,800,000.00
2011	24.05	6.11	14.02	13	335,500,000.00
2012	24.03	4.56	9.38	13	392,400,000.00
2013	24.06	5.88	5.72	14	425,100,000.00
2014	23.86	5.36	6.88	0	491,000,000.00
2015	22.76	5.72	6.58	12	566,000,000.00

TABLE A2: DATA ON REAL VALUS OF THE VARIABLES USED

Year	youth unemployment	GDP	Inflation rate	General sector minimum wage	FDI (% of GDP)
1991	18.78	1.44	19.6	4	26.99
1992	18.74	-0.8	27.33	12	26.2
1993	18.75	0.35	45.98	30	63.38
1994	16.51	2.63	28.81	20	59.05
1995	17.3	4.41	1.55	12	38.97
1996	18.12	4.15	8.86	10	30.4
1997	18.97	0.47	11.36	12	31.72
1998	19.84	3.29	6.72	15	31.01
1999	14.34	2.31	5.74	7	33.25
2000	15.28	0.6	9.98	6	21.85
2001	16.79	3.78	5.74	7	23.19
2002	18.13	0.55	1.96	7	24.46
2003	19.56	2.93	9.82	11	24.22
2004	20.02	5.1	11.62	11	26.61
2005	20.49	5.91	9.9	7	28.51
2006	20.98	6.47	6	12	23.02
2007	21.47	6.85	4.3	0	22.1
2008	21.98	0.23	15.1	0	23.1
2009	23.99	3.31	10.5	18	19.95
2010	24.07	8.41	4.1	10	22.46
2011	24.05	6.11	14.02	13	23.61
2012	24.03	4.56	9.38	13	21.87
2013	24.06	5.88	5.72	14	19.62
2014	23.86	5.36	6.88	0	18.23
2015	22.76	5.72	6.58	12	17.18

APPENDIX 2: DESCRIPTIVE STATISTICS

BASED ON RAW DATA

	YUN	GDP	FDI_US	INF	MW
Mean	20.11480	3.600489	1.66E+08	11.50272	10.52000
Median	19.84000	3.779906	81738243	9.377767	11.00000
Maximum	24.07000	8.405699	7.29E+08	45.97888	30.00000
Minimum	14.34000	-0.799494	5302623.	1.554328	0.000000
Std. Dev.	2.944770	2.480806	2.02E+08	9.872693	6.539113
Skewness	-0.088784	-0.079274	1.440351	2.076265	0.730717
Kurtosis	2.022888	2.002607	3.932951	7.307661	4.639256
Jarque-Bera	1.027374	1.062427	9.550873	37.29109	5.023907
Probability	0.598286	0.587891	0.008434	0.000000	0.081110
Sum	502.8700	90.01222	4.15E+09	287.5681	263.0000
Sum Sq. Dev.	208.1200	147.7055	9.76E+17	2339.282	1026.240
Observations	25	25	25	25	25

Where YUN is the youth unemployment, INF is inflation, and MW is the minimum wage, FDI_US is the foreign direct investment inflows in US dollars.

TABLE A3: GRANGER CAUSALITY TEST RESULTS

Pairwise Granger causality test		
Sample 1991-2015		
Lags 1		
Null hypothesis	F-statistics	Probability
GDP doesn't granger cause youth unemployment	0.03854	0.8463
Youth unemployment doesn't granger cause GDP	4.90449	0.0380
INFLATION doesn't granger cause youth unemployment	1.46923	0.2389
Youth unemployment doesn't granger cause inflation	0.00021	0.9886
Minimum wages don't granger cause youth unemployment	4.70620	0.0417
Youth unemployment doesn't granger cause minimum wages	0.00888	0.9258
FDI doesn't granger cause youth unemployment	3.25413	0.0856
Youth unemployment doesn't granger cause FDI	0.10308	0.7513
Inflation doesn't granger cause GDP	0.05358	0.8192
GDP doesn't granger cause INFLATION	0.63538	0.4343
Minimum wages don't granger cause GDP	2.73532	0.1130
GDP doesn't granger cause Minimum wages	9.11684	0.0065
FDI doesn't granger cause GDP	0.04028	0.8429
GDP doesn't granger cause FDI	4.54565	0.0450
Minimum wages don't granger cause INFLATION	2.90356	0,1031
INFLATION doesn't granger cause MW	13.0988	0.0016
FDI doesn't granger cause INFLATION	4.02082	0.058o
INFLATION doesn't granger cause FDI	11.0851	0.0032
FDI doesn't granger cause Minimum wages	0.75972	0.3933
Minimum wages don't granger cause FDI	1.55712	0.2258