MODELLING ECONOMIC DETERMINANTS OF

YOUTH UNEMPLOYMENT IN KENYA

By

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I56/67758/2013

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULLFILMENT OF THE REQUIREMNT FOR THE AWARD OF THE DEGREE OF MASTER OF SOCIAL STATISTICS IN THE DEPARTMENT OF STATISTICS, SCHOOL OF MATHEMATICS, UNIVERSITY OF NAIROBI

JUNE 2015

DECLARATION

I declare that this is my original work and to the best of my knowledge has not been presented in any other learning institution for academic award.

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This work has been presented with my approval as the university supervisor:

Signature: ………………………………   Date: ………………

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Dr. Japheth Osotsi Awiti

DEDICATION

To God whom I owe everything, Davis Junior whom I thought of constantly, Achilles always by side

when I study, Anita, Grandma Awuor,: from you I drew inspiration

ACKNOWLEDGEMENT

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ACRONYMS AND ABBREVIATIONS

ADEA Association for Development of Education in Africa

ADF   Augmented Dickey-Fuller Test

AIC   Akaike Information Criterion (AIC)

AEO   African Economic Outlook

AfDB   African Development Bank

ARDL   Autoregressive Distributed Lag

ED   External Debt

FDI   Foreign Direct Investment

GDP   Gross Domestic Product

ICT   Information Communication and Technology

ILO   International Labour Organization

IMF   International Monetary Fund

MoEST   Ministry of Education Science and Technology

UNDP   United National Development Programs

OECD   Organization for Economic Co-operation and Development

PI   Private Investment

SME   Small Medium Enterprises

SC   Schwartz Criterion (SC).

SSE   Sum of Squared Errors

WGI   World Governance Indicator

ABSTRACT

Despite numerous interventions by government and development partners, youth unemployment has remained an intractable challenge in Kenya. The "youth bulge" and attending challenges of unemployment resulting in social evils and political violence (rioting, civil war and terrorism) are overwhelming. This study therefore analyzes the economic determinants of youth unemployment in Kenya from 1979 to 2012 by investigating empirical relationship among youth unemployment, gross domestic product, population, foreign direct investment, and external debt. It is hypothesized that these factors have a long-run relation and effect on youth unemployment rate in Kenya's economy. The study used Autoregressive Distributed Lag (ARDL) to test the economic determinants of youth unemployment. At 5% significance level, empirical results indicate that population; gross domestic product, foreign direct investment, and external debt are significant economic determinants of youth unemployment in Kenya in the long-run.

CHAPTER ONE: INTRODUCTION

1.1Introduction

According to Davidson, (1998) unemployment occurs when a person who is actively searching for employment is unable to find work. The most frequently cited measure of unemployment is the unemployment rate. This is the number of unemployed persons divided by the number of people in the labour force. The definition of youth varies from one country to another depending on the customs, traditions, social behaviour, and location (URT, 1995). However, the UN defines youth as persons aged between 15-24 years. It should be pointed out that in most developing countries the age 15 to 24 is school going age where most youth are engaged in pursuit of education. Therefore, youth unemployment rate is the number of persons aged between 15-24 years and actively looking for employment but unable to find work divided by the number of people in the labour force. Whoever is not engaged in gainful employment or income generating activity and not searching for work does not fall under the category of unemployed.

The ADEA Kenya Country Report (2014) attributes Youth unemployment to limited opportunities for employment; large number of youth seeking employment due to high birth rates; lack of requisite skills (Harvey,Moon, &Geall, 2009) ; little or no experience (Harvey 2005:13); gender and cultural biases (Okonjie 2003); poor access to information on available opportunities; unfavorable geographical distribution of available opportunities; and ethnic considerations. These factors are discussed exhaustively in the subsequent chapters.

1.1.1Types of Unemployment

Many scholars have classified types of unemployment depending on a number of socio-economic circumstances. According to (Hameed et al 2012) unemployment can be classified as follows:

Seasonal Unemployment

Seasonal unemployment occurs when there is a limited need for a type of work to be performed during a particular period during the year based on factors like deadlines or climate. As a result people end up doing some work they are neither interested in nor trained for. It principally occurs when a person does not get the type of work he/she is proficient of doing. He may possess skills and proficiency but not for the job he is capable of doing. It is also referred to as underemployment.

Disguised Unemployment

It is also known as hidden unemployment. It represents a scenario where more people are occupied in some action than the number of individuals required for that. For instance, in a farm that only requires six people to accomplish the task, eight people are engaged but this does not change the out-put nor efficiency. The extra two labourers are engaged in disguised employments.

Frictional Unemployment

Frictional unemployment is the time period between jobs when a worker is searching for, or transitioning from one job to another. It is sometimes called search unemployment and can be voluntary based on the circumstances of the unemployed individual. In most cases this unemployment occurs when a worker quits his/her job to look for another.

Classical Unemployment

According to Dictionary of Economics classical unemployment occurs when there are more people looking for work but are unable to find employments. It implies real wage unemployment. In this case, real wages are positioned above market clearing level.

In this phenomenon the real wages for workers in an economy are too high, meaning that firms are unwilling to employ every person looking for a job. When real wages are too high, it means that the cost of employing an extra worker (the real wage) is higher than the benefit from employing an extra worker (the value of output the worker produces). So when real wages are too high in an economy,

firms cannot profitably employ all the labour on offer. As a result, some of the economy's pool of labour is not used.

Figure 1: Labour supply and demand diagram
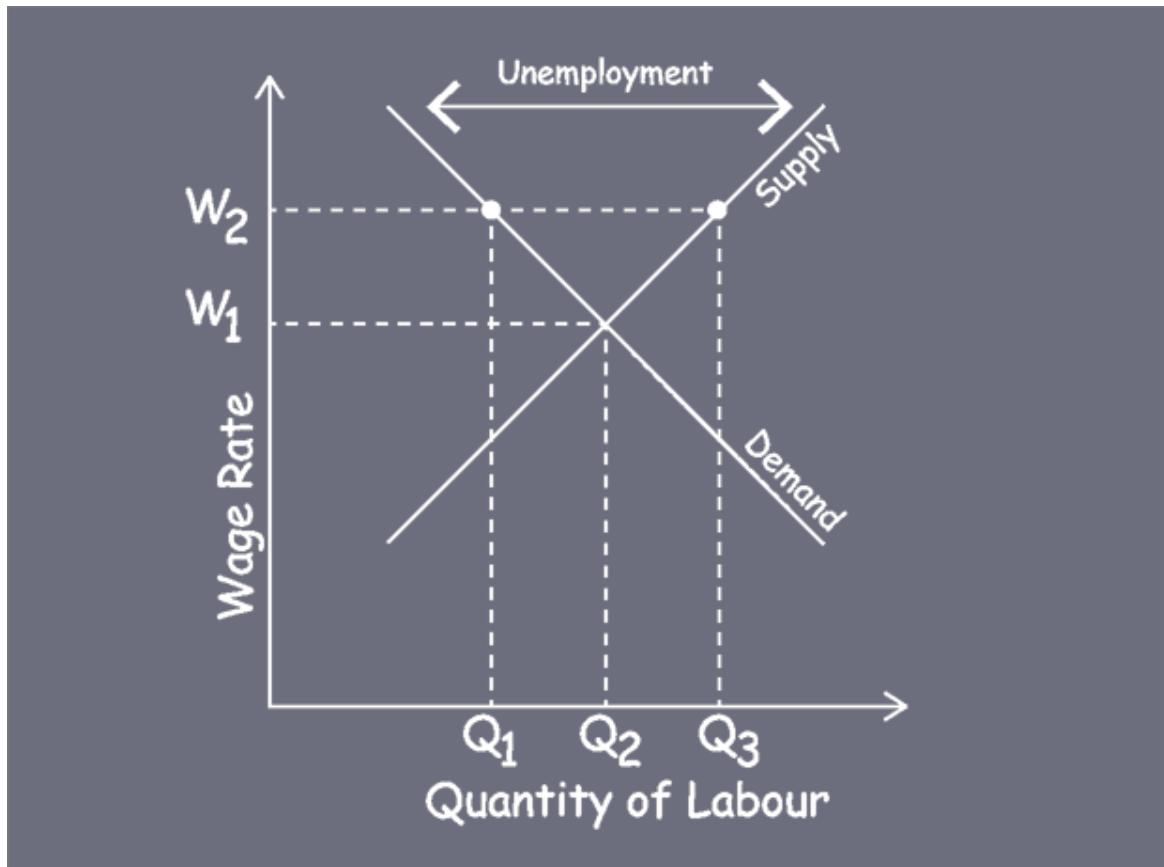
In any economy labour is supplied by individuals and demanded by companies. In this illustration, the supply curve shows the relationship between the quantity of labour supplied and the price of labour. The demand curve shows the relationship between the quantity of labour demanded and the price of labour.

The market is at equilibrium where the two curves intersect. In equilibrium, all the labourers in the economy are being employed. In the diagram, the wage rate that attains market equilibrium is labeled W1.

As explained earlier, when real wages for workers in the economy are too high it means firms are unwilling to employ all available labour. In the illustration W2 is an example when the real wage rate is too high.

At this wage rate Q1 explains the amount of labour demanded while Q3 explains the quantity of labour supplied. In this case, the supply for labour outweighs the demand for it. Thus, there is a quantity of labourers that won't be absorbed by firms. This is called classical unemployment

Structural Unemployment

The Dictionary of Economics describes structural unemployment as longer-lasting form of unemployment caused by fundamental shifts in an economy. Structural unemployment occurs for a number of reasons – workers may lack the requisite job skills, or they may live far from regions where jobs are available but are unable to move there. Or they may simply be unwilling to work because existing wage levels are too low. So while jobs are available, there is a serious mismatch between what companies need and what workers can offer. Structural unemployment is exacerbated by extraneous factors such as technology, competition and government policy. It pertains to geographical place, proficiency, and many other aspects.

Cyclical Unemployment

This is related to socio-economic cyclical trend, carried out by business cycle in both production and growth. When there is boom in the economy, cyclic unemployment is very low whereas output production is at its peak. On the contrary, when there is low production in an economy, calculated through GDP, the business cycle is at the bottom leading to increase in cyclical unemployment.

1.1.2 Global Perspective

Generally, youth unemployment is a vital challenge for both developed and developing world (Kabaklalri et al, 2011). According to Organization for Economic Co-operation and Development (OECD 2010) estimates, there are 85 million unemployed youth around the world. The global unemployment rate is 11.7 % while youth unemployment rate is 23.6 %. Both (Okojie, 2003) and

(Kabaklarli et al, 2010) studies in Nigeria and Turkey respectively noted that youth unemployment rate is two times higher than that of adults.

Other studies reveal the same trend. For instance, the 2009 rates where global financial crises affected countries negatively. In that year the general unemployment rate in USA was 9,4 % however the youth unemployment rate was17.6 % . The youth unemployment rate in UK was 18.9% while that of adults stood at 7.8%. The highest unemployment rate in general and youth unemployment was in Spain, at 18.1% and 37.9 % respectively. The unemployment rate in Turkey was 14.3% in 2009 but the youth unemployment rate was nearly two times higher than adult unemployment rate as 25.3% (OECD 2010, quoted by Kabaklarli et al, 2010). The high rates stated above are attributed to global crises affecting, Gross Domestic Product (GDP), Foreign Direct Investment (FDI), and External Debt (ED).

1.1.3 Continental Perspective

Adequate reliable unemployment statistics for African countries are limited Okojie (2003). OECD (2010) estimated global youth unemployment rate to be 27.3% while in Africa it stood at 36.7%. Compared to the rest of the world, Africa has the highest segment of young people in its population 36.7% Curtain (2000). In addition, Chigunta (2002) estimated that 50% of most African countries population is youth. In particular, he estimated that youth between 15-25 years in Africa were 122 million with the median age between 16-20 years. Further still, Mills (2011) estimates that 23% of the world's population will be living in sub-Saharan Africa and one in four babies will be born there. Mills (2011) adds that the African young cohort is mostly likely to live in poverty stricken urban conditions.

As such, this phenomenon described by various scholars as "youth bulge" is a source of concern not only to African governments but also development partners who incessantly try to embark on programs to bolster youth employment (Okojie 2003). Youth unemployment is concentrated between age 20-24 because ages 15-19 are still in school and about one-third of economically active youth in Africa are unemployed (Okojie 2003).

According to Okojie (2003) and Sarr (2000), Africa has been confronted with multidimensional challenges including drought, famine, floods, wars, HIV/AIDS, poverty, endemic diseases and underlying phenomenon of youth unemployment. Sarr (2000) further emphasizes that youth unemployment is at the core of Sub-Saharan Africa. Okojie (2003) who noted that youth unemployment has become a major concern for African governments pointed out that compared to adults, unemployment rate for youth is double that of adults in Africa. The situation is the same in other countries like Turkey where youth unemployment is double that of adults (Kabaklarli et al, 2011).

Majority of African youth are engaged in the informal sector activities as shop assistants, farm hands, clerical assistants, typists, stewards, and cooks in hotels and restaurants, in street trading/hawking and casual labour (Okojie 2003).

In light of all these, (ECA 2002) attributes youth unemployment to general high level of unemployment in Africa, rapid population growth, small private sector, rapid rural-urban migration, inappropriate school curricula and poor quality education which is largely numeracy and literacy. According to (Ponge 2013) graduates in Kenya are largely unemployed and unemployable due to lack of skills resulting from disconnect between education and labour market demand.

1.1.4 Regional Perspective

The sub-Saharan Africa's population is increasingly becoming more youthful. The youth proportion of the total population projected at over 75 per cent by 2015, resulting from high fertility rate underlying the demographic momentum. It is expected that this increase in the number of young people will not decline until 2035, African Economic Outlook (AEO, 2012).

According to (AEO, 2012) estimates, approximately 133 million young people (which accounts for more than 50% of youth population) in Africa are illiterate. Most young people have little to no skills and are largely unproductive economically. However, those with some level of education experience skill-jobs mismatch (AEO, 2012), thus millions of unemployed youth in sub-Saharan Africa.The

youth unemployment rate in sub- Saharan African is estimated to be over 20 %. Low skill level is one of the factors leading to youth unemployment.

Some of the common barriers to employment opportunities for young people living in sub-Saharan Africa include: inadequate or no job creation, exposure of young workers to layoffs during economic crises, high labour costs associated with unrealistic wage expectations by youth, discrimination based on inexperience, skill mismatch hence little to no access to on-the-job training, ineffective government policies, and rapid economic change (AEO, 2012).

It is revealed that most early school leavers in sub-Saharan Africa find work in the informal sector. This is the case in Benin, Nigeria and Senegal (ILO, 2012).

1.1.5 Kenyan Perspective

The Kenya constitution defines youth as persons between the ages of 15 and 34. In Kenya, the youth constitute 35% of the population. The youth in Kenya are experiencing much higher unemployment rates (67%) than the rest of the Kenyan population (34%) according to (Munga and Onsomu, 2014).

The Kenyan labour market is one that is characterized by inadequate employment opportunities against a large and growing population of unemployed people especially the youth. It is dual in nature, presenting a small formal sector alongside a large informal sector. Over the 30% of those on wage employment are casuals. Youth with primary education are in formal employment (4%), informal employment (54%), students (14%) and unemployed (14%). Those with secondary education are in: formal employment (12%), informal employment (40%), students (26%), and unemployed (15%). While those with tertiary education are in: formal employment (31%), informal employment (9%), and unemployed (8%).

Based on the (Kenya Population Census 2009) and statistics from Ministry of Education, Science and Technology (MoEST), (Sessional Paper No.14, 2012 on Reforming Education and Training Sectors in Kenya), almost 1.5 million children attain the age of 6 years but only 1.3 enroll in class one. There are 10.5 million primary school age, 6-13 years, and only 10 million are attending school. On the other

hand, there are 4.5 million secondary school ages (14-17 years) out of which only 2 million are actually in school. Further, there are 5 million youth aged 18-23 out of which only 0.5 million are in tertiary level of education (MoEST, 2012). The unemployment rate and the disappearance of certain jobs in the Kenyan work place is a major concern that needs urgent attention (Ponge, 2013).

Currently, the youth entering job market are classified as 200,000 who never attend primary school; 300,000 who drop out of primary school; 250,000 who complete primary education; 180,000 secondary school drop outs; 250,000 who complete secondary school and fail to join tertiary institutions; 45,000 who drop out of tertiary institutions; and 155,000 who complete tertiary education. These figures reveal that 89% of youth entering labour markets have no formal training thus lack employable skills; 800,000 entering youth age have no skills; 1.2 million youth enter labour market without formal training or skills; and at age 24 only 11% have formal training (ADEA, 2014). As such, education is a key mitigating factor in youth unemployment in Kenya.

1.2. RESEARCH PROBLEM

This section is divided into two parts with the first dealing with background of the problem and the second being problem statement.

1.2.1 Background of problem

Youth accounts for 35% of Kenya's population and represent 67% of unemployment (Kenya Population Census 2009). The youth population growth is 4% while national growth rate in 2.9%. As such youth population growth is higher than national population growth. Studies have linked youth unemployment to social evils and political instability. The unemployment creates a culture of idleness and group-up tendencies. The "youth bulge" is a source of concern for governments and development partners (Okojie, 2003). Both (Okojie, 2003; Kabaklalri, 2011) posit that unemployment drives youth to engage in illegal activities like touting, stealing, armed robbery, dealing in drugs, and prostitution. Jobless young people are more prone to crime as a result of psychological problems and depression (Australia National Health Survey, 1989-90; Morrell, Taylor and Kerr, 1998). Far from social evils like crime and juvenile delinquency compounding mass youth unemployment, African governments

have another concern: political stability. According to Urdal (2006) youth bulges increase the risk of all three forms of political violence: rioting, civil war, and terrorism. The unemployed youth bulge becomes political pond by politicians and extremist groups for devious activities (ADEA 2014). The Kenyan political history is livid with political violence and intolerance. In the recent past, Kenya experienced continued sporadic Islamic extremists terrorist attacks among other internal organized crime involving youth as perpetrators. The Kenyan youth are thus portrayed as vulnerable, and unable to contribute to national development. These social problems are linked to economic situation of the youth which makes them unproductive.

1.2.2 Problem Statement

There are currently limited studies in Kenya on economic determinants of youth unemployment. The gap therefore exists in mathematical modelling of economic determinants of youth unemployment to understand the relationship between each determinant and youth unemployment.

1.2.3 Research Objectives

To develop a model explaining economic determinants of youth unemployment in Kenya.

1.2.4 Specific Objectives

These were to:

1. Identify economic determinants of youth unemployment

2. Estimate the extent to which each of the identified determinants contributes to youth unemployment.

1.2.5 Conceptual Framework

In analyzing youth unemployment, the thinking is composed of particular framework of ideas, concepts and theories that constitute current debate. Staab and Studder (2003:3)perceive conceptualization as an abstract, simplified view of the world that we wish

to present for some purpose. In this abstract the objectives, concepts, and other entities tentatively exist in some area of interest and have a relationship that links them.

Economic conceptual framework of youth unemployment refers to range of concepts that relates to economy as a whole. For instance, gross domestic product (GDP), external debts (ED), foreign direct investment (FDI), and population growth among others are linked to youth unemployment. They are referred to as economic determinants of youth unemployment. These determinants do not operate in isolation. There are intervening variables like technology and global economy; moderating variables such as, age education, and gender. Whereas intervening variables are exogenous, the moderating variables are socio-demographic in nature.

Figure 2: Conceptual Framework

Intervening Variable

- Global Economy
- Technology

H3

Independent Variable

Economic Determinants

Gross Domestic Product

Foreign Direct Investment

External Debt & Internal

Population

H4

Dependent Variable

Youth Unemployment

Moderating variables

Moderating Variable

- Age
- Education
- Gender

H2

H1
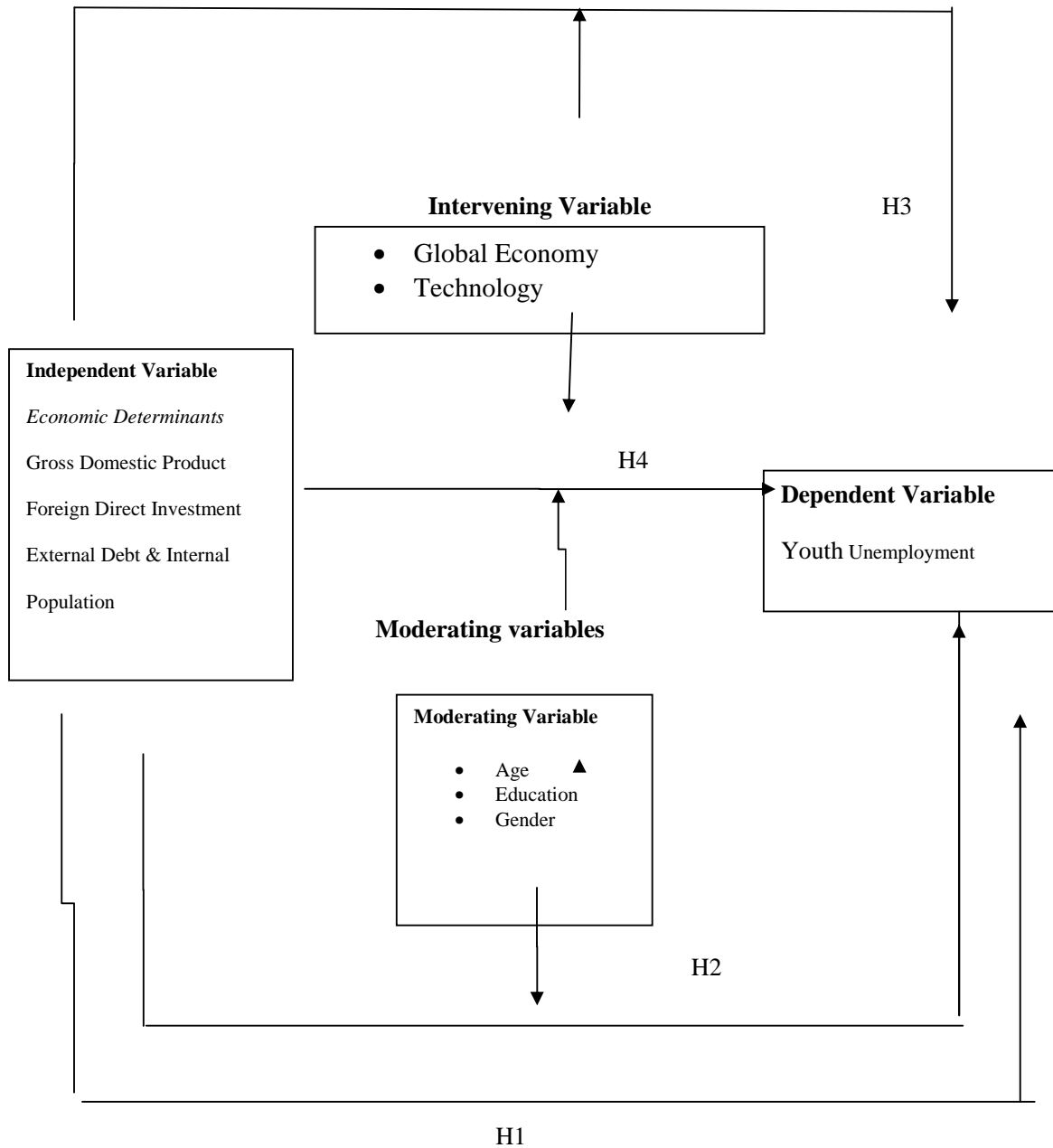
1.2.6 Hypotheses

The research investigated the following hypotheses:

H1: Youth unemployment rate is influenced by GDP, Population Growth, FDI, ED, and PI

H2: Youth Unemployment rate is moderated by Age, Education, and Gender

H3: Youth Unemployment rate is intervened by Global Economy and technology

H4: Youth Unemployment rate is influenced by both intervening and moderating variables.

1.2.7Operational definition of variables

In this study, the following are identified as economic determinants of youth unemployment in Kenya. They defines as follows:

1.2.7.1 Economic Determinants

Youth Unemployment: The dependent variable that is derived from labour force minus employed persons under youth age bracket. Unemployment occurs when an individual is able and willing to find work but is without work at that particular time.

Gross Domestic Product (GDP):

The total market value of all finished goods and services produced annually within the boundaries of a country. The framework assumes that increase in GDP reduces youth unemployment whereas decreases in GDP increases youth unemployment. This is a negative relationship.

External Debt

This is the total debt in a country owed to foreign citizens, firms and institutions. The debt includes money owed to private commercial banks, other governments, or international financial institutions, such as IMF and World Bank

Foreign Direct Investment (FDI):

Foreign Direct Investment is defined as a company from a country making a physical investment into building a factory in another country. In other words, it is the establishment of an enterprise by a foreigner.

Population

Population growth falls under economic demography. In its definition, population refers to *t*otal persons of the country

1.2.7.4 Research Design

The study relied on already existing national macrodata from World Bank. This falls under the category of document analysis and analysis of existing data. The data covers from 1979 to 2012. The variables to be analyzed are Youth Unemployment Rate (UN) (expressed as a percentage of total unemployment), Gross Domestic Product (GDP) in billion US Dollars, External Debt in billion US Dollars, Foreign Direct Investment (FDI) in billion US Dollars, and Population in millions. The research subjected the data to time series analysis, more specifically, autoregressive distributed lag model using GRETL software. The results were then subjected to statistical interpretation from conclusion and recommendations were drawn.

CHAPTER TWO: LITERATURE REVIEW

2.1Introduction

This section deals with previous studies on determinants of unemployment in various countries. Unemployment was considered in general, however, youth unemployment was particularly given precedence as the subject of this study. It also looked into findings of such studies verifying whether they are consistent or conflicting. It is important to note that consistency of variables used in these studies was equally reviewed and informed methodology used in this research.

2.1.1 Theoretical Review

(a) Gross Domestic Product

According to Levin (2012) there is positive relationship between employment rates and countries economic development. On this, Dimian (2011) reported that youth unemployment rate has negative impact to country's gross domestic products. Kabaklarli et al (2011) noted that when the economic activity is healthy and developing, employment as well as youth employment will be better. However, economic meltdown and crises affect employment as well as youth unemployment negatively. According to (Msigwa and Kipesha, 2013), youth employment result into increased aggregate demand as well as increase in capital formation. Further on this, (ILO 2011) argues that youth are likely to spend a higher percentage of their income on goods and services, which boost the countries' aggregate demand: thus economic growth. In addition, (ILO, 2011) explains that employed youth who receive higher salaries make savings and invest or deposit them in banks. The argument follows that, the savings result in increase in pool of capital which can be used to finance SME and start small businesses thereby boosting a counties economic development. To this (Kabaklarli et al,

2011) posit that young people have a marginal propensity to consume more than adults, therefore, increasing unemployment rate in young people negatively affects consumption, total investment and as a result GDP.

On a different note, studies show that youth employment reduces the social costs within the societies by decrease in violence, criminal activities, drug addiction as well as prostitution which reduce social costs in the country (McLean Hilker and Fraser, 2009, a quoted by Msigwa and Kipesha). From previous studies considered herein, increase in GDP reduces youth unemployment.

(b) External Debt

It is assumed that increase in external debt leads to decrease in unemployment. However, high public debts may be counter-productive in that it attracts associated tax increase which reduces investment and consumption expenses; with less youth employment and lower GDP growth rates (Maqbool et al, 2013).

(c) Population

Population growth leads to increase in unemployment. Youth represents an important cohort of the Kenya's population (ADEA 2014).The number of youth almost tripled from 4.94 million in 1979 to 13.67 in 2009. Kenya's population is projected to be 46.33 million in 2015 and 69.93 million by 2030. This implies that youth will be 35.35% in 2015 and 35.18% in of population 2030. In 2009 the youth population expressed as a percentage of adult is 66.6%.

When youth population grows by margin the labour market cannot absorb, youth unemployment increases. Muhammad et al (2013) noted that rapid increase in population raises many socio-economic problems in the economy: it increases unemployment and accumulates the backlog of unemployment.

The argument fronted by Muhammad (2013) reflects the Kenyan situation. There are more entrants into labour market than number of jobs created. Every year, there 200,000 youth who never attended primary school, 300,000 who drop out primary school,250,000 who complete primary school but do not join secondary school, 180,000 secondary school drop outs, 250,000 who finish secondary schools but do not join tertiary institutions,45,000 who drop out of tertiary institutions, and 155,000 who complete tertiary institutions. This implies that 1.2 million youth enter job market annually while only less than 500,000 jobs are created annually. For instance, the target for total job creation in 2008 was 425,000 but the actual jobs created were 467,300 of which 433,500 were in the informal sector, 33,700 were wage employees in modern establishments and 100 were self employed (Kenya Country Report for the 2014 Ministerial Conference on Youth Employment, 2014; Ponge 2013).

(d) Foreign Direct Investment

The assumption is that FDI too has a negative relationship with youth employment (Kabaklarli et al 2011). Mostly, foreign investors use local human resource in daily activities of the operations of their firms. This results in increased employment.

2.1.1. Socio-demographic Variables

They are also referred to as moderating variables. These variables are not economic in nature but play role in youth unemployment. They include education, population growth, age and gender.

Education

According to (Chigunta, 2000) "School" has become the primary means of preparing young people for the future. Chigunta uses the term "school" to refer to the educational system in all its forms. Education is one of the main determinants of unemployment rate (Kabaklarli et

al 2011). The study by (Kabaklarli et al, 2011) notes that there is a strong link between educational level and employment rate.

Education in African countries, according to (Chigunta, 2000) is in crises. The crises start from primary level to tertiary levels. From the formative stages of school pupils, Chigunta notes, that children attend schools in conditions that seem to "brutalize" them physically and psychologically. He takes into account physical infrastructure, feeding programs in boarding schools, 'commercialization' of education by introduction of remedial tuition at extra costs, selling exam leakages, and teachers demanding sexual favours for marks. These challenges hinder the learners' ability to pursue education with zeal.

On another note, to many parents in Africa, education means a well paying job, a big house and a car among other fringe benefits (Chigunta 2000). As a result of high unemployment rate among youths with tertiary education, their counterparts in lower levels are discouraged and term education as "useless" since its attainment is no longer the gatekeeper of better future life for young people. Most young people therefore are less enthusiastic about investment in education.

Weber (2000, as quoted by Kabaklarli et al, 2011) estimated relationship between educational rates of return and unemployment rate and found out that youth unemployment has important role in pursuing educational investment. The results illustrated that when people invest in their education as a result they decrease their unemployment opportunity cost. The argument advanced here is that there is lower risk of unemployment at higher levels of education because educated workers can find new jobs or adapt to workforce market easily as a result of job training and market demand (Mincer, 1991:22). (Kabklarli, 2011) adds that educated workers are more efficient than non-educated people in seeking new jobs and gaining more wages.

On a different note, (AfDB 2012) points out that youth with highest education levels tend to take long to search for a job and have higher unemployment rates than those who are less well educated. This could be as a result of either high wage job expectation or unwillingness to take up jobs in the informal sector.

Lastly studies (AfDB 2012; Ponge, 2013; Kbaklarli, 2011) have revealed that there exists miss-match between skills possessed by young workers and those demanded by employers. To address this miss-match of skills (Kabaklarli 2011) argues that educational system in terms of vocation and technical education must be transformed to provide youth with relevant skill to adapt to labour market. The (ADEA2014) explains that most institutions of higher learning (in Kenya) equip the students with theoretical knowledge and fail to understand that the demands of job market are changing with time. As a result of this, most employers put up as prerequisite for some appointments in the sense that they look for people of higher ages or with experience. According to the report, the prerequisite locks out young people since they shy away from such companies.

Currently the youth entering job market in Kenya are classified as 200,000 who never attend primary school; 300,000 who drop out of primary school; 250,000 who complete primary education; 180,000 secondary school drop outs; 250,000 who complete secondary school and fail to join tertiary institutions; 45,000 who drop out of tertiary institutions; and 155,000 who complete tertiary education. These figures reveal that 89% of youth entering labour markets have no formal training thus lack employable skills; 800,000 entering youth age have no skills; 1.2 million youth enter labour market without formal training or skills; and at age 24 only 11% have formal training (ADEA, 2014)..

Gender

Female youth are more vulnerable to unemployment than male counterparts when viewed under social, cultural, and political perspective (Chigunta, 2002). To this notion, (Okojie, 2003) observed that labour force participation rates are lower for women than for men in every country of sub-Saharan Africa, placed at 33.8% and 49.7% respectively. More specifically, (Okojie,2003) noted that in all countries labour force participation is higher for male youth while female youth figure are extremely low. Countries with Muslim population are greatly affected given that marriage age is low and female seclusion is practiced. In some cases, unemployment is higher among male youth compared to female youth because the latter get married early and consider themselves housewives thereby withdrawing from labour force or search for employment.

According to (Okojie, 2003), most employed young females are in the informal sector, some of them as skilled hairdressers, dressmakers, petty traders among other such activities. Young women who fail to get better opportunities engage in prostitution in urban centres; others migrate or trafficked abroad to engage in prostitution.

The Kenyan situation is not different as many young women migrate or get trafficked to Middle East countries to work as house-helps in deplorable dehumanizing human conditions. Media reports in Kenya are replete with young women held in Middle East as sex slaves or mistreated house-helps who more often end up in homicide cases.

According to (ILO, 1997;Katepa-kalala,1999;Okojie,2000; Africa Centre for Gender and Development,2002) there are four major structural constraints that curtail women's participation in economic activities:

First, customary laws and norms that deprive women of right to inherit land, access to credit, education, information, and healthcare. Some of these are currently addressed through rigorous reform processes, for instance, in Kenya where the new constitution has restored gender equity.

Second, the existence of multiple laws, mostly statute laws and customary laws relating to marriage and inheritance create ambivalence.

Third, gender bias in access to basic human resource development services like education training and health has limited the ability of women to compete for opportunities.

Fourth, time poverty, resulting from women's multiple and competing reproductive and productive responsibilities often in the absence of labour-saving technology, transportation and other amenities, exacerbate the condition of women. All the four constraints culminate in low productivity and remuneration.

Young women in rural Kenya account for large numbers of the unemployed and the situation is the same in the urban areas. This is attributed to the fact that most communities in Kenya prefer to educate the boy child at the expense of girl child (Kenya Country Report 2014). On another note, some companies prefer male employees to female ones due to their biological reasons in jobs that require much energy. These greatly contribute to young women unemployment.

Age

Education takes place between the ages of 6-19 years. In the ages between 15 -19 years unemployment is low as youth in this age bracket are still in school, at least in the Kenyan system of education (ADEA 2014). In this way, unemployment is higher among youth

between 19-24 age brackets. This mostly occurs to secondary school graduates and those from tertiary institutions.

2.1.2. Intervening Variables

The study views global economy as intervening factors in youth unemployment.

Information Communication and Technology

According to (Okojie, 2003) ICT has become an employment sector for African youth in recent years. The number of computer shops, internet service providers and trainers, phone shops are on the increase manned by youth; however, these jobs fail to reach the unskilled or the poorest youth who lack computer literacy, mostly in rural areas.

Lately, there are also vibrant social media applications like Facebook, twitter, YouTube, WhatsApp all accessible on cell phone through mobile phone data subscriptions. These have helped the youth to network among themselves. They get information on new opportunities in social media, market their skills and services not only locally but also globally.

The telephony companies operating in Kenya have also used ICT to create jobs for Kenyan youth. Safaricom mobile money transfer (M-Pesa), Airtel Money, mobile banking (M-Kesho), have employed over 100,000 youths as agents. Safaricom alone has 78,000 M-Pesa agent outlets in the country (Kenya Country Report, 2014).

Still on the issue of technology, many universities and tertiary colleges have established business incubators for young people (Ponge, 2013). The incubators enable young people to develop their innovations and designs to commercial levels. The institutions include, Jomo Kenyatta University of Agriculture and Technology, Kenyatta University, University of Nairobi, Strathmore University, and Mount Kenya University (Kenya Country Report, 2014).

Global Economy

Global economy plays critical role in employment in general. Increase in global economy reduces unemployment. Global economic crises have even more negative effects on youth employment as compared to adult employments. According to (Kabaklarli et al, 2011) the 2009 global financial crisis affected youth employment more than adults. For instance, the general unemployment rate in USA was 9.4% whereas youth unemployment rate stood at 17.6%. The same trend was replicated internationally including in UK, Spain and Turkey. After the economic crisis of 2009, the number of young people employed globally increased from 73.5 million to 77.7 million in 2010 (ILO, 2011). This is a clear indication of dynamics of global economy and youth unemployment.

2.1.2 Empirical Review

Studies on determinants of unemployment indicate that there are internal and external factors that determine youth unemployment (Muhammad et al 2013). The internal factors revolve around labour market fundamentals affecting labour supply and demand. These internal factors comprise workers and trade union preferences, bargaining powers, firms, technology, and market power.

To begin with, Valadkhani (2003) modelled major determinants of Iran unemployment using data between 1968 and 2000. He used consumer price index, output gap, total investment and the exchange rate as variables. He found out that these factors determine the variations in the unemployment rate.

In addition, Kalim (2003) analyzed the statistical relationship between unemployment, population and GDP using dataset for 13years from 1986-1999.The result in Kalim (2003) revealed that there was a positive relationship between unemployment and population and inverse relationship between unemployment and GDP over a period of 1986-1999. The

results of Kalim (2003) indicated that both GDP and population growth are major contributors of unemployment in the economy.

On the same note, (Aktar and Shahnaz, 2005), as quoted by (Muhammad 2013), examined the determinants of youth unemployment using data from 1991-2004. The findings revealed that growth rate of GDP, growth of service sector and private sector investment had greater impact than public sector investment to reduce youth employment. Arguing that these ignored key macroeconomic variables in model that may be responsible for youth unemployment, they incorporated population, GDP, private investment (PI), FDI, and ED as determinants of youth unemployment. The findings revealed that there was high youth unemployment due to low GDP and investment in general.

Further still, Eita and Eshipala (2010) used 1971-2007 data and found out that if actual GDP is below potential GDP, there will be an increase in unemployment as an increase in the cost of labour increases unemployment. They also revealed that there was a negative relationship between employment and investment (both FDI and PI).

Moreover, Kabaklarli et al (2011) used youth unemployment rate as dependent variable, whereas GDP, Price Index, Gross Fixed Capital Formation and Productivity as explanatory variables as was done by Eita and Eshipala (2010). The results indicated that inflation and productivity had positive effects on youth unemployment rate despite the fact that GDP and investment had negative effects on the long-run.

Lastly, Muhammad et al (2013) outlined external factors as macroeconomic policies and institutional changes related to fiscal and monetary policies and market. Muhammad et al (2013) worked on determinants of unemployment by considering GDP, inflation, population, and FDI.In the study, GDP and FDI results revealed that youth employment has inverse

relationship with inflation, GDP, FDI. However, population growth and youth unemployment rate have positive relationship

Based on these studies, the most frequently used variables of youth unemployment are population, GDP, FDI, and ED. It was for this reason that this study adopted the same variables.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

The chapter considered definition of variables, model selection, sources and choice of data. It also involved processes of standardizing data to meet the requirement of study objectives. In that regard, reliability of data and suitability of model were looked into.

The macro-economic data here was obtained from World Bank. The data covers the years from 1979 to 2012.

3.1.1 Data and Variables

The study used World Bank annual macroeconomic data covering period from 1979 to 2012. The data included GDP, Youth Unemployment Rate, Foreign Direct Investment, Private Investment and External Debt. Taking directive from previous studies, only those variables frequently featuring in literature review were used. This was derived from (Maqbool et al, 2013; Kabaklarli et al, 2011; Eita and Eshipala, 2010; and Valadkhani, 2003) where youth unemployment rate is modelled as a function of GDP, External Debt, Population, and Foreign Direct Investment.

3.1.2 Definition of Variables

Youth Unemployment: The dependent variable which is derived from labour force minus employed persons under youth age bracket. Unemployment occurs when an individual is able and willing to find work but is without work at that particular time.

$$LabourForce - Employed\ Youth\ Population = Youth\ Unemployment\ (UN)$$

Population: Total persons of the country. Population growth leads to increase in unemployment.

Gross Domestic Product (GDP): The total market value of all final goods and services produced annually within the boundaries of a country. The study verifies relationship between GDP and youth unemployment.

External Debt: Is the total debt in a country owed to foreign citizens, firms and institutions. The debt includes money owed to private commercial banks, other governments, or international financial institutions, such as IMF and World Bank.

Foreign Direct Investment (FDI): Is defined as a company from a country making a physical investment into building a factory in another country. In other words, it is the establishment of an enterprise by a foreigner.

The variables were converted into natural logarithmic form as recommended by (Kabaklarli et al, 2011) and other studies.

3.1.3 Model Used

The study used time series autoregressive distributed lag (ARDL) for analysis of long-run relations. The general form of ARDL with both dependent and independent variables lagged up to *p* and *q* respectively:

$$y_t - \delta + \theta_t y_{t-1} + \cdots + \theta_t y_{t-p} + \delta_0 x_t + \delta_1 x_{t-1} + \cdots + \delta_q x_{t-q} + \epsilon_t$$

(3.1)

Where:

y_t is the dependent variable, x_t independent variable δ is the impact multiplier, θ_t is the distributed lag weight of x_t, ϵ_t is the error term, *p* is the lag length of y_t, *q* is the lag length of x_t.

3.1.4 Assumptions of ARDL

1. $y_t = \delta + \theta_t y_{t-1} + \cdots + \theta_t y_{t-p} + \delta_0 x_t + \delta_1 x_{t-1} + \cdots + \delta_q x_{t-q} + \epsilon_t$

   $t = q + 1, \dots, T$

2. y and x are stationary random variables and ϵ_t is independent of current past and future values of x.

3. $E(\epsilon_t) = 0$

4. $Var(\epsilon_t) = \sigma^2$

5. $Cov(\epsilon_t, \epsilon_s) = 0, t \neq s$

6. $\epsilon_t \sim N(0, \sigma^2)$

3.1.4 Choosing the length of lags p and q

The study used Akaike Information Criterion (AIC) and Schwartz Criterion (SC).

This involves choosing lags p and q that minimizes the sum of squared errors (SSE) subject to increase in number of parameters. Increasing lag lengths increases the number of parameters but reduces SSE.

$AIC = \ln\left(\frac{SSE}{T}\right) + \frac{2K}{T}$ (3.2)

Where $K = p + q + 2$, the number of coefficients estimated.

$SC = \ln\left(\frac{SSE}{T}\right) + \frac{K\ln(T)}{T}$ (3.3)

Since $K\ln(T)/T > 2K/T$ for $T > 8$ the SC restricts additional lags more than AIC.

The functional form of the model is as:

$$UN = f(GDP, POP, FDI, EXD) \qquad (3.5)$$

And the DL form is:

$lnUN_t = \beta_0 + \beta_1 \Delta lnPOP_t + \beta_2 \Delta lnGDP_t + \beta_3 \Delta lnFDI_t + \beta_4 \Delta lnED_t + \epsilon_t$ (3.6)

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The ARDL form has previous values of $lnUN_t$ as part of explanatory variables.

$$lnUN_t = \beta_0 + \beta_1 \Delta lnlUN_{t-i} + \beta_2 \Delta lnPOP_t + \beta_3 \Delta lnGDP_t + \beta_4 \Delta lnFDI_t + \beta_5 \Delta lnED_t + \in_t ($$

3)   (3.7)

When every variable is lagged up to t-j

$$lnUN_t =$$
$$\beta_0 + \beta_1 \Delta lnlUN_{t-i} + \beta_2 \Delta lnPOP_{t-j} + \beta_3 \Delta lnGDP_{t-j} + \beta_4 \Delta lnFDI_{t-j} + \beta_5 \Delta lnED_{t-j} + \in_{t-j}$$
                (3.8)

The advantage of this method is that variables do not have to be classified into I(0) 0r I(1). The study uses ARDL approach to analyze variables. Stationarity test is carried out to ensure that there is no serial correlation among variables used in the regression. The Augmented Dickey-Fuller test is employed to investigate stationary status of each variable. The Philip-Perron test is not used for the reasons that it ignores serial correlation. Whereas both test deals with serial correlation and heteroskedasticity, Phillip-Perron ignores serial correlation.

3.1.4 Other Advantages of ARDL Model

1. The model captures dynamic effects from lagged x's and y's

2. If sufficient number of lags of x's and y's are included serial correlation can be eliminated.

3. ARDL can be transformed into one with lagged x's only which extends into infinite past, that is, infinite distributed lag.

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3.1.6 Estimation of Parameters

Let $Ly_t = y_{t-1}$

When the variable is lagged twice:

$$L(y_t) = Ly_{t-1} = y_{t-2} = L^2 y_{t-2}$$

$$L^s y_t = y_{t-s}$$

Re-writing the ARDL in terms of lag operator notation:

$$y_t - \mathcal{E} + \theta_1 Ly_t + \theta_2 L^2 y_t + \cdots + \theta_p L^p y_t + \delta_0 x_t + \delta_1 Lx_t + \delta_2 L^2 x_t + \cdots + \delta_q L^q x_t + c_t$$

(3.10)

Collecting terms that contain y_t on the left hand side and factoring out x_t and y_t:

$$\left(1 - \theta_1 L - \theta_2 L^2 - \cdots - \theta_p L^p\right) y_t - \delta + (\delta_0 + \delta_1 L + \delta_2 L^2 + \cdots + \delta_q L^q) x_t + c_t \qquad (3.11)$$

From Okun's Law:

$$DU_t = \delta + \theta_1 DU_{t-1} + \delta_0 G_t + \delta_1 G_{t-1} + \epsilon_t$$

(3.12)

This can be factored as:

$$(1 - \theta_1 L) DU_t = \delta + (\delta_0 + \delta_1 L) G_t + \epsilon_t$$

(3.13)

We now define inverse of $(1 - \theta_1 L)$ which becomes $(1 - \theta_1 L)^{-1}$

Such that $(1 - \theta_1 L)(1 - \theta_1 L)^{-1} = 1$

Substituting in (3.12)

$DU_t = (1 - \theta_1 L)^{-1}\delta + (1 - \theta_1 L)^{-1}(\mathcal{E}_0 + \delta_1 L)G_t + (1 - \theta_1 L)^{-1} \epsilon_t$

(3.14)

We equate this to infinite distributed lag:

$DU_t = \alpha + \beta_0 G_t + \beta_1 G_{t-1} + \beta_2 G_{t-2} + \beta_3 G_{t-3} + \cdots + \epsilon_t$ $\qquad$ (3.15)

$DU_t = \alpha + (\beta_0 + \beta_1 L + \beta_2 L^2 + \beta_3 L^3 + \cdots)G_t + \epsilon_t$

(3.16)

Since (3.15) and ((3.14) are identical:

$\alpha = (1 - \theta_1 L)^{-1}\delta$

(3.17)

$\beta_0 + \beta_1 L + \beta_2 L^2 + \beta_3 L^3 + \cdots = (1 - \theta_1 L)^{-1}(\delta_0 + \delta_1 L)$

(3.18)

$e_t = (1 - \theta_1 L)^{-1} \epsilon_t$

(3.19)

From (3.17)

$\alpha = \frac{\delta}{1 - \theta_1}$ which implies $(1 - \theta_1)\alpha = \delta$

In order to estimate β_s we multiply (3.18) by $(1 - \theta_1 L)$

$$\delta_0 + \delta_1 L = (1 - \theta_1 L)(\beta_0 + \beta_1 L + \beta_2 L^2 + \beta_3 L^3 + \cdots) = \beta_0 + \beta_1 L + \beta_2 L^2 + \beta_3 L^3 \cdots - \beta_0 \theta_1 L - \beta_1 \theta_1 L^2 - \beta_2 \theta_1 L^3 - \cdots = \beta_0 + (\beta_1 - \beta_0 \theta_1) L + (\beta_2 - \beta_1 \theta_1) L^2 + (\beta_3 - \beta_2 \theta_1) L^3 + \cdots$$

(3.20)

$$\delta_0 + \delta_1 L + 0 L^2 + 0 L^3 = \beta_0 + (\beta_1 - \beta_0 \theta_1) L + (\beta_2 - \beta_1 \theta_1) L^2 + (\beta_3 - \beta_2 \theta_1) L^3 + \cdots$$

(3.21)

From (3.20)

$$\delta_0 = \beta_0, \ \delta_1 = \beta_1 - \beta_0 \theta_1, \quad \beta_1 = \delta_1 + \beta_0 \beta_1; \ 0 = \beta_2 - \beta_1 \theta_1; \ \beta_2 = \beta_1 \theta_1; \ 0 = \beta_3 - \beta_2 \theta_1,$$

3.1.7 Inference on the Parameters

We use multiplier analysis to determine the effects of a change in one variable on the outcome of the dependent variable while controlling for other variables. In this case equation (3.1) is transformed into a finite distributed lag.

$$y_t = \delta + \theta_t y_{t-1} + \cdots + \theta_t y_{t-p} + \delta_0 x_t + \delta_1 x_{t-1} + \cdots + \delta_q x_{t-q} + \epsilon_t$$

(3.7)

The equation (3.7) becomes:

$$y_t = \alpha + \beta_0 x_t + \beta_1 x_{t-1} + \beta_2 x_{t-2} + \beta_3 x_{t-3} + \ldots + \epsilon_t \quad (3.8)$$

The multipliers in this case are similar to those of finite distributed lag given as:

$$\beta_s = \frac{\partial y_t}{\partial x_{t-s}} = s \text{ period delay multiplier}$$

$$\sum_{j=0}^{s} \beta_j = s, \text{ Period interim multiplier}$$

$\sum_{j=0}^{\infty} \beta_j =$ total multiplier

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 INTRODUCTION

This section deals with empirical results from testing for stationarity by unit root test through Augmented Dickey-Fuller test ADF. There is also lag order selection criteria using VAR, cointegration test to determine long-run relationship between variables. Eventually model is fitted and parameters interpreted. Lastly conclusions are drawn from the results obtained.

Figure 2: Q-Q plot of variables
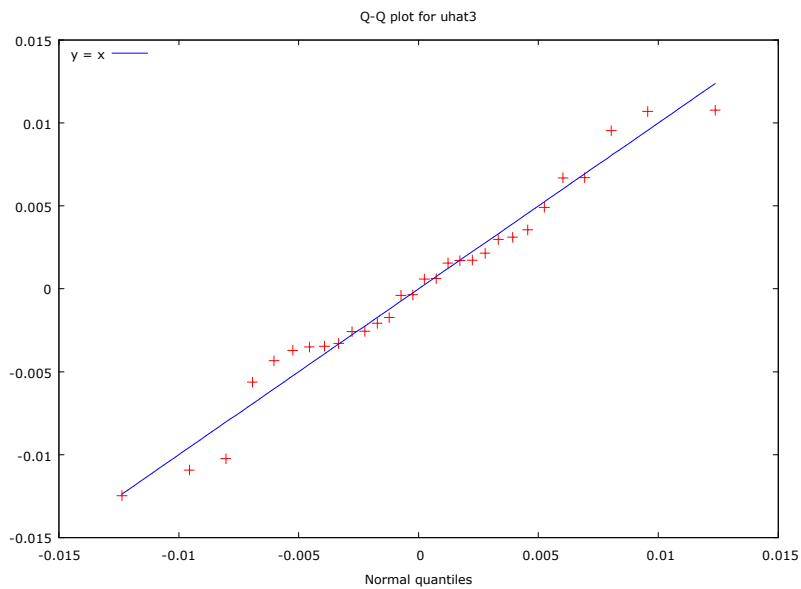
4.1.1.Testing for stationarity

Unit root test

$H_0: r = 0$ the series is stationary

$H1: r < 0$ the series is nonstaionary

Table 2: The Augmented Dickey-Fuller (ADF) Test results

Variable	Level	Tau	Order
$lnUN_t$	-0.1773	-2.8425	I(1)
$lnPOP_t$	-0.02048	-3.7388	I(1)
$lnGDP_t$	0.1655	0.7943	I(1)
$lnFDI_t$	-o.1604	-2.111	I(1)
$lnED_t$	0.1522	-2.0178	I(1)

The results indicate that all the variables are I(1) stationary.

4.1.2 VAR Lag selection Criteria

Table 3: VAR selection Criteria results

Lag	Loglik	LR	AIC	BIC	HQC
1	113.6815	-	-7.011709*	-6.780421*	-6.936315*
2	113.6816	0.9858	-6.947203	-6.6696	-6.8567

VAR system, maximum lag order 2

The asterisks below indicate the best (that is, minimized) valuesof the respective information criteria, AIC = Akaike criterion,BIC = Schwarz Bayesian criterion and HQC = Hannan-Quinn criterion.

In this case the best lag is 1.

4.1.4 Model Fitting
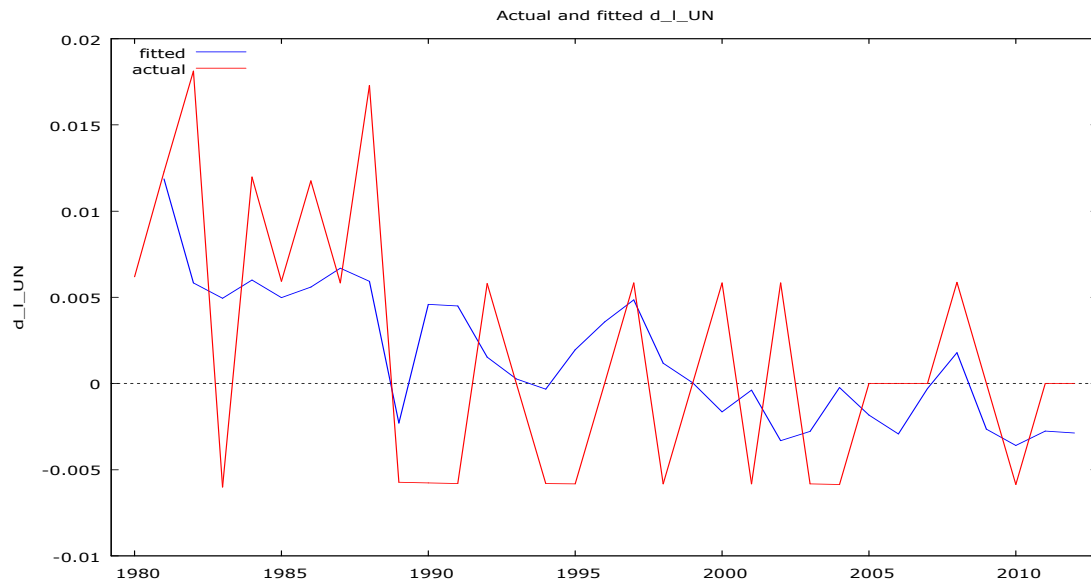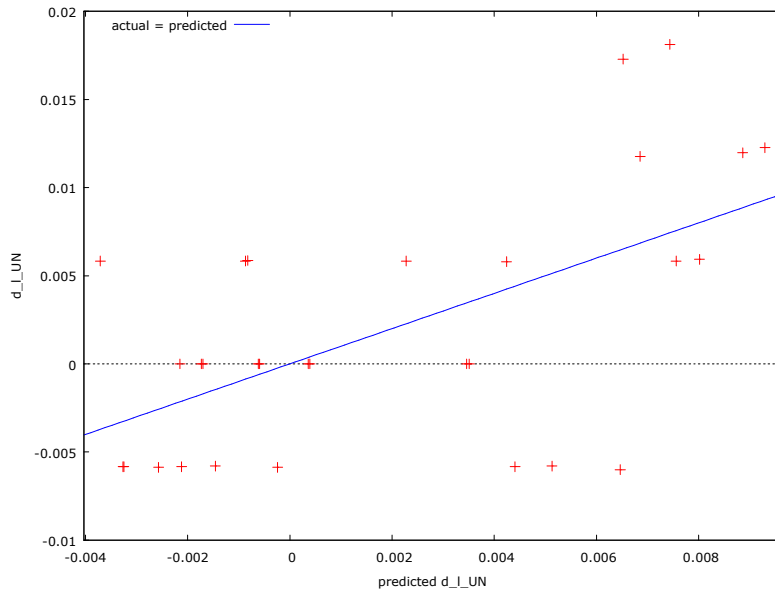
Figure 3: Graph of accrual and fitted model

Actual and fitted d_l_UN

Figure 4: Graph of Regression Residual of Observed and Fitted model

Regression residuals (= observed - fitted d_l_UN)

Figure 5: Predicted model

Fitted Model

$$LnUN_t = -0.02920 - 0.12062\,UN_{t-1} + 0.00559LnGDP_{t-1} - 0.005LnED_{t-1} - 0.000024LnFDI_{t-1}$$
$$+ 1.1LnPOP_{t-1}$$

According to the results, 1% increase in population increases youth unemployment by 1.1%; 1% increase in FDI reduces youth unemployment by 0.00024%; 1% increase in GDP increases youth unemployment by 0.00559% (which is unique); and an increase in immediate previous rate of unemployment by 1% reduces current youth unemployment by 0.12%; and 1% increase in ED reduces youth unemployment rate by 0.000024%.

Figure 6: Plot of Cumulative Sum of Squares of Recursive Residuals

CUSUMSQ plot with 95% confidence band
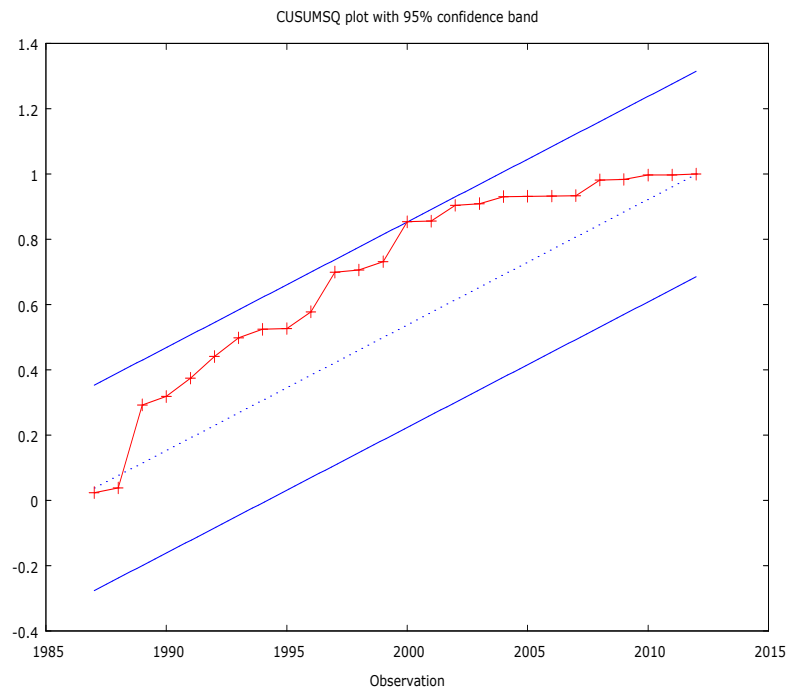
5.0: CONCLUSION, DISCUSSION AND RECOMMENDATIONS

Conclusions

Youth unemployment is a real problem in developing countries. In Kenya, many economic interventions have been implemented with minimal success. In Sub-saharan Africa youth constitute 75% of total population with estimated unemployment of over 45%. In Kenya, youth constitute 35% of total population and 67% of unemployed persons are youth. Youth unemployment in Kenya poses a real threat in terms of political violence: rioting, terrorism, and civil war. From ongoing experience, rioting and terrorism are real threats in Kenya as a result of youth unemployment.

According to the results, 1% increase in population increases youth unemployment by 1.1%; 1% increase in FDI reduces youth unemployment by 0.00024%; 1% increase in GDP increases youth unemployment by 0.00559% (which is unique); and an increase in immediate previous rate of unemployment by 1% reduces current youth unemployment by 0.12%.

This study has associated youth unemployment with economic determinants derived from macroeconomic data. As such empirical findings reveal a long run relationship between youth unemployment rate, GDP, Foreign Direct Investment, External Debt, and Population growth. The parameters indicate that population has positive effect on youth unemployment rate whereas foreign direct investment and external debt have a negative effect in the long run.

The negative relationship between lagged (immediate previous) value of youth unemployment rate and current unemployment rate may result from government intervention to lower rate of unemployment in the current year.

The unique finding that increase in GDP leads to increase in youth unemployment rate could be attributed to many factors. On such factor is the Kenya majorly exports unfinished products or raw materials. In this way, jobs associated with value addition are inadvertently exported. The strange finding of relationship between GDP and youth unemployment rate is consistent with Ajilore and Yinusa (2011) study in Botswana whose findings revealed a "jobless growth" of economy.

Lastly, previous studies have found out that education is a key determinant of youth unemployment. The gap in education requires a shift from numeracy and literacy to skills that are relevant to labour market. Education-skills mismatch exacerbates youth unemployment situation in Kenya.

Discussion

According to the results, 1% increase in population increases youth unemployment by 1.1%; 1% increase in FDI reduces youth unemployment by 0.00024%; 1% increase in GDP increases youth unemployment by 0.00559% (which is unique); and an increase in immediate previous rate of unemployment by 1% reduces current youth unemployment by 0.12%.

Except for the interesting result of GDP, the findings are consistent with Maqbool et al (2013), Kabaklarliset al (2011), and Valadkhani (2003) which revealed that population has a positive relationship with youth unemployment while foreign direct investment and external debt have negative relationship with youth unemployment.

The CUSUM and CUSUMSQ plot showed that residuals were well within 95% confidence interval. This indicated that the model is very stable.

Recommendations

- Further research should include private investment as part of variables of determinants of youth unemployment.
- Further extensive research should look into relationship between world governance indicators (WGI) and youth unemployment in Kenya. This is to test whether there is significance difference in youth unemployment rate between period Kenya score low and those whose scores is high in (WGI).
- Both county and national governments should consider policies that encourage foreign direct investment, increasing GDP through value addition, and using external debt resources for investment.
- sYouth seeking employment should acquire labour market–sensitive skills through education and vocational training to bridge job-skills gap as well as education skills mismatch.

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