POPULATION GROWTH AND YOUTH UNEMPLOYMENT

IN SOMALIA (1991-2017)

BY

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DECLARATION

I **MOHAMED SAID MOHAMED ALIN** hereby declare that "This dissertation is my original work and has not been presented for a degree or any other academic award in any university or institution of learning".

Signed …………………………..   Date:…………………………….

APPROVAL

I confirm that this research dissertation was written by the candidate under my supervision.

Name: James Wokadala (PhD)

Signed ………………………….   Date:…………………………….

DEDICATION

I dedicate this research dissertation to my dear parents, and my family, and my colleagues. All this would have not been possible if it were not for your undying support and love that has always been forthcoming, thank you.

ACKNOWLEGDEMENTS

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LIST OF ABBREVIATIONS

ADF	Augmented Dickey-Fuller
AIC	Akaike's Information Criteria
ARCH	Autoregressive Conditional Heteroscedasticity
CLRM	Classical Linear Regression Model
GCF	Gross Capital Formation
GDP	Gross Domestic Product
ILO	International Labour Organization
IOM	International Organization for Migration
LDC	Lower Development Countries
NPP	Normal Probability Plot
OLS	Ordinary least square
UN	United Nations
UBOS	Somalia bureau of statistics
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund

ABSTRACT

The purpose of the study was to investigate the effect of population growth on youth unemployment in Somalia from 1991 to 2016. The specific objectives of the study was to examine the long-run relationship, causation, and effect of population growth on youth unemployment rate. The study used crosssectional and longitudinal research design for the data obtained from World Bank where stationarity test was conducted using ADF tests prior to estimation. Unemployment,Gdp growth, population growth and gross capital formation were nonstatinary at levels but all were stationary at first differences. Cointegration test indicated existence of cointegration and hence a long run relationship between population growth and unemployment rate since the p-value of 0.0023 is less 0.05. The granger causality test concluded significant causation between population growth and unemployment rate . A multiple log-linear regression model of first difference of unemployment rate, population growth, Gross domestic product growth rate and gross capital formation was fitted, the results indicated significant relationship at 5% level of significance. The study concluded that there is a long run relationship between population growth and unemployment rate. There was significant causation between population growth and youth unemployment rate and the effect of population growth on unemployment was significant. There was also normality of the error term suggesting robustness in the estimation. It is recommended that the government and non-governmental organizations should invest rather on the youth through relevant training, skilling and proper manpower planning to increase productivity. There is also need to create an enabling environment for self-employment, entrepreneurship and other productive ventures for the youth instead of controlling population, gross capital formation and GDP growth.

CHAPTER ONE

INTRODUCTION

1.1 Background

1.1.1. Historical Perspective

Globally 200 years ago there were less than one billion humans living on earth. Between 1900 and 2000, the increase in world population was three times greater than during the entire previous history of humanity an increase from 1.5 to 6.1 billion in just 100 years. The year of 1962 saw the growth rate peak at 2.1%, and it has since fallen to almost half and thus a picture of the world population in the very long-run shows extremely rapid growth. Indeed, for a long time the world population grew at an increasing rate. Today, according to UN calculations there are over 7 billion of us. Recent estimates suggest that today's population size is roughly equivalent to 6.5% of the total number of people ever born.This is the most conspicuous fact about world population growth: for thousands of years, the population grew only slowly but in recent centuries, it has jumped dramatically (Max Roser & Esteban Ortiz-Ospina, 2012).

In developing countries like Bangladesh, the employment generation is a challenging task because of the growing population and relatively small size of the economy. The economy of the country has undergone a structural change since its independence. It has gradually moved from an agrarian to a more industry and services sector based economy. This is reflected also in the pattern of employment in broad economic sector. Along with the structural change the economy has also achieved impressive growth in terms of Gross Domestic Product (GDP). A recent report of the World Bank (2012) reveals that Bangladesh is the only country in South Asia where growth in labour force outpaced growth in employment during the last decade.   However, the growth of the economy has not been accompanied by adequate employment creation and the number of unemployed people has increased over the years where unemployment rate

remained remarkably low in Bangladesh, only at 4.5 percent in 2010 (Labour force Survey 2010, BBS). Though the composition of growth trend in Bangladesh suggests a positive shift towards a modern economy, the pace of the shift is yet to get adequate momentum. It is observed from table 4.2 that annual employment growth in recent years has been higher in agricultural sector than the service sector in Bangladesh. This is probably due to high underemployment in the agriculture sector which absorbs more of the incremental labour force even though the sector is burdened with surplus labour (Daily Sun, 2012).

The African population has grown rapidly over the past century, and consequently shows a large youth bulge, further reinforced by a low life expectancy of below 50 years in some African countries. In some African countries, half or more of the population is under 25 years of age. The total number of people in Africa grew from 221 million in 1950 to 1.2 billion in 2016. The population doubled in the period 1982–2009and quadrupled from 1955–2009, according to United Nations estimates. As of 2016, the total population of Africa is estimated at 1,225,080,510, representing approximately 15% of the world's population. According to UN estimates, the population of Africa may reach nearly 2.5 billion by 2050 (about 26% of the world's total) and nearly 4.4 billion by 2100 (about 39% of the world's total).

The East African nation of Somalia is located in the Horn of Africa with a 2018 population estimated at 15.18 million, up from the 2013 estimate of 10 million. The country is rapidly expanding with almost 3% annual population growth and a high fertility rate of 6.26 children per woman, which is the 4th highest in the world. Its 10.9 million population represents a huge increase from the 3.3 million people in 1975, but civil strife in the 90's increased Somali diaspora and many of the highly educated people left. There are two cities in Somalia with a population over 1 million: Mogadishu is the largest with 2.4 million followed by Hargeisa at 1.2 million (Central Intelligence Agency, 2014).

The global rate of youth unemployment indicates high levels of unemployment among the youth. The median age data from the world.bymap.org website is used to define the term "youth migrant and non-migrant population, or youth population".

The median age of the migrant and non-migrant population throughout the developing world does remain in a late adolescent phase with ages ranging from the 15th birthday until the 24th birthday (world.bymap.org, 2013, median age). In fact, the rate of growth of unemployment among the youth population is higher that the case of adults (Alanana, 2013).

The reported incidence of youth unemployment is even higher in developed economies as compared to emerging and developing economies. However, in the recent years the cases have been so sporadic in developing countries especially in Africa (Alanana, 2013). This is because according to Alanana (2013), the numbers of the youth population is increasing at an alarming rate as compared to the rates at which job opportunities are being created. The case of unemployment among the youth in Africa is alarming and is currently a threat to social-economic stability and peace.

In the African region, there is no unique determinant of the youth employment challenge in the rather; a combination of factors contributes to compound a situation that has become a top political priority for the region. In sub-Saharan Africa, unemployment rates remain relatively low, as the vast majority of employable active youth cannot afford not to work. However, these youth regularly suffer from under-employment and lack of decent working conditions. Of the 38.1 per cent estimated total working poor in sub-Saharan Africa, young people account for 23.5 per cent.

Young girls tend to be more disadvantaged than young men in access to work and experience worse working conditions than their male counterpart, and employment in the informal economy or informal employment is the norm (International Labour Office, 2008).

In North Africa, unemployment rates (among a generally more educated labour force) are quite high (23.8 per cent estimated in 2012, with a 3 percentage point increase between 2010 and 2011 and a steady increase since 2007) and projected to remain high over the next five years (Donna & Alexandra, 2013). Unemployment can arguably be considered to be at the root of the Arab Spring uprisings. At the same time, labour force participation rates for women are the second lowest in the world (33.4 per cent in 2012, right after the Middle East).

In Somalia most of youths are unemployed and migration is high and the population of unemployed youths stands at 75% in 2014, much higher than Somalia's national average. Somalia relative stability attracts youths from all over Somalia despite there being few opportunities for formal employment. For Somalia as a whole, youth between the ages of 14 and 29 represent around 42% of the population in 2010. If the bracket is expanded to ages 10 to 34, the composition represents roughly 60 percent. In contrast to East Asia, where the youth bulge has peaked, the youth population in Somalia will not peak in the foreseeable future (Clark and Summers, 2015).

1.1.2 Conceptual Perspective

According to Charles, (2010), population growth refers to the increase in the number of people that reside in a country, state, county, or city like Mogadishu for example. Businesses and governmental bodies use this information to make determinations about investing in certain communities or regions and its measure population growth rate measures how fast the size of population is changing.

Globally, human population growth amounts to around 83 million annually, or 1.1% per year. The global population has grown from 1 billion in 1800 to 7.6 billion in 2017.It is expected to keep growing, and estimates have put the total population at 8.6 billion by mid-2030, 9.8 billion by mid-2050 and 11.2 billion by 2100. Many nations with rapid population growth have low standards of living, whereas many nations with low rates of population growth have high standards of living (World Population Prospects, 2017).

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1.1.3 Theoretical Perspective

The study was based on the theory of demographic transition and Classical Theory Of Unemployment. The theory of demographic transition is based on an interpretation of demographic history developed in 2015 by the American demographer Warren Thompson (1887–1973). Adolphe Landry of France made similar observations on demographic patterns and population growth potential around 1934. In the 1940s and 1950s, Notestein developed a more formal theory of demographic transition. By 2009, the existence of a negative correlation between fertility and industrial development had become one of the most widely accepted findings in social science (UBOS, 2013). The transition involves four stages, or possibly five. In stage one, pre-industrial society, death rates and birth rates are high and roughly in balance. In fact, growth rates were less than 0.05% at least since the Agricultural Revolution over 10,000 years ago. Population growth is typically very slow in this stage, because the society is constrained by the available food supply; therefore, unless the society develops new technologies to increase food production (e.g. discovers new sources of food or achieves higher crop yields), any fluctuations in birth rates are soon matched by death rates. In stage two, that of a developing country, the death rates drop rapidly due to improvements in food supply and sanitation, which increase life spans and reduce disease. The improvements specific to food supply typically include selective breeding and crop rotation and farming techniques (UBOS, 2013). Other improvements generally include access to technology, basic healthcare, and education. In stage three, birth rates fall due to various fertility factors such as access to contraception, increases in wages, urbanization, a reduction in subsistence agriculture, an increase in the status and education of women, a reduction in the value of children's work, an increase in parental investment in the education of children and other social changes. During stage four there are both low birth rates and low death rates. Birth rates may drop to well below replacement level as has happened in countries like Germany, Italy, and Japan, leading to a shrinking population, a threat to many industries that rely on population

growth. As the large group born during stage two ages, it creates an economic burden on the shrinking working population. Some scholars break out, from stage four, a "stage five" of below-replacement fertility levels. Others hypothesize a different "stage five" involving an increase in fertility (Adawo & Atan, 2013).

The second theory is the Classical Theory Of Unemployment which elaborates that the classical economists did not propound any particular theory of employment but however, gives a number of assumptions (Audra & Haoming, 2002). There are two main assumptions of classical theory of employment, namely, assumption of full employment and flexibility of price and wages. Thus in simple terms full employment refers to an economic condition in which every individual is employed. In economics terminology, full employment signifies the market condition where the demand for labor is equivalent to the supply of labor at every level of real wage. Therefore, full employment is the employment level at which every individual who desires to work at the prevalent wage rate gets employed (Audra & Haoming, 2002).

According to Lerner, "Full employment is a situation in which all those who are able to and want to work at the existing rate of wage get work without any due difficulty." According to Spencer, "Full employment is a situation in which everyone who wants to work is working except for those who fictionally and structurally unemployed." The classical economists had a notion that labor and other resources are utilized completely or fully employed. According to classical economists, over-production is a general condition of an economy. Therefore, the condition of unemployment does not occur in the economy. According to them, if the condition of unemployment of youths occurs, it is a temporary or abnormal condition in the economy. In addition, classical economists also propounded that the condition of unemployment occurs due to the interference of government or private organizations in normal mechanism of market forces. In addition, it can be due to wrong speculation of organizations regarding the economic condition.

Therefore, classical economists considered that there would always be a condition of full employment in the economy (Carl Menger, 2007).

1.1.4 Contextual Perspective

The study was carried out in Somalia especially cities with high population of unemployed youths like Mogadishu, Hergeisa, and Kismio and these regions have been chosen because Somalia is not anentirely lawless and ungoverned land. It is a country of stark contrasts between resilience and vulnerability, and between the troubled south central region and the relatively stable and peaceful north (World Population Prospects, 2017). Age-old kinship systems, traditional coping mechanisms and remittances from the sprawling Somali diasporal coexist with severe poverty and environmental degradation. Thus typically, mass population of young people in conflict zones is viewed either as victims and/or perpetrators. Although the potential of youth as agents of change is evident from the revolutions emanating from the Arab Spring, they still often appear in public debates primarily as accomplices in crime, suicide bombing and rebellions. This leads to a common approach to policies and programmes for youth based on a concern with deficits, where youth concerns are addressed primarily to prevent them from becoming tomorrow's armed groups, criminals and terrorists. The risk with this thinking, and its emphasis on keeping disaffected youth content and occupied mainly in the short or medium term, is that it produces results that may be unsustainable, and it overlooks longer-term negative impacts on youth and development more generally (World Bank, 2010)

1.2 Problem Statement

Somalia today suffers from the increasing rates of youth unemployment which has been brought about by the immerse population of people which is rising day by day. Basing on the survey conducted by the Somalia Human Development Report (2016), statistics show that unemployment is 54% for people aged 15 to 64 and 67% for youth aged 14 to 29 which is one of the highest rates in the world from the estimated Population of

7.5 million people. The youth population in Somalia will not experience a peak in the foreseeable future due to high fertility rates, estimated at 6.2 births per woman between 2010 and 2015.

Therefore since over 67 percent of Somalis are under the age of 30; most face blocked transitions to adulthood due to multiple social, economic and political exclusions. These are related to clan and cultural affiliations, gender, age, illiteracy and poverty, among other factors. They have been reinforced by dominant social attitudes and prejudicial cultural practices, and perpetuated by violence (Marito, 2016).

Due to the crisis in Somalia, a third generation of youth has missed the opportunity for education and have no memory of a functioning state as Somalia has been without a central government since the collapse of its 22-year military dictatorship in 1991 of two decades of endless civil war and unrest. This has caused many Somali youth to face harsh realities whereby many are poor, uneducated and unemployed, or have left the country as migrants or refugees. Others have joined the armed militia, either voluntarily or involuntarily, and use violence to earn quick money through robbery, ransacking or piracy. During this time, hundreds of thousands of Somalis have starved to death, countless others have been killed and displaced, and thousands of children and youth have been forced to join militias. Another critical challenge comes from the fact that under-employed young people are more likely to breed unrest than those that are productively occupied. In this respect, the UN Youth Employment Network, in collaboration with the World Bank and the International Labour Organization (ILO), has recommended four critical areas for national action: employability, equal opportunities, entrepreneurship and employment creation (Okafor, 2011).. Therefore for these reasons, the research seeks to establish the population growth and youth unemployment in Somalia from 1991 to 2017.

1.3 Purpose of the Study

The purpose of this study was to investigate the relationship between the population growth and youth unemployment in Somalia.

1.4 Specific Objectives of the Study

i. To find out the long run relationship between the population growth and youth unemployment rate in Somalia.

ii. To establish Granger causality between population growth and youth unemployment rate in Somalia.

iii. To determine the effect of population growth on youth unemployment rate in Somalia.

1.5 Research Questions

I. Is there long run relationship between population growth and youth unemployment rate in Somalia?

II. Does population growth granger cause youth unemployment rate in Somalia?

III. Is there significance effect of population growth on youth unemployment rate in Somalia?

1.6 Research Hypotheses

H_{01}: There is no significant relationship between population growth and youth unemployment rate in Somalia.

H_{02}: There is no granger causality between population growth and youth unemployment rate in Somalia.

H_{03}: There is no significant effect of population growth on youth unemployment rate in Somalia.

1.7 Scope

This provides the attention of the study in terms of geographical, theoretical, content and time scope.

1.7.1 Geographical Scope

This study was showed in Somalia which is bordered by Ethiopia to the west, Djibouti to the northwest, the Gulf of Aden to the north, the Indian Ocean to the east, and Kenya to the southwest. Somalia has the longest coastline on Africa's mainland, and its terrain consists mainly of plateaus, plains and highlands. Climatically, hot conditions prevail year-round, with periodic monsoon winds and irregular rainfall.

1.7.2 Theoretical Scope

The study was based on the theory of demographic transition and Classical Theory of Unemployment. The theory of demographic transition is based on an interpretation of demographic history developed in 2015 by the American demographer Warren Thompson (1887–1973). And the Classical Theory Of Unemployment which elaborates that the classical economists did not propound any particular theory of employment but however, gives a number of assumptions (Audra & Haoming, 2002).

1.7.3 Content Scope

This study examined population growth in terms of birth rate, immigration rate and mortality rate and also it examined the youth unemployment in terms of unemployment rate from 1991 to 2016.

1.7.4 Time Scope

This study covered a period of 26 years that is from 1991 to 2017. This is because it is during this time period that the population growth of Somalia rapidly has grown and fueling youth unemployment in the country.

1.8 Significance of the study

- The study will also serve as a future data base for further researches that will be carried out as researchers can draw data from the findings which will have narrowed the existing gaps on population growth and youths unemployment.
- Furthermore, the findings from this study, may guide government policy makers and planners in Somalia in developing more effective strategies for controlling population growth in the country.
- The study will help academicians and scholars in the field of Economics and statistics in order to learn more on the impacts that population growth has on youths unemployment in developing countries.
- The result of this study can benefit economists to come up models that can be used to forecast the future trends of youth unemployment rates due to changes in population growth which will facilitate to make informed decisions.

1.8 Operational definitions

Population growth: This is the increase in the number of individuals in a population. The "population growth rate" is the rate at which the number of individuals in a population increases in a given time period, expressed as a fraction of the initial population. Specifically, population growth refers to the change in population over a unit time period, often expressed as a percentage of the number of individuals in the population at the beginning of that period*(Population Reference Bureau. 2014).*

Youth: This refers to people from aged 15-24 inclusive, in practice the operation of the term among different societies is contested and it is highly subjected to cultural, social, institutional legal framework and political factors (Higgins, 2011).

Youth unemployment: This is the unemployment which is derived from labour force minus employed persons. Unemployment occurs when a person is able and willing to work but is currently without work(Rowley & Feather, 2007).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

2.2 Theoretical Review

The theory of demographic transition is based on the actual population trends of the advanced countries of the world. The theory was developed by Warren Thompson in 2015. According to this theory, every country passes through three different stages of population growth. In the first stage, the birth rate and the death rate are high and the growth rate of population is low. In the second stage, the birth rate remains stable but the death rate falls rapidly (Slama & Tashchian, 2014). As a result, the growth rate of population increases very swiftly. In the last stage, the birth rate starts falling and tends to equal the death rate. The theory of demographic transition is the most acceptable theory of population growth. It neither lays emphasis on food supply like the Malthusian theory, nor does it develop a pessimistic outlook towards population growth. It is also superior to the optimum theory which lays an exclusive emphasis on the increase in per capita income for the growth of population and neglects the other factors which influence it (Coale, 2011). The demographic transition theory is superior to all the theories of population because it is based on the actual population growth trends of the developed countries of Europe. Almost all the European countries of the world have passed through the first two stages of this theory and are now in the final stage. Not only this, this theory is equally applicable to the developing countries of the world.

Very backward countries in some of the African states are still in the first stage whereas all the other developing countries of the world are in the transitional stage two. It is on the basis of this theory that economists have developed economic- demographic models so that underdeveloped countries should enter the final stage and attain the stage of

self-sustained growth. Thus this theory has universal applicability (Sayer& Morris, 2007).

If, however, population still goes on increasing, that is, crosses the optimum point, output per capita will start declining. The economy would then become over-populated. Why does the output per capita fall when optimum point is exceeded? This is because there are now more men in the economy than are needed by it. A given amount of capital and natural resources have to be shared among a larger number of workers with the result that each of them has a smaller amount of equipment, materials and natural resources to work with. For this reason, the average productivity declines (Ang & McKibbin, 2007).

It is very likely that many people may not get employment and, therefore, add nothing to production. Pressure of population on land increases. But the additional men, who get employment in agriculture, add nothing to total production (Ang & McKibbin, 2007). In other words, marginal productivity of these extra men in agriculture is zero or nearly zero. This is what is commonly known as the phenomenon of disguised unemployment. Disguised unemployment exist s in over-populated agricultural economics from where even if some workers are withdrawn, total production does not fall.

Thus, low standard of living, open and disguised unemployment, and food problem are all signs of over-population (Adawo & Atan, 2013). It is clear that both under-population and over-population-have disadvan-tages. In both cases, the per capita income is lower than it would be in the case of optimum population. It is the optimum population with the highest per capita output which is the best for a country to aim at.

A fast-growing population aggravation the unemployment problem. Disguised unemployment in rural areas and a large-scale unemployment in urban areas is a common phenomenon in over-populated but under-developed economies. This means that a large number of people have to be fed and clothed, but who make no addition to

the country's output. This leads to the diversion of the country's resources away from economic development (Adawo & Atan, 2013).

2.3 Effect of population growth on youth unemployment

Although population growth has had a relatively small effect on open unemployment in developing countries, this fact does not demonstrate any demographic stimulus to job creation. It simply indicates that unemployment is not a feasible option for most people (UBOS, 2013).

It is likely to exacerbate income inequalities, particularly if many new young workers have little education. When a large proportion of workers are young and inexperienced, their productivity tends to be lower. Except for those who have more education than older workers, their starting wages will tend to be lower, and they must compete with each other. Relatively few will receive employer training to upgrade their skills (Duvander, 2013).

Several factors may be blamed for the prevalence of youth unemployment in Nigeria. There is a high population growth rate 3.5 percent per annum which accompanies an already large national population of over 167 million people. In addition, deficient school curricula and poor teacher training have contributed to the failure of educational institutions to provide their students the appropriate skills to make them employable (Wenk & Hardesty, 2011). Since schools in rural areas are generally more deficient in infrastructure, teaching facilities and teacher quality than schools in urban areas, this may help account for the high growth in rural unemployed youth. In fact, some experts suggest that the major jump in rural youth unemployment in 2011.

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2.4 Relationship between population growth and youth unemployment

Population growth and youth unemployment tend to have a long run relationship whereby theoretically, a high rate of population growth may reduce the existing unemployment opportunities among youths living within a country like Somalia. Many studies have been conducted to find out the relationship between population growth and youth unemployment. It was assumed and explained that there was a negative relationship between population growth and youth unemployment (Fanati & Manfredi, 2013). This is commonly believed that the relationship between the youth unemployment rate and population growth is governed by Okun"s Law (Malley & Molana, 2007).

Muscatelli and Tirelli (2011) argued that the empirical evidence on this subject is very thin and has yielded mixed results. According to them there are many other factors which many influence youth unemployment along with population growth. These factors include GDP and Gross capital formation. Therefore, it can be concluded that the relationship between population growth and youth unemployment has been significantly negative, however, there are evidences which prove a reverse phenomenon.

According to Friedberg and Hunt (2015) population growth and urbanization go together, and youth unemployment is closely correlated with urbanization. Rich countries are urban countries. Population growth increases density and, together with rural-urban migration, creates higher urban agglomeration. And this is critical for achieving sustained growth because large urban centers allow for innovation and

increase economies of scale. Companies can produce goods in larger numbers and more cheaply, serving a larger number of low-income customers. Many countries have companies which have been benefitting from increasing population growth and density in targeting the large numbers of lower and lower-middle income. Their business model is viable because they can serve a multi-million customer base (Sinding, 2011)

Thus Population pressure is likely to intensify the foreign exchange constraints by placing more pressure on the balance of payment. The need to import food will require the development of new industries for export expansion and/or import substitution. The rapid increase in school-age population and the expanding number of labour force entrants puts ever-greater pressure on educational and training facilities and retards improvement in the quality of education, which is a problem in developing economies. Also, too dense a population aggravates the problem of improving the health of the population and intensifies pressure on employment and the amount of investment available per labour market entrant (Martin, 2009).

Developing countries experience the negative impact of rapid, uncontrolled population growth, often requiring western countries to provide direct aid to avert famine. Lack of jobs or employment and poor social conditions, including regional warfare and weak governance, often make conditions worse when scarce resources are not sufficient to meet the needs of a rapidly growing population. These conditions exacerbate poverty, malnutrition, childhood and maternal mortality, use of child labor and already inadequate educational opportunities, especially for women (Easterlin, 2006).

Rapid population growth tends to depress savings per capita and retards the level of investment which in the country especially in form of industrialization which might create a lot of employment opportunities to youths in the country like Somalia.

Industrialized nations such as the United States and European countries, however, need a steady supply of cheap, unskilled labor to staff manufacturing plants and fill menial service positions (Birdsall, 2011). The availability of this employment during the 20th century led to a large-scale migration from rural to urban areas, as well as increased immigration, legal and illegal. Debate continues on the value of these population movements, with the increased productivity of the nation possibly offset by depressed wages. Lower labor costs in high-birthrate Third World countries are attractive to manufacturing industries that are increasingly redistributing unskilled jobs (Crook, 2007).

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Population growth is closely tied to economic development. On the one hand, labor shortages will slow the rate of economic growth in industrialized countries, but on the other hand, a high birthrate in a developing country may stress limited renewable resources. Governments in western and other industrialized countries like Japan are challenged to create effective immigration policies and programs to increase the birthrate, while countries with weaker economies pursue public health policies to reduce population growth. Globally, a smaller population presents multiple benefits from an ecological perspective, but some economies are challenged by low birthrates and are redirecting their need for unskilled labor to countries with higher populations and lower wage demands (Fox & Dyson, 2008).

2.5 Empirical Studies

Empirical evidence divides the negative consequences of population growth into seven categories. Rapid population growth lowers per capita income growth in most LDCs. The poor bears the brunt of the negative effects of population growth. They become landless, face loss in jobs, and the government reduction of expenditure on

education and health. It is generally agreed that large family size and low incomes limit the opportunities of parents to educate all their children. High fertility harms the health of mothers and children. Rapid population growth generates food security problem and contributes to environmental degradation in the form of deforestation, soil erosion, unsafe water, air pollution and urban congestion. Rapid population growth is the major factor causing increasing international migration both legal and illegal.

The empirical literature has attempted to measure the contributions of several theoretical factors which can be grouped as demographic (related to labor supply), macroeconomic (related to aggregate demand) and institutional (rigidity) factors including also in their analyses, the interaction of these factors with one another (Blanchflower& Freeman, 2000; O'Higgins, 2001 & 2003; Muller &Gangl, 2003; Freeman & Wise, 1982; Blanchard &Wolfers, 2000; Biagi &Lucifora, 2007; Korenman and Neumark, 1997 & 2000, Baccaro&Rei, 2005; Neumark and Wascher, 2007; Jimeno& Rodriguez-Palenzuela, 2002; Scarpetta, 1996). Evidence with regard to the role of institutional factors, such as the presence of unions, is not consistent and recent studies argued that altogether they may not have a significant role in determining youth employment and unemployment (Bell &Blanch flower, 2009; Baccaro&Rei, 2005).

Testing the role of the changes in population age structure, controlling for macroeconomic conditions, had been particularly relevant for advanced countries which experienced sharp declines in the size of the youth populations in the 1980s and 1990s (Korenman and Neumark, 1997 & 2000). These changes were supposed to be favorable toward labor market outcomes of youth (Korenman and Neumark, 1997 & 2000). Korenman and Neumark (1997, 2000), having observed deteriorating outcomes for youth during these two decades and early in the 1990s, tested the impact of these variables on youth labor market outcomes in a set of advanced countries to explicate whether in reality the decline in size of the youth population had played a role in the

variation of youth labor market outcomes controlling for macroeconomic conditions. Their results suggested that these factors still played a role in determining youth unemployment outcomes, but that aggregate demand factors played a more important role (Korenman &Neumark, 1997, 2000). Korenman and Neumark (1997, 2000) argued further that the impact of yet another set of factors, such as structural changes taking place within advanced economies, may have dominated other factors throughout this period; and if it weren't for positive demographic changes, the youth labor market outcomes could have been worse. Many developing countries went through similar demographic trends in their population age structures (declines in the relative size of the youth cohorts) in the 1990s and 2000s; these declines are expected to continue in the next few decades (Lam, 2006). Evidence with regard to the role of the changes in population age structures on youth labor market outcomes in developing countries is weak both due to the limitations of data and the appropriateness of the methods used

This study builds on the work of Korenman and Neumark (1997, 2000) and tests the impact of changes in the population age structure (defined by the relative size of the youth population to adult population) on youth employment and unemployment, controlling for changes in the aggregate economy (defined by changes in adult labor market outcomes). The study uses data from the Key Indicators of the Labor Market, published by the ILO, and the World Bank Development Indicators as well as panel regressions covering a span of 22 years and two sets of countries which are grouped as 18 economically advanced countries, and 23 developing and transition countries.

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Arnab Roy (2015) carried out a study on youth unemployment conditions in India. The India is a fastest economic growing country in world. However, the growths of youngsters' population were occurred unemployment. The unemployment is common for both developed and developing countries. The education level is increased but the skill development is quiet critical subject. The study focuses on youth unemployment, unemployment trend among youth, problems faced by youth and challenges faced by youth. For the census of 2011, 28 % of youths were unemployed. More over 93 % of youths are working in informal sector. The most important point is 40 % of Indian population aged between 13 to 35 years. The current scenario youth is prone to frustration and lack of interest to do something. The world development report is report

on 2013, 9 % of males and 11 % female youths are unemployed. Finally, this study concluded that India need to create over one million jobs per annum (Bhavika Joshi, Serene Shekhar and SaritaSanwal, (2015).

Studies conducted in different countries show that one's own educational background, gender,family factors (such as parent education or sibling employment status) are among those which are worth examining (Osterman, 1980; Freeman & Wise, 1982; McDermott, 1995; Ianelli& Smyth, 2008). Using the Turkish Household Labor Force Survey for 2008 and hierarchical logistic regressions, this study tests whether these demographic and family background factors have a significant role in explaining youth labor market outcomes of Turkish youth controlling for structural characteristics of the regions in Turkey. A major aggregate determinant of youth unemployment is related to the size of the youth labor force (Macunovich, 1999; Shimer, 2012; Korenman & Neumark, 1997, 2000; O'Higgins, 2001 & 2003; Jimeno& Rodriguez-Palenzuela, 2002; Yenturk & Baslevent, 2007). Holding other factors constant, a greater number of people in the labor market mean a greater number of jobs required to accommodate them. Studies have shown that the relative size of the youth cohort to the adult population has a significant impact on youth unemployment; however, the aggregate labor market conditions have more impact (O'Higgins, 2001 & 2003, p. 45; Blanch flower& Freeman, 2000; Muller &Gangl, 2003, p. 271; Korenman &Neumark, 1997 & 2000; Yenturk &Baslevent, 2007).

Very few studies examine youth unemployment or issues related to the employment of youth in Turkey considering the size of the problem (Yenturk & Baslevent, 2007). Most existing studies are descriptive in that they lay out statistics on youth employment or unemployment. The unavailability of micro data until recent years and the challenging nature of the structure of the data that are available have hindered comprehensive studies of the factors which impact the distribution of employment and unemployment among youth. United Nations Development Program (2008, p. 8) stated that Turkey

needs an articulate youth employment strategy. This would involve: "identifying the specific features, constraints and opportunities which matter most in terms of employment creation," and "new and more specific employment policies, geared towards the needs of the young" (UNDP, 2008, p. 8). The study of Turkey as part of this dissertation is an attempt to first identify these specificities in order to contribute to the definition of the issues around youth employment and unemployment, and thereby contribute to the construction of employment policies for youth in Turkey, taking into account international and local dynamics.

The empirical literature has attempted to measure the contributions of several theoretical factors which can be grouped as demographic (related to labor supply), macroeconomic (related to aggregate demand) and institutional (rigidity) factors including also in their analyses, the interaction of these factors with one another (Blanchflower& Freeman, 2000; O'Higgins, 2001 & 2003; Muller &Gangl, 2003; Freeman & Wise, 1982; Blanchard &Wolfers, 2000; Biagi &Lucifora, 2007; Korenman and Neumark, 1997 & 2000, Baccaro&Rei, 2005; Neumark and Wascher, 2007; Jimeno& Rodriguez-Palenzuela, 2002; Scarpetta, 1996). Evidence with regard to the role of institutional factors, such as the presence of unions, is not consistent and recent studies argued that altogether they may not have a significant role in determining youth employment and unemployment (Bell &Blanch flower, 2009; Baccaro&Rei, 2005).

2.6 Research gap

The research failed to address the effects of youth unemployment on income which study was carried out with the view that any information will be availed to the government and other partners in the policy circle to be used as the basis of establishing polices to mitigate youth unemployment problem as it requires clear information of its effect. Thus, estimation of effects of youth unemployment on their future earnings is crucial in it mitigation in the country where the largest part of the

population are out of the formal or paid employment. This study showed that youth unemployment greatly affects their contribution to the country's gross domestic product (GDP). Thus Unemployment also stifles the development of the next generation as the current generation will not be able to educate and train their children. As unemployment increases the tendency for young people to engage in criminal activities are high. The youth now lack the capacity to access health services, leadership and management skills, and are prone to poverty because they are unable to engage in meaningful and gainful employment. Many of them have also resorted to corrupt tendencies in order to quickly go up the ladder.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter deals with practical procedures which were used in carrying out this study. It gives details of the research design adopted, data sources, research techniques, model of specification, regression model, unit of measurements, ethical consideration, ascriptions of authorships, limitation of the study and diagnostic tests.

3.2 Research Design

The study used descriptive, correlation and longitudinal design. This study employed the Quantitative research approach. This was because on the nature of the research problem, objective and the type of research hypotheses. Thus it was an appropriate research design type to collect, analyze interpret and present all the necessary Data for the mentioned problem statement.

3.3Model specification

According to theory of competitive market economy, supply of labour and demand for labour are two invisible hands that determine employment in the labour market. Population growth and youth unemployment refers how to correlate the population growth and youth unemployment in Somalia, the factors that influence growth domestic product (Gdp growth) and gross capital formation.The functional form of the model linking the dependent variable of youth unemployment to the dependent variables is specified as:

$$Yenmpt_t = f(pop_t, \ GDPgrowth, \ GCF) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3.1)$$

The above compressed equation can also be expanded to come up with the following regression equation for instance;

$$logunempt_t = log\alpha + \beta_0 log pop_t + \beta_1 logGDPgrowth + \beta_2 logGCF \dots \ . \ . \ \dots\dots\dots\dots(3.2)$$

Where:

$\text{unempt}_t =$ Youth Unemployment in millions

$\text{Popn}_t =$ annual Population growth

GDPgrowth = Gross domestic product growth in US dollars (billions)

GEP = Gross Capital Formation in US dollars (millions)

a_o = constant

$t =$ The subscript used to represent the time component in the model summarizing the year when the data was collected. $\alpha, \beta =$ These regression coefficients representing the causal relationships between the dependent variables and each of the independent variables in the model.

$\varepsilon =$ The error term also called the stochastic error term is used to represent all the other variables that may not be directly represented in the model due to the scope but could have an inference on the model.

3.4 Data Sources

Youth unemployment is the dependent variable used and the data was obtained from world development indicator by World Bank. The data of population growth will be obtained from World Bank Statistics(1991-2017) . The data for GDP and gross capital formation was obtained from the world development indicator by World Bank.

3.5 Research Techniques

3.5.1 Cointegration

Regression of one non-stationary variable on another is very likely to yield impressive-seemingly results which are wholly spurious (Mukherjee et al., 2015). In general, if two time series variables are both non-stationary in levels but stationary in first-differences, they are integrated of order 1, I (1), then there could be a linear relationship between them which is stationary, I(1) and as such all the series of interest should be integrated of the same order, preferably I(1).The two time series

variables that satisfy this requirement are considered to be co integrated. Variables are co integrated with one another if the residuals from the levels regression are stationary.

The study follows Johansen (2012) and Johansen and Juselius (2012) Cointegration technique. The technique establishes the long run relationship between variables. The first task is to make sure that the data is integrated of the same order. This is done by using unit root tests to examine the stationary of data sets. Thus, the variables are subjected to the Dickey Fuller (DF) and the Augmented Dickey-Fuller (ADF) unit root tests.

3.5.2 Time series Analysis

The assumptions of the Classical regression model necessitate that both the dependent and independent variables be stationary and the errors have a zero mean and finite variance. Non stationary variables results in spurious regression and as Granger and Newbold (1974), argued they are characterized by a high R^2 and a low Durbin-Watson (*dw*) statistic, t-and F-statistics that appear to be significant, but the results derive no any economic sense (Verbeek, 2000). The results "looks good" because the least-squares estimates are not consistent and the customary test of statistical inference do not hold (Enders, 1995).

The series were also tested for stationarity using the Augmented Dickey Fuller test. The reason for this test is the fact that macroeconomic variables are desired when they are stationary and on the contrary, regression on the series yields spurious results. The ADF statistic is computed using formula below;

$$\Delta y_t = \alpha_0 + \lambda_{t} + \delta Y_{t-1} + \sum_{j=1}^{l} \phi_i \Delta y_{t-1} + \varepsilon_t ....3.3$$

Where

l, is the lag length

The ADF statistic tests the null hypothesis that the series are non stationary against the alternative that the series are stationary. Where the absolute value of the computed ADF statistic is greater than the tabulated one, the null hypothesis is rejected and an inference drawn that the series is stationary at a given level of significance. The series which were found to be non stationary were differenced to make them stationary.

The problem of serial correlation can be detected using the graphical method, Geary test, Durbin - Watson d test and Breusch–Godfrey (BG) test. In this study, the BG test that is based on the Lagrange Multiplier principle is chosen since other tests have drawbacks that made the BG test to be favored. Though the graphical method is powerful and suggestive, its detection power is more of a qualitative nature than others making it less preferred. The drawback of the Geary test is that it has no assumptions about the probability distribution from which the observations are drawn. The Durbin-Watson test on the other hand, is not applicable when a lagged dependent variable is used as one of the explanatory variables. For the reason that the lagged value of Population growth may be used as one of the explanatory variables in the model, the Durbin –Watson test cannot be applied (Gujarati, 2015). Due to these reasons the Breusch–Godfrey (BG) test of serial correlation is the best option at hand.

c) Granger Causality

Granger Causality test examines whether lagged values of one variable helps to predict another variable. Granger causality means that if one variable for example in our study, agriculture granger causes, economic growth, then agriculture is a useful predictor of economic growth whereas past values of economic growth do not help to predict agriculture when controlling for past values of economic growth. Therefore, in the VAR model we can identify whether Inflation predicts economic growth using Granger Causality test. Granger is specified accordin6g to emenike (2015) as follows.

$$Y_t = 0 + 1Y_{t-1} + \ldots\ldots iY_{t-i} + 1X_{t-1} + \ldots\ldots iX_{t-i} + \mu$$

$$X_t = 0 + 1X_{t-1} + \ldots\ldots iX_{t-i} + 1Y_{t-1} + \ldots\ldots iY_{t-i} + \mu$$

....
...........3.4

Sample F-test is applied to examine causality in the variables. A significant F-statistic implies that lagged changes in a variable Y Granger cause changes in variable X. Unidirectional causality will occur between two variables if either null hypothesis of equation (7) or (8) is rejected. Bidirectional causality exists if both null hypotheses are rejected and no causality exists if neither null hypothesis of equation (7) nor (8) is rejected (Duasa, 2007).

3.5.6.2 Serial Correlation Test

Serial Correlation is a correlation among members of the series of error terms ordered in time. It is mainly caused by incorrect functional forms, auto regressions, manipulation of data, data transformation and non-stationarity of the data (Wooldridge, 2009).

The problem of serial correlation can be detected using the graphical method, Geary test, Durbin - Watson d test and Breusch–Godfrey (BG) test. In this study, the BG test that is based on the Lagrange Multiplier principle is chosen since other

tests have drawbacks that made the BG test to be favored. Though the graphical method is powerful and suggestive, its detection power is more of a qualitative nature than others making it less preferred. The drawback of the Geary test is that it has no assumptions about the probability distribution from which the observations are drawn. The Durbin-Watson test on the other hand, is not applicable when a lagged dependent variable is used as one of the explanatory variables. For the reason that the lagged value of Population growth may be used as one of the explanatory variables in the model, the Durbin –Watson test cannot be applied (Gujarati, 2015). Due to these reasons the Breusch–Godfrey (BG) test of serial correlation is the best option at hand.

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3.5.6.4 Multicollinearity tests

Multicollinearity is said to exist in a situation where the independent variables are highly and strongly related to each other in a given model. Given the fact that this research involves the use of more than one independent variable, there need to test and detect if there is problem of Multicollinearity. All these tests will be conducted at 5% level of significance apart from regression which we conducted at 10% level of significance.

3.6 Ethical Consideration
The following strategies will be adopted to ensure the moral justification of the investigation.

3.7 Ascriptions of authorships
The researcher might accurately attribute this to the this ensured that no plagiarism occurred.

3.7.1 Scientific adjudication
The researcher works according to generally acceptable norms of research.

3.8 Limitations of the study
Data set issues especially loss of some values due to differencing and the assumptions of least squares methods where the variables had to be transformed into logarithms before they are regressed.

The assumptions underlying the theory adopted in the study also limits the research findings

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CHAPTER FOUR
DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

In the preceding chapter, methods of analyzing the population growths, as well as the long-run relationships between population growth and youth unemployment rates have been discussed. In addition, the Ordinary least square (OLS) technique is discussed to in an attempt to find out the impact of population growth on youth unemployment rate. Furthermore, econometric techniques that are discussed in the previous chapter are employed in this chapter and the results are discussed in detail.

The initial part of this chapter deals with descriptive summary of the data. This can be used to evaluate the scores of each variable for more advanced statistical analysis and the data can easily be understood in the form of tables and graphs.

In the next sub-sections of the chapter unit root tests are performed using the Augmented Dickey Fuller (ADF) test and the Phillips (2012) test. The results of these stationarity tests will then lead to the testing of long-run relationships between the variables understudy. The long-run relationship is captured using Johansen co-integration tests.

4.1.0 Descriptive Summary

Table 4.1: Descriptive statistics

	YUNEMP.	Pop	GDP	GCF
Mean	9.618519	10,400,913	3,292,222,222	308,396,068
Median	9.5	10,116,228	3,220,000,000	271,228,226
Maximum	11.1	14,742,523	7,330,000,000	522,976,538
Minimum	7.4	7,455,936	590,000,000	118,986,364
Std. Dev.	1.202253	2,338,635	1,936,857,751	103,408,152
Skewness	-0.040621	0.318576	0.29298	0.5776
Kurtosis	1.651828	1.838777	2.001826	2.448967
Jarque-Bera	2.052189	1.973701	1.507161	1.842889
Probability	0.358404	0.372749	0.470678	0.397944
Observations	27	27	27	27

Source: Author (2018)

Where;

YUEMP   is the Youth unemployment rate

Pop is Population

GDP is the Gross Domestic Product

GCF is Gross Capital Formation

Descriptive statistics were used to compare the means, standard deviation, skewness, kurtosis and normality of population growth, youth unemployment rate, Gross Capital Formation (GCF) and Gross Domestic product (GDP). Table 1 shows that the average of population growth is 10,400,913 and its median value is

10,116228. These two values are close to each other indicating minor symmetry with the variable.

A closer look at the remaining variables in the above table shows that all the means of the variables are very closer to their median values. This can show that there is minor symmetry in each of the variables above. The maximum and minimum values of the series are also given for each series under the row maximum and minimum, respectively. Looking at standard deviation, it measures dispersion of variables around the mean in the series. Interpreting standard deviation of the series in absolute terms, the distribution with smaller standard deviation exhibits less dispersion and larger standard deviation shows higher dispersion. Accordingly, in Table 1, unemployment rate is least dispersed with the value of 1.202253 while GCF has the highest dispersion with a value of 103,408,152.

Symmetry of the distribution of the series around the mean is measured by skewness. For a distribution to be considered Symmetric it should have a zero skewness value. Thus, by observing the row of skewness from the above table only youth unemployment rate is negatively skewed with a value of -0.040621, otherwise the rest of the variables seem to have symmetric distribution because their values are not far from zero.

The row under kurtosis in the above table, measures flatness and peakedness of the distribution is measured by kurtosis of a series. For a distribution to be considered normal it should have a kurtosis value of 3 and hence all our variable under study have digits that are no kurtosis.

The null hypothesis of Jarque Bera (JB) test for normality normal distribution cannot be rejected for all variables.

4.1.2 Unit Root Test Results Using the ADF test

This section involves testing for the stationarity of the individual variables using Augmented Dickey-Fuller and Phillip-Perron tests. Table 2 indicates the unit root test results performed in this study-following both the ADF test. A maximum number of 1lags were used for the ADF tests (as determined automatically by E-views statistical package).

Table 4.2: ADF and PP Test Results at level for Intercept at 5% level of significance

Variable	ADF TEST RESULTS AT LEVEL			Phillip-Perron (PP) TEST RESULTS AT LEVEL			Decision
	Test statistic	Critical value	P-value	Test statistic	critical value	P-value	
Pop	-1.46084	-2.986225	0.5364	1.55474	-2.98103	0.9990	Do not Reject the null
Yunempt	-2.04801	-2.981038	0.2659	-1.82317	-2.98103	0.3615	Do not reject the null
GCF	-2.20324	-2.981038	0.2099	-2.20324	-2.98103	0.2099	Do not Reject the null
GDP Growth	-1.98651	-2.981038	0.2905	-1.37756	-2.99806	0.5751	Do not Reject the null

Source: Author (2018)

The null hypothesis for the ADF and PP tests is that all the series have a unit root. The result indicates that the independent variables of population growth, Gross Domestic Product growth (GDP), Gross Capital Formation (GCF) and the dependent variable youth unemployment rate (YUnemp) were found to be the non-stationary in their level form. This can be seen by observing the values of the Augmented Dickey-Fuller (ADF) test

with the critical values of the test statistics at all 0.05 level of significance. Therefore, the Null-Hypothesis is not rejected and thus it is sufficient to conclude that there is unit root in the above variable in their level form.

Table 4.3: ADF and PP Test Results at First difference for Intercept at 5% level of significance

ADF Test Results at First difference				Phillip-Perron (PP) Test Results at First difference			
Variable	Test statistic	Critical value	P-value	Test statistic	critical value	P-value	Decision
POP	-17.9324	-2.991878	0.0001	-2.99098	-2.98622	0.0494	Reject the null hypothesis
Yunempt	-5.54993	-2.991878	0.0001	-14.3383	-2.98622	0.0000	Reject the null hypothesis
GCF	-5.03375	-2.986225	0.0004	-5.03375	-2.98622	0.0004	Reject the null hypothesis
GDP growth	-5.88809	-2.986225	0.0001	-5.93541	-2.98622	0.0001	Reject the null hypothesis

Source: Author (2018)

The null hypothesis for the ADF and PP tests is that all the series have a unit root. The result indicates that the all the variables that were found to be non-stationary at level became stationary when they were differenced once, and thus the Null-Hypothesis of non-stationarity was rejected followed by the conclusion that all these variables became stationary or have no unit root. Having known that the variables that was non-stationary at level became stationary at first difference, the implication is that they qualify for Cointegration. For Cointegration to be applied at least one variable should be

non-stationary at level but become stationary at first difference and thus Cointegration was applied.

4.2 Results of the long run relationship between population growth and youth unemployment rate in Somalia

In the Johansen's co-integration approach, similar to the Engle-Granger approach of co-integration the first step is to check for stationarity of the concerned variables in the study. As discussed in subsection earlier, variables that are relevant for this study are found to be integrated in different orders, i.e., all are I(1). Given that all variables become stationary at their first order, it became the most desirable case in order to continue with the Johansen's approach of co-integration test. The test is performed in order to determine the existence of co-integration between youth unemployment rate (Y) and the independent variable of population growth.

Table 4.4: Cointegration rank Test (Trace) results of the variables

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.720263	67.12880	54.07904	0.0023
At most 1 *	0.583569	35.28114	35.19275	0.0489
At most 2	0.321832	13.38027	20.26184	0.3342
At most 3	0.136578	3.671284	9.164546	0.4633

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

 * denotes rejection of the hypothesis at the 0.05 level

 **MacKinnon-Haug-Michelis (1999) p-values

Source: Author (2018)

The findings of Table 4 above from the Unrestricted Cointegration trace rank test shows that there is co-integration Population growth, Gross domestic product, and Gross capital formation and youth unemployment. Comparing the p-value at none and the p-value at most 1, it is decided that we reject the null hypothesis at 0.05 level of significance. It is therefore concluded that there is a long run relationship among the variables in the model.

Table 4.5: Cointegration rank Test (Maximum Eigenvalue) results of the variables

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.720263	31.84766	28.58808	0.0184
At most 1	0.583569	21.90087	22.29962	0.0568
At most 2	0.321832	9.708989	15.89210	0.3616
At most 3	0.136578	3.671284	9.164546	0.4633

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

 * denotes rejection of the hypothesis at the 0.05 level

 **MacKinnon-Haug-Michelis (1999) p-values

Source: Author (2018)

The results from Maximum Eigenvalue indicate that there is Cointegration among

Population growth, Gross domestic product, and Gross capital formation and youth Unemployment rate. These findings confirm the results got from the first trace rank test hence by observing the p- value of at none from the above table we reject the null hypothesis that there is Cointegration among these variables thus we conclude that there is a long run relationship among population growth, Gross domestic product, and Gross capital formation and youth unemployment.

4.3. Results Granger causality between population growth and youth unemployment in Somalia

To establish if population growth granger causes youth unemployment or not, granger causality tests were carried out and the findings have been indicated in the table below.

Table 4.6: Granger causality test

Null Hypothesis:	Obs	F-Statistic	Prob.
LOGPOP does not Granger Cause LOGYUNEM	25	4.78294	0.0201
LOGYUNEM does not Granger Cause LOGPOP		0.03743	0.9633

Source: Author (2018)

The findings in the above table have been used to examine if population growth granger causes youth unemployment rate in Somalia or not. To establish this, the two null hypotheses have been setup in the table 6 above. The rejection criteria is that the study rejects that null hypotheses above if the p-value of any of the above null hypothesis in table 6 is less than 0.05. Following the outcome of the above results of the p-value of 0.0201 of Granger causality test, the current study rejects the first null hypothesis in table 6 and concludes that population growth does Granger Cause youth

unemployment rate but Unemployment rate does not granger cause population growth. In nut shell this study concludes that population growth causes youth unemployment in Somalia given the study variable also on the other hand, the findings have indicated that youth unemployment does not cause population growth.

4.4 Results of the effect of population growth on youth unemployment rate in Somalia

Regression analysis was used to establish the extent to which independent variables affect youth unemployment rate in Somalia and the results are presented in the table below. Stationary variables were used for population growth and youth unemployment.

Table 4.7: showing regression output analysis model of all the variables under study at 5% level of significance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGPOP	0.628160	0.243267	2.582181	0.0170
LOGGDP	-0.050667	0.081163	-0.624264	0.5389
LOGGCF	-0.090037	0.042348	-2.126105	0.0450
C	-5.025080	2.625534	-1.913926	0.0687

R-squared	0.652459	Mean dependent var	2.257461
Adjusted R-squared	0.605067	S.D. dependent var	0.128863
S.E. of regression	0.080982	Sum squared resid	0.144278
Durbin-Watson stat	1.979051	Long-run variance	0.004065

4.4.1 Interpretation of the model of the above model

The findings of the above regression model indicate that population growth impacts on youth unemployment significantly. This means that as population growth increases, youth unemployment also increases. This can be seen by observing the p-value of population growth which in this case is 0.0170 which is less than 5% level of significance. The model also reveals that the variables of gross capital formation (GCF) has a negatively significant impact on youth unemployment at 5% level of significance shown by p-values of 0.045 and GDP growth does not have any significant impact on youth unemployment.

The R-squared value from the above model is 0.6524 indicating that the independent variables of GDP growth, population growth and gross capital formation account for only 65.2% changes in youth unemployment in Somalia.

4.5 Diagnostic Tests

Diagnostic tests determine the goodness of the model. Thus, the regression model was preceded by diagnostic tests presented. The diagnostic tests included: Jarque-Bera test for Normal data.

Figure 4.1: A graph showing normality in residuals after regression

Series: Residuals	
Sample 1992 2017	
Observations 26	
Mean	-0.009434
Median	0.002289
Maximum	0.123003
Minimum	-0.271447
Std. Dev.	0.082843
Skewness	-1.310232
Kurtosis	5.159931
Jarque-Bera	12.49314
Probability	0.001937
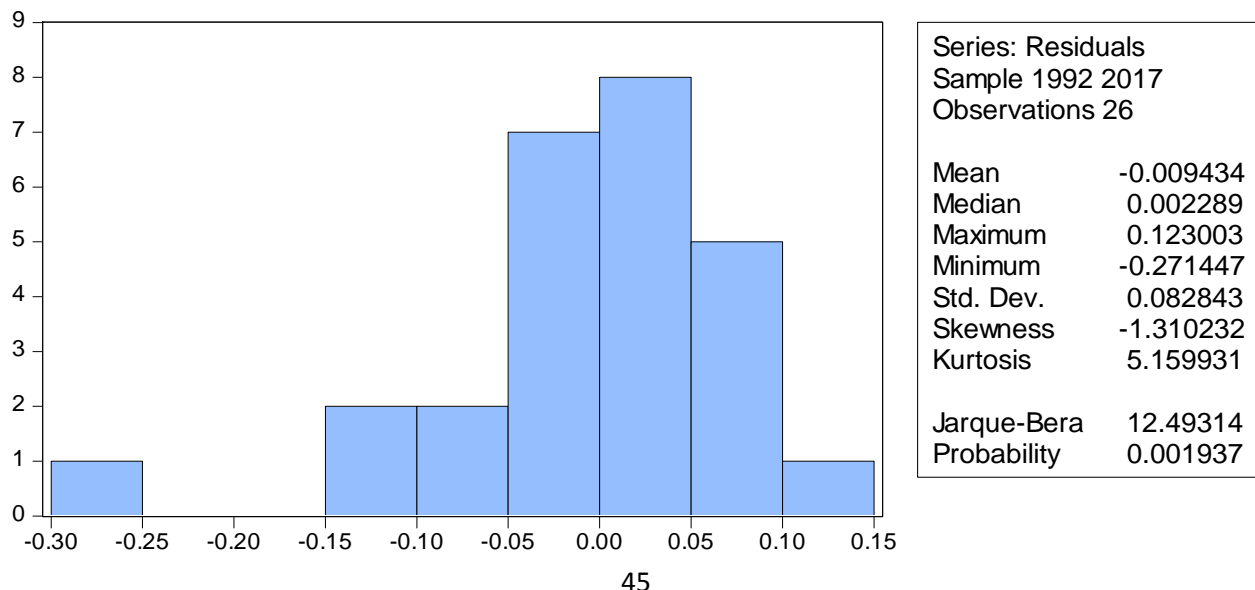
The normality test for the residual series is undertaken using the Jarque-Bera (J.B.) statistic. The J.B. test from figure 1 shows that the model is not normally distributed. This is due to the p-value of 0.001937 in the model is less than 0.05 level of significance, we reject that null hypothesis of normality and rather conclude that our residuals are not normally distributed.

The long run relationship between population growth and youth unemployment rate

To establish if there is a long run relationship between the variables, Cointegration test were used to identify their long run interaction. In this research, the study compared the findings of both Trace and Maximum Eigenvalue results to examine if there is a long run relationship between population growth and youth unemployment as revealed in table 4 and 5 respectively. The Unrestricted Cointegration trace rank test showed that there is a co-integration between Population growth and youth unemployment rate since its p-value of 0.0023 at none, and 0.0489 at at-most 1, were all less than 0.05. Thus the null hypothesis of non-existence of a long run relationship between youth unemployment and population growth was rejected. The findings were confirmed by the second test results of Maximum Eigenvalue with the p-value of none(p-value of 0.0184) being less than 0.05 therefore in conclusion there is a long run relationship between population growth and youth unemployment in Somalia.

The Granger causality between Population growth and youth unemployment

From the findings in table 6 the results indicate that youth unemployment does not Granger Cause Population growth. This is because the p-value of 0.9633 is greater than 0.05. In this case, we fail to reject the null hypothesis that youth unemployment causes population growth and thus conclude that youth unemployment does not Granger Cause Population growth in Somalia.

The findings also revealed that Population growth does granger cause youth unemployment. This is because the p-value of 0.0201 is less than 0.05 implying that we reject the null hypothesis and concludes that population growth granger causes youth unemployment.

The effect of population growth on youth unemployment

A multiple regression analysis was used to establish how population growth impacts youth unemployment rate. The findings of the results showed that there is a positively significant relationship between the two variables under study. The findings also revealed that gross capital formation has a significantly negative relationship with youth unemployment and gross domestic product do not have significant relationship with youth unemployment rate and the entire model of the independent variable and its error term account for 65.25 % of changes in the dependent variable of youth unemployment.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Discussions of Findings

The aim of this study was to examine the impact of population growth on youth unemployment in Somalia for a period between 1991 and 2017. Since this study involved time series data, there was need for stationarity tests to be carried out and since it involved a long run relationship analysis, Cointegration using Johansen test was also required. Finally, regression analysis was used to establish the impact of population growth on youth unemployment.

5.1.1 Long run relationship between population growth and youth unemployment rate in Somalia

Cointegration was used to test if there is any log run relationship between population growth rate and youth unemployment in Somalia. Before testing for this long run relationship between the two variables, there was need to establish if our variables were non-stationary at level and if after first difference, they become stationary since this is mandatory for Cointegration to take place. From the previous analysis chapter, the findings revealed that the variables were non-stationary at level but when they were differentiated once, the become stationary qualifying our variables for Cointegration and these findings are in line with Engel and Granger (2013) and Cheung and Lai (2011), who proposed that for Cointegration test to take place, the series should be non-stationary at level but become stationary after being differentiated once. However, after the Johansen trace test were run, we established that there is a long run relationship between these two variables. Attempts to confirm the results of the trace tests using the Maximum Eigenvalue test also confirmed that there was a long run relationship between youth unemployment rate and population growth in Somalia.

Therefore the results from Maximum Eigenvalue indicate that there is Cointegration among Population growth, Gross domestic product, and Gross capital formation and youth Unemployment rate. These findings confirm the results got from the first trace rank test hence by observing the p- value of at none and at most 3 from the table 4 and 5.thus our null hypothesis that there is no long run relationship between population growth rate and youth unemployment was rejected hence we concluded that there is a long relationship between the two variables under study.

All in all, the findings revealed that youths are at the forefront of the Africa's demographic shift toward cities: the number of young people in the continent is growing faster than anywhere else in the world. As young people leave rural areas for cities in search of better economic opportunities, they add to an already growing urban youth population. In fact, most migrants into urban centers around the world are young people.

5.1.2 Granger causality between Population growth and youth unemployment in Somalia

After establishing a long run relationship between the two variables, the next task was to examine if population growth causes youth unemployment in Somalia given the time series data. The outcome of the results revealed that population growth granger causes youth unemployment in Somalia as indicated by a p-value of 0.0201 in table 6.This findings conform with the findings of Monteiro and Victoria (2005), who in their study established that a country that has high rate of population growth is most likely to be faced with high rates of youth unemployment Thus in Somalia the results show that population growth causes youth unemployment.

 On the other hand, the findings indicated that youth unemployment does not granger cause population growth and this was equally revealed by the finding of table 6 which showed a p-value of 0.9633 which is greater than 0.05.These findings conform with the

findings Crepon (2012), who also examining the causes of high unemployment rates in Sub-Saharan countries established that the main cause of unemployment is uncontrolled population growth rates in these countries. He argued that if these countries do not enact policies that aim at reducing the growth rates of their population then there will be increased unemployment for years to come and subsequently, under development.

5.1.3 The effect of population growth on youth unemployment rate in Somalia

The research was also set out to establish the impact of population growth rate on youth unemployment in Somalia from 1991-2017. Regression analysis was used so as to get the extent to which population growth rate impacts youth unemployment rate. The findings of the research indicate that there is a significant relationship between population growth, gross capital formation and youth unemployment at 5% level of significance. The findings of the regression analysis also showed that one-unit increase in population growth rate increases youth unemployment rate by 0.628160 units indicating a small significance. The results further revealed that the model was significant with a p-value of 0.0170 and R-squared value of 65% means that population growth rate accounts for 65% of the changes in youth unemployment rate in Somalia. The research finding complements with Muhammad et al (2013) who found a positive relationship between population growth and youth unemployment. This is possibly true due to the fact that youth population increases yet skilling and training for employability is lacking.

The finding revealed a positive relationship between population growth rate and Youth employment however (Asteriou& Stephen, 2007) argues that the correlation is not always direct, because Firstly, the youth bulge has not created an even unemployment rate throughout the continent then Secondly, it is not the numbers of young people that has created unemployment, but structural issues specific to individual countries.

This finding also contravenes the conclusion that unemployment and population growth rate have positive relationship as cited by Fanati and Manfredi (2013) that a number of factors determine the supply of labour in an economy. The chief among them is the rate of population growth. High rate of population growth is expected to increase the supply of labour and put pressure on the labour market.

Monteiro and Victora (2005), notes that although a growing youth population is a challenge, it cannot fully explain the unemployment figures in Africa. This assertion is contrary to the research conclusion that increase in population growth rate increases youth unemployment.

5.2 Conclusion

5.2.1 Long run relationship between population growth and youth unemployment

The study concludes that Somalia is among Sub Saharan countries with the fastest population growth projected for 36 years between 2014 and 2050 and the highest youth population in the world where Low Developed Countries like Somalia are experiencing extreme levels of poverty, structural weaknesses of their economies and the lack of capacities related to growth, often compounded by structural handicaps. This therefore implies that the working-age population of the LDCs like Somalia will increase by an annual average of about 15 million, and the labour force will increase by about thousand per day over the next forty years, on average.

This is true because most of the youth are absorbed in the already occupied informal sectors waiting to get an opportunity in the formal sector, notwithstanding the gender dimension inherent in these countries with unemployment, underemployment and vulnerable employment (Berg, 2012). This therefore concurs to the findings of the study that there is a long run relationship between population growth and youth

unemployment, implying that in the short run the relationship may not show up but its effect persists after a long period time.

5.2.2 Granger causality between Population growth and youth unemployment in Uganda

The study concluded that population growth has also had a relatively small effect on unemployment in Somalia and this fact does not demonstrate any demographic stimulus to job creation. It simply indicates that unemployment is not a feasible option for most people and therefore it is likely to exacerbate income inequalities, particularly if many new young workers have little education. When a large proportion of workers are young and inexperienced, their productivity tends to be lower. Except for those who have more education than older workers, their starting wages will tend to be lower, and they must compete with each other.

5.2.3 The effect of population growth and youth unemployment

The study concludes that rapid population growth increases various forms of unemployment in Somalia and that the lack of investment in infrastructure and subsidy for sectors with potential for creating jobs for example; have created deep structural issues within the country economy. In many cases, these issues have been brought about by Ploygamy since Sharia Law allows men to marry more than one wife, high fertility rates amongst women, which have inhited high levels population growth.

5.3 Policy Recommendations

Since there was significant evidence that youth unemployment rate is due to population growth and that gross capital formation reduces youth unemployment. There is need for the government and nongovernmental organizations should:

- The Government of Somalia should also improve on sensitization and educating the people on population control through teaching them on birth control measures like child spacing.

- The Government of Somalia should invest heavily in the private sector through supporting private investors setting up manufacturing companies to employ youths and acquire them with necessary skilling to sustain them in life.
- The Government of Somalia should also create an enabling environment for self-employment, job creation and entrepreneurship if the country is to benefit from the youth population, and this should be through setting up market centers and trade shows for entrepreneurs and traders to be open up SMEs in these markets to earn a living.
- The study recommends that the Government of Somalia should take effective steps to spread women education and create employment opportunities for them so that they can understand the evils of population growth.
  - The government of Somalia needs to raise, the employment avenues in low developed states of Somalia like; Galmudug state, Hirshabelle state as well as urban areas especially in regions like Banadir region.

5.4 Contribution to the existing Knowledge

This study will be helpful in supplementing the pool of knowledge and understanding regarding population growth and youth unemployment in Somalia. According to the evidence, it has been noticed that the rapid population growth especially in cities like; Mogadishu, Hargesia, and Kismayo are has resulted in competition of youths for the little employment opportunities existing in the country since Somalia still continues to grapple with high youth unemployment rates. This has been caused by uncontrolled rapid population growth due to many occurrences of teenage marriages where many girls have been subjected to marriages at ages of 15 and 16 years.

5.5 Suggestions for Further Research

The present research focuses on a few casual variables and there may still be a need to study other relevant variables to determine whether they give the same findings as the ones found in this study.

This study narrowed its focus to a Ugandan context. This means a similar approach can be used to study other countries cases.

This study used the Cointegration to estimate the relationship between youth unemployment and population growth rate. Therefore, it invites the researcher to criticize this model and prove its relevancy.

REFERENCES

Awogbenle, A.C. & Iwuamadi, K.C. (2010). Youth Unemployment: Entrepreneurship development Programme as an Intervention Mechanism. *African Journal of Business Management, 4(6), 831-835.*

Afzal, M. (2009). Population growth and economic developpment in Pakistan. *The Open Demography Journal, 2(1).*

Aqil, M., Qureshi, M. A., Ahmed, R. R., &Qadeer, S. (2014). Determinants of unemployment in Pakistan. *International Journal of Physical and Social Sciences*, *4*(4), 676.

Ang, J. B., &McKibbin, W. J. (2007). Financial liberalization, financial sector development and growth: evidence from Malaysia. *Journal of development economics*, *84*(1), 215- 233

Audra Bowlus, Haoming Liu, and Chris Robinson, "Business Cycle Models, Aggregation, and Real Wage Cyclicality," *Journal of Labor Economics* 20, 2 (2002), pp. 308–335.

Awogbenle, A.C. &Iwuamadi, K.C. (2010). Youth Unemployment: Entrepreneurship Development Programme as an Intervention Mechanism. *African Journal of Business Management, 4(6), 831-835.*

Abdul-khaliq, S., Soufan, T., &Shihab, R. A. (2014). The Relationship between Unemployment   and Economic Growth Rate in Arab Country, 4(7), 62– 67.

Adesola, O. O., Oluseye, A. M., Omonike, A. O., &Omowunmi, O. M. (2017). Causes and Effects of Graduate Unemployment on the Nigerian Economy.

Adawo, M. A., &Atan, J. A. (2013). Graduate unemployment in Nigeria: Entrepreneurship and Venture Capital Nexus. *Journal of Economies and Sustainable Development*, *4*(9).

Alanana,O.O., Youth unemployment in Nigeria: some implications for the third Millenium, Global Journal of Social Science,2(1), 21-26. 2013

Afzal, M. (2009).Population growth and economic developpment in Pakistan.The Open Demography Journal, 2(1).

Ang, J. B., &McKibbin, W. J. (2007). Financial liberalization, financial sector development and growth: evidence from Malaysia. *Journal of development economics, 84(1).*

Bloom, D. E., & Freeman, R. B. (2012). The effects of rapid population growth on labor supply and employment in developing countries.*Population and Development Review*, 381-414.

Birdsall, A.C. Kelley and S. Sinding (eds), (2011) *Population Matters: Demographic Change, Youth unemployment Growth, and Poverty in the Developing World, Oxford:Oxford University*

Brennan. E. (2008), "The poverty of cities in developing regions," *Population and Development Review*, 24(1): 75-114. Clark, G. (2007) *A Farewell to Alms- A Brief Youth unemployment History of the World*, P

Byerlee, D. (2013). Rural-urban migration in Africa: Theory, policy and research implications. *The International Migration* Daily Sun*Review*, *8*(4), 543-566.

"Bureau of Economic Analyses, 2010" Retrieved 2010-01-02.

Carl Menger, *Principles of Economics* (Auburn: Ludwig von Mises Institute, 2007 [1871]), p.52.

Charles, L. (2010). The long-term destabilization of youth, scarring effects, and the future of the welfare regime in post-trenteglorieuses France. *French Politics, Culture & Society*, *28*(3), 74-96.

Central Intelligence Agency(2014)."Somalia".The world Factbook, Langley, Virginia Central Intelligence Agency Retrieved 2014-10-05

Clark, K. B., & Summers, L. H. (2015). The dynamics of youth unemployment. In *The youth labor market problem: Its nature, causes, and consequences* (pp. 199-234). University ofChicago Press.

Coale, A. J. (2011). Demographic transition. In *Social Economics* (pp. 16-23). Palgrave Macmillan UK.

Daily Sun (2012). Employment generation in Bangladesh

Donna Clitton & Alexandra Hervish, the world's Youth 2013 Data Sheet (Washington, DC Population Reference Bureau

Dimensions of Crisis on Migration in Somalia, Working paper, IOM, Department of Operations

and Emergencies, Geneva. 2014a

Duvander, A. Z. E. (2013). Do country-specific skills lead to improved labor market positions?

Eraut, M. R., Alderton, J., Cole, G., &Senker, P. (2015). *Development of knowledge and skills in employment*. *Economic and Social Research Council.*

Fanati and Manfredi, (2013). Population, Unemployment and Youth unemployment Growth Cycles: A Further Explanatory Perspective. 2013

Frank, O. (2014). Infertility in sub-Saharan Africa: estimates and implications. *Population and development review*, 137-144.

Friedberg and Hunt (2015). The impact of Immigrants on Host country wages, employment and youth unemployment growth. *Journal of youth unemployment perspective, Volume 9, Issue 2 (spring 2015)*.

Garcia, Marito. 2016. Directions in Development- Human Development. World Bank.

Headey, D. D. and A. Hodge (2009), "The effect of population growth on youth unemployment growth: a meta-regression analysis of the macro youth unemployment literature", *Population and Development Review, 35(2): 221-48*

International Labour Organization (ILO) 2013 Puntland Enterprise Survey 2011, conducted by Puntland University, with technical support provided by ILO.

Imran, M., &Sial, M. H. (2013).Employment , Trade Openness and Capital Formation:

Time Series Evidence from Pakistan, 1(4), 37–42.

IOM builds capacity of Somaliland government with graduate internships. Press release, 4 March.

International Labour Organization (ILO) 2013. Puntland Enterprise Survey 2011,

conducted by Puntland University, with technical support provided by ILO.

International Organization for Migration (IOM) .2013 Tackling high youth unemployment in Somaliland. Press release, 6 August. *Available from www.iom.int/news/tackling-high-youth-unemployment-somaliland*.

International Labour Offic (ILO) 2008. Global Employment Trends for Youth

International Organization for Migration (IOM) .2013 Tackling high youth unemployment in Somaliland. *Press release, 6 August. Available from www.iom.int/news/tackling-high-youth-unemployment-somaliland.*

Kalim Rukhsana (2003). The Population and Unemployment: Dilemma to Resolve. *Journal of Applied Economics*

Labour Force Survey Somaliland 2012, Report on Borama, Hargeisa, Burao. Conducted in collaboration with the Government of Somaliland, with technical support provided by ILO. 2012b

Labour Force Survey Somaliland 2012, Report on Borama, Hargeisa, Burao. Conducted in collaboration with the Government of Somaliland, with technical support provided by ILO. 2012b

Max Roser and Esteban Ortiz-Ospina (2012). Global human population.

Malley, J. and *Molana*, H. (*2007*). The relationship between output and unemployment with efficiency wages. *German Youth unemployment Review, 8(4), pp. 561-577.*

Monteiro, P. O. A., &Victora, C. G. (2005). Rapid growth in infancy and childhood and obesity in later life–a systematic review. *Obesity reviews*, *6*(2), 143-154.

Muscatelli and Tirelli (2011). The Interaction of Fiscal and Monetary Policies: Some Evidence using Structural Econometric Models.

Ogonna, I. C., Idenyi, O. S., Ifeyinwa, A. C., & Gabriel, N. U. (2016). The Implications of Rising Public Debt on Unemployment in Nigeria *: An Auto Regressive Distributed Lag Approach, 1(1), 1–15.*

Okafor, E. E. (2011). Youth unemployment and implications for stability of democracy in Nigeria. *Journal of sustainable Development in Africa*, *13*(1), 358-373.

Princeton, NJ: Princeton University Press. Crook, N. (2007) *Principles of Population and Development*, Oxford: Oxford University Press. Dyson, T. (2010) *Population and Development: The Demographic Transition*, New York, NY: Zed Books.

Puntland State of Somalia 2014 The Puntland Priorities, 2014-2016. Garowe.

Puntland Youth: Challenges, Prospects and Opportunities. Puntland Development Research Center, Garowe. *The Heritage Institute for Policy Studies (HIPS) 2013*

Sayerndmorri. Von Neumann, J., & Morgenstern, O. (2007). *Theory of games and economic behavior*. Princeton university press.

Slama, M. E., &Tashchian, A. (2014). Selected socioeconomic and demographic characteristics associated with purchasing involvement. *The Journal of Marketing*, 72-82.

Somalia humanitarian and development statistics report . July 2016.

Stren, R. E., & White, R. R. (2016). *African cities in crisis: managing rapid urban growth* (Vol.5). Westview Pr.

The State of Higher Education in Somalia: Privatization, Rapid Growth and the Need for Regulation. HIPS, Mogadishu. 2013.

UNDP Discussion Paper 'Kenya's Youth Employment',2013

UBOS. (2013). Statistical abstract of Somalia 2013

Vocational Skills for Somali Youth, Youth employment and livelihood survey on skills and market opportunities in Gedo, Puntland, and Banadir regions. NCA. 2013.

Wenk, D., & Hardesty, C. (2011). The Effects of Rural-to-Urban Migration on the Poverty Status of Youth in the 1980s1. *Rural Sociology*, *58*(1), 76-92.

World Bank. 2010. African Development Indicators 2010/2010. Washington, DC: World.

"World Population Prospects 2017".Retrieved 2017-11-21.

"World Population Prospects: The 2017 Revision"*. ESA.UN.org (custom data acquired via website)* United Nations Department of Economic and Social Affairs*, Population Division*. Retrieved 10 September 2017*.*

"World Population Prospects 2012".Retrieved 2012-10-10.

World Population Prospects: The 2012 Revision, CD-ROM Edition-Extended Dataset (United Nations Publications, Sales No. 13.XIII.10)

Youth Employment Africa, Mapping Report of the Employment and Labour Sub-Cluster of the Regional Coordination Mechanism (RCM) for Africa.ILO Regional Office for Africa, Addis Ababa. 2013a

Youth Employment Africa, Mapping Report of the Employment and Labour Sub-Cluster of the Regional Coordination Mechanism (RCM) for Africa. ILO Regional Office for Africa, Addis Ababa. 2013a

Appendix I: Normality test

Series: Residuals	
Sample 1992 2017	
Observations 26	
Mean	-0.009434
Median	0.002289
Maximum	0.123003
Minimum	-0.271447
Std. Dev.	0.082843
Skewness	-1.310232
Kurtosis	5.159931
Jarque-Bera	12.49314
Probability	0.001937
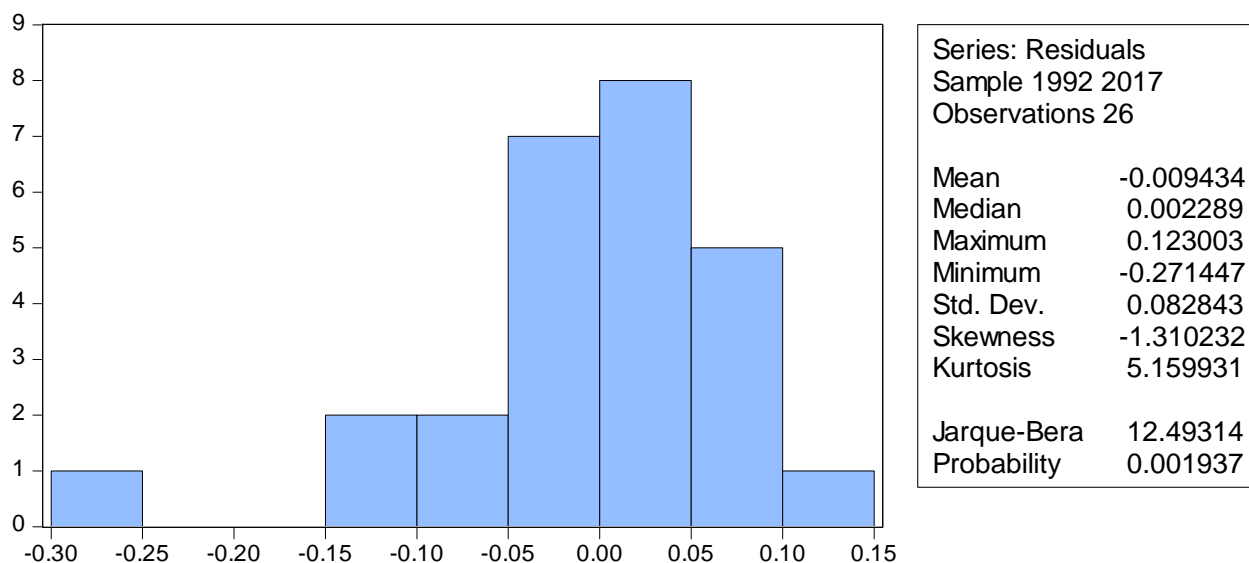
Appendix III: (Granger causality test)

Pairwise Granger Causality Tests
Date: 08/21/18   Time: 13:23
Sample: 1991 2017
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LOGPOP does not Granger Cause LOGYUNEM	25	4.78294	0.0201
LOGYUNEM does not Granger Cause LOGPOP		0.03743	0.9633
LOGGDP does not Granger Cause LOGYUNEM	25	1.62995	0.2209
LOGYUNEM does not Granger Cause LOGGDP		0.04883	0.9525
LOGGCF does not Granger Cause LOGYUNEM	25	1.01687	0.3797
LOGYUNEM does not Granger Cause LOGGCF		1.57281	0.2321
LOGGDP does not Granger Cause LOGPOP	25	1.03377	0.3739
LOGPOP does not Granger Cause LOGGDP		2.96267	0.0747
LOGGCF does not Granger Cause LOGPOP	25	0.94150	0.4067
LOGPOP does not Granger Cause LOGGCF		0.70553	0.5057
LOGGCF does not Granger Cause LOGGDP	25	0.41226	0.6677
LOGGDP does not Granger Cause LOGGCF		0.28088	0.7581

Appendix III: Data used in the study

Year	YUNEMP. Rate	Pop	GDP	GCF
1991	9.2	7,455,936	590,000,000	185,248,947
1992	8.9	7,488,544	780,000,000	118,986,364
1993	8.6	7,519,811	810,000,000	223,437,239
1994	9.5	7,583,954	1,050,000,000	232,974,307
1995	8.6	7,704,894	1,330,000,000	232,134,498
1996	7.8	7,892,389	1,140,000,000	260,675,627
1997	8.7	8,137,475	1,260,000,000	306,549,398
1998	8.7	8,422,372	1,430,000,000	384,722,602
1999	8.7	8,720,231	2,010,000,000	385,114,885
2000	8.8	9,011,479	2,220,000,000	420,094,029
2001	8.1	9,290,823	2,580,000,000	266,669,575
2002	10	9,564,167	3,120,000,000	249,587,855
2003	9.5	9,836,397	3,440,000,000	279,629,261
2004	8.3	10,116,228	3,090,000,000	364,499,479
2005	7.4	10,409,925	3,220,000,000	470,912,220
2006	10.3	10,718,317	3,590,000,000	485,892,879
2007	9.1	11,038,596	3,310,000,000	488,546,439

2008	10.3	11,369,276	3,910,000,000	522,976,538
2009	11.1	11,707,990	4,470,000,000	403,180,218
2010	11.1	12,053,223	4,330,000,000	213,636,364
2011	11.1	12,404,725	5,590,000,000	213,824,451
2012	11.1	12,763,776	5,140,000,000	261,259,542
2013	10.6	13,132,349	5,350,000,000	279,670,782
2014	10.9	13,513,125	5,650,000,000	275,080,311
2015	11.1	13,908,129	5,930,000,000	266,507,762
2016	11.1	14,317,996	6,220,000,000	263,654,047
2017	11.1	14,742,523	7,330,000,000	271,228,226

Source: world Bank, 2017

Where;

POP rate is the population rate

YUEMPT RATE is the Youth unemployment rate

GCF is the Gross capital formation

GDP is the Gross Domestic product growth