

**DETERMINANTS OF YOUTH UNEMPLOYMENT IN KENYA: AN ECONOMIC  
ANALYSIS**

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ECONOMICS IN THE UNIVERSITY OF NAIROBI**

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## DECLARATION

This proposal is my original work and has not been presented for any award or degree in any other University.

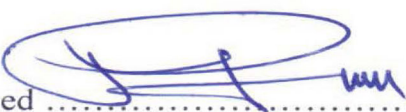
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## ACKNOWLEDGEMENT

The last decade has seen important developments on the employment theme within economics circles, albeit globally. External shocks non-adjustable by routine economic instruments have resulted to a strained job-market economy. These trends and their effect to the domestic and global job-market economy dominated much of my discussion with colleagues, both at university and at work. It is as a result of that discussion that when I shared my measured thoughts with my supervisor Mr. Raphael Muthee Kabando that we found the youth unemployment theme both timely and relevant, for an economy that was recovering from the perils of COVID-19 and locust invasion.

It is therefore natural that I am deeply indebted to Mr. Kabando whose guidance has been immense. From the very beginning he provided reflective insights and directed on useful materials to read. He challenged me to follow global development in my theme, something that enriched my understanding of the topic to better levels. It is this kind of guidance and generosity that gave this work shape.

Joyce Kineene and Obed Nyangena, friends like you are difficult to find. You are a rare gem. After long days and nights of reading and writing, I nearly felt fatigued at some point; I invited you home for tea and discussed many things about life. I may not have told you before, the March discussion saved much of my worries. As a result, I could concentrate and focus, again. To my parents, I love you so much and your prayers never went unanswered. Your kind support both material and immaterial, served me well at every turn in my journey. May God bless you always. Leilani Cherotich Koiyani, a daughter every mother would love to have, may you grow knowing I endured for you to smile.

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## **DEDICATION**

To every unemployed youth who so much believes that tomorrow would present a better day.

## **ABSTRACT**

Increasing youth unemployment is a challenge of national importance. Targeted youth programmes have failed to respond to the problem. Against this background, the study sought to examine underlying socio-economic factors and determine gender differentials responsible for persistent youth unemployment in Kenya to shape policy. The study used the World Bank Skills Toward Employment Productivity 2016 – 2017 survey data with 45,877 observations. Analysis was done using the instrumental variable-2 Stage Least Square model. Analyzed factors included education, training on skills, work experience, age, residence, career choice and type of schooling to determine gender differentials. Findings reveal worrying gender differentials in rural residence (63.5%) and education (13.2%), and a closed gender differential gap of 2.5% attributable to training on skills and work experience. It is concluded that deepened work experience and training on skills would yield desirable gender balanced employment outcomes. Study recommends that future studies should on focus understanding employers' preference for older male to female.

## **ABBREVIATIONS AND ACRONYMS**

<b>2SLS</b>	2 Stage Least Square
<b>AFM</b>	Accounting and Financial Management
<b>ARDL</b>	Autoregressive Distributed Lag
<b>CSIT</b>	Computer Sciences and Information Technology
<b>EAC</b>	The East African Community
<b>FDI</b>	Foreign Direct Investments
<b>GMM</b>	Generalized Method Of Moments
<b>ILO</b>	International Labour Organization
<b>KEPSA</b>	Kenya Private Sector Alliance
<b>KIHBS</b>	Kenya Integrated Household Budget Survey
<b>KKV</b>	Kazi Kwa Vijana
<b>KNBS</b>	Kenya National Bureau of Statistics
<b>KYEOP</b>	Kenya Youth Employment & Opportunities Project
<b>MBE</b>	Business Management And Entrepreneurship
<b>MENA</b>	Middle East and North Africa
<b>MSE</b>	Micro and Small Enterprises
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OIC</b>	Organization of Islamic Countries

<b>PWC</b>	PricewaterhouseCoopers
<b>STEP</b>	Skills Toward Employment Productivity
<b>VIF</b>	Variance Inflation Factor
<b>YEDF</b>	Youth Enterprise Development Fund
<b>IV</b>	Instrumental Variable

# TABLE OF CONTENTS

DECLARATION.....	i
ACKNOWLEDGEMENT.....	ii
DEDICATION.....	iii
ABSTRACT.....	iv
ABBREVIATIONS AND ACRONYMS.....	v
TABLE OF CONTENTS .....	vii
CHAPTER ONE.....	1
INTRODUCTION.....	1
<b>1.1 Background.....</b>	<b>1</b>
<b>1.1.1 Unemployment trends in East African Community .....</b>	<b>3</b>
<b>1.1.2 General Unemployment Situation in Kenya .....</b>	<b>4</b>
<b>1.1.3 Measures to mitigate unemployment problems in Kenya.....</b>	<b>8</b>
<b>1.2 Statement of the Problem .....</b>	<b>9</b>
<b>1.3 General Objectives .....</b>	<b>11</b>
<b>1.3.1 Specific Objectives .....</b>	<b>11</b>
<b>1.4 Research Questions .....</b>	<b>12</b>
<b>1.5 Importance of the Study .....</b>	<b>12</b>
<b>1.6 Organization of the Proposal .....</b>	<b>13</b>



CHAPTER TWO.....	14
LITERATURE REVIEW .....	14
<b>2.1 Introduction.....</b>	<b>14</b>
<b>2.2 Theoretical Literature.....</b>	<b>14</b>
<b>2.2.1 Classical theory of unemployment .....</b>	<b>14</b>
<b>2.2.2 Neoclassical view .....</b>	<b>17</b>
<b>2.2.3 Socialist View.....</b>	<b>18</b>
<b>2.2.4 Phillips Curve analysis .....</b>	<b>18</b>
<b>2.3 Empirical Literature .....</b>	<b>19</b>
<b>2.4 Overview of Literature .....</b>	<b>26</b>
CHAPTER THREE.....	28
METHODOLOGY .....	28
<b>3.1 Introduction.....</b>	<b>28</b>
<b>3.2 Theoretical framework .....</b>	<b>28</b>
<b>3.3 Empirical model .....</b>	<b>30</b>
<b>2.4.1 Model specification .....</b>	<b>31</b>
<b>2.4.2 Variable definition and measurement.....</b>	<b>32</b>
<b>3.4 Pre-estimation tests .....</b>	<b>33</b>
<b>3.4.1 Robust check.....</b>	<b>33</b>
<b>3.4.2 Heterogeneity effect of labor.....</b>	<b>33</b>

<b>3.5</b>	<b>Data, Data Types and Sources .....</b>	<b>34</b>
<b>CHAPTER FOUR.....</b>		<b>35</b>
<b>DATA ANALYSIS AND DISCUSSION OF RESULTS .....</b>		<b>35</b>
<b>4.1</b>	<b>Introduction .....</b>	<b>35</b>
<b>4.2</b>	<b>Descriptive Statistics .....</b>	<b>35</b>
<b>4.3</b>	<b>Diagnostic tests .....</b>	<b>37</b>
<b>4.3.1</b>	<b>Multicollinearity test.....</b>	<b>37</b>
<b>4.3.2</b>	<b>Heteroscedasticity Test (Breusch-Pagan Test).....</b>	<b>38</b>
<b>4.4</b>	<b>Model estimation .....</b>	<b>39</b>
<b>4.4.1</b>	<b>Education.....</b>	<b>40</b>
<b>4.4.2</b>	<b>Training on Skills.....</b>	<b>41</b>
<b>4.4.3</b>	<b>Working Experience.....</b>	<b>42</b>
<b>4.4.4</b>	<b>Age.....</b>	<b>42</b>
<b>4.4.5</b>	<b>Rural Residence .....</b>	<b>42</b>
<b>4.4.6</b>	<b>Career Choice.....</b>	<b>43</b>
<b>CHAPTER FIVE.....</b>		<b>45</b>
<b>CONCLUSION AND POLICY RECOMMENDATIONS.....</b>		<b>45</b>
<b>5.1</b>	<b>Introduction .....</b>	<b>45</b>
<b>5.2</b>	<b>Summary and Conclusion .....</b>	<b>45</b>
<b>5.3</b>	<b>Policy Recommendations.....</b>	<b>46</b>

<b>5.4 Areas for further studies.....</b>	<b>46</b>
REFERENCES.....	48
APPENDIX.....	55
INDEX.....	57

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background

Although United Nations (UN) recognises youth as anyone aged 15 to 24 years, this may be different in different countries due to divergence in customs and traditions, social behavior and legal regimes (URT, 1995). Lack of consensus on youth remains across developing countries. For instance, in Kenya, anyone aged 18 to 34 years is classified as youth (Kenyan Constitution 2010). Statistics indicate individuals aged 15 to 24 years are mainly schooling, gaining skills necessary in the labour market and therefore unemployed (URT, 1995). Importantly, International Labour Organization (ILO) explains unemployment as the labour force share that is willing and able to work but they are currently not working despite their availability and ability, having searched for the work (ILO, 2013).

The aggregated level of unemployment in an economy is dependent on the level of performance by both firms and industries. Decisions made by the firms to either expand or downsize trigger changes in total levels of unemployment. Haltiwanger, Scarpetta and Schweiger (2008) posit those rates of job creation and obliteration ranges from a low of 25 to a high of about 30 percent across economies. The net employment change breakdown is divided into creation of jobs; destruction rates of jobs provide more information on economy trends. This linkage across different firms and the contribution that they make influences flows in the economy, a point of interest for policymakers.

There are various types of unemployment that can manifest in an economy. First is the frictional unemployment, which occurs when an economy experiences the continuous movement of people from one job to another. As a consequence, these people find themselves not employed for a given period of time. While frictional unemployment can be attributed to a range of causes, large number of graduates from tertiary institutions mainly universities and colleges in Kenya, it is economic stagnation that builds it (Kayode, Arome & Anyio, 2015).

Sometimes the labour market experiences job-skills mismatch. These phenomena of skills supply not corresponding with skill demanded by the job market results to structural unemployment (Merino, 2014). Smith (2012) has observed that Kenyans who are mainly looking for better jobs tend to experience this type of unemployment in the labour market because of the lack of the required competences. It is important to note that structural unemployment in developing nations results from technological changes. Finally, there is the cyclical unemployment or Keynesian unemployment that occurs where there are no sufficient expenditures to achieve the total output of those who are fully employed (Murwirapachena et al., 2010; Merino, 2014). It is common in first world nations mainly in the recession period. For instance, in 2008/9 Kenya went into recession after the hotly contested election, which resulted to the loss of thousands of lives and properties. Many of the businesses closed down and this led to loss of many job opportunities but economy quickly jumped back to normalcy. It is intricate reversing structural unemployment due to time required for one to match skills with jobs.

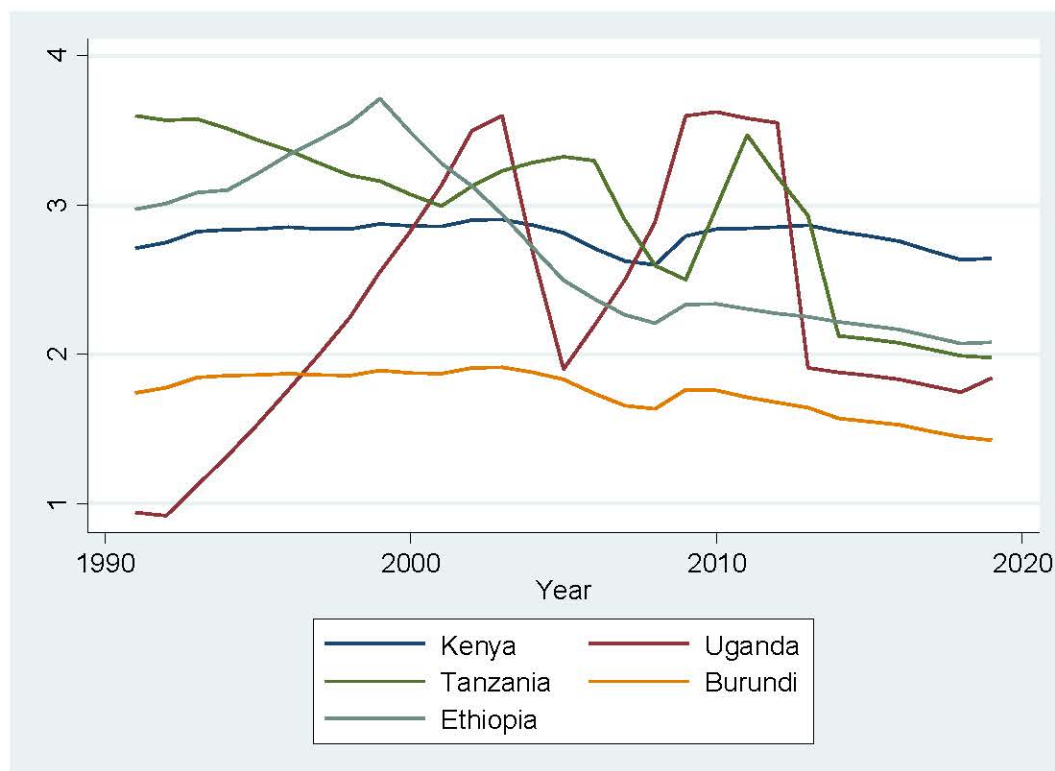
Variations in definition of youth provide varied insights on their employability or lack of it. In Africa, majority of the population consists of the unemployed youth under 25 years of age. The ILO (2019) has warned of a possible upsurge in number of unemployed youth above 15 years of age. Across African countries, startling statistics reveal, numbers of unemployed youth will swell

to a mean of half a million by 2035 yet youth are viewed as one of Africa’s greatest assets. In the next 15 years, it is further projected the number will most likely double reaching over 830 million by 2050 (World Bank, 2019).

### 1.1.1 Unemployment trends in East African Community

The countries within the East Africa Community (EAC) trading bloc have witnessed increase in the level of unemployment among youth. For instance, Uganda and Tanzania registered rates of 5.5 and 6.8 percent in that order. EAC has recorded an ever-increasing number of the youths who are out of employment (Economic Outlook, 2019). Figure 1 shows EAC trend of youth unemployment for the period 1990 to 2020.

Figure 1: Youth Unemployment in East African Community for the period 1991-2019



Source: World Bank Development Indicators (2020)

Generally, the unemployment levels for the select countries show a fluctuating trend over study period. Uganda saw rate of unemployment for the period 1991-2000 augment after which there was a decline in the level of youth unemployment for the period 2000-2010. Other countries including Kenya, Tanzania and Ethiopia shows stabilization in the level of youth unemployment with fluctuations witnessed from time to time for the entire period. Among the five countries, Burundi experienced low and stable levels of youth unemployment for the entire period from 1991-2019. High youth unemployment among these nations is a sign of lost potential in the process of national economic transformation in the country. According to international labour organization report on global employment trends, lever of youth unemployment is due to social exclusion and civil unrest (United Nations Development Programme, 2018; UN, “world Youth report, 2019).

Kenya's stabilization in the level of youth unemployment is due to the government effort to establish youth-oriented programs such as Kazi Kwa Vijana (KKV); Kenya Youth Employment & Opportunities Project (KYEOP) , Government’s effort to tackle youth employability apprenticeship by the Kenya Private Sector Alliance (KEPSA) as well as the Youth Enterprise Development Fund to promote economic activities by the youths in employment creation (GoK, 2019). These youth-focused programs were implemented in successive regimes after 2002-national coalition government.

### **1.1.2 General Unemployment Situation in Kenya**

The levels of unemployment and underemployment are pressing in the Kenyan economy especially among the youths (Kenya Sessional Paper No. 4, 2013); approximately 12.7 percent of the population in the working age being unemployed. It is estimated that 67 percent of the

unemployed Kenyan youths are aged 15-34 years and out of this, the higher proportion of the unemployed are aged 20 years and account for 35 percent of the total level of unemployment. The implication is that youth unemployment is a serious problem in Kenya. Similar to many other countries, labour market in Kenya is characterized by high influx of people while others are leaving jobs to join others.

As per the KNBS (2007), the overall unemployment rate was 12.7 percent for the year 2005/2006 while the unemployment rate in urban areas was 19.9 percent and the rural areas unemployment was 9.8 percent. Out of this, 57 percent of this were women and 86 percent were men aged 15-49 years were found not to be employed. There was a spike in the with number of employed women with the increase age to approximately 44 years before declining slightly for the age group 45-49 years (KNBS & ICF Macro, 2010). The job target creation for the year 2008 was estimated to be 425,000 but the actual jobs created were 467, 300 relatively higher than the target by 42, 300. Jobs created in the formal sector were in 2008 were 33,700 while the informal jobs were 433, 500 were in the informal sector and these were associated with the modern establishments and 100 consisted of self-employment (GoK, 2010).

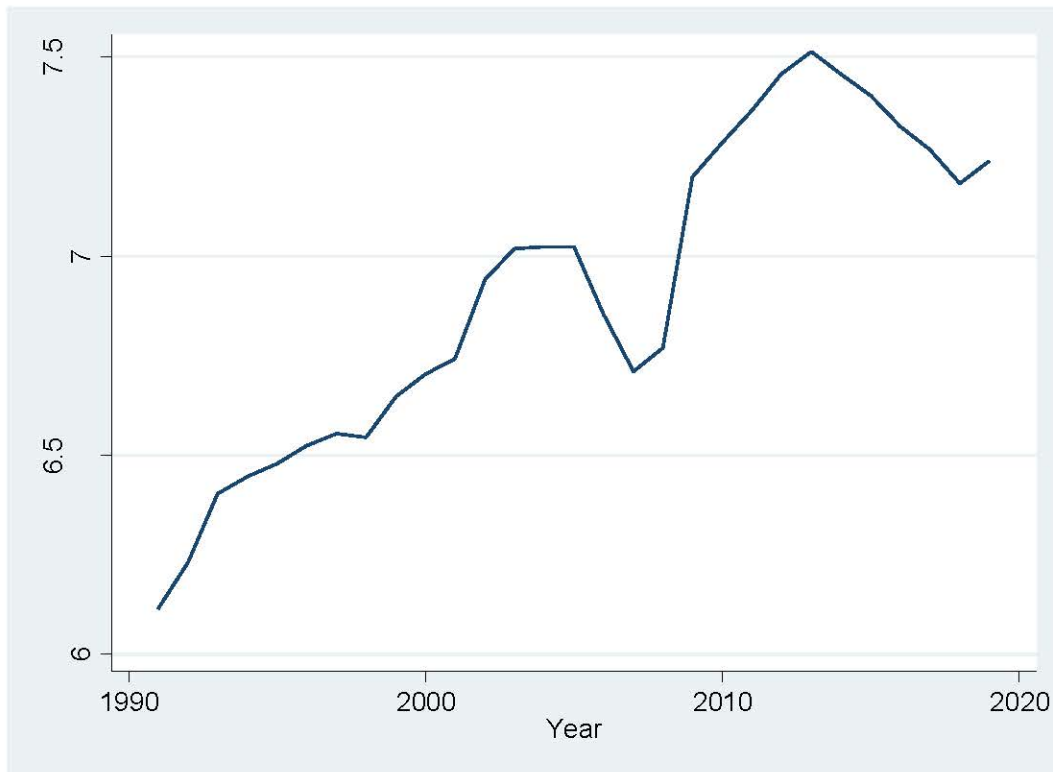
There was a total of 503, 500 new jobs created for the fiscal year 2010/2011 which was relatively higher as compared to the 502, 900 jobs created in 2009. Among these job, formal sector jobs accounted for 62, 600 new jobs in the year 2010 which was higher than 56, 300 jobs created in 2009 and this was approximately 12.4 percent of the entire jobs created in Kenya (Kenya, 2012). Moreover, statistics showed an interesting trends that the informal sector created 440, 900 more jobs which accounted for 80.6 percent of the jobs created. The major shift at the work places necessitates the study in the labour market to establish the various kinds of jobs available for



graduates in the post-industrial era (Amimo, 2012). This is an indication of effectiveness in reducing youth unemployment .

Labour market is characterized by limited opportunities for employment as compared to the increasing population that is not employed which is mainly youths aged 15-34 years (ILO, 2019). The employment dynamics in the economy shows decline in the number of new opportunities created in the long-term in the formal sector compared to informal sector. Some of the challenges experienced in this market include lack of the enough jobs created by the economy with only 743,000 new jobs generated in 2013 compared to 2 million job seekers and another over one million joining the labour force in Kenya. There is a mismatch between the requirements in the job market and the education acquired in addition to the fact that a large proportion of the new market entrants having no skills at all.

**Figure 2: Unemployment trends in Kenya for the period 1991-2019**



**Source: World Bank (2019)**

There was upward trend between the rate of unemployment and time implying that the country has witnessed increasing number of youth who are unemployed over the observed period, 1991-2020 as shown on Figure 2. The continued increase in the level of unemployed can be attributed to the many graduates from secondary schools due to the increased population, high primary school enrolments and accessibility of tertiary institutions such as universities and colleges. Other factors are such as poor-quality education and training, mismatch of demand-supply for labour, the economic melt-down in 2008/9 due to global recession, sluggish in economic growth as well as lack of interests for entrepreneurship (Godia, 1987; GoK, 2019). In addition to this,

there was a mismatch in the pace of expansion for labour demand in Kenya formal sectors and the graduation rate from secondary and tertiary institutions.

### **1.1.3 Measures to mitigate unemployment problems in Kenya**

Various sectoral policies have been developed under the umbrella of the Kenya Vision 2030. Developed policies affect status of youth employment in focal sectors such as labour, skills and education development, TIVET, industry as well as MSE development. Over the last two decades, youth unemployment has been closely associated with social and political instability risks giving impetus for youth-targeted policy formulation. Key youth policy documents include the Kenya National Youth Policy (KNYP) of 2006 and the National Action Plan on Youth Employment (NAPYE) 2007/2012. There was also the launch of Marshal Plan for Youth Employment and Development that was rolled out in 2008 that gave impetus to creation of immediate and medium-term employment opportunities for youth. This plan focused on low-cost labour intensive public works programs. It was projected that the plan could yield, at least, annualized 500,000 jobs. Under these auspices, the KKV program was such major initiative (World Bank, 2008).

After attaining independence 1963, the Government has developed policies to promote the creation of employment in the country in public and private sectors. The year 1970 was occasioned by increased rate of job creation which was identified by the International Labour Organization as caused by the rural-urban migration which resulted to the increased levels of unemployment (ILO, 1972). This led to rules on incomes and wages contained in the Sessional Paper No.4 of 1985 as well as emphasizing the imperativeness of the informal sector in the country (GoK, 1985).

Creation of the Sessional Paper No. 2 in 1985 identified measures that ought to have been consistently activated to respond problem of unemployment. This included policy initiatives aimed at addressing the developmental challenges as well as unemployment obscurities of the time. Specifically, these include: the National Development Plans in periods 1997 to 2001 and 2002 to 2008, which outlines policies related to labour market and human resources and labor towards economic development. Additional initiatives included plans to ensure conducive environment to sustain employment generation both in formal and in the informal sectors.

The Sessional Paper No. 2 of 1996 was aimed at transforming local industries by 2020 and address employment challenge, and stimulate economic growth and employment (GoK, 1996).

The Sessional Paper No. 7 of 2005 was a more recent policy strategy of employment whose key objective was to improve the standards of living for Kenyans through creating employment with impetus to tackle poverty (GoK, 2005).

KYEOP endears to improve employment and income-generating opportunities in the economy with particular focus to youth through combination of fitting skills development and entrepreneurship support. In 2019, Government initiated implementation of USD 150 million KYEOP initiative with support by the World Bank (GoK, 2019). These initiatives alongside increase in the National Industrial Training Institutions across the country (National Industrial Training Authority, 2019) go a long way in responding to the job-skills mismatch.

## **1.2 Statement of the Problem**

There are worrying levels of youth unemployment in Kenya. This is despite the activation of targeted programs to remedy the ballooning unemployment menace in the country (*see* GoK, 2009). Whereas youth-targeted policies are anchored on the promise of creating opportunities

that are aimed at reversing unemployment, certain critical implementation deficits remain. These policy deficits are occasioned by internal and external headwinds. Reports indicate that implemented policy initiatives have contributed to, at least, 15 percent annualized increase in employment (KEPSA, 2017). This annualized increment has not been calibrated on empirical lens to ascertain its implication on the sum total of youth that are locked out of employment. Tersely, only a dearth of empiricisms exists on gendered differentials in persistence of youth unemployment in the country, an issue that this study investigates.

Constructing impactful policy injections require concerted and holistic efforts in policy. Interventions needed also require certain gender considerations and understanding of how socio-economic factors influence youth unemployment. This has received little attention in literature. As much as it has received some attention, there is little that has been done on empirical lens. Socio-economic factors beyond age, gender and education, career choice and residence can be hypothesized to influence employability of youth in Kenya. Certainty on how and to what extent; magnitude and direction that this happens has not been estimated using recent data, a motivation for the present study. Considering these issues of critical policy-practice nexus, Kurgat (2012) asserts that programmes initiated throughout the decades in the country with a promise of tackling youth unemployment have failed to yield substantial outcomes.

This observed problem is partially catapulted by the worrying number of youth who enter into the labour market with zero skills, on annual basis. Estimates provide a figure of, at least, one million young people who happen to be school dropouts ((ILO, 2019; (KNBS, 2019), joining the labour market. This is an equivalent of 76.9 percent of the annual number of new job opportunities of 1.3 million that must be created to meet job demand. The number signals a worrying job-skills mismatch catastrophe that is characterized by high levels of unemployment,

something that the study seeks to address and inform policy. The hidden youth unemployment policy paradox, therefore, is that three in every four youth with requisite skills cannot find a job, an equivalent to the aforementioned proportion.

Understanding this disconnect would align jobs and skills but a dearth of context-based empiricisms to inform policy impede adoption and subsequent implementation. Issue has been heightened by the fact that recent unemployment studies have pursued narrow scopes. For instance, Muiya (2014) sought to understand drivers of unemployment in Muthurwa slum, Nairobi while Gachugia, Mutuku and Wanga (2014) sought to understand the implication of financing youth projects by the Youth Enterprise Development Fund (YEDF). While these studies provide some insights into the widely unsettled youth unemployment debate, they have failed to provide a holistic understanding that is critical in shaping policy, an aspect present study account for. A more representative study is needed to inform policy review on unemployment. Present study employs 2016 – 2017 World Bank data. This data was collected during the Skills Toward Employment Productivity Survey (STEP) and estimated on the probit model to provide more recent, expansive results and reflective insights on youth unemployment situation in Kenya<sup>1</sup>.

### **1.3 General Objectives**

The general objective of the study was to examine factors that affect youth unemployment in Kenya.

#### **1.3.1 Specific Objectives**

Specifically, this study sought to:

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<sup>1</sup> STEP Skills Measurement Program.

- i. Determine socio-economic factors that affect youth unemployment in Kenya;
- ii. Establish gender differentials in persistence of youth unemployment in Kenya;  
and
- iii. Identify the policy implication of youth unemployment in Kenya.

#### **1.4 Research Questions**

- i. What are the socio-economic factors that affect youth unemployment in Kenya?
- ii. What are the gender differentials in persistence of youth unemployment in Kenya?
- iii. What is the policy implication of youth unemployment in Kenya?

#### **1.5 Importance of the Study**

Study feeds into informing youth policy documentations; as it is, and as Kurgat (2012) posits, youth targeted initiatives have previously failed the promise of ending youth unemployment as envisaged. Failure can be partly attributed to reliance on non-empirical studies in designing and implementing policy directives throughout the decades. An empirical content therefore informs decision-making and deliberate planning for the labor market to absorb increased number of graduands from training institutions both universities and technical into the work force. Reports document general rates of unemployment; this study provides gender desegregated data through an empirical lens, insights that only few studies in this theme have endeavored to provide (KNBS, 2019; KNBS, 2018; ILO, 2019; Kenya Census, 2020).

The findings of this study on the youth unemployment status are relevant on various important policy issues and discourses. The study helps determine whether it is sensible to provide

subsidized loans to unemployed youths with the aim of helping them to be business owners or channel the subsidies entrepreneurs with experience in order to employ higher number of youths. The study findings enable for the identification of the disproportionately affected groups by the economy led by the private sector including those educated home in rural areas, because they have limited opportunities for private-sector employment. Further, its findings enable for the identification of the gender inequities and inequalities that exist in the job-searching market and how this can be accounted for through policy. Finally, the findings of the study augment existing body of literature in this area of research and thus forms basis of reference for future studies.

### **1.6 Organization of the Proposal**

Following introduction provided in chapter one, the remaining chapters are organized as chapters, sections and sub-sections. Chapter two details literature review on factors affecting youth unemployment; it presents theoretical and empirical literature. An overview of reviewed literature, at the tail-end provides the research gap. Chapter three presents explanation of the theoretical framework and the estimation model and a description of variables as well as data types and sources used in the study.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Chapter two consists of theoretical, empirical and overview of literature. Theoretical bit explains some theories that support this research. Empirical literature presents in detail other empirical works that have been done in this area of study. Overview of literature will present strengths and weaknesses in the reviewed literature and discuss contribution of this study to the existing knowledge.

#### **2.2 Theoretical Literature**

The concept of unemployment involves various aspects in economics, politics and social dimensions. The following paragraph discusses various some of the theories in economics that relate to employment issues in economic theory.

##### **2.2.1 Classical theory of unemployment**

The assertion in the classical theorists is that economic growth rate is determined by saving rate in the economy since saving translates to investments (Marshall, 1920). The theory postulates that unemployment is an indication that the smooth functioning of labor market has been obstructed in some way. Classical model assumes an ideal demand-supply model in which the labour market is seen as single and static. The labour market is perfectly perfect competitive, experience spot transactions in addition to institutions that govern double-auction and bidding. In the Harrod-Domar model savings are critical in economic growth (Meade, 1962). Moreover, according to Okun's law increased level of economic growth rate is accompanied by increased

level of employment. Based on this, Clark and Summers (1982) asserted that growth and development in the economy is key in addressing the level of unemployment.

The theory of human capital postulates that unemployment is caused by machines replacing man involvement in the production activity as explained by Adam Smith (1776). According to him machines replace the need for man involvement in the production activity and this creates unemployment (Wealth of Nations, 1776). He compared a man who is equipped with skills as the machine that can perform more high level of jobs. The educated man is expected to perform and produce more than an ordinary employee (Smith, 1776). This leads to increased level of output and hence increased profits for the firms. The findings in the human capital theory by Mincer (1958; Becker (1964); Schultz (1961) emphasized that education, health and working experience were key in human capital which translated to increased level of output in the production process. Thus, employers look at the stated variables in their recruitment process and thus human capital on the demand side it explains the possibility of the employee getting employed. It can therefore be stated that unemployment is a function of human capital (Ben-Porath, 1967).

According to Fagerlind and Saha (1997), human capital theory plays useful role in shaping economic structure through investment in sectorial productivity and education. Further, Lucas (1998) postulated that human capital production, does not only produce spillover effect to regional development but also aggregate economic development. Increased levels of unemployment among youth is due to limited or lack of experience and skills, mismatch in skills and low school leaving age as compare to the population in the adult age (Adams, 1997; Godfrey, 2003).

As noted by Overman and Puga (2002), human capital theory spillovers not only explain the tenacious regional economic differences, intertemporal human-capital variations and distributions within the post-communist countries, skill upgrading, may lead to variation in unemployment at regional level. On this basis, there is need to understand the extent to which regional unemployment differences in transition nations lead to the outcome of the national-level skill-biased labor demand shocks, this is in addition to initial regional distribution of human capital, specifically skills, which justifies the use of this model.

As asserted by Tome (2007) in the 20th century, there has been change in the economic structure and employment has become uncertain due to the advent of knowledge-based economies. There is need for organizations to prepare for increased level of competition in order to enhance their competitiveness and comparative advantage. Human capital is seen as one of the key pillars in driving their survival and hence enabling them to thrive. In producing more wealth for the economy, employees are an important asset and they have to be marketable even during economic uncertainty.

The argument by classical economists was that the level of unemployment is proportional government interventions and regulations. Government intervenes in the market by regulating the minimum wage which may lead to the increase in the labor costs above the economic value of labor more in jobs that do not require high level of competence. The firms adhere to such regulations by not hiring more employees to reduce their operations costs and optimize operations which lead to increase in the level of unemployment. In some countries, the labour laws put restrictions on the mandate for the provision of benefits higher than wages, protecting the job tenure as well as downsizing. As a result, some firms will not be able to higher and this increases the level of unemployment (Fagerlind & Saha, 1997; Overman & Puga, 2002).

### **2.2.2 Neoclassical view**

According to Gordon (1974), the theory postulates that unemployment is caused by imperfections in the market as a result of information asymmetry between the employers and the job seekers in the labour market. Gordon (1974) argued that the existence of unemployment in an economy is associated with market imperfections in the labour market where employers and employees are not equally informed. The intuition here is that unemployment in the labour market is a result of the market information asymmetry between the employers and employees. This could also be associated by the failure to have salary reduction in the markets. In such cases it is regarded as the failure by the government to correct the capitalist approach through the appropriate fiscal policy. The government increases its public expenditures to increase investments. This creates employment and thus increasing incomes to the people living in the given economy (Gordon, 1974). Keynes argued that the issue of unemployment can only be corrected in the near-term but not in the long run (Keynes, 1936; Blanchflower & Oswald, 1994). He argued that employment is dependent on the aggregate demand in the economy and not the wages in the labour market. Thus, the government can solve unemployment by controlling the level of aggregate demand (Gordon, 1974).

The theory postulates that savings are equivalent to investments. This implies that investments depend on savings (Akyuz, 2009). In his study, Tapsin (2011), established that an increase in the investments causes the creation of employment while low levels of investments create unemployment. Ultimately, the savings rate was included in his study as one of the variables that determine youth unemployment.

### **2.2.3 Socialist View**

This theory can be traced back to Karl Max (1950) who was very much opposed to capitalism. In this theory, he postulated that capitalism was the reason behind the cases of unemployment in many economies. In his theory, Karl Max argued that capitalism was the main cause of unemployment because the system of capitalism fails to achieve full employment. In his theory the argument is that it is the work of the government to create employment for its population (Mandel ,2002). According to the Karl in the economy there are two parts; the first part is the one that hires and controls the factors of production and thus they hire labor which is the second part of the economy. The capitalists buy or even rent the means of production as well as the raw materials. The growth of capitalism reduces the gap between the two parts of the economy. With the increased competition, the big firms buy the small firms and the medium ones through mergers. The new mergers can now enjoy the economies of scale and thus the workers can now operate the larger capital amount of the big firms. Adoption of technology and merger of two firms leads to lay-offs (Myers, 2014). In his argument, the solution is the adoption of the communists' system where the government controls resources and as such, this system creates employment for all and allows for the achievement of full employment in the long run (Papava, 1995). On the other hand, the capitalist system resources are controlled by few individuals and as such full employment cannot be achieved (Hanna, 2014).

### **2.2.4 Phillips Curve analysis**

Another important theoretical aspect of unemployment in economics was brought about by Phillips in his model of the trend between unemployment and inflation. The Phillips curve shows an inverse relationship between the two variables with downward sloping curve. The intuition is

that unemployment is always high whenever there are low levels of inflation and low when inflation is high. The implication is that increased level of the inflation leads to reduction in the level of unemployment (Arslan & Zaman, 2014). On the contrary many developing nations fail to obey this principle with high levels of inflation associated with high unemployment levels and in many cases, there is no economic growth leading to stagflation (Macleod, 1960; Maqbool et al., 2013;). This presents dilemma in policy formulation since policies to solve the unemployment exacerbates the problem of inflation and vice versa.

### **2.3 Empirical Literature**

Demidova and Signorelli (2012), sought to find out the factors that affect the levels of youth unemployment in several regions of Russia during the period 2000-2009. The study employed generalized method of moments (GMM) model and panel data to capture the distance between different regions in Russia. The study findings showed that unemployment was negatively related to GDP per capita, pension scheme and productivity coefficients in country's regions. Further, the study established that there was a positive relationship between trade openness and youth unemployment in the Russian regions. The study results were useful for informing policies to reduce unemployment in the region.

Ahmad and Khan (2018) investigated factors that affect youth unemployment levels in Pakistan for the time period 1991-2016 and established that inflation, FDI and government expenditures were the key factors affecting the level of unemployment. The three stated variables led to significant reduction in the level of unemployment in Pakistan. On the other hand, other factors such as wage and population growth were found to have an insignificant effect on the youth

unemployment. The study used three models; Ordinary Least of Squares together with Fully Modified Least Squares besides Robust Least Square.

In another study by Maqool et.al (2013) for the study period 1971-2012 using ARDL model concluded that youth unemployment in Pakistan is affected by GDP, population, inflation and FDI in the immediate-term and into the long-run. The study recommended that the government of Pakistan should invest towards attracting FDI as well as improving local macroeconomic variables in the country. This will lead to increased youth employment opportunities.

According to Denacica (2013) gender plays an important role on the youth unemployment in both Romania and Hungary with more opportunities available to men and women. The gender gap in the youth unemployment was wider in Hungary. Education and skills training were found to be key in increasing the chances of getting jobs among the youths and this reduces youth unemployment in both countries. The youths living in urban areas were found to easily get a job relative to rural residents. Other factors that were found to affect youth unemployment include age, work experience as well as disability. The study employed semi-parametric Cox proportional hazard model for the study period 2000-2010.

Using data from the National Labor Force Survey Report 2015, Tangtipongkul and Wangmo (2017) carried out a study to find out the factors that affect unemployment in Bhutan. The study results show that both demand and supply side variables have an effect on the unemployment level in Bhutan. Education level was found to have a significant effect on the level of unemployment in Bhutan. Low levels of education lead to low unemployment while high educational level was associated with high levels of unemployment. This showed a mismatch between educational level and employment. From the study results, the variables that greatly and

significantly affected unemployment include marital status, household size and household asset can explain greater impact on unemployment. Having skills showed is a key ingredient into increasing the probability of getting employed as a youth in Bhutan. To achieve the study objectives, Probit model was employed and marginal effects interpreted.

Using panel data for 31 selected OECD countries, results of a study by Bayrak and Tatli (2018) established that macroeconomic variable such as economic growth, inflations, savings and labour productivity are important factors that affect unemployment levels. Labour productivity affects unemployment positively while growth, inflation and savings negatively affect unemployment. To achieve the study objectives, the, random effect model was carried out.

According to Ebaidalla (2016) youth unemployment in the Organization of Islamic Countries (OIC) countries depends on macroeconomic factors such as inflation, domestic investment and GDP growth. These three factors can be classified as economic environment in these countries. Use of the GMM was justified to address distance between nations. The study results showed that GDP growth significantly reduces the level of youth unemployment within the OIC countries. Inflation was also found to be significantly and negatively related to youth unemployment in the OIC countries. Trade openness was unexpectedly found to significantly and positively affect youth unemployment. Finally, private investments were found to negatively affect youth unemployment.

Anyanwu (2013) carried out a study to determine the factors that affect youth unemployment in Africa for the time period 1991-2009. The study was based on independent macroeconomic variables which include, private sector credit access, development of the infrastructure, level of education, factors that are demographic, institutionalized democracy, time trends and sub-



regional and oil effects. The study results showed that domestic investments positively affect youth employment in the North Africa context and negatively in the Sub-Saharan Africa. Real GDP was found to negatively affect youth employment in Africa and thus increased GDP growth is associated with high level of job opportunities. Oil price positively and significantly affect youth employment on Central and East Africa. Similarly, time trend was found to positively affect youth employment in North Africa. Better institutions and education in Africa affect youth employment in Africa positively. Demographic factor the functioning of was found to negatively and significantly affect the employment levels in Africa.

A Swaziland study on youth unemployment by Brixiova and Kangoye (2014) using a multivariate analysis revealed that youth labour market outcomes and performance is affected by socio-economic factors which include education, age, gender, location and mobility. This was achieved by the use of multinomial logit model for the period 2007-2010. The study concluded that youth unemployment can be solved in the country by supporting youth entrepreneurship, improvement of business environment as well as making youth employment attractive.

Using a randomly and systematically selected sample of 580 selected randomly and systematically, Dagume and Gyekye (2016) set out a study to determine the both the socio-demographic and economic factors that affect youth unemployment in South Africa Vhembe district. The results from the binary logistic showed that factors such as the age of the respondents, being male or female, the race of an individual, marital status, level of education, location geographically, years of work experience and training played an important role in determining the youth unemployment. The study showed that training and experience reduces the level of youth unemployment. The study relied on primary data collected by use of structured questionnaires.

In their study, El-Hamidi and Wahba (2005) investigated the effect of youth unemployment in Egypt for the time period 1988 to 1998 and particularly the economic reforms in the countries within the MENA region. The study find that the period was occasioned by increased level of unemployment among youths. This was associated with the dependence or queuing for public provided jobs as well as the failure by the private sector to create jobs. This study also sought to determine factors that affect youth unemployment in Egypt. Using probit model the study results showed that youth unemployment is affected by factor such age, gender, education, characteristics of the parents such as their literacy level and their region of residence.

The empirical study in Somalia particularly in Garowe district by Muturi (2019) sought to investigate the determinants of the youth unemployment using descriptive approach. The study concluded that lack of educational training implied lack of the required skills for a given job and this hinder them accessing various job opportunities. Secondly, the study established that 71.1% of those interviewed agreed that community culture was one of the key factors that lead to increased levels of unemployment. Most of the youths were found to depend on their families instead of working for themselves. Lack of job opportunity contributed immensely to the level of unemployment among youths in Somali. There is need for the government to put proper policies to promote education, make opportunities to the youths available and discourage retrogressive culture.

The labor market study by Stampini and Verdier-Chouchane (2011) sought to establish the determinants of youth unemployment for the study period 2005/7 in Tunisia located in West Africa. Using logit model, the study results show continuous growth in the economy is negatively related to youth unemployment in Tunisia. Thus, as the economy grows, there is going to be reduction in the level of unemployment dues to increased economic activity. Growth

of the private sector leads to the reduction in employment. The study findings revealed that young graduates take long time to secure employment with the private sector being the main source of employment to Tunisian youths.

Gender, location of the youths geographically, level of education, level of skills as well as marital status are important determinants of youth unemployment in developing countries (Msigwa & Kipeshwa, 2013). The study employed a case of Tanzania, which was based on the country's integrated labor force survey of 2006. Male gender had the highest probability of getting jobs compared to their female job-seekers. Residential area, educational qualifications, those who were single and married were stood a higher chance of being employed than those were divorced, separated or widowed. The study objectives were achieved by the use of multinomial logit model.

A micro level study in Ethiopia by Dereje and Shita (2018) investigated determinants of youth unemployment in urban areas. Specifically, this study sought to identify and examine the factors which affect urban youth unemployment particularly in East Gojjam zone, Ethiopia. Employing binary logit model to achieve the study objectives, the results of the study showed that urban unemployment among youths was negatively and significantly determined by age, years of work experience, demand –supply match, social network and prosperity of the family prosperity affects unemployment. This implies that the listed factors reduce the levels of youth unemployment. Further, findings revealed that the level of education was positively linked to youth unemployment. Similarly, migration was associated with increased levels of unemployment in urban areas.

Using Autoregressive Distributed Lag (ARDL) model, Sam (2013) modeled factors of unemployment in Kenya from 1979 to 2012. Main factors that the study concentrated on were GDP, population, foreign direct investment as well as external debt. Through the long-run, the study results the four factors were found to significantly affect the levels of unemployment in Kenya for the specified period. The results showed that GDP growth and population significantly and positively affected unemployment in Kenya. Instructively, foreign direct investments (FDI) and external debt were established to negatively affect the unemployment levels in Kenya. The study on the youth unemployment in Kenya was therefore carried at macro level determinants.

A study by Muiya (2014) conducted in Mathare, Nairobi sought to determine the status, shortfall and results of youth unemployment in urban areas. The study relied on primary data from the slum of Muthurwa where majority of the youths are poor and not employed. By the use of descriptive design, the study established that the high level of unemployment in Mathare was due to required education and skills required in the job market. Lack of employment and education has led to social and economic problems such as housing, prostitution, early school dropouts, spread of infectious diseases and early marriages. The study recommended that the curriculum should be developed to increase matching between work and training and this can be ensured by providing intensive courses.

According to Gachugia *et al.*, (2014) in their study to find out the effect of YEDF. The study findings showed that the YEDF was key in enabling youths to develop, put into implementation and expand their micro and small enterprises where majority of the employees are youth. Further, this study established that more employees were found in the group-owned enterprises relatively to the individually owned enterprise. This study was based on the primary data from a

sample of 51 units were sampled using stratified and simple random sampling. The study objectives were achieved through the use of the descriptive study design.

The study by Farah and Ali (2018) on the employment among the graduates in Kenya established that there was a high number of the youths who were not employed. The study findings showed that this high level of unemployment in Kenya was associated with the lack of aligning the curriculum with the demand in the Kenyan market. Over time, the study noted that high unemployment levels were associated with increased levels of criminal activities, corruption, nepotism and favouritism, high dependency as well as substance abuse. Study employed a descriptive approach and applied both primary and secondary data collected by the use of questionnaires. In conclusion, this study proposed appropriate measures to mitigate youth unemployment as well as relevance of the curriculum to meet market demand.

## **2.4 Overview of Literature**

Socio-economic factors and how they play out in developing countries are complicating unemployment situation in developing countries. Theoretical literature and classical model - precisely assumes an ideal demand-supply model of skills for available jobs in the labor market as single and static (Merino, 2014). Neoclassical approach posits that unemployment can only be corrected in the short run but not through the long-run (Keynes, 1936; Blanchflower & Oswald, 1994; Gordon, 1974). But few theoretical insights concretize gendered differentials in persistence of youth unemployment (Denacica, 2013).

Reviewed literature indicates demographic and socio-economic factors such as age, educational level, gender, education of parents, salaries, work experiences, place of residence either rural or urban among others affect youth unemployment (Msigwa & Kipeshwa, 2013; Muturi,2019;

Anyanwu,2013; Denacica, 2013; Khan,2018; Sam, 2013). However, there is scanty of literature suggestive of recent local empiricisms on gendered differentials alongside role of social-economic factors implications on youth unemployment in the country. These dual discrepancies in literature inform the current study. KIHBS 2015/2016 data is used, which provides more expansive and recent observation on youth unemployment situation in Kenya. Previous studies in literature have confined the binary model utilization (*e.g.*, Robert & Daniel, 1998; Nickell; 1980; Pissarides & Wadsworth, 1990; Brown & Session, 1996). In a clear endeavor to provide novel insights, current study employs probit model.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

The chapter provides theoretical approach, followed by the model specification used in empirical testing pre-estimation tests and data.

#### **3.2 Theoretical framework**

The long run effects of youth unemployment labor market outcomes are key in evaluating of government policies which have an effect on youth in the labor market. The adverse may be in form of lower levels of human capital, reduced wage rates and weakened labor force participation in the future. To model the determinants of youth unemployment in Kenya, the study adopts Human Capital theory by Ben-Porath's (1967). This model is appropriate since, according to Fagerlind and Saha (1997), Human Capital Theory is key in determining the economic structure through investment in sectorial productivity and education. This is echoed by Lucas (1998) who postulated that human capital production, not only produce spillover effect to regional development but also aggregate economic development.

According to Overman and Puga (2002), although human capital theory spillovers is key in explaining the tenacious regional economic differences, intertemporal fluctuations in human-capital in the post-communist nations and developing of skills can cause the variation in unemployment at regional level. On this basis, it becomes key to understand the extent to which regional unemployment differences in the developing and transition economies affect labour market outcomes combined with initial regional distribution of human capital. As a result, this

justifies the use of this model. This is in line with what was outlined by Puga and Overman (2002) that increasing polarization of regional unemployment in developing economies, estimate the explanatory power of regional human capital in explaining unemployment rates.

To begin with, unemployment is hypothesized by the following equation:

$$Unemployment = f(Human\ Capital) \dots\dots\dots 1$$

Additionally, human capital is hypothesized as follows using the key components:

$$Human\ Capital = f(Knowledge, Experience, Skills\ and\ innovation, Population\ size, Life\ expectancy, Health) \dots\dots 2$$

Provision of the key components of human capital for the youth depends on the government through education and training. However, the way of providing the components differs across institutions as well as countries, hence the need to model the relationship. Combining equations 1 and 2 above results into the following relationship which defines youth unemployment situation.

$$Unemployment = f(Knowledge, Experience, Skills\ and\ Innovation, population\ size, life\ expectancy, health) \dots\dots 3$$

Increase in the number of investments made in the development of human capital there causes fluctuations in unemployment. The rise in the level of unemployment exists due to increase in the acquisition of knowledge acquisition for skills development plausibly have negative implications for the human capital development (Jurajda, & Terrell, 2009). Understanding determinants of youth unemployment in Kenya, demands explorations into appropriate factors using recent data.



### 3.3 Empirical model

This study adopts the binary response model to examine youth unemployment in Kenya. Adoption of this model is based on literature works of Nickell (1980); Pissarides and Wadsworth (1990) and Brown and Session (1996). The binary response model gives the likelihood of a youth being employed or not, and further determines the factors behind that. The implication of the model is that unlike younger workers, the probability of the older looking for a job is very low as the duration for working age is minimal. It is likely that marginal cost of searching for a job would be greater than marginal benefit from the job.

The main assumption of the binary model is that respondent has two alternatives, in this case, whether a youth is employed or not (Robert & Daniel, 1998). For the case of binary response model, we have the logit and probit regression model. A model is considered as probit model in the case where the F-statistic is expressed as the cumulative of a normal distribution function, and as a logit model if F is the cumulative logistic distribution function. The estimation of this model is subjected to a Maximum Likelihood estimation technique. The general probit /logit model adopted by the study is represented as follows:

$$Y = X_i\beta + \varepsilon \text{ and } y_i = 1 \text{ if } Y > Z, y_i = 0 \text{ IF } Y \leq z \dots\dots\dots 4$$

$Y$  represents the unobserved dependent variable,  $X_i$  is a vector of predictor while  $\beta$  are the coefficients that are estimated in the model,  $\varepsilon$  is the error term.

Assuming that the error terms follow normal distribution,  $u \sim N(0,1)$  with a probability function, the model is achieved by transforming  $X\beta$  into a probability. The following cumulative distribution function represents the probit model.

$$Pr (y = 1) = \Phi(X\beta) \int_{-\infty}^{X\beta} \frac{1}{\sqrt{2\pi}} e^{-z^2/2} dz \dots \dots \dots 5$$

And the log likelihood function is:

$$Ln = \left(\frac{Y}{X}, \beta\right) \prod_{i=1}^N Y \log \log \{\phi (X\beta)\} + (1 - Y)\{1 - \phi (X\beta)\}^i \dots \dots \dots 6$$

Model estimation and interpretation demands marginal effects to be employed, which accounts for changes in likelihood of an event taking place. Marginal effect is estimated as the mean of specific marginal effect.

### 2.4.1 Model specification

From theoretical aspect, unemployment or employment results from both the demand and supply side of labor. The model is specified as follows:

$$UNEMP_i = \alpha + \beta SUP_i' + \gamma DEM_i' + \vartheta CONT_i' + \varepsilon_i \dots \dots \dots 7$$

UNEMP<sub>i</sub> represents youth unemployment and is measured as 1 if the youth is unemployed and 0 otherwise. SUP<sub>i</sub> is a vector of explanatory variables of supply factors, which includes education level. DEM<sub>i</sub> denotes a vector of demand side variables and they include type of employment and the skills. CONT<sub>i</sub> represents the control variables that affects the youth employment or unemployment status and they include such variables as gender, marital status, and area of residence. β, γ and θ are a representation of the vectors of parameters of the predictor variables, α is the intercept factor, and ε is the standard vector representing the disturbance term.

## 2.4.2 Variable definition and measurement

**Table 1: Variable name, measure and expected sign**

Variable Name	Measurement	Expected Sign
<b>Dependent variable</b>		
Unemployment	Unemployment is defined as the situation of being out of labor or having no job, measured as 1 if employed and 0 otherwise	
<b>Independent variables</b>		
Level of education	This is a categorical variable categorized as: 1 if primary and secondary 2 if college and undergraduate 3 if postgraduate 0 if no education	±VE
Training on Skills	This is a dummy variable measured as: 1 if the youth received training on skills 0 otherwise	
Years of experience	This is a continuous variable measured as the total number of years' experience in job	
Gender	Dummy variable measured as: Female= 1 if female, 0 otherwise Mae = 1 if male, 0 otherwise	±VE
Age	This is a continuous variable which give the age of the individual in years	±VE
Residence	This is a binary variable, measured as: 1 if person is urban 0 if a person is from rural area	±VE
Job Search Innovation	This is a dummy variable measured as: 1 if the youth used internet to search for a job 0 otherwise	

Career choice	<p>This is a dummy variable represented as:</p> <ul style="list-style-type: none"> <li>• Accounting and financial management (AFM),</li> <li>• Marketing, business management and entrepreneurship abbreviated as (MBE)</li> <li>• Psychology and sociology</li> <li>• Mathematics and statistics</li> <li>• Languages and communication</li> <li>• Law</li> <li>• Computer sciences and information technology (CSIT)</li> <li>• Public administration, public management and political studies</li> <li>• Intermediate, health and social work</li> <li>• Art and history.</li> </ul>	±VE
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**3.4 Pre-estimation tests**

**3.4.1 Robust check**

Endogeneity is a problem that arises due to regulation on indexes. For instance, the level of regional rate of unemployment can endogenously be determined by the intensity of the pollution and not the other way around. Therefore, urban areas that are characterized by more functional trade activities and attract talents due to better remunerations and better legal regime. Additionally, some studies argue that increased employment rate can be used to explain the environment regulation policies and not the other way round (*see* Dechezleprêtre & Sato, 2017; Kunapatarawong & Martínez-Ros, 2016). For this purpose, endogeneity concerns were keenly examined in the study.

**3.4.2 Heterogeneity effect of labor**

The differences between the youths living in urban areas and rural areas create a dual kind of structure in the two separate labour market. This is due to factors such as acquisition of

information, opportunities, stability of career, resources availability as well as capacity to counter risks. Majority of the urban resident employees are usually always skilled compared to the employees in the rural areas in addition to having longer years of schooling which increases the capacity to fight risk. As a result, regulation is more effective in rural areas as compared to urban areas due to job stability. The jobs which are not agriculture based depends on the rationality of the households. On this basis, this study will carry out a heterogeneity test to take into account the differences between the urban and rural areas youth differences.

### **3.5 Data, Data Types and Sources**

The study used cross-sectional data from the STEP Skills Measurement Program Survey 2016 – 2017, which was supplemented by secondary data. STEP data was extracted from World Bank. Data provides useful observations on variates under estimation.

## CHAPTER FOUR

### DATA ANALYSIS AND DISCUSSION OF RESULTS

#### 4.1 Introduction

This chapter provides data analysis. It also provides discussion of findings. For instance, the descriptive statistics encompasses explanation of distribution of variates under observations immediately succeeds the introduction section. Descriptive statistics provided encompasses measures of central tendencies alongside the standard deviation, minimum and maximum observations, skewness and kurtosis values of observed variates of interest considered in the analysis. The subsequent sections include the diagnostic tests that were executed namely: multicollinearity and heteroscedasticity test. The later sections of the chapter encompass the model results and its detailed interpretation.

#### 4.2 Descriptive Statistics

Descriptive statistics summarize the variety and distribution of the data utilized in estimate. In this sub-section, the mean, standard deviation, minimum and maximum values of the data used are computed. Consequently, the corresponding skewness and kurtosis are presented in Table 2.

**Table 2: Descriptive Statistics (N= 45877)**

<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min.</b>	<b>Max</b>	<b>Skew.</b>	<b>Kurt.</b>
<b>Employment</b>						
Employed (1/0)	0.6226	0.4848	0	1	-0.5059	1.2560
<b>Education</b>						
No Education (1/0)	0.0429	0.2026	0	1	4.5124	21.3622
Primary and Secondary (1/0)	0.6312	0.4825	0	1	-0.5440	1.2959
College and Undergraduate (1/0)	0.1248	0.3305	0	1	2.2705	6.1550
Post Graduate (1/0)	0.1587	0.3654	0	1	1.8681	4.4896

<b>Training on Skills</b>							
	Trained (1/0)	0.1089	0.3115	0	1	2.5112	7.3062
<b>Working Experience</b>							
	Yes (1/0)	0.4920	0.5000	0	1	0.0319	1.0010
<b>Gender</b>							
	Female (1/0)	0.5241	0.4995	0	1	-0.0967	1.0093
<b>Age</b>							
		29.5303	9.9285	15	64	1.2152	4.2666
<b>Residence</b>							
	Rural (1/0)	0.8017	0.3987	0	1	-1.5137	3.2913
<b>Career Choice</b>							
		4.0758	2.6790	0	10	0.7803	2.4754
<b>Parental advisory</b>							
	Yes (1/0)	0.9072	0.2902	0	1	-2.8066	8.8769
<b>Type of schooling</b>							
	Private schooling (1/0)	0.1644	0.3707	0	1	1.8106	4.2782

The standard deviation for the observed variates was marginal. All variates had decimal standard deviations but age and career choice. Age, as a variate had a highest standard deviation of 9.929 with corresponding minimum and maximum observations of 15 and 64 (years). Generally, a small standard deviation implies a relatively uniform dataset (*see* Richter, Ng & Karimi, 2021). Indicatively, this necessitates execution of multicollinearity test.

Anil *et al.* (2021) and Okassa *et al.* (2021) provide conventional lower and upper bounds for both skewness and kurtosis as absolute 3 and 1, respectively. As such education aspects but primary and secondary, training on skills, age, rural residence, parental advisory status and private schooling has higher extents of kurtosis. Most variates maintained conventional bounds of skewness of absolute 1; as much as some variates had higher levels, little has been suggested to necessitate data transformation (*see* Dagne, 2021). The study considered a total of 45, 877 who were covered in the World Bank STEP survey.

### 4.3 Diagnostic tests

#### 4.3.1 Multicollinearity test

Test for multicollinearity was done using the Variance Inflation Factor (VIF). Under this test, the mean VIF of value that is lower than 8.0 indicates the absence of multicollinearity while mean VIF value that exceeds 8.0 implies multicollinearity is present. Conventionally, a VIF with a value of 1 is considered not to be correlated; values ranging between 1 to 5 are considered to be moderately correlated while those that are greater than 5 are considered to be highly correlated (Miles, 2014). The findings of the VIF test are shown in Table 3:

**Table 3: Variance Inflation Factor Multicollinearity Test**

Variable	VIF	1/VIF
Post graduate education	2.43	0.411299
Primary and secondary	2.40	0.416540
Age	1.46	0.683853
Working experience	1.32	0.759731
Training on skills	1.13	0.883945
No education	1.07	0.932341
Career choice	1.07	0.933201
Type of schooling	1.03	0.968261
Gender	1.03	0.975528
Parental advisory	1.01	0.986432



Residence	1.01	0.988815
<b>Mean VIF</b>	<b>1.36</b>	--

The VIF index for the estimated results reveals that the predictor variables were all moderately correlated, all the variables fall within the margin of moderate correlation. Furthermore, the mean VIF was 1.36 which is below the threshold of 8.0, hence multicollinearity was not a problem in the study as suspected.

#### 4.3.2 Heteroscedasticity Test (Breusch-Pagan Test)

The study used the Breusch-Pagan test to test for the presence of heteroscedasticity under the null hypothesis of homoscedasticity. In this test, if the p-value is smaller than the critical value, the null hypothesis is not rejected. But if the P-value is larger than the critical value, the null hypothesis is rejected meaning there exists heteroscedasticity. If heteroscedasticity in the residuals exists, then robust standard errors are used to correct for the problem. Upon carrying out the test, the hypothesized heteroscedasticity results are shown in Table 4:

**Table 4: Breusch-Pagan / Cook-Weisberg test for heteroscedasticity**

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Ho: Constant variance
Variables: fitted values of Consumption
$\chi^2(1) = 60.82$
Prob > $\chi^2 = 0.0000$

---

The results show that the probability of the chi-square statistic is less than 0.05, therefore we reject the null hypothesis implying that heteroscedasticity is a problem in the residuals. To address the problem, robust standard errors were used when estimating the model. Having carried out the diagnostic tests, the probit model was estimated.

#### 4.4 Model estimation

The probit model was estimated and results revealed as detailed in Appendix 1 . As aforementioned under section 3.4.1, it was necessary to examine endogeneity. A variate was used as an instrument for the endogenous variable. Considering that the study utilized the World Bank STEP survey data, omitted variables could be to blame for the occasioned problem of endogeneity. As shown in Table 5, endogeneity problem is addressed by employing the Instrumental Variable (IV) 2 stage least square (2SLS) model.

**Table 5: Estimation results**

	IV 2SLS Model	
	Female Gender Employment	Male Gender Employment
<b>Education Level</b>		
Primary and Secondary	-0.618*** (0.136)	-0.486*** (0.116)
College and Undergraduate	0.0668 (0.0699)	-0.0891*** (0.0185)
Post Graduate	0.175* (0.0780)	0.0846*** (0.0222)
<b>Training on Skills</b>	0.115*** (0.0317)	0.138*** (0.0193)
<b>Working Experience</b>	0.198*** (0.0384)	0.238*** (0.0146)
<b>Age</b>	0.0244*** (0.00283)	0.0301*** (0.00156)
<b>Rural Residence</b>	1.048** (0.373)	0.635*** (0.160)
<b>Career Choice</b>		
Engineering Manufacturing and Architecture	-0.0348 (0.0910)	0.0474 (0.0357)
Marketing, business and entrepreneurship	0.313** (0.0957)	-0.00951 (0.0370)

Psychology and sociology	0.113*	0.0644
	(0.0509)	(0.0350)
Mathematics and statistics, and AFM	-0.0441	0.149**
	(0.0677)	(0.0483)
Languages and communication	0.297**	0.113*
	(0.0955)	(0.0456)
Law	0.476***	0.0187
	(0.108)	(0.0660)
Computer sciences and information technology	0.261**	0.00247
	(0.0895)	(0.0495)
Intermediate	0.358***	-0.0369
	(0.0881)	(0.0511)
Health and social work	0.143	-0.111*
	(0.100)	(0.0521)
Arts and history	0.378*	-0.136**
	(0.183)	(0.0461)
<b>Private schooling</b>	0.206**	0.0457**
	(0.0634)	(0.0168)
<b>Parental Advisory</b>	--	--
	--	--
<b>Constant</b>	-1.539***	-1.023***
	(0.380)	(0.148)
Observations	3216	3216
Log pseudo likelihood	--	--
Pseudo R2	--	--

Standard errors in parentheses \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

#### 4.4.1 Education

Holding other factors constant, an additional female with primary and secondary education reduces employment by 61.8% compared to a female with no education. Similarly, for male gender, an additional person with primary and secondary education reduces employment chances by 48.6% compared to a person with no education. The change in sign from the probit to 2SLS model is explained by endogeneity. This is opposite for the male gender with same qualifications whose chances reduce by 8.9% compared to male without college or undergraduate education. Findings suggest skewness to the detriment of female job seekers with primary and secondary education as opposed to male counterparts. Suggestively, results strengthen Calvès (2002) that abortion and early pregnancies far overwhelm young mothers than young fathers; its associated

socio-psychological effects locks many out of employment. Bartik (2001) asserts that less-educated women are more likely to be stigmatized, an argument that bolsters the findings. A gendered intervention is needed to curb the gender differential of 13.2% and ensure equity.

For youth who have attained post graduate level, holding other factors constant, additional number of female youth attaining the educational level increases employment chances by 17.5% than female without post-graduate qualifications; For male who have attained the same educational level, an increase in their number increase employability by 8.5% compared to those without the qualifications. The sign on the ratios is consistent with literature that education increases performance than an ordinary employee (Smith, 1776). With a gender differential of 9%, results further amplify aforementioned arguments by Calvès (2002) and Bartik (2001) to create an equal ground for both female and male job searchers. It is important, however, that employers' confidence in female job searchers increases with their increased level of academic qualification.

#### **4.4.2 Training on Skills**

Training in skills is a 'career-orientated method of teaching workplace skills' (Guo et al., 2014). The influence of this job-orientational model on youth seems to be a near equilibrium between male and female. Indicatively, for every female apprentice, there is a 11.5% chance that she will land on a job and 13.8% that a male counterpart would secure employment. These results bolster the suitability of apprenticeships as they bring about gender equality in access to employment opportunities among unemployed youth, an aspect that Newton and Williams (2013) have advanced.

### **4.4.3 Working Experience**

Working experience has emerged as an important aspect in job search. An additional female job applicant who demonstrated having ample working experience in job applied for, holding other factors constant, boosted employability chances by 20.0%, a near tie with male applications with similar experience as female at 23.8%. Findings support the idea of having youth exposed through aforementioned programmes under section 4.4.2 and as argued by Newton and Williams (2013). When balanced interventions are given, study strongly suggests, balanced outcomes are achieved.

### **4.4.4 Age**

Holding other factors as constant, an increase in age for every female looking for employment increased employability by 2.4% compared to 3.0% for male. High levels of unemployment, literature revealed, is due to a number of factors, among others, low school leaving age as compared to the adult age (Godfrey, 2003). Results indicate incremental chances for employability associated with age (in this context, a sense of maturity, responsibility and accountability) with employers preferring slightly younger female employees and slightly older male employees. Put into context, holding all factors constant, employers are more likely to give an offer to a slightly older male job searcher than a female. The gender differential is 0.6%.

### **4.4.5 Rural Residence**

The 2SLS results revealed that *ceteris paribus*, female residing in rural areas increased their employability by 4.8%. This was much lower compared to male whose employability chances increased by 63.5%, translating to a gender differential of 63.5%. Denacica (2013) articulates that youth in urban areas are more likely to get a job than those in rural areas. The intertemporal

space women occupy is important as it affects their professional lives. A rural set up has its own challenges with thin opportunities that come along. Aspects such as access to information, which is beyond the scope of the present study should be investigated to explain why women in rural areas stand disadvantaged (*see Afridi, Dinkelman & Mahajan, 2018*).

#### **4.4.6 Career Choice**

Career choice is quite an intricate task for majority of the youth (Wanberg, Ali & Csillag, 2020). Students' choice of subjects has been established to be influence by employability prospects (Hussain et., 2017). Marketing, business and entrepreneurship specialization revealed interesting results with an additional female who pursued the course increasing employability prospects by 31.3%. Equally, female job seekers who pursued psychology and sociology increased employability by 11.3%. For mathematics and statistics, and AFM job seekers, and additional male job seeker was more likely to be employed at 14.9%.

These results are important pointers to how employers perceive job applicants and organizational preferences, thereof. Indicatively, employers link greater satiation among female employees with marketing, business and entrepreneurship as well as those that pursue psychology and sociology. The perception changes to male employees looking for mathematics and statistics, and AFM talents. Unlocking reasons as to why boys tend to do better in mathematics and statistics is important to orient girls (Dickerson, McIntosh & Valente, 2015). A sectoral approach that involves education experts would go a long way in explaining why, that way bridging gaps in employment.

In languages and communication specialization, again, holding other factors as constant, a female was more likely to be employed than male counterparts with same line of specialization

at 29.7% and male, 11.3%. This translates to a gender differential of 18.4%. In law, female employability prospects increased by 47.6%. Although Dickerson et al., (2015) blame the environment and downplay the impact of parental education and school attendance attributes (or lack of it), including teacher gender, a broad approach that seeks to explore why girls outshine boys in non-science subjects is needed. Interestingly however, it was found that in computer sciences and information technology concentration, *ceteris paribus*, an additional female with the qualifications increased employability prospects by 26.1%.

Holding other factors constant, female job seekers with intermediate qualifications were likely to be employed at 35.8%. In health and social work, *ceteris paribus*, male employability reduced by 11.1%. Under the arts and history category, female specialists increasing employability by 37.8% but a reduction of 13.6% with an additional male specialist, *ceteris paribus*. This is an equivalent of 51.4%. Results show that employers are more willing to bring on board female talents with some level of qualifications; unwilling to employ male in health and social work and in arts where female are plausibly likely to be employed. Employability of women in non-science subjects is supported within literature by Dickerson et al. (2015).

Private schooling, holding other factors constant, improved female employability prospects by 20.6% and that of male by 4.6% under the 2SLS model, translating to a gender differential of 16%. This is an interesting finding as it suggests, private school environments provided better chances for women to getting an employment than male. Iderman, Orazem and Paterno (2001) have argued that private schools perform better.

## CHAPTER FIVE

### CONCLUSION AND POLICY RECOMMENDATIONS

#### 5.1 Introduction

Chapter five details the summary, conclusion and policy recommendations, given the findings, as presented and discussed in CHAPTER FOUR. Like other previous chapter, the chapter is organized into sections. The **Summary and Conclusion**, that provides the summative intent, modalities, findings and conclusion, **Policy Recommendations** which focuses on actionable interventions with institutional legal effect and lastly, **Areas for further studies** section that suggests unsettled debate in youth unemployment for purposes of strengthening policy and enabling decision making.

#### 5.2 Summary and Conclusion

Increasing youth unemployment in Kenya is a mainly determined by the level of performance by firms and industries. It is also determined by firms and industries' acquisition skills that are demand in the labour market (URT, 1995). Although the government has implemented a raft of youth-oriented programmes such as KKV and KYEOP, among others, this has not responded to the pressing youth-unemployment problem.

Unemployment trends in Burundi, Uganda and Tanzania are elusive narrowing prospects of EAC taming the situation from proliferating (Economic Outlook, 2019). Statistics reveals that 67% unemployed Kenyans are youth (15-34 years). Literature reveals understanding demographic and socio-economic indicators could be the first step in responding to youth unemployment problem (*see* Anyanwu, 2013; Denacica, 2013; Khan,2018; Sam, 2013). There is a dearth of literature suggesting that recent unemployment works have accounted for these indicators; while indicators



have been accounted for studies have lacked national outlook therefore unable to form basis for national policy review. These demographic factors have been accounted for in the present study with an aim of determining gender differentials between female and male.

Study intended to utilize the probit model but endogeneity problem was detected necessitating adoption of the 2SLS model that controls for the problem. In sum, deepened work experience and training on skills as factors would yield gender balanced outcomes. A gendered approach into the role of the remaining factors would go a long way in promoting equity in employment.

### **5.3 Policy Recommendations**

The study suggests paradigm shift in certain areas. Priority should be given in areas that revealed huge gender differentials. For instance, under primary and secondary education, girl-targeted support is needed to bridge the 13.2% gap between female and male. Kind of support needed should be informed by close examination of studied factors and attendant factors not accounted for in the study such as abuse, distance travelled to school, among others.

On training on skills, corporations should be supported to deepen their policy orientations towards creating additional opportunities for internships, fellowships, exchange programmes and young professional programmes as these programmes yield intended results, in view of increasing number of youth joining the job market. Similar policy interventions would be needed to also address the challenge of work experience.

### **5.4 Areas for further studies**

Stakeholders in education should consider continuous research to uncover drivers to the established gender differentials in education, especially in mathematics and statistics where male tend to outshine female and in arts, languages and law, where female tend to outshine male.

Future studies should also focus in unravelling the disparity in employers' preference for older male.

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# APPENDIX

## Appendix 1: Probit Model Results

	Probit Model	
	Female Gender Employment	Male Gender Employment
<b>Education Level</b>		
Primary and Secondary	4.106*** (0.117)	4.696*** (0.0935)
College and Undergraduate	4.433*** (0.139)	4.513*** (0.107)
Post Graduate	4.640*** (0.0966)	4.861*** (0.0880)
<b>Training on Skills</b>	0.546*** (0.0861)	0.502*** (0.0580)
<b>Working Experience</b>	0.640*** (0.0684)	1.104*** (0.0511)
<b>Age</b>	0.138*** (0.00824)	0.0984*** (0.00575)
<b>Rural Residence</b>	-0.0413 (0.0697)	-0.311*** (0.0642)
<b>Career Choice</b>		
Engineering Manufacturing and Architecture	---	0.511** (0.170)
Marketing, business and entrepreneurship	1.072*** (0.187)	0.459** (0.171)
Psychology and sociology	0.936*** (0.196)	0.329 (0.171)
Mathematics and statistics, and AFM	-0.219 (0.204)	0.449* (0.195)
Languages and communication	0.988*** (0.213)	1.171*** (0.188)
Law	1.823*** (0.246)	1.051*** (0.194)
Computer sciences and information technology	1.018*** (0.214)	0.954*** (0.171)
Intermediate	1.357*** (0.203)	0.718*** (0.184)
Health and social work	0.295 (0.196)	0.411* (0.179)
Arts and history	---	-0.177 (0.208)
<b>Private schooling</b>	0.0743 (0.0711)	-0.0761 (0.0659)
<b>Parental Advisory</b>	-1.027*** (0.244)	-0.885*** (0.139)

<b>Constant</b>	-8.663*** (0.401)	-7.727*** (0.254)
Observations	3216	3216
Log pseudo likelihood	-933.21676	-1768.3338
Pseudo R <sup>2</sup>	0.4343	0.3924

# INDEX

## A

Adoption, 18  
Adverse, 28

## B

Binary model, 27, 30  
Businesses, 2

## C

Countries, 1, 2, 3, 4, 5, 16, 20, 21, 23, 24, 26, 29, 53

## D

Data, 10, 11, 12, 13, 19, 20, 21, 23, 25, 26, 27, 28, 34, 35,  
37, 40, 49, 55  
Demographic and socio-economic indicators, 46  
Descriptive approach, 23, 26  
Developing countries, 1, 26  
Differences, 16, 28, 33

## E

Economic transformation, 4  
Employability, 2, 4, 10, 41, 42, 43, 44, 45, 50, 52, 54  
Employees, 16, 17, 26, 34, 43, 44  
Employers and employees, 17  
Entrepreneurship, 7, 9, 22, 33, 40, 43, 44, 56

## F

Firms and industries, 1, 46  
Fiscal policy, 17  
Formal and informal sectors, 5, 6

## G

Gender desegregated, 12  
Gendered approach, 47  
Graduands, 12  
Graduates, 2, 6, 7, 24, 26  
Growth, 7, 9, 14, 18, 19, 20, 21, 22, 24, 25, 30, 53

## H

Heteroscedasticity, 35, 39, 49  
Holding other factors constant, 41, 42, 45  
Human capital, 15, 16, 28, 29

## I

Increases, 16, 17, 34, 41  
Indicatively, 37, 42, 44  
Inflation, 18, 19, 20, 21  
Informal sector, 5, 6, 8  
Information, 1, 17, 33, 40, 43, 44, 56  
Initiatives, 9, 10, 12  
Insights, 2, 11, 12, 27  
Institutions, 2, 7, 12, 14, 22, 29  
Investments, 14, 17, 21, 22, 25, 29

## J

Job creation, 1, 8  
Job market, 2, 6, 25, 47

## L

Labor demand, 16, 49  
Labour market, 1, 2, 5, 9, 10, 14, 17, 22, 29, 33, 46  
Legal, 1, 46  
Literature, 10, 13, 14, 26, 27, 30, 42, 43, 45, 46  
Local industries, 9  
Logistic distribution function, 30  
Logit model, 22, 24, 30

## M

Macro level, 25  
Marginalization, 25  
Migration, 8, 25  
Models, 20  
Multicollinearity, 35, 37, 38

## O

Opportunities, 2, 6, 8, 9, 10, 13, 20, 22, 23, 33, 42, 43, 47

## P

Policies, 8, 9, 19, 23, 28, 33, 49, 50  
Policymakers, 1  
Population, 2, 4, 6, 7, 15, 18, 20, 25  
Probit model, 11, 23, 27, 30, 31, 39, 47  
Production, 15, 18, 28  
Productivity, 15, 19, 21, 28

## R

Research, 13, 14, 47, 53