THE EFFECT OF GENDER INCLUSIVITY IN EDUCATION AND EMPLOYMENT ON ECONOMIC GROWTH IN KENYA

KABIRU ANNE WANJIKU

X50/35965/2019

A RESEARCH PAPER SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN ECONOMICS AT THE DEPARTMENT OF ECONOMICS AND DEVELOPMENT STUDIES, UNIVERSITY OF NAIROBI.

November 2023

DECLARATION

I certify that, to the best of my knowledge, this paper is my authentic work and has not been submitted for review to any other university.

Signature……...

Date……23-11-2023……...

Kabiru Anne Wanjiku

X50/35965/2019

This research paper has been submitted for examination with my approval as the university supervisor.

Signature ……

Date ……26-11-2023……

Dr. Mercy G. Mugo

Department of Economics and Development Studies.

DEDICATION

I dedicate this paper to my loving family; My parents Daniel and Lucy Kabiru, my seven siblings, my loving husband Anthony Karanja, and my son, Maximilian Kabiru Karanja. They have been a great source of motivation and have offered immense support in the period I have taken to do this work.

ACKNOWLEDGMENT

I begin by thanking God for the grace, health, and ability throughout my study and research period.

My sincere gratitude goes to Dr. Mercy Mugo, my supervisor, for the support and guidance offered during the writing of this paper. Your constant guidance and positive criticism have increased my knowledge and sparked much critical thinking which has improved my research, language, and presentation skills. You never withheld any comment and was always keen to details. This together with your unending encouragement made this academic experience exciting and acute. I lack enough words to express my gratitude.

I am grateful to the University of Nairobi for providing me with the opportunity to undertake this Master's program through their graduate program scholarship. It is because of this financial support that I have had a smooth experience. Lastly, I appreciate my parents and my husband Anthony Karanja for all the emotional and moral support throughout my studies. May God bless you abundantly.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

AfDB	African Development Bank
ARDL	Auto Regressive Distributed Lag
CEO	Chief Executive Officer
COK	Constitution of Kenya
EPR	Employment to Population Ratio
GMM	Generalized Methods of Moments
GNP	Gross National Product
ICESCR	International Covenant for Economic, Social, and Cultural Rights
LFPR	Labor Force Participation Rate
LM	Lagrange Multiplier
UNESCO	United Nations Educational Scientific and Cultural Organization

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Gender inclusivity is the idea that all privileges and services are available to everyone regardless of sexual disposition (United Nations, Gender-inclusive Language). It is the availability of all resources and opportunities to everybody, irrespective of their biological structure as male or female. Including females in education and employment has benefited the economy over time, both directly and indirectly. Gender inclusivity in education improves economic growth through increased human capital, work, and reduced fertility rates, translating to a low population. On the other hand, gender inclusivity in employment improves economic growth by increasing labor force and productivity. The vector error correction model was for analysis.

The paper used time-series data from 1982 to 2022 on GDP per capita, investments, population growth rate, employment, gender parity in primary and secondary education, government spending on education, fertility rate, gender parity in labor force participation rate, and net exports. The study showed the direct effects of gender inclusivity on economic growth by analyzing how each independent variable predicts economic growth. The second step explained the indirect effects of gender inclusivity on economic growth. The paper described how human capital and gender gaps in education affect economic growth through investments, population growth, fertility rate, and employment rate in a 'path analysis' technique. This work was based on endogenous growth theories, which propose that innovation and human capital investments can lead to increased productivity and economic growth.

The findings indicated that gender inclusivity in education and employment improved growth in the long run, both directly and indirectly. The indirect effects of gender inclusion in education and employment were greater than the direct effects, showing that improving gender inclusion in Kenya will have a snow balling effect on economic growth over time.

CHAPTER ONE: INTRODUCTION

1.1 Background

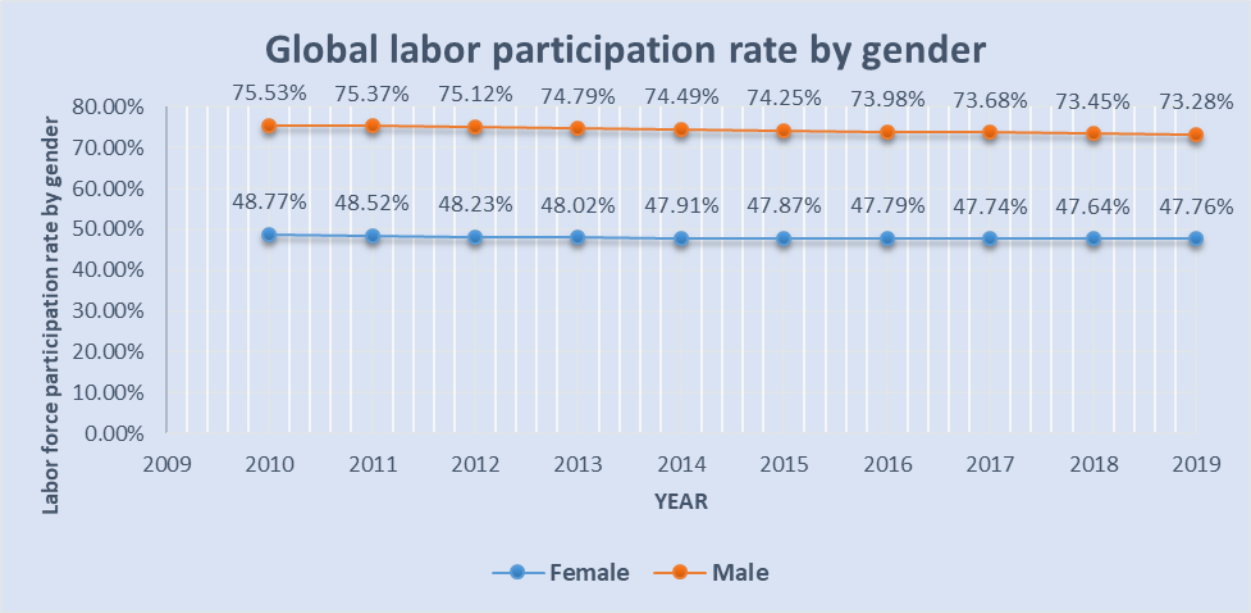
Gender inclusivity is the notion that all resources and opportunities are equally available to everyone. It is the availability of all resources and opportunities to everybody, irrespective of their biological nature or sexual disposition as male or female. These resources and opportunities include food, shelter, education, jobs, and freedom of expression. Including women in education and employment has always resulted in economic growth and improvement in the welfare of individuals and households(Klasen & Lamanna, 2009a). There has been compelling evidence that allowing women to access jobs, education, credit, transfers, and other facilities leads to improved economic factors such as poverty reduction, children welfare, low fertility rates, and overall productivity (Barrientos & Dejong, 2006; Blumberg, 2005; Quisumbing, 1996; Kabeer, 2003). These factors eventually improve economic growth. On the other hand, the gender gap is the undesirable disparity between men and women, in various aspects within the economic, social, or political sphere. These aspects can be education, parental care, job opportunities, pay, inclusion in political or social matters among others. Gender difference has always been an issue in many economies across various aspects of life (Mensch & Lloyd, 1998). Unfortunately, this divide has had a slowdown effect on economic growth for a long time.

Most gender inclusivity issues are based on strict adherence to conservative gender norms. Gender norms are the shared expectations about men and women's social and physical nature as dictated by culture (Eagly et al., 2012). Swim et al., (1995) give an instance where boys are supported to participate in sports activities compared to their female counterparts, claiming that this demonstrates strong gender norms encouragement. The same would go for providing boys with science-based education while strictly giving girls training based only on art subjects. It has been shown that males and females have very specified patterns in subject selection in schools (Ball & Lamb, 1999; Collins, 2000). Social norms have a considerable effect on the economy of a country. Social norms demand that women engage in household chores which competes with time for economic activities (Wekwete, 2014). Limiting women to menial tasks has

robbed them of the ability to achieve more than what tradition dictates. Furthermore, upon divorce, women in several countries across Africa, who have been homemakers throughout the marriage duration are often dispossessed of all resources they previously 'owned' due to their gender status (World Bank, 2017). In Gambia, women divorcees who had wetland rice cultivations, were cheated out of their property which was given to the state and the men in the community (Levien, 2017). Van de Walle (2017) stated that not only do women divorcees across Africa face land dispossession, they are also subjected to dehumanizing rituals, seclusion, and loss of custody of their children. Gender inclusivity allows the social lines between males and females to disappear by allowing all services, opportunities and establishments to be made available to all people without exhibiting any gender stereotypes. Saxena et al. (2009) assert that gender should not be the determining factor in what should be done and what should not be done. Kenya needs to conduct and accept cultural reorientation for the economy to grow more sustainably (Keter, 2013). The allowed access to all areas of expertise with little regard for gender, and sexual disposition allows specialization based on knowledge and skills, which are essential for productivity and economic growth.

Globally, the fight for gender inclusivity has been consistent overtime, leading to a rise in the inclusion of women in education and employment. However, men still dominate in these sectors. According to UNESCO, (2022), women still account for almost two-thirds of those who cannot read globally. Furthermore, studies show that 129 million girls worldwide are currently out of school (UNICEF, 2023). Male employment surpasses that of women, even with the gradual increase in female employment over the years (Gill, 2010). Figure 1.1 shows the global trend in labor force participation between 2010 and 2019. The labor force participation rate, analyzed by dividing the total labor force by the working-age population, which begins from 15yrs to 64yrs, showed the average global labor participation rate of men being higher (74.39%) than that of women (48.32%) overtime (World Bank, 2022).

Figure 1. 1: Global Labor Force Participation Rate, 2010-2019



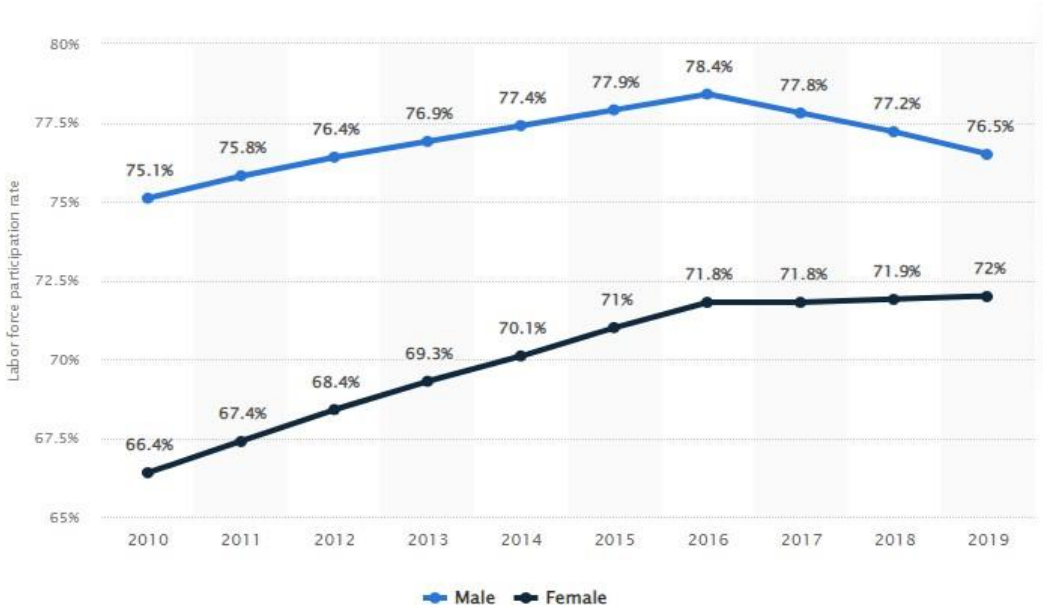
Source: World Bank, 2022

Africa faces the most problem with gender inclusion due to its considerably low levels of formal economic sector female participation (Efobi et al., 2018). Various development literature insists that African women are mostly left to do secondary and supportive or peripheral duties (Asongu & Odhiambo, 2018). Some of these peripheral duties include domestic activities without pay, small scale agriculture and minute modes of trading (Tandon & Wegerif, 2013). This narrative is consistent with academic literature on formal sector inclusion (Ellis, 2007; FAO, 2011). Inclusion of women in education and employment in Africa has been lacking for decades due to cultural strongholds. Gender inequality in the formal economic sector, primarily regarding women, should be addressed to ensure great rewards from shared economic prosperity (World Bank, 2015). Many governments and policymakers recommend the application of all the manpower that is available and capable for economic activities, considering the growing nature of the economy. Inclusive development is crucial to the SDG's achievement process in Africa because it improves the effect of economic progress on poverty. Most African countries will steer towards the extreme-poverty-reduction goal by reducing all forms of inequality, gender included. (Asongu & Kodila-Tedika, 2017).

In Kenya, the inclusion of women in education (particularly sciences), employment, sports, and leadership has grown in recent years, as traditional gender norms are slowly being broken. Data from the 2015-2021 survey shows that the female to male primary school enrolment ratio in Kenya rose from 92.37% in 2015 to 94.64% in 2021 (KNBS, 2021). On Kenyan employment, World Bank data showed that the female employment to population ratio has risen from 58.46% in 2015 to 70.02% in 2019. Furthermore, female participation in politics in Kenya increased to 9.8% by 2015, from 8.2% in 2002 (Kurea, 2015). Sufficient inclusion of women in the economy, and in politics may influence economic growth, and women's economic outcomes through their influence in policy-making. Women still suffer discrimination in joining and participating the education and employment sectors.

Figure 1.2 presents a comparison in labor force participation rate of males and females in Kenya. The trend presented in this figure relates to the global outlook in Figure 1.1. Although the gap is reducing, it is still evident that female inclusion in employment can be improved. Furthermore, women who are employed experience a lower pay compared to their male counterparts which limit them from adequate financial empowerment, and access to various services such as health, schooling or housing (Blau & Kahn, 2017; Reshi & Sudha, 2023). This shows that more efforts need to be made toward gender inclusivity and encouraging sustainable female employment to enable an inclusive economic growth process. Female participation will also guide Kenya towards achieving Vision 2030 goals by increasing human capital and labor force that generates income which spurs economic growth (Syomwene & Kindiki, 2015). Increasing women and girls' education and employment levels will improve inclusive growth and be beneficial to the economy in all spheres.

Figure 1. 2: Labor Force Participation Rate in Kenya, 2010-2019



Source: World Bank, 2021

This research will provide more insight to the Kenyan government and policymakers on how female inclusion in schools and employment sectors will improve economic growth. The knowledge from this study will point out the need to strengthen already set policies or alter redundant or ineffective provisions on gender inclusivity. Education centres such as primary, secondary, and tertiary schools will use the knowledge from this study to formulate and adjust already set policies and strategies through which younger and older women are included in education to increase gender equality and development in the education sector. Additionally, managers and human resource departments of individual companies can use this information to develop gender inclusion and protection policies in the workplace to ensure a smooth workflow and good relations between employees. Apart from policy, more information on this topic will give students, researchers, and stakeholders a better appreciation of this unique economic growth aspect.

1.1.1 Gender Inclusivity

Gender transcends biological sex. It is a learned behavioral pattern ingrained in everything done individually or as a community. Male or female stereotypes do not influence a person's expected performance. Gender inclusivity is considered a human right issue as denying women and girls various opportunities denies them the right to

express their maximum strengths and capabilities. Women and girls ought to have the freedom to move beyond their daily routines (United States Institute of Peace, 2018).

In the 21st century, gender inclusivity does not only involve the inclusion of women, but also gives them a voice to share their opinions on crucial matters, including economic growth, political agendas, and institutional stability. A lot of neutral gender beliefs have emerged, with people fighting for the rights of transgender, gays, lesbians, and other modern sexual minorities. Mohan & Murthy (2013) claim that gender and sexual minority issues are still an important consideration even amidst the war on poverty, hunger, and violence. In modern times, laws and bills that support the minority are being formulated to achieve a broad scope of equality and gender inclusivity. For simplicity, this research will primarily focus on including the female gender and assume all definitions relating to gender inclusivity as female inclusivity (Asongu & Odhiambo, 2018).

Currently, gender inclusivity is considered a significant factor in many areas. First and foremost, improving female inclusion in the formal sector is among the Sustainable Development Goals set to be achieved by 2030. Goal 4 describes the availability of an all-inclusive and quality education, while the 5th goal talks about women empowerment. In the 2010 Constitution of Kenya, Article 27 (8) defines the two-thirds gender rule. The article states that the State shall "…take steps to ensure that not more than two-thirds of members of all elective and appointive positions are of the same gender" (The Constitution of Kenya, 2010). This law calls for gender inclusivity in leadership and politics, pushing the equality agenda forward. Nevertheless, recent statistics indicate that there has been little progress towards achieving this goal. In the national assembly, women constitute only 21.78%, and 30.88% in the senate, which is lower than the required 1/3 ratio of women to men in parliament (UNICEF, 2020).

Gender inclusivity and equality arose from the concept of affirmative action. Affirmative action is the intentional and proactive decision to make deliberate efforts in aspects of social behavior, such as education and employment, to make up for discrimination done in the past (Lee, 1999). (Sen, 1999) claims that affirmative action should not be the reason for women's empowerment. He insists that women's agency can affect the livelihoods of those around them (Sen, 1999). Women can expand the economy and improve

livelihoods outside of their families. Equality is achieved with the women empowerment and gender inclusivity plan, and inclusive and increased economic growth is attained.

1.1.2 Education

Education is simply acquiring knowledge and expertise that can be applied in a particular or general field. Education can be achieved through teaching, practical training, storytelling, and research. In this way, information is passed on from an educator to a student, although sometimes the students can educate themselves. Education is a critical element of achieving growth for countries, and literacy levels serve as perfect indicators of this growth (Ozturk, 2008). Schooling is among the primary forms of human development. According to Barro & Lee (1994), education increases human capital, which improves economic growth through technological advancement and innovation.

The right to education is regarded by the United Nations, a human right. Every child has the right to free, primary education as well as the promise of secondary and tertiary schooling, according to the International Covenant on Economic, Social, and Cultural Rights (ICESCR), which was put together by UNHCR. Education is seen as a human right in Kenya as well. According to the Ministry of Education, girls' enrollment in secondary school had increased by 9.6% between 2015 and 2020 and continues to rise as cultural gender norms are being broken (Ministry of Education, 2020). Besides availability to education and all that entails the learning process, the right to education incorporates the students' privilege to be shielded from discrimination in the educational process, set minimum learning standards, and improve education quality according to the SDGs set by the United Nations.

1.1.3 Employment

Employment refers to any work that is reciprocated by remuneration. Employment in Kenya is governed by the general law of contract and common law (National Labor Law Profile; Kenya). This law suggests that employment is considered a personal transaction between the employer and employee. There also exist different Acts of Parliament which provide for how employment ought to be conducted (International Labour Organization, 2011). For example, the Employment Act together with the Wages and Remuneration of Employment Act set up regulations on how payment and employment benefits should be

provided as well as positions for exceptional cases such as juveniles and women (International Labour Organization, 2011)

Employment in Kenya has been a priority since independence. Growth-oriented development strategies supplemented by high earnings and localization policies were highly incorporated during independence (Republic of Kenya, 1993). The localization policy entailed providing ample opportunities to local citizens by reducing the employment of foreign workers (Republic of Kenya, 1993). In recent years, the government has advocated for self-employment, ensuring easy registration of businesses and companies to promote creativity and income generation opportunities that will likely lead to economic growth. Despite the many efforts made, Kenya still faces significantly slow growth in employment, especially in the gender disparity (Omolo, 2010; Vuluku et al., 2013). Table 1.1 below shows employment to population ratio (EPR) ratios by gender and age group. Females' EPR was below males across the working-age group in 2015 (National Gender and Equality Commission, 2016). These findings suggest that the youth and women have been disadvantaged in accessing employment. Measures are still required to improve youth and women's employment and make the working environment conducive by implementing proper wage policies and employee protection.

Table 1. 1: Employment to population ratio (EPR) by age group and sex, 2015 (percentage)

Age group	Male	Female	Total
15-34	46.8	43.4	45.0
35-64	82.4	73.1	77.6
15-64(working age)	60.8	54.9	57.8

Source: National Gender and Equality Commission, 2016

1.1.4 Economic Growth

Economic growth has been defined as the production of commodities or converting raw resources into valuable products (Lewis, 2003; Łukasz, 2014; Rostow, 2000) . Romer (2018) likens economic growth to a kitchen where food is made from given different ingredients by using a particular recipe. As a result, economic growth happens whenever individuals combine resources to create a finished good. According to Harrod and Domar, long-term economic growth is consistent and steady (Sato, 1964; Solow, 1956). Growth

is a function of savings and population in the economy. Therefore, growth is affected by the income and employment of individuals in the country. Solow modifies the Harrod-Domar model to include investment to increase the ratio of capital to labor (Solow, 1956). In the Solow model, technology through education and training helps advance economic growth. Kuznets (1967) suggests that growth does not just involve the growth of aggregate output but also the complete transformation of a country's economy, from its sectoral foundations to its demographic outlook and its entire social and institutional structure.

Economic growth in most economies is measured by the national gross domestic product (GDP) or gross national product, abbreviated as GNP. In circumstances where growth will be determined in terms of individual incomes, per capita GDP and per capita GNP are used.

1.2 Research Problem Statement

In Kenya, the issue of gender inclusivity is a crucial problem. Education and employment possibilities for girls and women are still low, even as society warms up to the idea of women empowerment. There is a need to relate and quantify the importance of gender inclusion with economic growth for accurate policy making. Globally, countries have accepted that the inclusion of women in education and employment opportunities helps the country grow more inclusive. The initiative to improve female inclusion is steered by the Millennium Development Goals (MDGs) (United Nations, 2015). Apart from being a key component of Sustainable Development Goals, women empowerment in education and employment is central to realizing gender parity and expanding the economy through increased manpower, reduction in fertility, growth of per capita income, and innovative development (Asongu & Odhiambo, 2019).

Klasen & Lamanna, (2009) found that gender gaps affect economic growth in a negative way. The economy fails to tap the vast potential that the female gender possesses, which would exponentially improve economic growth. Traditionally, women were considered the weaker sex whose duty was to keep the household organized. The good news is that these primitive ideologies are now fading as women manifest their ability to be involved in more active positions than their traditionally defined roles. Over the years, there has

been a rise in the female share of the total labor force, but this improvement has been captured mainly in informal sectors where the pay is very low (Wanjala and Were, 2009). More research needs to be done for three primary reasons; to use recent data and determine how sustainable gender inclusivity has been over time, cement the notion of gender inclusivity in Kenya, and spearhead policies that ensure that men and women to be treated equitably without bias.

Studies have shown the importance of gender inclusivity (Asongu & Odhiambo, 2019; Efobi et al., 2018). However, very little literature is available to analyze the direct and indirect impact of gender inclusivity in education and employment on Kenya's economic growth. Past research focused on a panel of African countries that include Kenya, but so far, none has focused on Kenya alone (Asongu & Odhiambo, 2019; Efobi et al., 2018; Klasen, 2000; Klasen & Lamanna, 2009). This research showed how the inclusion of females in schools and the workplace affects economic growth in Kenya and consequently makes progress toward reinforcing this informational gap. By showing how gender inclusivity impacts development, this research will provide a basis for which appropriate policies regarding female inclusion can be made or improved in Kenya to facilitate economic development.

1.3 Study Objectives

The broad objective will be to determine the effect of gender inclusivity in education and employment on economic growth in Kenya.

The specific objectives include:

i. To determine the level and stability of gender inclusivity in Kenya.
ii. To evaluate the direct effects of gender inclusivity in education and employment on economic growth in Kenya.
iii. To evaluate the indirect effects of gender inclusivity in education and employment on economic growth in Kenya.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The problem of gender inclusivity and economic growth is not new, and a theoretical and empirical literature pool addresses this issue. Firstly, theoretical literature comprises growth theories and models that provide a framework for the many factors which affect economic growth. Various scholars from the classical economists, Keynesians, monetarists, and the now neo-classical and neo-Keynesian economists have studied economic development and identified many critical drivers of growth over time. Essentially, these drivers are land, labor, capital and technology. These significant factors have improved over time to include social and institutional factors such as health, education, regional integration, and gender inclusion. The gender socialization theory describes the social differences between males and females, which have advanced the economic position of each gender. Generally, the theoretical section of this study explains how theory supports the positive connection between gender inclusivity and economic growth.

The empirical section of this literature review shows empirical methods and findings that point toward the impact of gender inclusion in schools and the job environment on the economy. Various authors have relied on multiple linear regression to demonstrate this effect, using factors of gender inclusion such as school enrollment, government spending in public schools, and employment as independent variables (Asongu & Odhiambo, 2019; Klasen, 2002; Klasen & Lamanna, 2009; Perotti, 1996). The dependent variable used in most empirical studies includes GDP per capita. While some studies develop a correlational analysis, indicating simultaneity (Klasen & Lamanna, 2009), most studies dwell on the causation of gender inclusion in education and employment on economic growth.

2.2 Theoretical Background

This research is anchored on growth theories and models that have emerged over time. Another theory related to this study is the socialization theory (or sexual/gender difference theory).

2.2.1 Economic Growth Theories and Models

Growth theories explain how a country can grow its economy naturally. Economic growth analysis began in the 18th century with Adam Smith's classical model and evolved to the short-run Keynesian models until distinct growth theories were developed. Adam Smith described the notion of the invisible hand where growth happens naturally due to individual pursuit of fulfilment (Smith, 1954). The topic of economic growth seeks to investigate the main drivers of economic growth. Łukasz (2014) questions that if economic growth is ongoing, are there fixed determinants in required proportions that enable this non-stop process? Classical economists claimed that economic growth was the product of land, labor, and capital. These factors were prevalent in capitalist economies (Łukasz, 2014).

2.2.1.1 Classical Theories of Growth

Growth theories were described in the form of various models. The earliest of these was the model by Harrod and Domar in the 1940s. The Harrod-Domar (H-D) model relies on a constant economic growth rate that maintains full employment and potential output. If the labor force grows at, say, 3%, then the economic growth rate is also at 3% so that all resources are employed to achieve maximum growth. This 'knife-edge growth' is critical and a slight deviation from it leads to significant hyperinflation and prolonged unemployment (Hochstein, 2017; Sato, 1964). Higher savings lead to more investment, while a lower capital-output ratio means that investment is efficiently incorporated into production, and the growth rate will improve. Harrod (1939) also developed the concept of warranted growth, the growth rate at which all savings are used in production.

According to Sato (1964), the H-D model has no self-equilibrating force, and it was essential to maintain the growth rate at a steady state. However, this attempt is near impossible for many economies. The assumption that labor productivity is constant is also very unrealistic. Labor productivity will depend on many factors, such as food supply and healthcare, which is not stable, especially in developing countries. Harrod and Domar only emphasize savings and investment, forgetting the role of technology, diminishing returns, and external and internal borrowing (Hochstein, 2017). Despite its flaws, the applicability of the H-D model allows it to be widely used in developing economies today.

Solow and Swan (1956) improved the H-D model to include knowledge, a central technical component in the process. The assumption that capital and labor are in fixed ratios is the limitation that mainly drove Robert Solow to modify the H-D model (Solow, 1956). According to Solow (1953), Harrod did not consider the aspect of prices and change in price-interest equilibrium in his analysis of equilibrium growth of capital and output (Greenwald & Stiglitz, 1987). In the Solow model, the technological aspect is involved in the macroeconomic production function Y=f (K, L), producing output through capital and labor. Per-capita output is a function of per-capita capital Y/L=f(K/L) (assuming constant returns to scale). Therefore, the Solow model states that economic growth depends on constant savings, population growth, and rate of change in productivity, also called technology.

2.2.1.2 Neo-classical Growth Theories

Compared to Kaldor's approach, where the propensity to save determines output adjustment, the neoclassical model depends on the capital-output ratio to determine equilibrium output (Hagemann, 2009). Additionally, Salai-i-Martin broke down Solow's concept of technical progress into various components, including a) physical capital, human capital, and knowledge through education, b) institutional diversity that benefits the economy, and c) free flow of capital, technical propositions, and information (Sala-i-Martin, 2002). Hochstein also insists that total employment growth cannot be achieved without a well-placed monetary policy, even when limitations of diminishing returns or knife-edge growth are eliminated (Hochstein, 2017).

Bullionism and mercantilism failed to fully explore the growth factor as the focus was an accumulation of gold and wealth by capitalists (Cameron, 2004). Later came the physiocrats led by Quesnay, who believed that agriculture was the root of economic growth and dwelled on producing the 'pure product' (Steiner, 1994). Ricardo and Jean-Baptist Say agreed on the importance of competitive markets in output growth (Ricardo, 1957). Karl Marx disagreed, claiming that capitalism made it impossible for competitive markets to stand (Marx, 1951).

2.2.1.3 Keynesian, Neo-Keynesian and Endogenous Growth Theories

The Keynesian theory, developed in the twentieth century, focused on-demand as the primary contributor to economic growth. This was contrary to classical thought; whose focus was supply. The Great Depression of the 1930s, which affected countries such as the USA, Australia, Germany, Italy, and Polland, shook the validity of stable economic growth (Łukasz, 2014). Keynes, in his work, criticized classical economists claiming that economic growth was not steady in the long run (Patinkin, 1984). Keynes insisted that the economy is filled with a series of imbalance and unemployment and that economic growth depended on demand (Keynes, 1985). Malthus agreed with Keynes' demand theory, claiming that economic growth relied on effective demand (Eltis, 1980). The Keynesian theory significantly dwelt on the short run economic period.

Keynes's theory led to the New- Keynesian models that considered supply and demand as determinants of economic growth. The New Keynesians acknowledged the purpose of the market system but insisted that government intervention is essential when the market fails (Greenwald & Stiglitz, 1987). Later came the endogenous growth models. Endogenous growth theories state that growth develops from within a system due to internal processes rather than external forces. The Harrod-Domar and Solow-Swan models had one thing in common: the assumption that technology is entirely exogenous, almost as if it comes from an unknown place and plants itself into the growth process. Aghion et al. (1998) opine that technological progress will transform the very system that develops it. Therefore, the interaction between the economy and technology is a continuous two-way movement that leads to long-run growth. Endogenous growth models have their implications for the role of government intervention (Shaw, 1992). Government intervention in providing knowledge to the country's labor force can lead to technological improvement and economic growth.

Growth theories are significant in this study by analyzing factors that lead to a rise in the economic growth rate, and female inclusion in strategic sectors is one of them. The theoretical review describes the key drivers of economic growth. Initially, the classical economists, led by Adam Smith, pointed out three main factors that spur economic growth: land, labor, and capital. The Harrod-Domar model describes this theory by

showing how economic growth is a factor of population and capital accumulation through investments. After that, Solow and Swan improved the model by including technological progress as a vital aspect of economic growth. However, assumptions of exogenous technical progress could not hold in an economy. This assumption was challenged by Endogenous growth models, which asserted that the economy and technology relate in a two-way format, leading to long-term growth. The function of government intervention is implied by endogenous growth theories (Shaw, 1992). Salai-i-Martin dissected Solow's concept of technical progress into several elements, including knowledge, institutional diversity, and free flow of capital (Sala-i-Martin, 2002). Hochstein also emphasized the need for a sound monetary policy to spur economic growth. Modern economists include gender inclusion into economic growth's technical and institutional factors. Gender inclusivity widens the labor force pool, which increases per capita GDP. Additionally, gender inclusion increases innovation, strengthens the country's institutional framework, and improves the people's welfare.

An overall increase in knowledge may spur enough technological growth to enable sufficient endogenous growth in an economy. Learning about the foundational structure of growth in the economy will allow for proper strategic planning to spur more growth in the future. Furthermore, the determination of the full employment labor force will include the level of gender inclusivity in the employment sector that will positively change economic growth. Providing education to personnel includes educating women as well.

2.2.2 Gender Socialization Theory

Socialization is the process where human beings adopt the behavior to become relatable members of a group or society through their biological make-up and interactions with others. Sigmund Freud claimed that socialization is a biological concept (Freud, 1989). He suggested that the human mind is a three-part system; the id, ego and super-ego. The id is the part that wants to satisfy physical desires, while the super-ego is the mind that encourages strict conformity to societal norms. The ego reconciles the id and the super-ego to equilibrate natural wants and strict societal discipleship. Mead (1934) contradicted Freud's ideology by claiming that a person's social behavior is acquired from their interactions with others in the environment they are placed in and not from a biological

make-up. Mead argued that the Self, consisting of an individual's awareness and self-image, results from their social experiences(Mead, 1934).

Cooley's notion, the looking-glass self, relates to Mead's theory, emphasizing the impact of the 'significant other' on one's behavior (Cooley, 2010). Essentially, people's beliefs and behaviors are firmly anchored on their relationships and social interactions with those around them. This notion suggests that people living in a given social group or area will portray similar behavior as dictated by the society within which they belong.

Gender socialization theory explains how gender norms are formed and cemented from a young age by social and biological factors. Many scholars have explored ideas on socialization. According to Grusec and Hastings (2014), a child by their sex would have opportunities set for from nativity. As they grow, children's gender concepts are influenced by their social environment: families, peers, schools, and the media. These social situations orchestrate and ingrain gender roles and inequalities in the larger community (Leaper, 2000; Wood & Eagly, 2002).

Three main approaches as considered in gender socialization theory: the social-structural perspective claims that a person's societal environment and relative status will influence their circumstances. According to Wood & Eagly (2002), the social-structural approach is associated with feminism because it is explained as the cause of gender inequalities in societies. Secondly, cognitive-motivational processes explain that children impute the concepts of gender as dictated by their culture, which affects how they view the world (Bussey & Bandura, 1999). Gender-schema theory emphasizes that children contribute actively to their gender development, and the self-socialization process ensues (Tobin et al., 2010). Thirdly, the biological processes approach attributes gender specifications based on physical make-up. Wood and Eagly’s biosocial theory show that the major biological characteristics that separate different sexes are the women's nature of reproduction and nurture, separate from men's exceptional muscle strength, size, and speed. In that, gender roles emerge (Wood & Eagly, 2002). Sex-linked hormones such as testosterone and progesterone are biological factors in analyzing behavior and men-women functions.

The socialization theory is relevant in this research. It gives an insight into the origin and explanation of gender roles, from which the inquiry of whether women can be included in areas that were known to be male-centered is possible. Over time some gender norms have had to be done away with because of the harm they cause to women. Most cultural practices are being modified to accommodate the women in sectors that were once known for the male gender. Knowledge of former cultural practices emphasizes the need for social improvement.

2.3 Empirical Review

Different studies have been done globally and locally to determine gender inclusivity and its effects on the economy (Asongu & Odhiambo, 2019; Barro & Lee, 1994; Efobi et al., 2018; Seguino, 2000b). Most of these studies have revolved around similar variables of gender inclusion, such as female education levels, female labor participation rate, and the differences between male and female (Efobi et al., 2018). Additionally, previous research has included regression models to show the positive correlation between growth and gender inclusivity considering other control variables.

2.3.1 Gender Inclusion in Education

In education, early studies seemed to negate any meaningful response of economic growth to female inclusion. Barro & Lee (1994) explored the determining factors of growth and included female and male schooling as separate independent variables. Using a panel data set on 138 countries for 1965-75 and 1975-85, Barro and Lee found an inverse relationship between GDP and education of females. The result for male schooling and economic growth differed from that of female education. Later, Barro & Sala-i-Martin (1995) built on the same study, including four separate secondary and tertiary education variables, each for males and females. This study found similar results as the former. Perotti (1996), on similar research, also found that education of females diminished economic growth while male education affected growth positively. However, Caselli et al. (1996) found that male education affected economic growth negatively, after repeating the model by Barro & Lee (1994). These early studies were heavily contrasting and received intense methodological criticisms. Barro and Lee themselves suggested that these “puzzling findings” resulted from issues with measurement or omitted variables

(Barro & Lee, 1994). It was also shown that the education variables for males and females were strongly correlated with a probability value greater than 0.9 (Barro & Lee, 1994). Specification issues were detected, and the high multicollinearity was further backed up by the huge standard errors and the different findings when the model specification was altered (Klasen, 2002; Knowles et al., 2002). Stotsky (2006) also found that regional characteristics affected female schooling, which must have highly driven the Barro and Lee results.

Later studies using advanced econometric methods and better model specifications found positive outcomes regarding female education and the economy. Dollar and Gratti (1999) estimated the relation between gender inequality and per capita income growth using a five-year average analysis between 1975 and 1990. The data set was from 100 different countries at different development stages. Gender inequality was measured using the population of females who had attained the highest education (Dollar & Gratti, 1999) controlling for the same male population (those with the highest education), other growth model variables and regional dummies. At first, the results were insignificant. However, a later study, where the population was divided into developed and developing countries, (with emerged economies having a female secondary education rate greater than or equal to 10.35%), Dollar and Gratti (1999) found that in developed nations, female education positively impacted per capita income to a greater extent than in less developed countries. These results suggest a difference in how gender inequality relates to economic growth in different economies. Klasen (2000, 2002) improved his estimation procedures from Dollar and Gratti (1999) by using a longer period (1960-1992) and assuming that education has long term effects and solving the problem of multicollinearity. Klasen (2000) found a positive response when economic growth regressed on gender disparity in education and employment, applied in both less progressed and more progressed countries. The analysis of employment is explained later in this section. A re-estimation of the same model in African countries, Kenya included, further strengthened Klasen's results showing that investing in human capital, particularly women, had a considerable impact on developing countries' growth. This suggests that human capital is vital in agricultural cultures, especially since women are the primary source of agricultural labor in Sub-Saharan Africa (Kabeer & Natali, 2013). Klasen (2000) also

included the indirect impact of female schooling, particularly through fertility levels and improved health outcomes. This emphasized that female education also led to subsequent growth over time, and differed between developed and emerging economies (Abu-Ghaida & Klasen, 2004).

Many other studies confirm the general idea that gender inequality in education adversely affects the economy. Klasen and Lamanna, (2009) established Klasen's (2000) earlier results, by studying the effects of gender inclusion in 93 countries using data set from a later period (1960-2000). Klasen and Lamanna, (2009) found that schooling had gender disparities which considerably deteriorated growth.

Additionally, Knowles et al. (2002) showed the impact of gender inclusion on the market by estimating the relationship between education and long-term worker productivity. Knowles et al. (2002) used five-year averages on data from 1960 to 1990 to estimate economic growth where the factors of production used were male and female education, with positive but diminishing marginal returns. They found that GDP per worker positively responded to changes in female education, thus contributing to higher productivity.

2.3.2 Gender Inclusivity in Employment

Over time, several empirical research and similar findings on gender inclusion in education have been published. On the other hand, the employment sector has received less empirical backing and has yielded less convergent outcomes (Kabeer & Natali, 2013). This is primarily because different countries define employment differently. Klasen (2000) evaluated the proportion of women in the labor force and in the formal sector to determine gender inequality. Even though both variables contributed to economic growth, the former was statistically insignificant. Klasen (2000) cautioned that the insignificant findings could be due to insufficient information on women's employment, making it difficult to identify an instrumental variable that could reduce the effects of reverse causation.

Klasen and Lamanna (2009) evaluated this relationship over a longer time period (1960-2000). They demonstrated that increased labor force participation of women accelerated growth. The ratio of men to women in the labor market had a favorable effect on economic performance. Still, as previously explained, this impact was reduced when the education

gap was factored in (Klasen & Lamanna, 2009). The scholars concluded that differences in gender in education and employment had an adverse impact on the economy, but the extent of this effect varied with the economy. On the other hand, Baliamoune-Lutz and McGillivray (2009) examined the link between women labor force participation and growth in Sub-Saharan Africa (SSA) and Arab nations, and came up with inconsistent findings. They discovered a statistically significant inverse relation. Considering the countries under research, the outcomes were expected. SSA countries saw sluggish economic growth but high levels of female economic participation, especially in agriculture. On the contrary, Arab countries, primarily oil-producing economies, have relatively strong economic growth rates but low female labor participation rates (Baliamoune-Lutz & McGillivray, 2009). While female inclusion in the labor force affects economic growth, the intensity or direction of this relationship depends on the economic structure of a country.

2.3.3 Gender Inclusivity and Gender Inequality

According to recent research, inequality and gender inclusion go hand in hand. The relation between inequality and gender inclusivity is influenced by the weight and importance placed on female participation in an economy, which varies for different countries (Asongu & Odhiambo, 2019; Efobi et al., 2018). Gender inclusivity reduces inequality in the economy which improves productivity, reduces poverty levels, and leads to more sustainable economic growth.

Between 2004 and 2014, Asongu and Odhiambo (2019) explored how strengthening gender inclusivity affects disparity in 48 African countries. The gender inclusion variables considered were female employment and labor participation rate. Asongu and Odhiambo (2019) advocated for policies similar to those advocated by Efobi et al. (2018) to increase female LFPR, thereby improving equity and, as a result, gender inclusion. These policies are financial development, improved information and communication technologies, and inclusive education. Efobi et al. (2018) included interventions that could increase female economic participation in their analysis. They contended that training and incorporating information and communication technology (ICT) improves female involvement in the formal economy. Between 1990 and 2014, researchers examined how ICT development affects female participation in the formal sector in 42 countries in Africa. Ordinary least

squares, fixed effects, and the general method of moments were used in the study to conclude that ICT increases female involvement in the formal economy. Inclusivity in the formal sector is facilitated by mobile phones, and an internet network, increasing inclusive economic growth (Efobi et al., 2018).

2.3.4 Gender Inclusivity in Kenya

Similar studies on gender equality have been conducted in Kenya's economy, but they are few. Wamuthenya (2010) and Vuluku et al. (2013) analyzed gender disparities in unemployment and underemployment. Vuluku et al. (2013) specified their model using binary probit, which determined the likelihood of unemployment and underemployment in the different genders and the aspects that provide rationale for the underlying disparity. Women were more likely to be underemployed and jobless, with female-male differences in individual and family factors accounting for 88.8 per cent of the difference. Age, marital status, residence, and non-labor income were critical determinants of the gender gap in unemployment and underemployment in Kenya (Vuluku, 2012). Additionally, Wamuthenya (2010) investigated the sources of gender disparities in employment from 1986 to 1998 and observed that household leadership was the critical factor that led to gender gaps in unemployment. Differences in household leadership between the two genders accounted for 71% and 91% of the unemployment gap in 1986 and 1998 respectively.

Evidence shows that female education is instrumental on the individual, community, and national levels (MOE, 2007). Wamahiu (2011), in a talk about education, quoted the saying, "educating a girl is educating the whole nation". There have been growing gaps in the education sector for an extended period. In 2015, the gender parity index of secondary school enrollment was 0.92, while that of universities was drastically lower at 0.69 (National Gender and Equality Commission, 2016). The Centre for the Study of Adolescence (CSA) concluded that girls' lack of school completion is costing Kenya an estimated Ksh 60 million annually. Disparities are also reflected in the employment sector. According to WERK, 2011, women receive a tenth of global income yet participate in 60 percent of the hours used in labor. Suda (2002) observes that the female labor participation rate has been below 30% for many years. Women have been mainly

engaged in agricultural and other casual jobs whose income is far less than the current jobs men are involved in (Suda, 2002). As of March 2020, USAID Kenya found that women have little access to financial support and lack competitiveness in the labor market because they must juggle between domestic and employment activities (Asongu & Odhiambo, 2019; Vuluku et al., 2013). The gender inequality in employment has affected output by limiting women's potential to produce this output.

2.3.5 Methodological Considerations

Many studies have adopted multiple linear regression to analyze gender inclusivity and economic growth. Barro and Lee (1994) adopted the neo classical growth model, on a data set for 138 countries in the periods 1965-75 and 1975-85. To reduce endogeneity, they used lagged values of national GDP as the dependent variable, while independent variables included investment rate, government spending as a ratio of GDP, level of schooling as a proxy for education, and foreign exchange. Furthermore, Barro and Sala-i-Martin (1995) used similar variables in an endogenous growth model, with the assumption that technological advancement was not an exogenous factor, but a variable that is derived from within the model. Instead of schooling as a single variable, Barro and Sala-i-Martin (1995) used secondary and tertiary education, each for males and females as the main regressors, and government spending, investment, interest rate, and foreign exchange as controls.

Later studies used advanced econometric methods in their analysis. Dollar and Gratti (1999) incorporated a panel model over 100 countries, which were categorized into developing and developed economies. The variables used were per capita GDP as the main variable, and government spending, consumption level, interest rates, and highest education level for females and males in the countries, and regional dummies. Categorizing the countries into less developed and more developed economies implied that the impact of female schooling on GDP differed between the two categories, with the former having less impact than the latter.

Klasen and Lamanna (2009) used multiple linear regression in 93 countries. Direct effects included a regression model that showed gender disparities between males and females in the education and employment sectors related to economic growth. The indirect effects

explained this relationship through fertility levels, health outcomes, and growth rates of population and labor. This methodology employed instrumental variables to reduce the effects of multicollinearity in the model.

This study focused on the endogenous growth theory that states economic growth is an endogenous concept, that is improved with technological advancement which is derived endogenously as well (Shaw, 1992). Modern economists include gender inclusion into economic growth's technical and institutional factors (Aghion et al., 1998; Hiller, 2014; Santos Silva & Klasen, 2021). This is because gender inclusivity spurs economic growth from within the economy. Gender inclusivity widens the labor force pool, which increases per capita GDP. Time series analysis was used to determine the effect of gender inclusivity on growth, both directly and indirectly (Efobi et al., 2018). The variables used in this study partake to factors that contribute to economic growth (Asongu & Odhiambo, 2018). Following the studies mentioned above, this study used per capita GDP, investment rate, government spending on schooling, gender parity in primary and secondary education, labor force participation rate fertility rate, and net exports.

2.4 An Overview of Literature

Increased gender inclusion, according to previous literature, provides considerable benefits (Asongu & Odhiambo, 2019; Klasen, 2002; Klasen & Lamanna, 2009; Perotti, 1996). These benefits include increased consumer freedom, poverty reduction, technology, environmental preservation, and innovation. All these factors, in turn, contribute to higher economic growth. Gender inclusivity affects economic growth both directly and indirectly. Direct effects primarily concern how gender disparities and low female participation affect economic growth. Indirect effects include fertility, health, infant education, mortality rates, and how these variables relate to gender equality and economic growth. Furthermore, studies show that specific measures of gender equality boost economic growth, including female education and female labor participation. Although the informal sector, particularly agriculture, contributes to growth, it is insignificant compared to the formal employment sector. Another observation is that various contextual factors influence the intensity in which gender inclusion impacts economic growth. These aspects include growth strategies, economic development,

structure, and various cultural factors (Kabeer & Natali, 2013). The improvement in international competitiveness is another argument proposed in previous studies (Klasen & Lamanna, 2009). Many countries have been able to prosper in worldwide markets due to female participation in export-oriented industries (Seguino, 2000a). These findings indicate that increasing female participation in school and employment will increase exports and allow countries to capitalize on global opportunities, thereby boosting economic growth.

For Kenya's economic growth to improve, women's contribution in the workforce is critical. While there is literature on gender inclusivity in Kenya, these studies do not evaluate the effect of female inclusion on economic growth; instead, they investigate various interventions that improve female inclusion. Wamuthenya (2010) and Vuluku et al. (2013) failed to link gender disparities in their study to economic growth. Other research focused simply on education, with no regard for employment (Chege & Sifuna, 2006; Syomwene & Kindiki, 2015; Unterhalter & North, 2011). Gender inclusion in investment increases female employment and alleviates poverty (Suda, 2002). Her study did not consider the implications for economic growth. The studies that included Kenya focused on a group of countries other than Kenya (Asongu & Odhiambo, 2019; Efobi et al., 2018; Klasen, 2000; Klasen & Lamanna, 2009). There has been inadequate research in Kenya. The findings and recommendations of this study will be focused primarily on Kenya to improve women participation in the country's economic progress.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

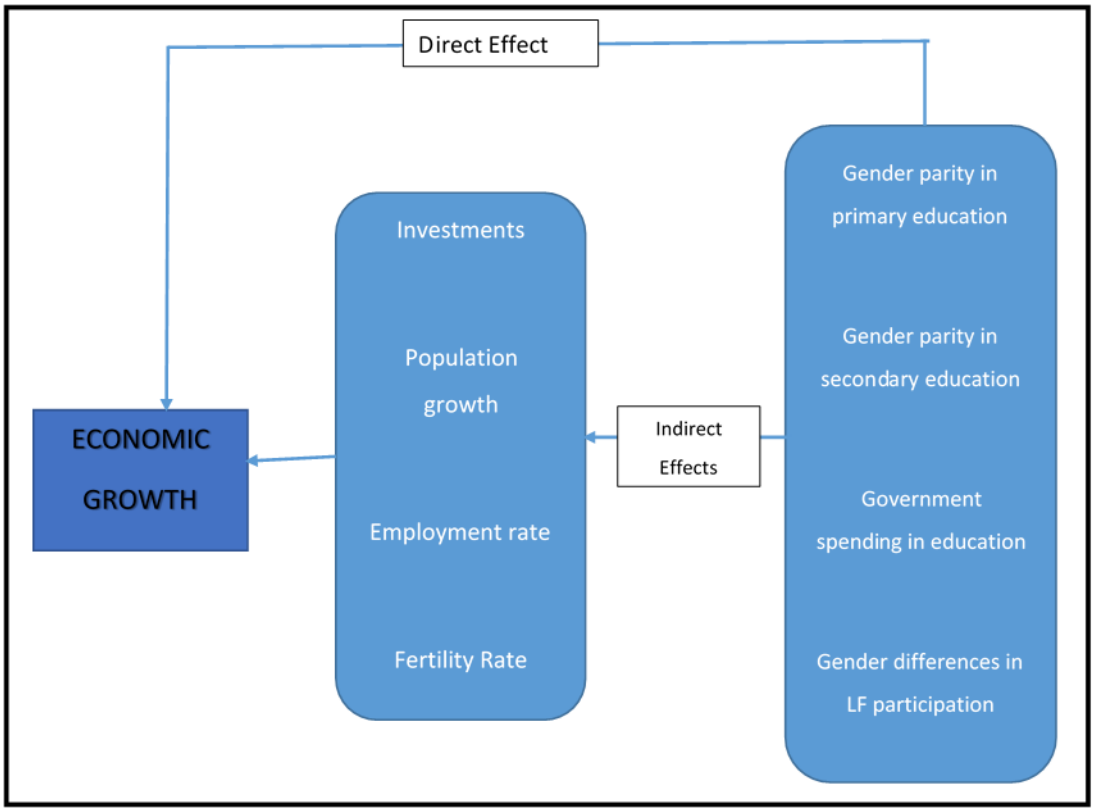
This chapter discusses the conceptual framework, the specified model, variables definition and measurement, data analysis techniques, and pre-and post-estimation tests. In addition, data sources are presented.

3.2 Conceptual framework

The conceptual framework is as shown in Figure 3.1. The explanatory variables are in line with both theoretical (Harrod, 1939; Sato, 1964) and empirical literature (Klasen & Lamanna, 2009b; Knowles et al., 2002) that show the relation between gender inclusivity and growth. The framework shows how gender gaps in education and employment affect GDP through investments, population growth, fertility rate, and employment rate in a technique called 'path analysis' (Klasen, 2002). The dependent variable measured by Kenya's GDP per capita growth. Independent variables include investments, population growth rate, employment, gender adjusted primary school and secondary school education, government spending on education, fertility rate, and net exports. Employment and population growth are estimated independently (Bloom & Williamson, 1998). The employment rate is expected to have a positive influence, whereas population growth will affect economic growth adversely, as seen in third world countries (Vuluku et al., 2013). Furthermore, investment, population growth rate, fertility rate, and employment to population ratio act as dependent variables, to link the independent variables representing gender inclusivity with economic growth. Gender parity in education has a positive effect on GDP through increasing investment, population rate, and employment, while reducing fertility rate. Similarly, gender parity in labor force participation also affects growth directly and indirectly. The overall effect of gender inclusion on growth will be a combination of direct and indirect effects.

This study used 'path analysis' to demonstrate total effect. Path analysis is important in this study as it is used to show that gender inclusion affects economic growth in a more profound and sustainable way. Gender inclusivity in education and employment increases human capital and investment, enhances population growth, increases employment rate and reduces fertility rate which eventually leads to economic growth.

Figure 3. 1: Conceptual Framework



3.3 Model Specification

The relationship between the variables to be tested is described in the model specification. The model in this work is based on endogenous growth theories, which propose that innovation and human capital investments results in increased productivity and economic growth. Gender inclusivity is considered an institutional factor that relates to improved human capital which is endogenous in nature. This means that gender inclusivity improves economic growth from an internal rather than an external (exogenous) point through increased productivity, low fertility rates, and increased human capital investments. Klasen (2002) and Barro and Lee (1994), who did the same analysis on a panel of countries, using multiple linear regression. However, this research used time series to conduct the study in Kenya only.

The study evaluated the direct effects of gender inclusivity on economic growth by analyzing how each independent variable predicts economic growth as shown in model 3.1. Secondly, the study determined indirect impact of gender inclusivity on GDP.

Following Taylor, the study used a set of regressions (3.2 – 3.5) to demonstrate the indirect implications of gender in education and employment through their effects on investment, population, fertility rate, and employment to population ratio. The data was transformed to log before estimation to eliminate misspecification issues. The model is specified as follows:

$$lng_t = \alpha_1 + \beta_1 lnInv_t + \beta_2 lnPop_t + \beta_3\ lnERP_t + \beta_4 lnG_t + \beta_5 lnPrim_t + \beta_6 lnSec_t + \beta_7 lnLFPR_t + \beta_8\ lnFert_t + \beta_9 lnX_t + \varepsilon_t \quad (3.1)$$

$$lnInv_t = \alpha_2 + \beta_{10} lnPrim_t + \beta_{11}\ lnSec_t + \beta_{12} lnLFPR_t + \beta_{13} lnG_t + +\beta_{14} lnX_t + \varepsilon_t \quad (3.2)$$

$$lnPop_t = \alpha_3 + \beta_{15} lnPrim_t + \beta_{16}\ lnSec_t + \beta_{17} lnLFPR_t + \beta_{18} lnG_t + +\beta_{19} lnX_t + \varepsilon_t \quad (3.3)$$

$$lnERP_t = \alpha_4 + \beta_{20} lnPrim_t + \beta_{21}\ lnSec_t + \beta_{22} lnLFPR_t + \beta_{23} lnG_t + +\beta_{24} lnX_t + \varepsilon_t \quad (3.4)$$

$$lnFert_t = \alpha_4 + \beta_{25} lnPrim_t + \beta_{26}\ lnSec_t + \beta_{27} lnLFPR_t + \beta_{28} lnG_t + +\beta_{29} lnX_t + \varepsilon_t \quad (3.5)$$

g_t - The annual per capita GDP growth

Inv_t - Investment (% of GDP)

Pop_t - Population growth

$EtoPop_t$ - Employment to population ratio

$Prim_{nt}$ – Gender adjusted primary school education

Sec_t – Gender adjusted secondary school education

$LFPR_t$ – Gender adjusted LFPR

G_{et} - Government spending on schooling (% of GDP)

$Fert_t$ – Fertility rate

X_t – Net exports (proportion of GDP)

ε= disturbance term

Regression 3.1 in the regression model shows the direct effects in the model when investments, population growth, fertility rate, and employment rate are all controlled for. Equations 3.2 - 3.5 show how gender disparities in education and employment affect population, employment, fertility, and investment. In Equations 3.2- 3.5, the variables on

education and employment are regressed on investment rate, population growth rate, employment to population ratio, and fertility rate, respectively. These relationships show that gender inclusivity in education and employment affects economic growth through the economy's population growth, investments, fertility rate, and employment to population ratio. The total impact is done by multiplying the coefficients from models 3.2 to 3.5 with corresponding coefficients in the main model (model 3.1) (Klasen, 2000).

Direct Effects + Indirect Effects = Total Effects

The impact of gender adjusted LFPR on economic growth is calculated as:

$$\beta_7 + (\beta_{12} \times \beta_1) + (\beta_{17} \times \beta_2) + (\beta_{22} \times \beta_3) + (\beta_{27} \times \beta_8) \quad (3.6)$$

The first coefficient indicates the direct effect of LFPR on economic growth, the second, third, fourth, and fifth factors are the indirect implications of LFPR via investments, population growth, employment rate, and fertility rate.

The effect of gender parity in primary education is calculated as:

$$\beta_5 + (\beta_{10} \times \beta_1) + (\beta_{15} \times \beta_2) + (\beta_{20} \times \beta_3) + (\beta_{25} \times \beta_8) \quad (3.7)$$

The impact of gender parity in secondary education is calculated as:

$$\beta_6 + (\beta_{11} \times \beta_1) + (\beta_{16} \times \beta_2) + (\beta_{21} \times \beta_3) + (\beta_{26} \times \beta_8) \quad (3.8)$$

The total effect of government spending on schooling is calculated as:

$$\beta_4 + (\beta_{13} \times \beta_1) + (\beta_{18} \times \beta_2) + (\beta_{23} \times \beta_3) + (\beta_{28} \times \beta_8) \quad (3.9)$$

The total effect of net exports on economic growth is calculated as:

$$\beta_9 + (\beta_{14} \times \beta_1) + (\beta_{19} \times \beta_2) + (\beta_{24} \times \beta_3) + (\beta_{29} \times \beta_8) \quad (3.10)$$

Gender parity in both primary and secondary levels of education was included to cater for the differences in female education that occur as girls grow up. In many cultures it is observed that girls leave school at primary level due to reasons such as early marriages, pregnancy, and lack of income which force some families to prioritize education of boys at the expense of the female in the household (Birchall, 2018). This study used public education spending as a % of GDP to measure changes in the total education level, as

most studies confirm that there is a strong positive relation between government spending and education (Basu & Bhattarai, 2009). Dissou et al. (2016) opine that government spending in education can be used where data on level of schooling is not sufficient for analysis. Total education level is an indication of the level of human capital, and how this capital affects economic growth. This study also used the ratio of women to men in labor force participation to show the trend of gender parity in employment. Gender parities in education and employment appear to be linked (Barro & Lee, 1994). However, they do not measure the same item; thus, it is necessary to measure them independently. Barro and Lee (1994) assert that the two variables are not mutually exclusive and are influenced by different institutional factors. Any multicollinearity was corrected through transformation of the variables into logs.

3.4 Measurement and Definition of variables

This section explains each variable used in the study, how the variables are measured, and their significance in this study. Appendix A shows the variables in tabular form.

Per capita GDP growth: This is a standard measure for economic growth as it factors in the country's population. Change in GDP from year to year shows the rate at which the economy grows and is measured as a rate in percentage.

Investment (Inv): Investments measure the changes in the capital, leading to changes in economic growth. When investments are high, then economic growth rises. In this paper, investment was measured as a proportion of GDP.

Population (Pop): the rate of population growth is expected to relate negatively to GDP so that as the rate of population growth goes up, economic growth reduces. Theory suggests that increasing the population growth rate would boost economic growth (Solow and Swan, 1956). However, the case is different for developing countries like Kenya. Empirical studies show that for developing economies, the relationship between population growth rate and GDP is inverse (Bloom & Williamson, 1998).

Employment to Population ratio (EtoPop): growth in employment level in this study is attributed to the increase in education levels and female education in the economy. Employment rate in this study is used as a link via which human capital affects economic

growth. An increase in employment level affects GDP positively due to the rise in labor productivity (Vuluku et al., 2013). Therefore, if positively affected by female education in the economy, employment rate will affect economic growth positively. This variable is measured using data on employment to population ratio.

Gender parity in primary school education (Prim): This variable describes the ratio of girls to boys in primary schools. A gender parity index (GPI) lower than 1 shows that boys have more advantage than girls regarding primary school education. An increase in the GPI in primary education is projected to improve GDP through its influence on human capital.

Gender parity in secondary school education (Sec): this variable explains the ratio of females to males in secondary schools. This variable positively affects economic growth by reducing population growth and fertility rate and increasing employment and investment levels. As in primary education, an increase in the GPI in secondary schooling is projected to improve GDP through its influence on human capital.

Fertility Rate (Fert): The fertility rate affects economic growth inversely. When the fertility rate increases, economic growth falls due to the rise in the dependent population. Fertility rate is also a response variable of female inclusive education and employment and is used to link gender inclusivity and economic growth in this study. The fertility rate is evaluated using the average births per woman in a given period (Barro & Lee, 1994).

Government spending in education (G): Kenyan government spending on education is shown as a share of GDP. This factor represents the overall level of education, and it has a positive link to economic growth. GDP is anticipated to rise if government spending on education is increased.

Gender parity in labor force participation rate (LFPR): Gender parity in LFPR identifies the ratio of females to males in LFPR. Economic growth is anticipated to be positively affected, therefore if the ratio is higher, economic growth is anticipated to improve. Men's and women's LFPR are expressed as a proportion of the respective population.

The country's openness (X): this variable was used to acknowledge the significance of international trade in GDP growth. Openness is defined as the total net exports described as a proportion of GDP (Klasen, 2002).

3.5 Data Analysis

This research will use secondary data to carry out its analysis of how gender inclusivity affects economic growth. Descriptive analysis was included to describe each variable in the form of means, range, and standard deviation. Skewness and Kurtosis will also be included in descriptive analysis. Skewness indicates how symmetrical the data is, where a value of zero means that the data is perfectly symmetrical. Skewness values of less than 1 indicate left skewed data, while values greater than 1, show that the curve is skewed to the right (Jones & Christine, 1998). Kurtosis explains how peaked or flat the curves are. Time series analysis was also used for the regression model, where either the VECM or ARDL model was used depending on the existence of a long-term relationship. The data will be organized in Microsoft Excel sheets, and analysis will be made using STATA software version 15.1 (Kohler & Kreuter, 2005).

3.5.1 Pre-estimation tests

Unit-root test

The researcher determined whether there is a unit root. Stationarity occurs when the moments (mean, variance) is independent of time. A stationarity test is used in time series to ensure that the regression is neither erroneous nor inconsistent by checking for stationarity. Because the data is in time series, the unit-root test was done in two phases. One test was done assuming that there were no structural breaks and another in the case of structural breaks being present in the series. To correct for any structural breaks, this study would include a dummy variable, where 1 is used to represent structural breaks and zero otherwise.

Structural breaks come about when there are economic booms and policy shifts that change the trend of macro-economic variables. Considering that this study is done from 1982-2022, various political and economic structural breaks may occur. One main economic shift occurred during the post-election violence, and another during the COVID-19 period (Wambugu, 2016). To test for stationarity in the absence of structural breaks,

the Augmented Dickey-Fuller (ADF) test was applied in this study. On the other hand, to test for stationarity in the case of structural breaks, the Zivot-Andrews method was used. In both cases, the series is said to be stationary if we reject the null hypothesis. The hypothesis is stated as follows:

$$H_0: \beta = 0 \ (unit\ root)$$

$$H_1: \beta \neq 0 \ (no\ unit\ root)$$

Co-integration test

Another pre-estimation test is the cointegration test. Cointegration tests look for long-term interactions between two sets of data. Series, even though non-stationary, can relate to one another, affecting the relationship of these explanatory variables with the decision variable (Pesaran & Shin, 1999). The ARDL Bounds test was used to test for cointegration in this study. The equation is written as

$$\Delta Y_t = \delta_{oi} + \sum_{i=1}^{k} \alpha_i \Delta Y_{t-1} + \sum_{i=2}^{k} \alpha_2 \Delta X_{t-i} + \delta_1 Y_{t-1} + \delta_2 X_{t-1} + v_{1t} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.7)$$

Where k is the equation's maximum lag order. An F-test is conducted, where the null hypothesis states that lagged variables have a coefficient of zero. That is;

$$H_0: \delta 1 = \delta 2 = 0 \ (no\ cointegration)$$

$$H_0: \delta 1 \neq \delta 2 \neq 0 \ (cointegration\ present)$$

Rejecting the null hypothesis indicates the presence of cointegration. According to Pesaran et al. (2001), there exists critical values so that the lower bound value is I (0), and the upper bound value is I (1). The limitation is that these values are obtained only for large observations. Table 3.1 is a decision table that shows how the critical values for smaller sample sizes are determined to make decisions of cointegration or no cointegration (Narayan, 2005).

Table 3. 1 Decision Table

F-statistic	Decision
F-statistics > upper bound	Cointegration
F-statistics < lower bound value	No cointegration
F-statistic within the upper and lower bounds	Non-conclusive results

Source: Narayan (2005)

If we reject the null hypothesis and conclude that co-integration is present, then we run the long run model called the Vector Error Correction Model (VECM). If we fail to reject the null hypothesis, the short run or Auto Regressive Distributed Lag (ARDL) model is run. The ARDL method for testing cointegration is appropriate because it can be used in a non-stationary series. Additionally, the variable integration does not have to be in the same order. The study also estimated the lag length in the series using an acceptable model selection criterion.

3.5.2 Post-estimation tests

The first test is autocorrelation which examines whether the error terms across different periods are related or not. The LM Test for residual autocorrelation was conducted. For a p-value greater than 0.05, we conclude that autocorrelation does not exist in the model and vice versa. The second test is the Jarque-Bera test of normality. The null hypothesis states that there is a normal distribution of the error terms. The null hypothesis is rejected when p-value is less than or equal to 0.05.

3.6 Data Sources

We use secondary data sourced from the World Bank database, the Gender Statistics section for the period 1982-2022. Meidinger (1980) and Jebb et al. (2015) recommend collecting time-series data for at least 30 periods. Our time series data spans 41 years. We collected data on gender-based variables as well as population growth, investments, and employment rate.

Data on parity in labor force participation rate was derived from individual datasets on female and male labor participation rates by dividing the female participation rate by the male participation rate in each period. The labor force participation rate was for people aged 15 – 65 years. Data on employment to population ratio was also collected for the

population aged 15+ years using the modelled ILO estimate instead of the national estimated which was discarded due to missing data values. Gross public investments data (as % of GDP) was collected to represent the level of investment in the economy for the required period (1982-2022). Appendix A contains a description of how each data set is obtained, its format, and its significance.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Introduction

This chapter explains how this objective was achieved and the results found, relating them to past studies. Additionally, this chapter provides a discussion of the findings.

4.2 Summary Statistics

Table 4. 1: Summary Statistics, n = 41

Variable	Mean	Standard Deviation	Range
GDP per capita growth (g)	0.821	2.351	-3.767 – 5.449
Investment rate (inv)	2.655	1.268	-7.209 – 25.810
Population growth (pop)	2.853	0.523	1.943 – 3.714
Fertility rate (Fert)	5.063	1.172	3.335 – 7.402
Employment to population ratio (EtoPop)	70.825	0.688	69.111 – 72.356
Primary education, GPI (Prim)	0.974	0.018	0.940 – 1.008
Secondary education, GPI (Sec)	0.857	0.074	0.713 – 1.015
Government spending in education (G)	5.631	0.744	4.581 – 7.336
Gender gap in LFPR	0.928	0.0149	0.904 – 0.956
Net Exports (X)	-5.621	4.555	-18.680 – 0.889

Author's Compilation

Table descriptive analysis is presented in Table 4.1. The study was done on 41 observations, that is forty-one annual periods. The mean values of gender adjusted primary education, secondary education and labor force participation rate are less than one, indicating that girls are more disadvantaged in these areas. On the other hand, the standard deviations of most of the variables were very small, indicating that the statistical values of these variables were not very far from the mean.

4.3 Pre-estimation tests

These are tests done before the actual estimation of data. They include stationarity tests (when structural breaks are present, and where they are not) , as well as the test for co-integration.

4.3.1 Stationarity tests

4.3.1.1 Absence of structural breaks

ADF test was done to test for stationarity when no structural breaks are assumed. When the test statistic exceeds the crucial t-value, as was discussed in the previous chapter, we reject the null hypothesis and come to the conclusion that the series is stationary. The results on stationarity when there are no structural breaks are presented in Table 4.2.

For GDP per capita growth, net exports, and fertility rate, the series is stationary (the test statistic is greater than the critical t). The other variables (Population growth, Employment to population ratio, gender parity in primary education, gender parity in secondary education, Government spending in education, Gender parity in LFPR, and investment rate) are found to have unit roots in their series. For these variables, we take the first difference and conduct the test again. Testing on the first difference showed that the series of these variables was stationary. These variables, therefore, have an integration of the first order.

Table 4. 2: Test for stationarity

Variable	Test statistic	p-value for z(t)	Stationarity conclusion	1st difference done	Test statistic (1st difference)	p-value (1st difference)	Order of integration
GDP per capita growth (g)	-4.320	0.004	Stationary	No	-	-	I (0)
Investment rate (inv)	-2.461	0.125	Not stationary	Yes	-6.734	0.000	I (1)
Population growth (pop)	-0.259	0.931	Not stationary	Yes	-2.977	0.045	I (1)
Fertility rate (Fert)	-4.090	0.001	Stationary	No	-	-	I (0)
Employment to population ratio (EtoPop)	-1.314	0.623	Not stationary	Yes	-3.286	0.002	I (1)
Primary education, GPI (Prim)	-2.50	0.116	Not stationary	Yes	-8.982	0.000	I (1)
Secondary education, GPI (Sec)	-2.158	0.222	Not stationary	Yes	-7.675	0.000	I (1)
Government spending in education (G)	-1.994	0.289	Not stationary	Yes	-6.560	0.000	I (1)
LFPR, GPI	-0.333	0.921	Not stationary	Yes	-3.221	0.018	I (1)
Net Exports (X)	-4.123	0.025	Stationary	No	-	-	I (0)

Critical value at 5%= -2.961

4.3.1.2 Presence of structural breaks

The ADF method may not be sufficient because the data may have structural breaks and this makes the method faulty in testing for stationarity. Structural breaks may be caused by economic shocks, political problems, and policy shifts. This study used the Zivot-Andrews test as shown in Table 4.3.

Table 4. 3: The Zivot-Andrews test for stationarity

Variable	Test statistic	Stationarity conclusion	1st difference Test statistic	Stationarity at 1st difference	2nd difference test statistic	Stationarity at 2nd difference	Break point
GDP per capita growth (g)	-5.109	Stationary	-	-	-	-	1994
Investment rate (inv)	-3.778	Not stationary	-6.718	Stationary	-	-	1997
Population growth (pop)	-2.868	Not stationary	-3.049	Not stationary	-5.735	Stationary	2012
Fertility rate (Fert)	-2.972	Not stationary	-2.195	Not stationary	-4.50	Stationary	2011
Employment to population ratio (ERP)	-4.641	Stationary	-	-	-	-	2003
%Females in primary school (Prim)	-3.254	Not stationary	-8.943	Stationary	-	-	2000
%Females in secondary school (Sec)	-3.488	Not stationary	-7.715	Stationary	-	-	2000
Government spending in education (G)	-2.992	Not stationary	-6.567	Stationary	-	-	2010
Gender gap in LFPR	-2.932	Not stationary	-3.638	Not stationary	-8.305	Stationary	2001
Net Exports (X)	-3.425	Not stationary	-7.485	Stationary	-	-	2001

Critical value at 1%= -4.93
Critical value at 5%= -4.42
Critical value at 10%= -4.11

The results from the Zivot-Andrews tests are not consistent with those from the ADF test, showing that the series has structural breaks. In this test, only the GDP per capita growth and employment to population ratio were stationary. The other variables were stationary at the first difference, and only population growth, fertility rate, and gender parity in LFPR were stationary at the second difference. Therefore, population growth, fertility rate and gender parity in LFPR were integrated in order 2. To correct for structural breaks, this

study will include a dummy variable, where 1 is used to represent structural breaks and zero otherwise.

4.3.2 Test for Co-integration

The cointegration test determines whether the series in the variables relate to one another, which may affect the regression results. The null hypothesis states that lagged variables have a coefficient of zero. Rejecting the null hypothesis indicates the presence of cointegration as shown in Table 3.1. Therefore, the study will run the long-run model using VECM. Otherwise, the short run model will be estimated using the ARDL method. This study used the Bounds test to test for cointegration. The findings are shown in Table 4.4.

$$H_0: \delta 1 = \delta 2 = 0 \ (no\ cointegration)$$

$$H_0: \delta 1 \neq \delta 2 \neq 0 \ (cointegration\ present)$$

Table 4. 4: Bounds test for cointegration results

Upper bound	Lower bound	Test statistic (F)
3.97	2.65	8.498

Author compilation

At the 5% significance level, the F-statistic is bigger than the upper bound value, or I (1), with a value of 8.498. We infer that there is a long-term link between the variables and reject the null hypothesis. Therefore, we run the long run model (VECM).

4.4 The optimal lag length

An optimal lag is critical to avoid misspecification and estimation errors. Table 4.5 describes the different criteria used in this selection. Choosing the length of lag is often subjective. We pick criterion and the corresponding lag length that yields the lowest value. For all the three criteria, lag 2 has the least values. Since AIC yields the lowest of the three criteria, the optimal lag length of this study is 2, using the AIC criterion.

Table 4. 5: Optimal lag length

Lag	HQIC	SBIC	AIC
0	4.316	4.034	3.881
1	-4.368	-7.469	-9.157
2	-4.836*	-9.756*	-12.979*
3	-3.547	-7.559	-9.236
4	-4.112	-7.224	-9.574

4.5 Estimation Results

Due to the long-run relationship, the study opted to run a VEC model. We use the first difference of the transformed variables in the model, and include an error correction term to determine the long run direct effects of the independent variables, and in particular gender inclusion, on per capita GDP. Furthermore, all the models showing the indirect effects of gender inclusion run in a similar way. The variables were transformed to log and estimated as illustrated in Tables 4.6 and 4.7.

4.5.1 Direct impact

The model on direct effects was the main model of the study showing how gender inclusion affects growth in GDP per capita directly. This was described in chapter three as Equation 3.1. Gender adjusted variables of education and employment were regressed on GDP per capita growth using VECM, as shown in Table 4.6.

The estimation findings explain the long run effects of the independent variables on GDP per capita growth. With an R-squared of 0.5164, the model was able to explain 51.64% of the variation in per capita GDP, leaving 48.36% unexplained.

Table 4. 6: Estimation results for direct effects

Dependent variable: GDP per capita growth

Method: Vector error correction model estimation

Variable	coefficient	Standard error	Prob(z)
constant	-0.027	0.357	0.062
Investment rate (inv)	11.511	0.201	0.000
Population growth (pop)	52.418	7.414	0.002
Fertility rate (Fert)	61.247	42.846	0.000
Employment to population ratio (ERP)	-34.144	20.808	0.016
%Females in primary school (Prim)	14.668	11.574	0.042
%Females in secondary school (Sec)	53.259	3.760	0.000
Government spending in education (G)	11.225	1.758	0.023
Gender gap in LFPR	108.617	3.918	0.047

Number of observations = 39

R2 = 0.5164

Chi square p-value = 0.0029

All the variables had a statistically significant long run effect on GDP per capita growth, as shown by the p-values. Investment rate, population growth rate, employment to population ratio, gender adjusted primary and secondary education, government spending on education, and gender adjusted LFPR had a long run positive effect on GDP per capita growth. Only fertility rate affected GDP per capita growth negatively in the long run, where an increase in fertility rate by one percent, would reduce per capita growth rate by 34.14% in the long run. The ratio of women to men in LFPR had the highest long run effect on GDP per capita growth rate, where an increase in the ratio by one percent, would increase GDP per capita growth rate by 108.67% in the long run. On the other hand, government spending on education had the least effect on GDP per capita growth,

where, in the long run, an increase in government spending by 1% would improve GDP by 11.23%. These outcomes are consistent with earlier research, as expected for a low to middle income country (Efobi et al., 2018; Vuluku et al., 2013). Net export was omitted from the model due to high collinearity with other variables.

4.5.2 Indirect impact

The indirect effects of this model are as shown in Equations 3.2, 3.3, 3.4, and 3.5 where the logs of population, employment to population ratio, fertility rate and investment rate were considered as the dependent variables. The long run indirect relationship between gender specific variables was estimated through the effect of these variables on population growth rate, employment to population ratio, fertility rate and investment rate. The results are presented in Tables 4.7, 4.8, 4.9, 4.10.

Equation 3.2 estimated the long run effects of gender adjusted primary and secondary education, government spending in education, and gender adjusted labor force participation rate, on investment rate. There was a positive long run relationship between gender adjusted LFPR. A rise in the ratio of females to males in labor force participation rate by 1% would increase investment rate by approximately 254% in the long run. When gender adjusted primary and secondary increased by 1%, investment rate increased by 144.5% and 83.48% respectively. The relationship between government spending in education and investment rate was not statistically significant in this study. 16.38% of the variation in investment rate was explained by the model in Equation 3.2 as shown by the R-squared value. The model was also statistically significant at 5% significance level as shown by the chi-square p-value.

In Equation 3.3, the model was statistically significant as shown by the chi-square probability value of 0.0011. The r-squared value showed that 55.88% in the variation of population growth was explained in the model, and 44.12% of this variation was unexplained. While government expenditure in education had positive long run effects on population growth (0.654%), the ratio of females to males in education and LFPR will reduce population growth in the long run by 2.897%, 0.691% and 3.618% respectively.

Table 4. 7: Estimation results for indirect effects via investment rate

Dependent variable: Log of investment rate

Method: Vector error correction model estimation

Variable	coefficient	Std error	Prob(z)
constant	0.391	0.124	0.001
%Females in primary school (Prim)	144.587	9.937	0.000
%Females in secondary school (Sec)	83.482	3.193	0.021
Government spending in education (G)	-6.667	1.412	0.355
Gender gap in LFPR	254.476	38.179	0.000

No. of observations = 41

R2 = 0.1632

Chi square p-value = 0.0011

In Equation 3.4, employment to population ratio was the dependent variable. Here, the gender adjusted values of primary and secondary education were not statistically significant. Ceteris paribus, the employment to population ratio was at 4.3%. In the long run, increase in government expenditure in education by 1% increased employment to population ratio by 2.2%, while an increase in gender parity in LFPR by 1% reduced employment to population ratio by 8.3%. these results are similar to those of Kabeer and Natali (2013) who stated that improvement in educational outcomes especially those that favor the discriminated gender, may improve employment and economic growth in the long run.

Table 4. 8: Estimation results for indirect effects via population growth rate

Dependent variable: Log of population growth rate

Method: Vector error correction model estimation

Variable	coefficient	Std error	Prob(z)
constant	0.529	0.005	0.000
%Females in primary school (Prim)	-2.897	0.307	0.001
%Females in secondary school (Sec)	-0.691	0.104	0.011
Government spending in education (G)	0.654	0.0479	0.000
Gender gap in LFPR	-3.618	1.205	0.033

No. of observations = 41

R2 = 0.5588

Chi square p-value = 0.0025

Table 4. 9: Estimation results for indirect effects via employment to population ratio

Dependent variable: Log of employment to population ratio

Method: Vector error correction model estimation

Variable	coefficient	Std error	Prob(z)
constant	4.302	0.005	0.000
%Females in primary school (Prim)	0.182	0.0397	0.064
%Females in secondary school (Sec)	0.022	0.0127	0.408
Government spending in education (G)	0.022	0.0057	0.014
Gender gap in LFPR	-0.083	0.148	0.000

No. of observations = 41

R2 = 0.6298

Chi square p-value = 0.0138

Table 4. 10: Estimation results for indirect effects via fertility rate

Dependent variable: Log of fertility rate			
Method: Vector error correction model estimation			
Variable	**coefficient**	**Std error**	**Prob(z)**
constant	-0.119	0.004	
%Females in primary school (Prim)	-1.956	0.139	0.140
%Females in secondary school (Sec)	-2.225	0.0527	0.000
Government spending in education (G)	-0.688	0.0204	0.000
Gender gap in LFPR	-0.664	0.551	0.001
No. of observations = 41			
R2 = 0.8238			
Chi square p-value = 0.0000			

Author compilation

Equation 3.5 estimated long run effects between the gender specific variables and fertility rate. The model was able to explain 82.38% of the variability in the fertility rate through changes in the independent variables (R-squared = 0.8238). Government spending in education, gender parity in secondary education and in LFPR had a negative impact on fertility rate. However, the findings showed that gender adjusted primary education was not statistically significant in the model. Klasen and Lamanna, (2009) and Barro and Lee (1994) found similar results stating that improvement in gender inclusivity will reduce fertility rate, which may lead to increased economic growth by eliminating excess dependency in the country.

4.5.3 Total effects calculation

The total effects are a combination of the direct and indirect effects as shown below. This is done for the gender specific variables as well as the share of government expenditure in education.

Direct Effects + Indirect Effects = Total Effects

The total impact of the gender adjusted LFPR on economic growth, for example, is calculated as:

$$\beta_7 + (\beta_{12} \times \beta_1) + (\beta_{17} \times \beta_2) + (\beta_{22} \times \beta_3) + (\beta_{27} \times \beta_8)$$

Table 4.11 presents these findings.

Table 4. 11: Total effects calculation

Variable	Direct effect coefficient	Indirect effect coefficients	Total effect (direct + indirect effects)
%Females in primary school (Prim)	14.668	1512.3	1526.958
%Females in secondary school (Sec)	53.259	1000.7	1053.97
Government spending in education (G)	11.225	59.12	70.34488
Gender gap in LFPR	108.617	2825.5	2934.118

Author compilation

The results on total long run effects show that gender inclusivity has more indirect effects than direct effects on economic growth. The total effects of these variables are positive and increase GDP per capita growth in the long run. This coincides with previous literature and show that to improve economic growth in Kenya, it would be important to focus on increasing gender inclusion especially in education and employment.

4.6 Post-estimation tests

These tests are performed after the VECM estimation has been done. They include the LM test for autocorrelation, test for normality and the Breusch-Pagan test for heteroscedasticity.

4.6.1 Test for autocorrelation

The test for residual autocorrelation was done using the LM test. According to the findings, the p-value was greater than 0.05, and therefore, we fail to reject the null hypothesis, concluding that there is no autocorrelation in the model. Table 4.9 presents these findings.

Table 4. 12 Test for autocorrelation

Test	Chi square value	Prob (Chi square)
LM test	19.2837	0.78332

4.6.2 Normality test

This test was done using the Jarque-Bera test (Jarque & Bera, 1987). The test was used to evaluate if the error term of each variable was normally distributed. The findings are presented in Table 4.10. The error term in the entire model is not normally distributed (p-value = 0.000). Consequently, the variables on gender adjusted primary education, and government expenditure in primary education had errors that were normally distributed. All the other variables had error terms that are not normally distributed.

Table 4. 13: Test for normality

Variable	Chi square value	Prob (chi square)
Fertility rate	241.231	0.00000
%Females in primary school (Prim)	0.170	0.91854
%Females in secondary school (Sec)	47.365	0.00000
Government spending in education (G)	0.498	0.77962
Gender gap in LFPR	10.855	0.00439

D = first difference

CHAPTER FIVE: SUMMARY, CONCLUSION, AND POLICY RECOMMENDATIONS

5.1 Introduction

This chapter includes a summary of the research, the findings, and any policy implications. The chapter also discusses limitations and offers suggestions for additional research.

5.2 Summary

The purpose of this study was to assess how gender inclusion affects Kenya's economic growth. Studying the direct and indirect effects of gender inclusivity in employment and education on Kenya's GDP per capita growth was the study's specific objectives. The empirical model used in this work was based on endogenous growth theories, which propose that innovation and human capital investments can lead to increased productivity and economic growth. To conduct this study, data from the World Bank and ILO was retrieved and a VECM or long run model estimated. The data included gender adjusted primary and secondary education, as well as employment to population ratio. Other variables included in the model were fertility rate, investment rate, government spending on schooling, and population. The study included two models, one to estimate the direct effects, and the other to estimate the indirect effects of gender inclusivity on economic growth. The total effect of gender inclusion was then calculated by summing up the direct and indirect effects using a criterion known as “path analysis” (Klasen & Lamanna, 2009).

The findings of this study were similar to previous studies and to the endogenous growth theories. The findings showed that there is a long run relationship between economic growth and gender inclusion. Additionally, there were direct and indirect effects of gender inclusivity on economic growth. The results from the direct effects estimation showed, that gender parity in primary and secondary education had a positive impact on economic growth in the long run. Additionally, improving the ratio of females to males LFPR would improve growth in the long run. Increase in government spending in primary education also improved economic growth. This showed that improving gender inclusivity in the country yielded long run positive outcomes. Other variables that improved economic growth in the study included population growth rate, investment rate, and employment to population ratio. As would be expected for an emerging economy, the study observed a

statistically significant inverse relationship between the fertility rate and economic growth. (Klasen & Lamanna, 2009). A reduction in the number of births per woman (fertility rate) would improve economic growth by reducing the dependency ratio and allowing women more time to work.

The indirect effect estimation showed a stronger relationship between growth and gender inclusivity. Gender parity in primary and secondary education reduced population growth in the country, which according to the findings may affect economic growth adversely. However, increased government spending in primary education led to an improvement in population growth in the long run. Gender inclusion in education and employment also increased investment rate which led to increase in economic growth (Senguino & Floro, 2003). Gender inclusion had a negative impact on fertility rate, implying that increasing education and employment among women will reduce the need to have children, which leads to improvement in economic growth (Knowles et al., 2002). Gender inclusivity in education and employment increased the employment to population ratio which subsequently led to improved economic growth.

The cumulative effects of gender inclusion on economic growth demonstrated that gender inclusion contributed to economic growth in the long run. A significant portion of this effect resulted from the long-term indirect effects of gender inclusion on economic growth.

5.3 Conclusion

This research sought to evaluate the effects of gender inclusivity in education and employment on economic growth in Kenya. The variables used included GDP per capita growth, investment rate, population growth rate, employment to population ratio, fertility rate, gender parity in primary and secondary education, government spending in primary education, and gender parity in LFPR. The study found that gender inclusivity has positive long run effects on economic growth both directly and indirectly through factors such as reducing fertility rate, reducing population growth, increasing investment, and improving the employment to population ratio. The total effect of gender inclusivity on economic growth was also positive, suggesting that increasing female inclusion in education and employment is beneficial for the country through increase in productivity in the long run.

5.4 Policy Implications

This study findings imply that gender inclusion has positive outcomes for Kenya. Policy makers should ensure that strategies are put in place to improve the quantity and quality of female education and employment so as to increase economic growth. This outcome might also improve the welfare of the citizens by improving individual incomes. However, policy makers should be careful not to focus excessively on improving the educational and employment outcomes for women and forget that of men, as this may lead to an imbalance which be counteractive down the line. Additionally, while reduction in fertility and population growth may improve the economy, prolonging these reductions may have detrimental effects in the future in terms of a reduced labor force.

5.5 Recommendations for further research

More research can be done on this topic with a focus on gender inclusivity in other economic sectors such as agriculture and small private businesses which are rapidly growing in the country. Additionally, the indirect effect of gender inclusivity can be evaluated through other factors such as health risks, nutrition, and mortality rate.

REFERENCES

Abu-Ghaida, D., & Klasen, S. (2004). The Costs of Missing the Millennium Development Goal on Gender Equity. *World Development*, *32*(7), 1075–1077. https://doi.org/10.1016/j.worlddev.2004.02.003

Aghion, P., Howitt, P., Brant-Collet, M., & Garcia-Penalosa, C. (1998). *Endogenous Growth Theory*. MIT Press.

Asongu, S. A., & Kodila-Tedika, O. (2017). Is Poverty in the African DNA (Gene)? *South African Journal of Economics*, *85*(4), 533–552. https://doi.org/10.1111/saje.12165

Asongu, S. A., & Odhiambo, N. M. (2018). ICT, financial access, and gender inclusion in the formal economic sector: Evidence from Africa. *African Finance Journal*, *20*(2), 45–65.

Asongu, S. A., & Odhiambo, N. M. (2019). How enhancing information and communication technology has affected inequality in Africa for sustainable development: An empirical investigation. *Sustainable Development*, *27*(4), 647–656. https://doi.org/10.1002/sd.1929

Baliamoune-Lutz, M., & McGillivray, M. (2009). Does Gender Inequality Reduce Growth in Sub-Saharan African and Arab Countries?*. *African Development Review*, *21*(2), 224–242. https://doi.org/10.1111/j.1467-8268.2009.00209.x

Ball, K., & Lamb, S. (1999, February). *Senior secondary curriculum choice and entry into post-secondary vocational education and training.* AVETRA Conference.

Barrientos, A., & Dejong, J. (2006). *Reducing Child Poverty with Cash Transfers: A Sure Thing? - Barrientos—2006—Development Policy Review—Wiley Online Library*. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-7679.2006.00346.x

Barro, R. J., & Lee, J.-W. (1994). Sources of economic growth. *Carnegie-Rochester Conference Series on Public Policy*, *40*, 1–46. https://doi.org/10.1016/0167-2231(94)90002-7

Barro, R. J., & Sala-i-Martin, X. (1995). *Economic Growth*. McGraw - Hill.

Basu, P., & Bhattarai, K. (2009). *Does government spending on education promote growth and schooling returns?* Durham University and Hull University Working Paper.

Birchall, J. (2018). *Early Marriage, Pregnancy and Girl Child School Dropout*. https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/14285

Blau, F. D., & Kahn, L. M. (2017). The Gender Pay Gap: Have Women Gone as Far as They Can? *Academy of Management Perspectives*, *21*(1), 7–23.

Bloom, D. E., & Williamson, J. G. (1998). Demographic Transitions and Economic Miracles in Emerging Asia. *The World Bank Economic Review*, *12*(3), 419–455. https://doi.org/10.1093/wber/12.3.419

Blumberg, R. L. (2005). *Women's economic empowerment as the magic potion of development.*

Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological Review*, *106*(4), 676–713. https://doi.org/10.1037/0033-295X.106.4.676

Caselli, F., Esquivel, G., & Lefort, F. (1996). Reopening the convergence debate: A new look at cross-country growth empirics. *Journal of Economic Growth*, *1*(3), 363–389. https://doi.org/10.1007/BF00141044

References

Chege, F., & Sifuna, D., N. (2006). Girls' and women's education in Kenya. *Gender Perspectives and Trends, UNESCO*, *91*, 86–90.

Collins, D. (2000). The Quest to Improve the Human Condition: The First 1 500 Articles Published in Journal of Business Ethics. *Journal of Business Ethics*, *26*(1), 1–73. https://doi.org/10.1023/A:1006358104098

Cooley, C. H. (2010). Looking-glass self. In J. O'Brien (Ed.), *The Production of Reality: Essays and Readings on Social Interaction* (Vol. 6, pp. 126–128). Pine Forge Press.

Dissou, Y., Didic, S., & Yakautsava, T. (2016). Government spending on education, human capital accumulation, and growth. *Economic Modelling*, *58*, 9–21. https://doi.org/10.1016/j.econmod.2016.04.015

Dollar, D., & Gratti, R. (1999). *Gender Inequality, Income and Growth: Are Good Times Good for Women?* (Vol. 1). Development Research Group, The World Bank.

Eagly, A., H., Wood, W., & Diekman, A., B. (2012). Social role theory of sex differenced and similarities: A current appraisal. In *The Developmental Social Psychology of Gender* (Vol. 174, pp. 123–174). Psychology Press.

Efobi, U., R., Tannankem, B., V., & Asongu, S. A. (2018). Female Economic Participation with Information and Communication Technology Advancement: Evidence from Sub-Saharan Africa. *South African Journal of Economics*, *86*(2), 231–246. https://doi.org/10.1111/saje.12194

Ellis, A. (2007). *Gender and Economic Growth in Tanzania: Creating Opportunities for Women*. World Bank Publications.

References

Eltis, W. A. (1980). Malthus's theory of effective demand and growth. *Oxford Economic Papers*, *32*(1), 19–56. https://doi.org/10.1093/oxfordjournals.oep.a041469

FAO. (2011). *The state of food and agriculture, 2010-2011: Women in Agriculture: closing the gender gap for development*. FAO. https://www.fao.org/documents/card/en/c/99f234e5-fac5-5a06-8964-b455b4ffe721

Freud, S. (1989). The Ego And The Id (1923). *TACD Journal*, *17*(1), 5–22. https://doi.org/10.1080/1046171X.1989.12034344

Gill, S. (2010). Is gender inclusivity an answer to ethical issues in business? An Indian stance. *Gender in Management: An International Journal*, *25*(1), 37–63. https://doi.org/10.1108/17542411011019922

Greenwald, B., & Stiglitz, J., E. (1987). Greenwald, B. C., & Stiglitz, J. E. (1987). Keynesian, New Keynesian, and new classical economics. *Oxford Economic Papers*, *39*(1), 199–133. https://doi.org/10.1093/oxfordjournals.oep.a041773

Grusec, J., E., & Hastings, P., D. (Eds.). (2014). *Handbook of socialization: Theory and research.* Guilford Publications.

Hagemann, H. (2009). Solow's 1956 Contribution in the Context of the Harrod-Domar Model. *History of Political Economy*, *41*(Suppl_1), 67–87. https://doi.org/10.1215/00182702-2009-017

Harrod, R., F. (1939). An essay on dynamic theory. *Economic Journal*, *49*(193), 14–33. https://doi.org/10.2307/2225181

References

Hiller, V. (2014). Gender inequality, endogenous cultural norms, and economic development. *The Scandinavian Journal of Economics*, *116*(2), 455–481. https://doi.org/10.1111/sjoe.12056

Hochstein, A. (2017). The Harrod-Domar Model in a Keynesian Framework. *International Advances in Economic Research*, *23*(3), 349–350. https://doi.org/10.1007/s11294-017-9639-7

International Labour Organization. (2011, June 17). *National Labour Law Profile: Kenya* [Document]. http://www.ilo.org/ifpdial/information-resources/national-labour-law-profiles/WCMS_158910/lang--en/index.htm

Jarque, C. M., & Bera, A. K. (1987). A Test for Normality of Observations and Regression Residuals. *International Statistical Review / Revue Internationale de Statistique*, *55*(2), 163–172. https://doi.org/10.2307/1403192

Kabeer, N. (2003). *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A Handbook for Policy-makers and Other Stakeholders*. Commonwealth Secretariat.

Kabeer, N., & Natali, L. (2013). Gender equality and economic growth: Is there a win-win? IDS Working Papers, 2013(417), 1-58. *IDS, Working Papers*, *2013*(417). https://doi.org/10.1111/j.2040-0209.2013.00417.x

Keter, R. C. (2013). *Factors influencing female teachers' progression into leadership positions in public secondary schools in Trans-nzoia east district, Kenya* [Thesis, University of Nairobi]. http://erepository.uonbi.ac.ke/handle/11295/56399

Klasen, S. (2000a). Does gender inequality reduce growth and development? Evidence from cross country regressions. *World Bank Research Report*.

References

Klasen, S. (2002). Low Schooling for Girls, Slower Growth for All? Cross-Country Evidence on the Effect of Gender Inequality in Education on Economic Development | The World Bank Economic Review | Oxford Academic. *World Bank Economic Review*, *16*(3), 345–373.

Klasen, S., & Lamanna, F. (2009b). The Impact of Gender Inequality in Education and Employment on Economic Growth: New Evidence for a Panel of Countries. *Feminist Economics*, *15*(3), 91–132. https://doi.org/10.1080/13545700902893106

KNBS. (2021). *Economic survey 2021*. Kenya National Bureau of Statistics. https://www.knbs.or.ke/economic-survey-2021/

Knowles, S., Lorgelly, P. K., & Owen, P. D. (2002). Are educational gender gaps a brake on economic development? Some cross-country empirical evidence. *Oxford Economic Papers*, *54*(1), 118–149. https://doi.org/10.1093/oep/54.1.118

Kurea, G. M. (2015). *The Implementation of the Two Third Gender Rule in the Devolved Government as Stipulated in the Kenyan Constitution: The Case Study of Meru County* [Thesis, University of Nairobi]. http://erepository.uonbi.ac.ke/handle/11295/94524

Kuznets, S. (1967). Population and Economic Growth. *Proceedings of the American Philosophical Society*, *111*(3), 170–193.

Leaper, C. (2000). Gender, affiliation, assertion, and the interactive context of parent–child play. *Developmental Psychology*, *36*(3), 381–393. https://doi.org/10.1037/0012-1649.36.3.381

Lee, R. A. (1999). The Evolution of Affirmative Action—R.A. Lee, 1999. *Public Personnel Mnagement*, *28*(3), 393–408.

References

Levien, M. (2017). Gender and land dispossession:A comparative analysis. *The Journal of Peasant Studies*, *44*(6), 1111–1114.

Lewis, W. A. (2003). *Theory of Economic Growth*. Taylor & Francis. https://doi.org/10.4324/9780203709665

Łukasz, P. (2014). Review of theories and models of economic growth. *Comparative Economic Research*, *17*(1), 45–60. http://dx.doi.org/10.2478/cer-2014-0003

Marx, K. (1951). *Capital. A Critique of Political Economy* (Vol. 1867).

Mead, G. H. (1934). *Mind, Self and society. Chicago* (Vol. 111). University of Chicago Press.

Mensch, B. S., & Lloyd, C. B. (1998). Gender Differences in the Schooling Experiences of Adolescents in Low-Income Countries: The Case of Kenya. *Studies in Family Planning*, *29*(2), 167–184. https://doi.org/10.2307/172157

Ministry of Education. (2020). *Basic education statistical booklet*. Republic of Kenya.

Mohan, S., & Murthy, S. (2013). *Towards gender inclusivity*. Alternative Law Forum.

National Gender and Equality Commission. (2016). *Status of equality and inclusion in Kenya.*

Omolo, J. (2010). The Dynamics and Trends of Employment in Kenya. *Africa Portal*. https://africaportal.org/publication/the-dynamics-and-trends-of-employment-in-kenya/

Ozturk, I. (2008). *The Role of Education in Economic Development: A Theoretical Perspective* (SSRN Scholarly Paper 1137541). https://doi.org/10.2139/ssrn.1137541

References

Patinkin, D. (1984). Keynes and Economics Today. *The American Economic Review*, *74*(2), 97–102.

Perotti, R. (1996). Growth, income distribution, and democracy: What the data say. *Journal of Economic Growth*, *1*(2), 149–187. https://doi.org/10.1007/BF00138861

Pesaran, M. H., & Shin, Y. (1999). *An autoregressive distributed lag modeling approach to cointegration analysis.* Centennial Volume of Rangar Frisch.

Quisumbing, A. R. (1996). Male-female differences in agricultural productivity: Methodological issues and empirical evidence. *World Development*, *24*(10), 1579–1595. https://doi.org/10.1016/0305-750X(96)00059-9

Republic of Kenya (Ed.). (1993). *National development plan for the period 1994 to 1996*. Govt. Printer.

Reshi, I. A., & Sudha, T. (2023). The gender pay gap and its impact on women's economic empowerment. *Morfai Journal*, *3*(1), 9–16.

Ricardo, D. (1957). *On the Principles of Political Economy and Taxation* (Vol. 1817).

Romer, D. (2018). *Advanced macroeconomics*.

Rostow, W. W. (2000). *The Stages of Economic Growth: A Non-Communist Manifesto—Walt Whitman Rostow—Google Books*. Cambridge University Press. https://books.google.co.ke/books?hl=en&lr=&id=XzJdpd8DbYEC&oi=fnd&pg=PA1&dq=Rostow+2000+economic+growth&ots=OGrGKCZNpy&sig=C37QIeREB_DLXaphNYPsM6QycVM&redir_esc=y#v=onepage&q=Rostow%202000%20economic%20growth&f=false

Sala-i-Martin, X. (2002). Fifteen years of new growth economics: What have we learned? *Journal Economia Chilena*, *5*(2), 41–59.

References

Santos Silva, M., & Klasen, S. (2021). Gender inequality as a barrier to economic growth: A review of the theoretical literature. *Review of Economics of the Household*, *19*, 581–614.

Sato, R. (1964). The Harrod-Domar model vs the Neo-Classical growth model. *The Economic Journal*, *74*(294), 380–387. https://doi.org/10.2307/2228485

Saxena, R., Deepti, B., Geetha, K., Vipin, G., Dileep, M., Rahul, D., & Neharika, V. (2009). Gender and workplace experience. *Vikalpa*, *34*(4).

Seguino, S. (2000a). Accounting for Gender in Asian Economic Growth. *Feminist Economics*, *6*(3), 27–58. https://doi.org/10.1080/135457000750020128

Seguino, S. (2000b). Gender Inequality and Economic Growth: A Cross-Country Analysis. *World Development*, *28*(7), 1211–1230. https://doi.org/10.1016/S0305-750X(00)00018-8

Sen, A. (1999). *Gender and cooperative confilct*. Research in Agricultural and Applied Economics.

Shaw, G. K. (1992). Policy Implications of Endogenous Growth Theory. *The Economic Journal*, *102*(412), 611–621. https://doi.org/10.2307/2234298

Smith, A. (1954). *An inquiry into the nature and causes of the wealth of nations*.

Solow, R. M. (1953). A note on the price level and interest rate in a growth model. *The Review of Economic Studies, 21*(1), 74–79. https://doi.org/10.2307/2296261

Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics*, *70*(1), 65–94. https://doi.org/10.2307/1884513

Solow, R. M., & Swan, T. W. (1956). A contribution to the theory of economics and Capital Accumulation. *Quarterly Journal of Economics*, 65–66.

References

Steiner, P. (1994). Demand, price and net product in the early writings of F. Quesnay. *The European Journal of the History of Economic Thought*, *1*(2), 231–251. https://doi.org/10.1080/10427719400000001

Stotsky, J. G. (2006). *Gender and its Relevance to Macroeconomic Policy: A Survey* (SSRN Scholarly Paper 941295). https://papers.ssrn.com/abstract=941295

Suda, C. (2002). Gender disparities in the Kenyan labour market: Implications for poverty reduction. *Nordic Journal of African Studies*, *11*(3), 21. https://doi.org/10.53228/njas.v11i3.344

Swim, J. K., Aikin, K. J., Hall, W. S., & Hunter, B. A. (1995). Sexism and racism: Old-fashioned and modern prejudices. *Journal of Personality and Social Psychology*, *68*(2), 199–214. https://doi.org/10.1037/0022-3514.68.2.199

Syomwene, A., & Kindiki, J. N. (2015). Women Education and Economic Development in Kenya: Implications for Curriculum Development and Implementation Processes. *Journal of Education and Practice*, *6*(15), 38–43.

Tandon, N., & Wegerif, M. (2013). *Promises, Power, and Poverty: Corporate land deals and rural women in Africa*. Oxfam.

The Constitution of Kenya. (2010). *Equality and freedom from discrimination—Kenya Law Reform Commission (KLRC)*. https://www.klrc.go.ke/index.php/constitution-of-kenya/112-chapter-four-the-bill-of-rights/part-2-rights-and-fundamental-freedoms/193-27-equality-and-freedom-from-discrimination

Tobin, D. D., Menon, M., Menon, M., Spatta, B. C., Hodges, E. V. E., & Perry, D. G. (2010). The intrapsychics of gender: A model of self-socialization. *Psychological Review*, *117*(2), 601–622. https://doi.org/10.1037/a0018936

References

UNESCO. (2022). *Gender equality and education* (Priority Gender Equality).

UNICEF. (2023). *Girls' education*. https://www.unicef.org/education/girls-education

UNICEF. (2020). *Women's Empowerment in Kenya, UNICEF Eastern and Southern Africa.* https://www.unicef.org/esa/reports/womens-empowerment-kenya

United Nations. (2015). *United Nations Millennium Development Goals*. United Nations. https://www.un.org/millenniumgoals/

Unterhalter, E., & North, A. (2011). Responding to the gender and education Millennium Development Goals in South Africa and Kenya: Reflections on education rights, gender equality, capabilities and global justice 1. *Compare: A Journal of Comparative and International Education*, *41*(4), 495–511. https://doi.org/10.1080/03057925.2011.581516

van de Walle, D. (2017). *Divorce, Widowhood and Women's Welfare in Africa* (Policy Research Talk). World Bank.

Vuluku, G. M. (2012). *Gender Differences in Unemployment and Underemployment in Kenyan* [Thesis, University of Nairobi]. http://erepository.uonbi.ac.ke/handle/11295/96363

Vuluku, G. M., Wambugu, A., & Moyi, E. (2013). Unemployment and underemployment in Kenya: A gender gap analysis. *Economics*, *2*(2), 7–16. https://doi.org/10.11648/j.eco.20130202.11

Wamahiu, S. P. (2011). *Educate more girls today for a better Kenya*.

Wambugu, N. N. (2016). *The Impact of External Shocks on Economic Growth and Welfare in Kenya: A Computable General Equilibrium Analysis* [Thesis, University of Nairobi]. http://erepository.uonbi.ac.ke/handle/11295/97192

References

Wamuthenya, W. R. (2010). To what extent can disparities in compositional and structural factors account for the gender gap in unemployment in the urban areas of Kenya? *ISS Working Paper Series / General Series*, *502*, 1–44.

Wekwete, N. N. (2014). *Gender and Economic Empowerment in Africa: Evidence and Policy | Journal of African Economies | Oxford Academic*. *23*(1), 87–127. https://doi.org/10.1093/jae/ejt022

Wood, W., & Eagly, A. H. (2002). A cross-cultural analysis of the behavior of women and men: Implications for the origins of sex differences. *Psychological Bulletin*, *128*(5), 699–727. https://doi.org/10.1037/0033-2909.128.5.699

World Bank. (2017). *Invisible and Excluded: The Fate of Widows and Divorcees in Africa* [Text/HTML]. World Bank. https://www.worldbank.org/en/news/feature/2018/01/20/invisible-and-excluded-the-fate-of-widows-and-divorcees-in-africa

World Bank. (2022). *Female labor force participation over three decades*. World Bank Gender Data Portal. https://genderdata.worldbank.org/data-stories/flfp-data-story/

.

References

APPENDICES

Appendix A: Data Sources and their Significance in the Study

Table 6. 1: Data Sources and Significance

Variable Name	Measurement	Expected relationship with economic growth	Data source
GDP per capita growth	Growth in per capita GDP is in percentage form, from 1997 to 2019, to show the rate of change of economic growth	This variable is better because it incorporates the population of the country (Barro & Lee, 1994)	World Bank Database; World development indicators 1982-2022
Investment	Investment rate described as a proportion of GDP	Due to capital accumulation, which fosters development, investments have a positive association with economic growth.	World Bank Database; World development indicators 1982-2022
Population rate	Population growth rate, Kenya, measured as a percentage. To describe population growth trends in Kenya	Klasen and Lamanna (2009) demonstrate that population growth has a negative impact on economic expansion for developing countries such as Kenya.	World Bank Database; Population estimates and projections 1982-2022
Employment to population ratio	To calculate the proportion of persons who are employed in Kenya, total employed is expressed as a percentage of the total population.	Employment is a good indicator of the changes in economic growth in the country, and affects economic growth positively (Vuluku et al.,2013)	World Bank database; World Development indicators 1982-2022
Fertility rate	This variable represents the average fertility rate for all women of reproductive age by measuring the number of births per woman	This variable has a negative relationship with economic growth as shown by Klasen and Lamanna (2009)	World Bank Database; Gender statistics 1982-2022
Gender parity in primary education	This variable describes the ratio of females to males in primary schooling	The expected relationship to economic growth is positive (Efobi et al., 2018; Vuluku et al., 2013	World Bank Database; Gender statistics 1982-2022

Variable Name	Measurement	Expected relationship with economic growth	Data source
Gender parity in secondary education	This variable is a percentage to describe the ratio of females to males in secondary schooling	The expected relationship between the variable and GDP is positive (Vuluku et al., 2013)	World Bank Database; Gender statistics 1982-2022
Government spending in education	The variable is measured as a proportion of GDP, to describe the portion of GDP that is allocated to education	This variable will positively relate to economic growth due to increase in human capital	World Bank database; Education statistics 1982-2022
Gender disparities in labor force participation rate	Gender parity in labor force participation rate is expressed as a ratio of females to males LFPR. Men's and women's labor force participation rates are expressed as a proportion of the respective population.	Economic growth and the gender gap in labor force participation are directly related. Economic growth will be boosted by a smaller gap between the participation rates of men and women.	World Bank database; Gender Statistics From 1982-2022
Openness	Represents the level of openness in a country It is measured using the sum of exports and imports given as a percentage of GDP to show the part of GDP that comes from net exports.	Openness is an appropriate control variable to factor in the role of international trade in economic growth (Klasen & Lamanna, 2009)The variable X is expected to relate positively with economic growth.	World Bank Database; International Trade from 1982-2022