Is FDI an Instrument for Poverty Reduction: Case of Kenya

Don Ouma Okello
The Kenya Institute for Public Policy Research and Analysis
Policy Analyst, Young Professional- Capacity
Building Department
P.O BOX 56445-00200 Nairobi, Kenya

John Byaruhanga (Professor)
Masinde Muliro University of Science and Technology
School of Business and Economics
P.O BOX 190-50100 Kakamega, Kenya

Abstract:- Foreign direct investment's effect on Kenya's poverty as examined in this article. Across the world, people are becoming increasingly concerned about poverty. The wealth disparity widens annually, and conditions have gotten worse in many nations. Less than 10% of Kenyans hold more wealth than the poorest 90% of the population, indicating a significant wealth gap in the country. By 2030, Kenya, a developing nation, hopes to become industrialized. Government agencies need to comprehend the causes, trends, and impacts of poverty in order to develop policies that would guarantee good living standards and an equal distribution of income by 2030. To achieve the 2030 goal, it is expected that economic development would improve. Finding out how poverty and foreign direct investment were related in Kenya was the study's main objective. The years 2010 through 2020 were covered by the time series data utilized in this investigation. The study established a link between poverty and foreign aid using a causal-effect research technique. Although the variables in question are stationary on the initial disparity, the existence of the unit root at levels was established by the Argumenta Dickey Fuller test for unit root. Multi-collinearity was absent, having a variance inflation factor (VIF) test result of 1.06<10. A Durbin test result of 1.931<2.5 indicated the absence of serial association. Descriptive statistics, which include the measure of dispersion, were utilized to illustrate the general characteristics of the sample. However, correlation analysis revealed a somewhat negative relationship (-0.5331) between foreign direct investment and poverty. Three cointegrating equations were found via the Johansen test for cointegration. The estimated model regression was (-0.522707, p<0.0500). According to the report, in order to expand the number of jobs accessible to the unskilled and semi-skilled labor force, the government should promote projects that need a large labor force and foster an atmosphere that is supportive to investors. To draw in more foreign investors across a range of industries, the government should also provide free trade agreements.

Keywords:- Poverty, Foreign Direct Investment.

I. INTRODUCTION

This piece of article looks at how foreign direct investment affects poverty in Kenya. Economists from all over the world have long been concerned about foreign direct investment and how it affects poverty (ILO, 2019). There are three general methods for figuring out whether members of a family, community, country, or area are poor. The income or expenditures plan, which is predicated in the concept of basic necessities for people, is most likely the first choice. According to the second technique of defining poverty, a person is considered to be destitute if their consumption or income falls below what is known as the "poverty line" (World Bank, 2018). This method views poverty as the result of a person lacking fundamental of human abilities necessary to perform at a level which is desirable in society (Arndt, Jones & Tarp, 2015). Third method of assessing poverty, based in the UNDP (2019), is a hybrid method that acknowledges poverty as a complex issue which includes a number of variables, such as income levels, consumption, security, health, and mortality.

There is a remarkably high percentage of poverty in the global income distribution (Mahmood, 2017). Compared to the richest 20% of the global population, 80% of people made significantly less money (UNCTAD, 2018). Seventy-five percent of global income is owned by the wealthiest 20 percent of individuals. 20% of the world's population is disadvantaged and controls only 1.5% of the money, while the poor and vulnerable control 40% (ECA, 2017). World's wealth is 20% dominated by wealthy countries (Adinde, 2017). Poverty has a big impact on many countries' ability to flourish, even in wealthy ones. According to a 2009 World Bank report, economic inequality and poverty continue to be significant problems for a number of countries, including the US, France, and the UK.

African continents contain some of the most lopsided economic distributions in the world, and poverty has traditionally existed there (Field, 2010). According to UNDESA (2010), Africa is not only the world's poorest continent. However, it is only surpassed by Latin America as the most unequal continents in the world in regard to economic inequality. The top five African countries with the lowest rates of poverty in 2007 were Mauritania (19.8%), Sudan (9.6%), Malawi (7.8%), Mozambique (7.9%), and Angola (17.6%). A few nations experiencing rapid economic growth are Rwanda, Ethiopia, Chad, Niger,

Burkina Faso, and Mozambique (Klahsu, 2010). Nevertheless, growth has been appalling, unfavorable and unresponsive in Africa; Among the instances are the Congolese Democratic Republic of the Congo, the country of Zimbabwe, Burundi, and the Republic of the Congo.

The wealthiest 10% of Kenyan families control more than 40% of the country's national revenue, according to a 2011 assessment on poverty levels by the Central Bank of Kenya. The 10% of the economy that is destitute controls less than 1% of the total. The World Bank (2020) estimates that 16% of Kenyans were living on less than $1.90 each day in 2021. The nation's severe poverty rate, which was 17% in 2020, has somewhat declined. In 2020, the share rose, breaking a trend that had been declining as of 2017. The coronavirus illness (COVID-19) has been implicated in the slump. Based on data from the World Bank's most current global economic update (2020), the percentage of Kenyans living below the poverty line ($1.90 per day in 2018) decreased from 43.6 percent in 2005–06 to 35.6 percent in 2015–16. In comparison to the norm for Sub-Saharan Africa, Kenya undoubtedly has one among the least levels of poverty in East Africa, in accordance with the World Bank 2020 study. Comparing Kenya against other lower countries with middle incomes, the report also reveals that the nation's rate of poverty is still high.

The Gini Coefficient, putting severe inequality at 100 and perfect equality at zero, is used to quantify income inequality. Kenya ranks below Rwanda's 50.8 with a score of 47.7, but 10 points ahead of Burundi, the East African country with the greatest wealth distribution (33.3). Numerous factors, including progressive tax policies, robust unions, corporation healthcare and pension programmes, and shifting social norms about pay inequality, might be blamed for the rise in poverty (Dankur, 2010).

Kenya, a developing nation, intends to become industrialized by 2030. Economic development is anticipated to accelerate the achievement of the objective. To guarantee a reduction in poverty and better living conditions by 2030, the government needs to understand the origins and consequences of poverty. This served as the foundation for the current research, which looked at how foreign direct investment would affect Kenyan poverty between 2010 and 2020.

➤ *Foreign Direct Investment and Poverty*

Foreign direct investment is defined as a foreign national's investment in producing goods and services that can indeed be purchased in domestic markets or conversely as an export overseas (UNCTAD, 2015). FDI as described by the World Bank (2013) is a cross-border investment where an occupant from one economy (the direct investor) obtains a long-term interest through a venture from another economic system (the direct investment enterprise). Total FDI inflows to LDCs as expected hit $35 billion throughout 2015, representing a 133-percentage rise over 2005 UNCTAD (2016). Economists and policymakers presume that foreign direct investment (FDI) can help least developed nations for example the United States to grow

and develop by switching to modern technological and managerial expertise, developing human resources, and gaining access to foreign markets. While the role of FDI in LDC development is being debated again, some fundamental issues remain unresolved. Whilst also poverty has risen in the LDCs in recent decades, there has also been a quick global expansion of business activities and via international globalization and foreign investment, more so in the form of FDI.

Since their independence, African countries have implemented a variety of policies to increase FDI and reduce poverty rate by providing various investment incentives. FDI inflows into the country reached 30.5 million US dollars from the 1970s to the 1980s, and GDP growth averaged 6.6 percent at the time. However, FDI inflows not only fluctuated but began to decline in the 1980s and 1990s, when GDP growth also slowed (UNCTAD, 2005). According to Guzaa, Ishakb, Banic, and Madina (2020), favorable technological and economic circumstances must exist for foreign direct investment to positively impact recipients' economic development. FDI directly and indirectly minimizes poverty by providing private sector jobs and investing straightforwardly in the stipulation of certain socioeconomic welfare for the vulnerable (Furceri & Ostry 2019). FDI-created jobs in host nations can be especially advantageous in terms of transfer of technology (Jovanovic, 2015). Such decent jobs alleviate poverty directly, as well as the knowledge acquired can help indigenous people create far more employment opportunities. Foreign direct investments as well as wealth generation can assist economic growth by reducing poverty levels via the indirect channel. It is hoped that certain economic growth will narrow the inequality gap in the long run. However, for FDI to directly reduce poverty rates by creating jobs, a labor-intensive economy is required (Afandi, Rantung &Marashdeh, 2017).

Kenya is one of East Africa's largest recipients of FDI. Kenya is East Africa's economic powerhouse, having a mean development rate of about 5% for the last ten years (Dupas and Robinson, 2011). Kenya received the vast majority of total FDI flows in the East African region until the last ten years. This study examined how much FDI inflows contributed to poverty reduction in Kenya during the study period.

➤ *The Statement Problem*

Poverty is a multifaceted problem that involves not just economic but also cultural, political, and social, political aspects. Therefore, rather of depending just on economic strategy to tackle poverty, a comprehensive package of well-coordinated initiatives is required. The premise for comprehensive measures for reducing poverty, as espoused in the Sustainable Development Goals 1, is, in fact, based on this. It contends that access to the necessities of life-health, education, and sanitary conditions-should be unhindered by poverty. For strong and sustained rates of growth to lead to the eradication of poverty and, eventually, economic expansion and development, macroeconomic stability is necessary. In most cases, macroeconomic stability has been

maintained at high growth rates that also depend on important structural reforms including better governance, trade liberalization, privatization, regulatory reform, and banking sector reform. The Poverty Reduction Strategy is made up of several of these. Growth associated with gradual changes in distribution will have a greater impact on poverty than growth that keeps the existing distribution in place (World Bank, 2020). Therefore, every country putting effort to eliminate poverty have to put into consideration guidelines to promote the poor people accessibility to attain financial services, land tenure changes, and additional regulations which improves the allocation of wealth and income within a community. Kenya like many other developing nations has suffered from galloping inflation, absolute poverty and poor standards of living at a Human development index of 0.575 which is less of less than 0.70 HDI for a nation with a high HDI (GHDR, 2021). Despite Kenya having an increasing trend in foreign aid, the Human development index has remained below a high HDI (0.7). From a low of $55787.00 million in 2018 to a peak of $99690.00 million in 2022, Kenya has also demonstrated an upward tendency in the growth of FDI inflows. Because of this, economists have differing opinions about how much inflation, foreign aid, and foreign direct investments affect poverty, particularly in less developed countries like Kenya. The Arguments presented by Alban William Housego Philips in 1957 in the Philips curve argues that some degree of inflation is necessary to facilitate full utility of resource hence reducing unemployment and curing the poverty problem. This justifies the essence for this study to examine whether the increasing foreign direct investment to Kenya has led to increasing poverty levels or has cured it, as the current trend show an inverse relationship between them onto Kenya.

➢ *The Study's Objective*

The purpose of this study was to examine how, between 2010 and 2020, foreign direct investment affected Kenyan poverty rates. The investigation was directed by the subsequent hypothesis.

- HO1: The statistical significance influencing foreign direct investment on poverty in Kenya is null.

➢ *Study's Significance*

The study's findings serve as a foundation for developing policies and proposing suitable changes that may lower Kenya's rates of income disparity and poverty. The information gathered from this study narrows the levels of poverty by adding knowledge already available in the field of income distribution. According to academics and other researchers, future research on wealth allocation and economic advancement in general, as uncovered by this study, will be a crucial source of literature. With the recommendations for future researchers, this study allowed the researchers to identify topics for more investigation. Investors can also benefit from the study's results as they give them pertinent knowledge about the business climate in which to place their money and make significant returns.

II. LITERATURE REVIEW

Barro (2000) used a broad panel of nations to investigate how foreign direct investment inflows affect Bangladesh's efforts to reduce poverty. The study found a slightly positive but insignificant correlation between rates of growth and investment and poverty, as well as a minimal general correlation between poverty and inflows of foreign direct investment. But conversely, income gap tends to encourage development in richer countries while slowing it in poorer countries. The Kuznets curve evolved as an empirical regularity that shows how inequality increases and then decreases as a result of economic development. The study's reliance on panel data raises the possibility that an accurate representation of how foreign direct investment affects poverty in different countries is lacking. Using time series data, this study examined how foreign direct investment affected Kenya's poverty rates.

Trinh (2016) used the Gini coefficient as the predictor variables and inward foreign direct investment as the primary independent variable. They discovered that FDI positively affects the decline of poverty in Vietnam. The study discovered that inbound foreign direct investment tends to reduce income disparities using panel data analysis using a pooled OLS model and a fixed effect. The control variables were population size, GDP per capita, annual inflation rate, foreign investment, openness to trade, and secondary education. The expectation was for secondary education and trade openness to increase, but for income distribution equity to worsen. The study made use of panel data, which is typically affected by dummy variables. his study used time series data to analyze the relationships between poverty levels and foreign direct investment flows into Kenya.

After analyzing structural relationship involving foreign direct investment (FDI) and poverty in Malaysia, Azman-Saini et al. (2010) came to the conclusion that positive or direct relationship between FDI and poverty levels is not there. From 2007 to 2017, Tang et al. (2008) found a one-way causal link between FDI and income disparity in China. The association between poverty and FDI has previously been studied using the structural vector error correction model (SVECM) method. Regardless of the study's conclusions, earlier research was conducted in developed nations, and as a result, its conclusions cannot be generalized to developing nations. More research in Kenya is therefore needed, and this study set out to fill that research gap by examining how FDI affects poverty in Kenya.

From 2004 through 2014, Mbulawa (2015) investigated how macroeconomic variables affected Botswana's economic expansion and efforts to reduce poverty. Mbulawa found that each of these outcomes were positively and significantly impacted by foreign direct investment. The study employed a generalized autoregressive model and both primary and secondary data. However, the study used a generalized autoregressive model, which does not reveal the granger relationship between the variables studied.

In 2012, Soltani and Ochi performed study on how foreign direct investment affected Tunisia's poverty levels. The study found that FDI significantly helps to reduce poverty in Tunisia using data from 1975 to 2009. Using a descriptive research design and secondary data, the study made the recommendation that the government establish incentives and measures to draw more investors in order to accelerate industrial growth. Because the descriptive design does not clearly depict the analytical results, an analytical causal research design, such as the one used in this study, was required.

According to Adams' 2009 study, FDI has favorable and good impact on poverty rates in Sub-Saharan Africa, as well as economic growth. Anwar and Sun (2011) found that foreign direct investment had tremendous benefits in alleviating poverty at Morocco. Both analyses used cointegration and error correction models with secondary data spanning the years 1994 to 2008. The factors in this study varied substantially because of the study's scope. This study employed data spanning eleven years and a vector error correction model to lessen data fluctuation.

From 1998 to 2008, Barasa (2009) looked into the relationships between causal inflation, FDI inflows, and poverty rates in Kenya. To investigate whether inflation and foreign direct investment inflows are causally related to Kenya's poverty levels, the Granger Causality Test was utilized. The analysis found a positive causal association between FDI and low poverty levels, with a coefficient value of 0.6231 p0.05. Similar to this, Caroline (2017) and Ngetich (2017) utilized an OLS technique to investigate how FDI affected Kenya's economic growth and found that, from 2005 to 2016, FDI significantly and modestly decreased the country's poverty rates. This study set out to evaluate how FDI inflows affect poverty rates using the Error Correction approach because other studies employed the OLS approach, which did not clearly demonstrate an enduring correlation among the variables under investigation.

Kimonge (2016) examined the connection between FDI inflows and levels poverty in Kenya from 2007 to 2017 using a vector error approach. The findings showed that FDI inflows considerably decreased poverty rates, with a coefficient value of 0.4527 and $p<0.05$. The study's conclusions indicate that in order to develop both new and current industries and create more employment opportunities, the government should more effectively adopt a variety of measures that would stimulate foreign direct investment in Kenya. The KNBS and World Bank websites provided secondary data for the study variables. An updated study is required to demonstrate the trend discovered in this study in the current year.

> *Review of the Theory*

Modernization theory was used as a paradigm for the investigation. According to modernization theorists, foreign direct investment is the best method for the spread of wealth, industries, and expertise, leading to growth for recently liberated economies (King & Váradi, 2019). They handle both domestic and foreign capital equally, which encourages economic progress that eventually spreads the benefits of capital throughout the society. According to this theory inflow of capital in a nation which can be in the form of FDI or even an aid stimulates economic development through job creation. Theorists discuss about Kuznets effect, which holds that as per capita income increases, poverty initially rises but subsequently reduces once a particular level of development is attained. While foreign direct investment initially encourages development in a few sectors which are leading and locations and enriches some talented elites, progress in these areas eventually makes it possible for countries to distribute income more fairly (Tsai, 1995). The findings of a number of research, such as those conducted by Hanad & Harrison (1993), Coe, Helpman, and Hoffmaister (1994), Blomstrom & Kokko (1999), Batra & Tan (1997), and Markusen & Venables (1999), have supported modernization theory findings. Their findings show that increasing a country's capital and technological capacity increases worker productivity and overall effectiveness.

Researchers that study dependency contend that FDI increases income disparity and, consequently, poverty, in contradiction to the modernization argument. The argument links historical occurrences to current poverty. Additionally, according to the theory, institutional influences and government strength are crucial for determining how much money is distributed. According to Tsai (1995), the global economy and historical perspective are at the root of the poverty problem. The income distribution of a country is determined by its relative position in the global economy. It illustrates that when foreign investment rises, foreign influence rises as well, and poverty levels rise (Bornschier & Chase-Dunn, 1985). The idea states that the most prevalent explanation is that foreign direct investment raises the proportional pay of skilled labor in a host nation by introducing technology that is skill-biased. Furthermore, the capital-intensive strategies employed by foreign investors create an economy which has big backwards sector and a small advanced sector that causes unemployment among unskilled people and distorts the distribution of income (Jenkins, 1996; Reuveny and Li, 2003). This idea was found to be relevant to the study since it has an effect on the levels of poverty. Both theories recognize the influence of foreign investment on growing levels of poverty inside countries and differentiate the consequences for industrialized and developing countries.

III. TECHNIQUES

> *Areas of Study*

Serving as the study's location, Kenya's population is 55,920,673 and its physical area is predicted to be 580,367 Km³. It is situated roughly between latitudes 50 N and 40 40'S (UN DATAs 2021). The Equator splits the nation nearly in half horizontally, and 380E longitude halves it vertically. Its length is from longitude 33053' East of Greenwich Meridian (from Suba, Ilemba, Mfangano, and the pyramid islands in Lake Victoria) to 410 55.5' East.

With the greatest economy in East Africa, the water surface occupies 2.3% of the entire area.

The pragmatic factors that influenced the research area selection. First, there aren't enough comparative research to provide sufficient and accurate evidence about how foreign direct investment affects poverty in Kenya. Second, although there is a rising disparity in the rate of poverty, of all East African countries, Kenya's economy is the biggest and expanding the quickest. Thirdly, one of the most beneficial regions of Eastern Africa is where Kenya's economy is located. Five landlocked countries—South Sudan, Rwanda, Uganda, Burundi, and Ethiopia—with an abundance of natural resources are served by it. Among its competitive advantages are its comprehensive road and rail networks, transit airports, and sophisticated port facilities, which act as commercial gateways for these five countries. Of more significance is the strengthening of the system of governance brought about by a progressive constitution,

which was adopted in 2010 and completely altered the previous executive branch hegemony. Distribution of decision-making authority to 47 counties administrations forms the foundation of the new constitutional arrangement. According to Kimenyi and Ndung'u (2015), all of these indicators point to sustained economic growth and a decline in poverty among the populace.

➤ *Procedures and Methods for Data Collection*

Content analysis method was used to collect data for this study, which solely included secondary sources. Time series information from World Bank publications, and economic surveys websites were used in the research. KNBS produced economic surveys for each year between 2010 and 2020, from which foreign direct investment figures were gathered. World Bank statistics on poverty (Multidimensional Poverty Index) was gathered.

➤ *Measurement and Description of the Variables*

Table 1 Variable Measurement and Description

Variables	Descriptions	Measurements	Prior-Expected Sign
Poverty level:	A gauge of economic Prosperity within a population, between groups within a group, or between nations.	metrics: wealth, income, and consumption (Peñalosa&Turnovsky,2006)	+/-
Foreign Direct Investment	These are net inflows of investments in a nation.	As percentage of GDP	+/-

Source: (Computation by the Author using STATA v.16, 2022).

➤ *Design of Research*

The study used a causal research technique with time series data from 2010 to 2020. Using this design and patterns of variables throughout time may be shown by providing the researcher with an effective means of understanding. Course-and-effect linkages of study's quantitative data was analyzed using statistics that were both descriptive and inferential. The mean, variance, percentages, standard deviations, and distributions of frequencies are examples of descriptive statistics. To evaluate how foreign direct investment affects poverty in Kenya, regression analysis was estimated using inferential statistics. Annual financial investments as a proportion of GDP were used to calculate the statistics on foreign direct investment, while wealth, income, and consumption were used to get the data on poverty.

IV. DATA ANALYSIS PROCEDURES AND STATISTICS

Prior to removal of outliers, the data was subjected to a series of pre-diagnostic tests to ensure consistency in measurement. After the data was cleaned up and transformed into ratios, STATA was used as an analytical tool. The programme is suggested for time series evaluation because of its multi-test capability. The correlation matrix was used to look into a second linear relationship on the explanatory variable. Third, a Durbin Watson d-statistic was employed to evaluate the autocorrelation between the residuals and the dependent variable. The residuals yield an error correction term (ECT) when the 2.0 statistic indicates that there is no serial correlation. Fourth, to evaluate the

impact of shock and prevent erroneous regression linked to non-stationary variables, a unit root test was done using data from Augmented Dickey Fuller test (ADF). While lagging each variable once is recommended, the amount of lag lengths to use varies depending on the test statistic and significant values at 1%, 5%, and 10%. If the test statistic is less than the critical values, the variable is said to be stationary. Fifth, correlation analysis was performed once all variables had been lagged until this was accomplished. The final step was the unit root test. There were two stages to this analysis. First, estimations and integrations of the order (n), in this case equal to 1, variables from a long-run Ordinary Least Square (OLS) problem were performed. Running an OLS with an Error Correction Term included was the second step.

➤ *Specification of the Model*

The stochastic model used in the investigation is indicated in equation 1 below.

• *The Model was Changed to;*

$$PVTY_t = f(FDI_t)\text{...………………………….……………..…1}$$

In expansion equation 1 becomes

$$PVTY_t = \beta_0 + \beta_1 FDI_t + \varepsilon_t \text{…………...……………………2}$$

The variables in this example are the time (t), the regression approximation parameters (β_1), the poverty rates (PVTYt), the intercept (β_0), and the foreign direct investment (FDIt).

V. FINDINGS

To determine the fundamental details about the variables in the dataset under consideration, descriptive statistics were especially used, as table 2 below illustrates:

Table 2 An Overview of Descriptive Statistics

Variable	Observation	Mean	Std. Dev	Min	Max
PVTY	44	35.56955	4.875702	26.40	41.90
FDI	44	1. 607928	0.824767	0.146724	3.456496

Source: (Computation by the Author using STATA v.16, 2022).

Previous table's standard deviation values, which are far from the variables' respective mean values, demonstrate the significant data dispersion among the variables. Its structure led one to believe that time series analysis, particularly that of aggregates, would proceed in a stochastic or random manner. Kenya's poverty levels varied during the course of the study, as seen by the 4.875702 standard deviation of the poverty composite index. Using the GDP as a benchmark for foreign direct investment, minimum value was 0.46724, maximum value was 3.456496, and standard deviation was 0.824769. The mean was 1. 607928.

➤ *Test for Stationarity*

Because of false regression caused by the presence of a unit root, inferences drawn from the model are invalid, making prediction using the model impossible. Elliot Rothenberg stock Test was used to do the unit root test on each of the different variables. Table 3 below shows results of the test:

Table 3 Root Test of the *Elliot-Rottenbergstock* Unit at Levels

Variables	DF-GLS TEST STATISTICS	DF-GLS TEST CRITICAL VALUES			Conclusion
		1%	5%	10%	
PVTY	-6.33	-12.424	-11.08	-10.56	*Unit root*
FDI	-8.320	-12.42	-11.08	-10.56	*Unit root*

First Difference in the Root of the *Elliot-Rotenberg* Stock Unit

Variables	DF-GLS TEST STATISTICS	DF-GLS TEST CRITICAL VALUES			Conclusion
		1%	5%	10%	
PVTY	-32.75	0.000	-14.32	-12.08	Stationary
FDI	-26.65	0.010	-14.32	-12.08	Stationary

Source: (Computation by the Author using STATA v.16, 2022).

The DF-GLS test statistics larger than the DF-GLS critical values at 1% and 5% critical values at levels clearly show that all variables had unit roots at corresponding levels. But after the first round of differencing, the variables stabilized, as shown by DF-GLS test statistical values less than 1%, 5%, and 10% DF-GLS crucial values. The null hypothesis, which maintained that the series did, was rejected in favor of the alternative hypothesis, which asserts that the series did not have a unit root. The series was found to have been different at start, initially remaining still.

➤ *The Cointegration Test by Johansen*

It was necessary to perform Johansen Test for cointegration after checking that each and every time series had been included of order three, or I (3). Relationships between economic variables that result into direct long-run equilibrium are referred to as economic variable integration. The table below illustrates how maximal Eigen value statistics and trace statistics used in the Johansen cointegration test process (Cameron and Trivedi, 2005).

Table 4 below provides the information needed to identify three cointegrating equations. The null hypothesis in the previously cited finding, which asserts that there is no cointegration, was effectively refuted by alternative hypothesis, which claims availability of several cointegrating equations.

Table 4: Johansen's Cointegration Test outcome

Trend: Constant Sample : 4-44			Number of Observations = 42 lags = 4		
Maximum Ranks	Parms	LL	Eigenvalue	Trace Statistics	5%Critical Value
0	30	-284.8714		117.4568	68.52
1	39	8.5769987	0.31716	71.9798	47.21
2	46	14.474664	0.24485	40.5324	29.68
3	51	16.526391	0.09308	18.6163	15.41
4	54	-226.9900	0.33816	1.6941*	3.76
5	55	-226.1430	0.04048		

Source: (Computation by the Author using STATA v.16, 2022).

The Johansen Test for cointegration findings are displayed in Table 4. The research data's kind of trend, the number of lags, and the total number of observations throughout the study period are listed at the top of the table. Using test, trace, and maximum Eigen value statistics are all necessary when performing Johansen's cointegration test (Cameron and Trivedi, 2005 co-integration connection is absent at rank zero, and a co-integration equation exists when the rank is more than 1. When there is a maximum lag of 0, the trace statistic (117.4568) exceeds the crucial value at 5% (117.4568 > 68.52), rejecting null hypothesis hence no cointegration. Once more, null hypothesis of the maximum one cointegration was rejected since the trace statistic (71.9798 > 47.21) was more than the critical value at the 5% significance level. The alternative hypothesis with a minimum of two cointegrating equations was chosen over null hypothesis since is no cointegration once it was discovered that the trace statistics was bigger than the crucial value (40.5324>29.68). attained a maximum rank of three when the trace statistic was higher than the critical values at 5% (18.6163>15.41), rejecting alternative hypothesis because there are at least three cointegrating equations rather than the null hypothesis which shows no cointegration. where the highest rank is 2n. The alternative hypothesis, which states that there are actually at least three cointegrating equations, was chosen over null hypothesis, states that there are none after a trace statistic at maximum rank of 4 was found to be below the 5% critical threshold (1.6941<3.76). Three cointegration among the study variables, suggesting a long-term relationship between them, may be deduced from the Johansen test findings for cointegration. VECM, or vector error correction model, was utilized in the study instead of VAR, or vector autoregressive model, because it has three integrating equations.

➤ *Model for Vector Error Correction (VECM)*

With regard to the error correction term's long-term modifications trajectory and its point of convergence due to short-term shocks, the level of alteration (i.e., the rate in which the dependent variable changes in response to a modification of both independent variables) was depicted using a model called the Vector Error Correction Model (VECM), which was also used to determine the dynamics in the short- and long-term relationships.

Table 5 Findings of the Vector Error Correction Model

Sample 5-44 No. of Obs = 40 R-Square = 0.6948					
	Coef.	**Std. Err**	**Z**	**P > | z |**	**(95% Conf Interval)**
D_PVTY					
_cel L1	-.116275	.03799836	-3.06	0.000	-.248142 .015591
_cel L2	-.179584	.0836052	-2.148	0.000	-.525829 .166661
_cel L3	-.2329606	.093936	-2.48	0.001	-1.35126 .885343
LD dpvty	-.1087882	0.0549	-1.98	0.0000	-.234760 .017184
LD dFDI	-.179584	.07300	-2.46	0.014	.5258299 .166661

Source: (Computation by the Author using STATA v.16, 2022).

Based on the Vector Error Correction Model (VECM), the error correction term for this first cointegrating equation should be -.116275. This demonstrates the ongoing correlation between foreign direct investment and poverty rates. Furthermore, data showed that within the current year, mistakes from prior years or departures from the equilibrium error were rectified at a rate of convergence of 11.6275 percent. The absolute number indicates the long-run disequilibrium adaptation, which is 11.6275 percent because of the error shock lag time. Based on the Vector Error Correction Model (VECM), the error correction term for this first cointegrating equation should be -.116275. This demonstrates the ongoing correlation between foreign direct investment and poverty rates. Furthermore, data showed that within the current year, mistakes from prior years or departures from the equilibrium error were rectified at a rate of convergence of 11.6275 percent. The absolute number indicates the long-run disequilibrium adaptation, which is 11.6275 percent because of the error shock lag time. The previous year's equilibrium inaccuracy will be modified by 17.9584 percent. A potential speed convergence of 23.29606% for short-run adjustment towards equilibrium error is indicated through 3rd cointegration equation (_ce3), whose value of coefficient is 2.239606. This provides a great deal with more clarity to the study's long-term correlations for both dependent and independent variables.

➤ *Heteroscedasticity Test*

The characteristic of heteroscedasticity is that the variance of the error term varies with each value of the independent variable. The error correction term is predicted to equal -.116275 using this initial cointegrating equation. The presence or absence of heteroscedasticity in this study was assessed using the Breusch-Pagan test. The outcome is shown in Table 6 below.

Table 6 The Cook-Weisberg / Breusch-Pagan Test for Heteroscedasticity

Chi 2 (1)	**8.20**
Prob > chi 2	0.0941
Ho: Constant variance Variables: fitted values of Dltxr	

Source: (Computation by the Author using STATA v.16, 2022).

The Prob>chi 2 value of 0.0941 in Table 6, which is more than 0.05 and does not exhibit heteroscedasticity, lends credence to null hypothesis acceptance an alternative hypothesis rejection.

➢ *Regression Analysis*

This paper's main goal was to ascertain how foreign direct investment affected Kenyan poverty. After the required diagnostic procedures were completed, logarithmic model demonstrated presence of connection amongst poverty and foreign direct investment. The resulting regression results are displayed in Table 7 below.

Table 7 Regression Analysis

dPVTY	Coefficients	Std. Err.	T	P>|t|	[95% Conf. Interval]
dFDI	-.522707	.153256	-3.41	0.001	-1.791958 .7465439
Cons	-.019241	.0059662	3.225	0.000	-.5113353 .4728532
Number of Obs = 42 F (3, 38) = 22.5	Prob > F = 0.0000 R-squared = 0.69461			Adj R-squared = 0.6527	Root MSE = 1.5635 SS=16.468992 MS=5.48964276

Source: (Computation by the Author using STATA v.16, 2022).

VI. DISCUSSION

At the 5% level of significance, the probability of 0.001 indicates that every variable in the model has a shared role in explaining the variance in Kenya's poverty levels.

In Table 7's regression analysis, the foreign direct investment coefficients were (0.522707), with p-value of $0.001 < 0.05$. This advocates for relationship between foreign direct investment and poverty in Kenya is of statistical significance and has a negative sign, as expected. Regression study indicates 1% increase in the rate of foreign direct investment will lead to a 52.2707% reduction in Kenya's poverty rate, assuming that all other factors stay same. The relationship between more FDI and faster economic development helps to explain this. Achieving the World Bank's primary goal of decreasing poverty requires foreign direct investment since economic development is a crucial element of poverty reduction. With the correct host nation policies and a minimal degree of development, foreign direct investment will lead to more jobs, technology advancement, more innovation, and the development of human capital through employee training for start-ups, trade integration, idea flows, and international business standards that will boost corporate tax receipts from capital gains and earnings that foreign direct investments produce, as well as foster competition in the country's commercial climate. All of these benefits ought to lead to the expansion of the economic gowth and job market, which is a helpful tactic for enhancing the reduction of poverty.

The present investigation's findings align with the perspectives of multiple academicians who postulate that benefits brought by foreign direct investment (FDI) could encompass the procurement of novel technologies, creation of job opportunities, the cultivation of human capital, the facilitation of global trade integration, the augmentation of local investment, and a notable reduction in poverty through the FDI-generated tax revenue (Hailemariam, Sakutukwa, &Dzhumashev. 2020). In a 2019, research done in East Asian nations, Furceri & Ostry shows foreign direct investment (FDI) has a direct effect to Spoverty reduction by creating jobs in the private sector funding from direct foreign investments that provide specific social benefits to the impoverished. The transfer of knowledge and technology may be facilitated by jobs produced by FDI in host countries, which may be especially beneficial. Jovanovic (2015) found that these high-quality positions have a direct positive impact on poverty reduction and that knowledge transfer creates new job prospects. Through an indirect route, FDI investments and capital accumulation can increase economic development and decrease poverty. But in order for FDI to directly lower income inequality and poverty by creating jobs, an economy that relies heavily on labor is necessary (Afandi, Rantung & Marashdeh, 2017).

As the economic engine of East Africa and one of the primary receivers of FDI in the region, Kenya has grown at an average annual pace of around 5% during the last ten years (Dupas and Robinson, 2018). Kenya received the bulk of all foreign direct investment in the East African area. Their decrease in poverty from 45% in 2005 to 36.1% in 2015 and under 31% in 2018 has been mostly attributed to them (KNBS, 2019). Similarly, research conducted in 2017 by Afandi, Rantung, and Marashdeh on the effects brought by foreign direct investment flows to the sub-Saharan African nations showed that FDI makes a substantial contribution to the decline in poverty on the continent.

VII. CONCLUSION AND RECOMMENDATION

This study looked at how Kenya's poverty rates were affected by FDI. Through results, there is a negative and modest connection between poverty rates and foreign direct investment. In the regression model, a negative and significant coefficient of (-0.522707) indicates that FDI inflows lead to a fall in Kenya's rate poverty. This conclusion is explained by the fact that capital accumulation and FDI investments made through indirect channels can accelerate economic growth and reduction of poverty by job opportunities creation.

The study's conclusions indicate existence of a statistically significant connection between the quantity of FDI inflows and rate of poverty. Inflows for FDI was found to positively and moderately lowers Kenya's poverty rates.

Therefore, the report advises Kenya's government to promote FDI inflows into the country's productive sectors by revisiting its FDI Acceptability Threshold Policies and regional free trade agreements in order to attract more international investors into a variety of economic sectors. Secondly, the government should endorse incentives like holidays tax-free, free land designed for potential investors, and lowering industrial taxes to draw in more foreign investment, particularly in the industrial sector. Likewise, to boost the number of jobs accessible to the unskilled and semi-skilled labor force, the government should encourage labor-intensive investments.

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