

**REPUBLIC OF TURKEY  
SAKARYA UNIVERSITY  
INSTITUTE OF SOCIAL SCIENCE  
DEPARTMENT OF ECONOMICS**

**FACTORS AFFECTING THE FOREIGN DIRECT  
INVESTMENT IN KENYA (AUTOREGRESSIVE  
DISTRIBUTED LAG MODEL ARDLM)**

**Abdirahman Ali AHMED**

**MASTER'S THESIS**

**Thesis Advisor: Assoc. Prof Ünsal Ozan KAHRAMAN**

**AUGUST - 2021**

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**“ This thesis was defended online on 26/08/2021 and was unanimously accepted by the jury members whose names are below .”**

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- Clinical studies on humans,
- Animal studies,
- Retrospective studies in accordance with the personal data protection law.)

**Abdirahman Ali AHMED**

**02/08/2021**

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**Abdirahman Ali AHMED**

**02/08/2021**

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## ABBREVIATIONS

|               |   |
|---------------|---|
| <b>ADF</b>    | : Augmented Dickey–Fuller test                        |
| <b>ARDL</b>   | : Autoregressive Distributed Lag Model                |
| <b>COMESA</b> | : Common Market for East and Southern Africa          |
| <b>EAC</b>    | : East African Community                              |
| <b>FDI</b>    | : Foreign direct Investment                           |
| <b>GDP</b>    | : Gross Domestic Product                              |
| <b>IGAD</b>   | : Intergovernmental Authority for Development         |
| <b>SDGs</b>   | : Sustainable Development Goals                       |
| <b>SSA</b>    | : Sub-Saharan African Countries                       |
| <b>UNCTAD</b> | : United Nations Conference for Trade and Development |
| <b>USD</b>    | : United States of America Dollars                    |
| <b>WDI</b>    | : World Development Indicators                        |

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## ABSTRACT

**Title of Thesis:** Factors Affecting the Foreign Direct Investment in Kenya (Autoregressive Distributed Lag Model ARDLM)

**Author of Thesis:** Abdirahman Ali AHMED

**Supervisor:** Assoc. Prof Ünsal Ozan KAHRAMAN

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Considering the empirical and literature debates and gaps on factors affecting Foreign Direct Investment, the core objective of this paper was to inquire and investigate the Short Run and Long Run epitope, determinants and the effect of Foreign Direct Investment on the Kenyan economy. This study employed an Autoregressive Distributed Lag Model with a Bound Test for Co-integration in examining the multivariate time series data which converts and covers from 1970-2020 in exploring the short run and long run nexuses among the variables. Findings of the study for the factors effecting the FDI in Kenya, in the long run, gross savings, interest rate, trade openness, growth domestic product have a significant and positive link with Foreign Direct Investment inflows into the Kenya. On the other hand, rate of inflation, infrastructure and exchange rate have a negative and significant association with Foreign Direct Investment. According to the variable of infrastructure the study revealed that infrastructure is negatively associated with FDI and it is contrary with many studies made by this topic. The results in this study imply the need for proper management of the inflationary pressures on the economy which affects FDI inflows negatively. So, the country's monetary administrations should improve and implement policies and procedures that will effectively manage all inflation and interest rate in order to come up with long lasting and sustained at levels that will guarantee raising the degree of FDI inflow.

**Keywords:** FDI, GDP, Inflation rate, Kenya and ARDL model

## ÖZET

**Başlık:** Kenya’da Doğrudan Yabancı Yatırımı Etkileyen Faktörler (Otoregresif Dağıtılmış Gecikme Modeli ARDLM)

**Yazar:** Abdurahman Ali AHMED

**Danışman:** Dr. Öğr. Üyesi Ünsal Ozan KAHRAMAN

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Bu çalışma, kuruluşlarda sürdürülebilir kalkınmanın gerçekleştirilmesinde toplam kalitenin oynadığı stratejik rolü vurgulamayı amaçlamaktadır. Teorik kısım, toplam kalite ilkeleri ve kavramlarının rekabet avantajına ulaşmak için bir strateji olarak benimseyin sunmaktadır. Ayrıca ISO 9000, 18000. 26000,14000 sertifikalarına dayanarak; sürdürülebilir kalkınma çerçevesinde çevresel, sosyal ve ekonomik hususlara uyum sağlamaya çalışan çeşitli toplam kalite modelleri tartışılmaktadır. Çalışmanın, Sadanese Petroleum Pipelines Şirket ile ilgili çalışmanın uygulamalı bölümünde, görüşmeler ve anketler aracılığıyla toplam kalitenin sürdürülebilir kalkınmaya ulaşmada oynadığı stratejik rolü araştırdı ve şirketin sürdürülebilir kalkınmayı sağlamak için ortalama bir düzeyde toplam kalite stratejisine güvendiğini bulunmaktadır. Çalışma, ISO 9000 şartlarının elde edilmesinin kuruluşların maliyetleri ve israfı azaltmasını sağladığını ortaya koymaktadır. Operasyonlar ve ürün kalitesi ile verimliliği artırması, müşteri memnuniyeti sağlaması, rekabet gücünü güçlendirmek, pazar payını ve katma değeri artırması, finans performansını iyileştirmek ve iyi bir itibar oluşturmak ve böylece ekonomik açıdan sürdürülebilir kalkınmaya ulaşmaya katkıda bulunmaktadır. Ayrıca, ISO 14000 sertifikasının alınması, enerji tüketiminin ve doğal kaynakların rasyonelleştirilmesine, kirliliğin azaltılmasına, çevre yasalarına ve mevzuatına uyulmasına, tüketicilerin korunmasına, ihracat gerekliliklerinin yerine getirilmesine ve iyi bir üne ulaşmaktadır. Böylelikle çevresel açıdan sürdürülebilir kalkınmanın sağlanmaktadır. ISO 26000 ve OHSAS 18000'in benimsenmesi, yüksek derecede iş tatmini yanında iş kazalarının da azalmasını sağlarken, böylece sosyal boyutta sürdürülebilir kalkınmanın sağlanmaktadır. Buna göre, kuruluşun ISO 9000.14000.26000 ve 18000 şartlarını bütünleşmiş ve sürekli bir şekilde kullanmasının sürdürülebilir kalkınmanın sağlanmasına katkı sağladığı söylenebilmektedir.

**Anahtar Kelimeler:** DYY, GSYİH, Enflasyon oranı, Kenya ve ARDL modeli.

## **INTRODUCTION**

This section outlines and addresses the basic idea of the research. It gives a brief background of the study followed by the problem statement and then introduces the image of the study by identifying its main areas. The chapter also presents research question, objectives & significance & scope of the study and organization of the research report. In summary it is the foundation upon which the rest of the research is lay on and guides the researcher through the research process.

### **Background of the Study**

In the globe, there prevails difference in economic performance across different countries. Developed countries have excess capacity to invest, however, low level of investment due to lack of capital is the main complication for the economic growth of developing countries.

In general, whether local or international, investment is a necessary component for long-term growth; productive investment leads to greater output. Foreign investment becomes critical, especially when domestic resources are insufficient to guide a country toward its long-term prospective growth path (Asian development bank, 2004).

The threshold value for foreign equity ownership that countries consider confirmation of a direct investment association varies. This is the amount of involvement whereupon a direct investor is deemed to have a significant say in the company's management. For data on the operations of TNCs, the threshold value for FDI is normally 10%; it includes chosen ranges of between 10% and 50%. (UNCTAD, 2011).

Foreign direct investment is considered one of the utmost outstanding elements in today's global economy and most of the developing countries are trying how to attract an international investor. The swift growth in FDI during the course of the previous few periods have driven a huge form of empirical literature to observe the core factors affecting the FDI. Since FDI usually includes resources as well as technological and administrative, the effects of FDI can be extensive. FDI is mainly significant for emerging economy countries because it allows them approach to services that it could be difficult to obtain because of their limited capital and poor technology, Its involvement to

development economy and great poverty education comes through after the participation of investment and its contribution as a channel aimed at transporting progressive knowledge and structural systems to the home nation, creating technical and additional spillovers to domestically possessed initiatives, serving human investment, fundamental to worldwide trade incorporation, and serving to produce a further competitive business atmosphere (Ikiara, 2003).

Foreign direct investment (FDI) is a type of trans-border investment undertaken by a foreign investor in a foreign economy with the goal of creating a long-term interest in a domestic firm in a country aside from the foreign investor's own (OECD 2008).

In corporate governance, Lipsey (2001) remarked that possession at minimum of 10% of the ordinary shares or voting stock is the measure for the presence of a direct investment association while possession of lower than 10% is documented as portfolio investment. Foreign Direct Investment can take the form of a subsidiary (controlled enterprise) when it is possessed by its instantaneous direct investor in excess of 50%; an associate (influenced enterprise) when it is controlled by its immediate direct investor in the range of 10% to 50%; or a branch if it is owned by its immediate direct investor in the range of 10% to 50%. (quasi corporation). The inward FDI status of a country is counting hosted FDI projects, whereas outward FDI is formed foreign-owned investment projects (Nyamwange, 2009).

According to Ali-Lekkala, countries approved a set of aims to end hunger, safeguard the environment, and provide prosperity for all on September 25th, 2015 as part of a new sustainable development strategy (2015). The worldwide push to meet the Sustainable Development Goals (SDGs) by 2030 has resulted in stronger and more combined transcontinental collaboration in sectors of trade, health, education, and security. The rising flow foreign Direct Investment (FDI), Official Development Assistance (ODAs), and also alternative foreign wealth streams to emerging economy countries demonstrates these linkages (Ranis & Kosack, 2009).

Many developing countries require increased economic expansion and development by means of these FDI benefits. Generally, the intention of nations to meet faster economic growth and low level of capital accumulation are contradictory in nature; existence of broader saving-investment gap which means low level of saving and capital

accumulations. To solve this problem, FDI served as a source of capital in most less developed countries and it the only way that nation can achieve their goal of faster economy growth and development. Most of the emerging economy nations are now dynamically soliciting foreign investment by implementing economic and political changes aimed at improving their business climate.

The countries in a continent of Africa and particularly Sub-Saharan African nations are doing a tremendous effort as a region in order to obtain an international investor and they created a climate of business investment. The popularity of FDI is due to the numerous advantages it provides. As a result, African governments have worked hard to adopt FDI, and some African countries have made attempts to enhance their potential business climate in an effort to attract FDI. The New Partnership for Africa's Development (NEPAD) was established on the principle of increasing accessible capital to US\$64 billion through a mix of innovations, resource mobilization, and a conducive FDI environment. Unfortunately, most African governments' efforts to attract foreign direct investment have been fruitless. Despite the continent's visible and obvious need for FDI, this is the case. The trend is alarming, indicating that these countries have little prospect for economic progress and prosperity. Furthermore, the FDI that does exist is frequently slanted towards extractive industries, showing that natural resources have a role in the unequal rate of FDI influx into Sub-Saharan African countries, but the size of the home-grown market may also be another factor. Foreign Direct Investment not solitary delivers the African nations through abundant crucial wealth for domestic investment, nevertheless also generates employment chances and empowers the purchasing power of the citizens, creates investment environment, supports transferring of managerial skills and also technology transfer, which all of them encourage economic development. Acknowledging that FDI can add up lot to economic development, all nations of Africa along with republic Kenya aims to fascinate it in order to get an international investment. Certainly, global market for such business investment is extremely competitive, and Kenya in specific, pursues such investment to generate this sector. Kenya is devoting more time and attention to measures that actively support FDI as liberal policy structures become more commonplace and lose some of their established power to attract FDI. As a result, the factors affecting FDI are extremely significant.

## **Problem Statement**

Big corporations and multinational companies have also opened their big shops in Kenya in the recently The Africa Development Bank relocated from Tunis to Nairobi, and General Electric, a major American firm, has established a foothold in Kenya. These two organizations represent only a small portion of the important organizations based in Nairobi, Kenya's capital. Some academicians believe that some of these companies are only in the country to establish a footprint, while others believe that they are taking advantage of the low cost of doing business.

For more than two decades, Kenya's economy has expanded at a rate of at least 10% per year, allowing the country to catch up to average Sub-Saharan African (SSA) countries in terms of per capita income. Kenya's gross domestic savings as a percentage of GDP, however, is low, and the country is unlikely to accomplish this growth amount by tapping into its modest domestic reserves (EEA, 2016). Kenya's present government has recognized that domestic capital is insufficient and has opened key economic sectors to international companies. To attract foreign capital inflow investment, the Kenyan government has implemented a number of investment incentives, which includes tax holidays, duty-free imports of capital goods, and export tax exemption. In addition, the Kenyan Investment Commission (EIC) was founded to provide services to investors and modernize investment measures.

Kinuthia (2011) conducted research on how tax incentives have an effect on the flow of foreign direct investment into Kenya's manufacturing sector. The researcher looked at the bottlenecks in Kenya's tax legislation as well as the benefits provided to enterprises that are created through FDA. All these studies have something in common. They are very keen on development brought about by FDI as well as benefits brought about by FDI. Gumo (2010) explored that FDI is an advantage of Kenya's economic and financial openness. As a result of all of these considerations, it has been stated that Kenya is one of the final frontiers for FDI and multinational firm creation. Kenya was undesirable and unattractive throughout the 1980s and 1990s, owing mostly to the political regime and policies in place. Many international and foreign corporations, such as General Motors, Proctor & Gamble, Coca-Cola, Microsoft, and Citibank, have offices in Kenya. A third of Kenya's banks are foreign-owned, accounting for 51% of the country's total banking

assets. Safaricom for instance, is 40% possessed by Vodafone of the U.K. Foreign direct investment (FDI) has also been accurate and large in the capital Nairobi Securities Exchange. The Nairobi 20-share Index was about 3100 in January 2012, but by July 2012, it had risen to over 3800.

Because of the low level of income and domestic saving in Kenya, the gap between domestic investment and saving has remained significant. According to a 2013 IMF national study, the average financing gap was around 9.4% of GDP in 1990-2000, but it expanded to around 17% in 2006-2012. The east African countries including Kenya should try to recognize the importance of FDI, and the last decades Kenya has been striving to implement different policy initiatives and incentives to attract capital inflows which can fill the saving-investment gap in the economy. Therefore, identifying the determinants and the core factors affecting the FDI of Kenya is an important footstep to recognize the aspects and causes for the underprivileged performance of Kenya in fascinating FDI, since Foreign Direct Investment procedures is among the most significant associations between emerging and industrial countries and progressively among emerging economy nations. Like trade, it delivers a vital channel for international incorporation and knowledge transmission. Kenya faces a significant difficulty in attracting and keeping foreign direct investment at levels that enable domestic investment to benefit from capital inflows. As a result, the study attempted to perform an empirical investigation of the key factors influencing foreign direct investment in Kenya. The study adopted an econometric analysis technique by using Autoregressive Distributed Lag Model (ARDLM). Both in long- run and shot run estimates. Real GDP, exchange rate, interest rate, infrastructure, Inflation rate, trade openness and gross saving are the variables include in this research.

### **Research Questions**

The study raised significant questions require to answer and the major research questions are as follow: -

How does real GDP affect the inflow of foreign direct investment in Kenya?

In which extent the macroeconomic stability of the country affects the inflow of FDI?

How does openness to trade affects the inflow of FDI in Kenya?



How does the status of infrastructure of the country affects the Foreign direct investment in Kenya?

### **Objectives of the Study**

- General Objective

As research on the factors affecting FDI are vital to analyze the restrictions to attracting FDI in a country, there is a substantial body of theoretical and empirical literature on the factors affecting FDI. Various factors including the level of economic development of an economy, the policy government in place, infrastructures, social and political factors may play a part in shaping the inflow of foreign direct investment. However, there is a shortage of studies focus on the factors, which affect the FDI in Kenya. overall aim of this study is to examine the major factors affecting the foreign direct investment in Kenya in the periods of 1970 to 2020. The researcher employed mostly commonly used Autoregressive Distributed Lag (ARDL) forecasting and to disentangle long-run relationships from short-run dynamics to avoid any statistical errors.

- Specific Objectives

The specific of this study is as follows: -

1. To examine the role of GDP on the inflow of FDI to Kenya.
2. To examine the effect of macroeconomic stability on the inflow of FDI in Kenya.
3. To determine the extent of trade openness on the inflow of FDI in Kenya.
4. To find the effect of infrastructures on the inflow of FDI in Kenya.

### **Scope / Delimitation of the Study**

The scope of the study relies on the major factors affecting of FDI in Kenyan economy.

### **Significance of the study**

The study has a tremendous important for various reasons:

The study highlighted the key areas where the government and other interested parties can focus their efforts to attract foreign capital.

Future researchers and scholars will benefit from the study because it contributed to the current literature and can be used by future researchers and scholars interested in the study field. The research would also reveal where there is a knowledge gap and suggest new fields for research.

### **Methodology of the study**

The methodology of this study is greatly discussed in chapter three by using datasets from word bank indicators, the study employed ARDL model.

### **Organization of the Research Report**

The study is composed of five parts including the introduction chapter which outlines and addresses the basic concepts of the study while the second chapter provides the literature review which constitutes theoretical and empirical procedure research of the study. The third chapter which is about methodology of the research presents the research design employed, data collection methods, while the fourth chapter is about the data analysis and findings of the study. Lastly, the fifth section presents summary of the study, concludes the investigation, further recommendations and suggests areas for future research.

## **CHAPTER 1: LITERATURE REVIEW**

This Unit provides detailed arguments that relates to this study, which is about the theoretical and empirical literature on Foreign Direct Investment.

### **1.1. Definition**

FDI is described as an investment or funds engaged by a business entity or enterprise in a country into an enterprise or institution in any more country. Foreign direct investment, based on the data of the World Bank, is described as "an investment or funds made to obtain a long-term managing location in an activity working in a state rather than the investors." According to the International Monetary Fund's Balance of Payments labor-intensive (1993), an international investor's investment is weighed or counted FDI, if the direct investor owns minimum or at least 10% of a business's normal shares but less than 10% would not be considered as foreign direct investment since the lower percentage resulting lower influence on the business involvement and decision making as well.

Countries may be varying in the worth for foreign equity rights which they get as prove of a through asset correlation instead of Local investment. Here is the phase of contribution at otherwise over which through shareholder is usually considered as encompassed an efficient role in the managing of the enterprise concerned. The verge value typically employed for Foreign Direct Investment is 10% (UNCTAD, 2011).

There are five distinctive forms of FDI, according to Chrysochoidis, Millar, and Clegg (1997). The first form of FDI is made to increase access to unique production factor possessed by a business in the host country, such as capital, technological expertise, exclusive rights, or brand names. If such factors of production are unavailable or difficult to transfer in the foreign company's home market, the strange firm must provide locally to gain right of entry. The next type for FDI by Raymond Vernon during his manufactured goods cycle theories.

Based on this form, Business enterprise shall spend to achieve right to use to lower factors of production, e.g., low-cost employment. If the local country is following an export-oriented progress strategy, the government can promote this form of FDI. Since it may provide a foreign business with investment opportunity, such as discounts, grants, or tax

reductions. Instead, if the government uses a trade in substitution strategy, foreign firms might be permitted to operate in the domestic economy only if they had and achieve technological or administrative expertise that is not available to local industry. Licensing may be used to transfer such information. It could also lead to the formation of a business or venture with a local partner.

The third type of FDI includes foreign companies investing in each other, such as throughout cross-shareholdings or the formation of a joint business enterprise, to increase access to each other's merchandise choice. As an outcome of greater than before perfect competition between related products and Research & Development-induced specializations this kind of FDI came out. In cooperation, firms have a hard time competing in their home markets or in other-country marketplace for each other's commodities. If neither product gains a significant competitive benefit, the two business companies will commit in each other's field of expertise and also encourage under-product specialization in manufacturing.

Fourth form of Foreign Direct Investment deals with market right of entry in the local country. There is absolutely no evidence of a change in relative advantage to or from the local country when this form of FDI occurs. Certain facilities, for example, or the opportunity to request urgent design changes, could be difficult to export from the company's home base. The restricted tradability of many resources has been a major contributor to the increase in FDI in those industries.

The fifth form of FDI has to do with the divisional component of regional incorporation in terms of trade. When foreign companies have location advantages in their residence country, but due to taxes, tariffs or other trade barrier prohibit them from sell to other countries to the host country, this form of situation arises. To get access to the local marketplace, foreign companies must first develop a local presence within the host economy. Since the multinational business needs to keep as much value added in its home market as possible, the confined manufacturing being there just needs to be adequate to get around trade obstruction.

It is additionally called horizontal FDI, as it includes to better serving as local markets by production and development. Barriers like tariffs and transportation cost also give confidence this kind of FDI. Since the justification level FDI is to more readily play an

important role in domestic market by home manufacture, size of the market, growth and the development of the host economy's market assume significant parts. The theory supports the market size factor and was utilized to critic the link between the market volume of output or size and also the economic development in the context of Kenya.

## **1.2. Theoretical Reviews**

### **1.2.1. The theory of market imperfection**

The market imperfection theory was developed by Hymer (1976) and meant for explaining and providing adequate information about the behavior of firms in no perfect competitive environment, which are monopolistic or oligopolistic environment. For firms to commence FDI, they require some unique improvement on technology and market strategy to compete abroad with locally owned firms which have already exist and had specific benefits.

Taking into consideration, the marker equilibrium hypothesis, FDI would be temporary as it operates as an equilibrium power amongst different segments of the market that will be eradicated by the re- creating of equilibrium. The disequilibrium is normally originated in reason markets, for example labor markets or labor-intensive industries where Foreign Direct Investment inflows from full employment cost nations to low labor cost countries (Calvet 1981:45). Rate of labor arises like a significant issue of FDI.

Labor is a factor of production and each businessperson targets limiting the cost of production. Market limitation Hypothesis subsequently favors the foreign investors as they can acquire lower cost labor which infers more revenue which means high GDP. Hutchet (2014) upholds that the allocation of resources to investment expenditure when contrasted with discontinuous expenditure improves economic development since it increases the returns component which is a vital determinant of economic development.

### **1.2.2. The Theory of Internationalization**

The Theory of internationalization was formulated by Buckley and Casson, in 1976 Rugman (1981), and Hennart, (1982). This assumption endeavor to clarify the development of transnational business entities and their inspirations for accomplishing foreign direct investment. The hypothesis shows that multinational and international

businesses are coordinating their inter actions and activities to develop explicit benefits, which at that point to be misused. The theory of internationalization explains how global firms market-seekers are, whose endeavor is to contribute local and territorial businesses.

It is additionally called crosswire or horizontal Foreign Direct Investment, as it includes to better serving as local markets by production and development. Barriers like tariffs and transportation cost also activate this kind of Foreign Direct Investment. Since the justification level FDI is to more readily play an important role in domestic market by domestic production, market dimension and market development of the local market assume significant parts. The theory supports the market size factor and was utilized to critic the links between the market intensity of production or size and the economic development in the context of Kenya.

### **1.2.3. Eclectic Paradigm Theory**

This hypothetic theory was first developed by Dunning 1977. This theory attempts to clarify inflow of Foreign Direct Investment from three heavenly times (Dunning, 1981, 2000, 2001) which are proprietorship importance, location benefit and internationalization of MNEs. The emphasize of the current study was on the location advantages which included great condition for business which limits the risk on investment and guarantees satisfactory the degree of exchange transparency. Comparable with the influence of international business on Foreign Direct Investment inflows, defenders on behalf of business trade receptiveness and openness (Nishimizu and Robinson, 1986; Nishimizu and Page, 1991; (Tybout, 1992) challenge to trade transparency encourages the competition which basically expands effectiveness, specialized transform and product development, lower cost of production, wide-ranging economic development by means of increasing profits which support development of foreign investment and asset deal and inflows of capability in the structure of the market. This theory also focuses on competitive market or in other words trade receptiveness as decisive factor of Foreign Direct Investment, and how it is related to the economic development in Kenya. Although trade openness is able to be measured as a socio - economic issue, this study was intrigued uniquely with regards to economic dimensions of trade openness.

Seim (2009) suggests that none local owned companies that have the goal to grow their market may decide that despite a serious level of trade openness, trade limitation, and little trade expenditure; the market might be recovered in the course of a send abroad instead of FDI. Kenya, by being a net imported country has high rate of trade openness, which means a larger number of imports than trades which negatively affects the economic growth and thus socioeconomic development. Tybout, 1992) fight that exchange receptiveness upgrades rivalry which thusly builds efficiencies, specialized change, and item improvement, decreases expenses of creation, general financial development through raising benefits which energize development of unfamiliar capital venture and inflows of aptitude of the framework.

#### **1.2.4. Solow Growth Theory**

This hypothetic theory known as Solow Growth Theory was established by Robert Solow in 1956. This tentative insight states that almost 3 prominent variables and factors that are innovative technology (innovation), accumulation of capital and labour force that drive economic development. So that, FDI authorizes host countries to achieve investment that exceeds their own local saving and improves capital formation and development.

On the other hand, as indicated by this tentative theory the likely latent benefits effect of Foreign Direct Investment on the output or product growth and development is kept to the short period since over the long run by deteriorating marginal restorations or returns to physical assets apply (Njeru, 2013). Once the firm status is reached and the resources in a country are spent, the economic development and growth rate can be increased all the way through innovation and as well as improvements in technological advancement as an alternative of focusing the labour and other factors of production.

#### **1.2.5. Monopoly Theory of Advantage**

A corporation that invests in other countries is thought to benefit from monopolistic benefits. Ownership of limited resources from nature, copyrights, and symbol rights are all examples of strengths and weaknesses compared to other businesses (Hymer, 1976). Therefore, Massive investments in foreign nations benefit from monopolistic powers since they are stronger than domestic firms in the receiving countries. Furthermore, a

monopoly advantage accrues to the company due to superior knowledge and better knowledge, as well as cost advantages due to expanded output. The market structure that exists the competitive advantage of an industry is based on talents and innovative materials, thus according Roots (1978). As a direct consequence, a company's products must be differentiated in some way. Therefore, the companies that invest in nations from which they can move powerful knowledge assets will pay less per unit compared to local firms that must invest a whole cost to create such assets according to Kindle Berger, (1969)

#### **1.2.6. Oligopoly Theory of Advantage**

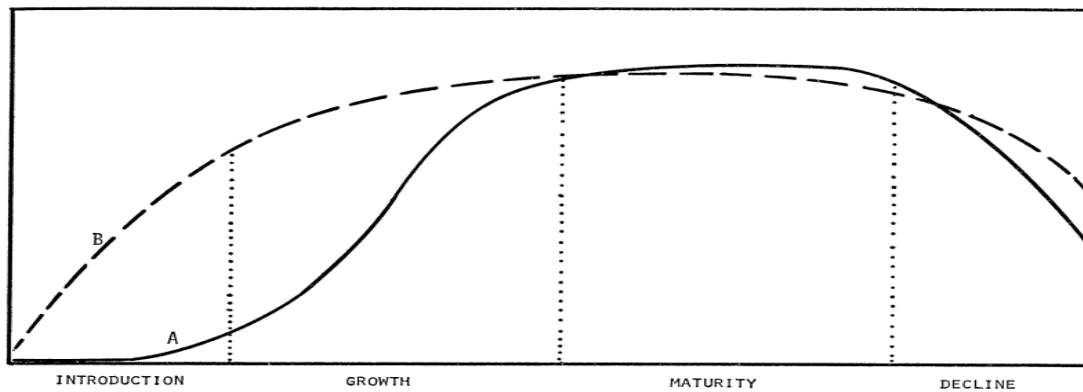
Lin et al. (2010) that two separate businesses make judgments over whether or not to commit investment in a foreign nation have reported it. In addition, neither company creates final products, whereas the other provides intermediate goods. In addition, Firm's choice to engage in host nation has operating expenses and technical economic consequences on recipient country companies as well as a reduction in marginal cost of production for that nation's enterprises. However, Firms in this theory view foreign direct investment (FDI) as a way to protect themselves against some other business, as according Hoenen et al (2009). Furthermore, upon learning that its primary competitor has ventured throughout the foreign country, the risk-averse business follows suit does the same to avoid market disruptions. In contrast, a firm's activity in an oligopolistic market, according to Schenk (1996), is met with an equal and opposite reaction both domestically and worldwide.

Therefore, to create equilibrium and therefore attract foreign direct investment, rival businesses in the oligopoly must also invest overseas in order to counteract an industry commander's action. The theory emphasizes that oligopoly market bring massive benefits to both overseas and domestic companies, thus the existence of this type of market creates an environment that attracts foreign investors, because the overseas investors searches benefits and win markets, due to this opportunity they would create competitive firms, in contrast, market eventually become very competitive places.



### 1.2.7. Product Life Cycle Model

This tentative theory was formulated by Vernon (1966). A significant setback in the diffusion of technologies led him to propose the impression lag hypothesis. Several other assumptions of classical trade theory have been replaced by the product life cycle. Office machinery and electronic devices, for example, are considered part of the product life cycle concept (Albaum & Duer, 2011). This innovation has had a significant impact on the hospitalization of overseas commerce patterns. Furthermore, product life Cycle theory encourages foreign direct investment and innovations of host countries to imitate innovative nations. Thus, the product cycle theory explained four significant stages: like Introduction stage, Growth stage, and lastly the stage of Maturity and Decline.



**Figure 1:** This figure shows us the stages of the product life cycle

### 1.3. Theoretical link among the variables

#### 1.3.1. Theoretical Link between FDI and Trade Openness

In general, there are two distinct of openness on FDI: 1) Encourage FDI that is focused on exports. 2) Has a detrimental impact on FDI that is focused on the market. In this situation, a low degree of openness promotes market-oriented FDI since corporation's desire to avoid tariffs, transportation costs, and to produce in order to export utilizing the host country's inexpensive capitals, which would occur if tariffs were reduced. The transfer of commodities, not the inland market, is the primary goal of this type of investment. Since this form of FDI has a proclivity to enter other markets, while also employing low-cost local productions not to ignore market-oriented FDI—the degree of openness intrigues it (ShahAbadi,2006,101). The greater the openness of trade, the more

the host country's economic contacts with other countries grow, allowing them to access worldwide markets and a favorable investment climate. This creates favorable conditions for a variety of nations to commit investment in those international nations (Nahidi, 2010, 111). Many papers show a statistically significant positive association between receptivity of the market and Foreign Direct Investment (Chakrabarti, 2001, Morisset, 2000). The relationship between openness and FDI, on the other hand, is quite intricate and requires further explanation. To break down this intricacy, the researcher distinguishes between two types of openness: trade openness and capital flow openness. The first one refers to the simplicity or ease with which commodities then are imported and exported, whilst the second one refers to the lack of constraints on capital trend. Trade openness promotes export-headed Foreign Direct Investment, whereas trade restrictions attract tariff-jumping Foreign Direct Investment whose main goal is to take importance the home market (Onyeiwu, 2003, 5-6). The higher level of trade openness, which facilitates a country's preparedness to receive foreign investment, has proven to be crucial and vital in fascinating inflows of capital (Nonnemberg et al. 2004).

### **1.3.2. Theoretical Links Between FDI and Foreign Exchange**

When we go back to the primitive concepts, it was assumed the degree and the level of the exchange rate had no bearing on Foreign Direct Investment, hence determining where to invest had no bearing on the level of the exchange rate. However, this concept has recently been challenged due to its unclear nature (Hojabr kiani, 2006, 185). Bouoiyour (2003) described the rate of exchange effect on Foreign Direct Investment such like: the attractiveness is approached by the exchange rate in the real terms. Theoretically, the effect of this explanatory variable on Foreign Direct Investment is unclear, and relies on the incentive of domestic as well as foreign investors from outside countries. As an example, devaluation creates host country's capital and local cheapness of production cost, creating huge level of inflows of FDI. Low tariff barriers and protectionism, on the other hand, can motivate foreign firms to get into the domestic market to take their role local production, as tariffs jumping converts a low demand product.

(see Benassy et al, 2000). The impact of the real exchange rate has been inconsistent, whether on a short- or long-term basis. the currency area theory assumes that businesses

entities will not invest in countries where currencies are weaker and more likely to devalue day by day.

Aliber (1970) discovered that capital market bias exists because revenue sourced from nations with fewer valuable moneys are related with existence of exchange rate risk.

As a result, when a revenue stream is owned by a company with a less valuable currency, the market takes advantage of it at a higher rate (Marial A & Ngie Teng,2009,10).

Exchange rate instabilities effect FDI from the supply side, taking into account supply and demand. Exchange rate increments - as a consequence of a lack of exchange supply, the volume of exchange transactions decreases, reducing FDI inflows (Nahidi, 2010, 112).

Normally, the steadiness of exchange rate instills confidence in the local economy, resulting in investment opportunities in the present and future. Rising exchange rate fluctuations leads a great variation in capital value. Exchange rate fluctuations leads the way for financial manipulations and deepens macroeconomic problems and bad economic instability (Shah Abadi, 2006, 106).

### **1.3.3. Theoretical Links Between FDI and Infrastructures**

Often, international investors, choose countries aligned advanced infrastructure, such as a well-connected road network, airports, water supply, nonstop electricity source, telephone services, and the connection of internet for locations with weak infrastructure are unattractive because they increase the expense of undertaking business, lower the rate of investment returns, and diminish output. In the absence of other factors, production costs in nations with improved infrastructures are naturally cheaper than in countries with inadequate infrastructure services. As a result, nations with well-developed infrastructure are more likely to fascinate FDI (Morisset, 2000). (Shah Abadi, 2006, 101). The number of telephone lines per large number of citizens in a country, for example, is a procurator of infrastructure and is predictable to substantial associated to FDI. The reason for using this proxy is that states with a large and significant number of phone lines are more probable to have good roads, advanced airports and also seaports, connectivity of the internet, and water and electricity supply. In other words, if a country has better

infrastructure, it is more likely to attract more foreign investors and capital inflows. (Onyeiwu, 2003, 5-6).

#### **1.4. Empirical Literature**

There have been many studies to examine the characteristic aspect or feature that influence the connection with Foreign Direct Investment in the domestic or local country. This article merely classifies the earlier works into the data variables employed for time series analysis. So Many variables are used to pick out the objective issue impact on FDI. These causes are marketplace dimension, local investment, GDP outer debts, international trade, road and rail network, not direct taxes, price increases, investment returns, collection diversity, resource locality, foreign trade reserves or earmark, internationalization, rule and regulation, interest rate, political stability, gross fixed capital formation and infrastructure.

Onuorah & Nnenna (2013) has examined the durable links between international economic data variables and Foreign Direct Investment in Nigeria, the most populous country in the continent of Africa. They employed Vector Auto Regression (VAR) and urge gathering method. The end outcome suggested that there is an unconstructively tough links between FDI and GDP in the state effecting a contrary correlation. Exchange rate, price increase, supply of money, the rate of interest and velocity directly affected.

Uwubanmwun & Ajao (2012) showed the aspect affecting and effects of Foreign Direct Investment in republic of Nigeria started from 1970 to 2009 by using the vector modification model, and the modeling of Granger causality style. The result showed that the rate of exchange, interest, inflation rates and the openness of the trade of the financial system establish the inflow of Foreign Direct Investment in Nigeria throughout those times. The size of the administration and Growth Domestic Product include the helpful, but not significant influences on Foreign Direct Investment. The finding also showed that FDI and GDP have a long run stability relationship between FDI and GDP, but FDI has an unimportant influence on the development in addition to the growth of Nigeria financial system.

Onuorah & Nnenna (2013) used regression in a simple way to investigation to look into the link among FDI and GDP in Cambodia. The ending consequence has shown that there

is a constructive correlation between Foreign Direct Investment and Growth Domestic Product in the future in Cambodia.

According to Tsen (2005), Malaysia's manufacturing industry has a long-term association between FDI and location-related factors. The researchers adopted the Johansen cointegration method and Fully-Modified Least Squares (FMLS) to evaluate and measure the long-term relationships among variables. However, the study's outcome emphasized that the study variables showed that a rise in basic education level, improving of the infrastructure, the size of the market, or current account balance brought about an increase in Foreign Direct Investment. In contrast, a increase of inflation or exchange rate led to a decrease. Thus, the study highlights the long-term increase in foreign direct investment when the connected variables such as education and infrastructure also increase.

Researchers conducted another related study associated with foreign direct investment: Bekhet & Al-Smadi (2015); they measured the long-term and short-term link between determinants of foreign direct investment in Jordan. They employed the bound-testing method of analysis. Therefore, the study's outcome revealed that variables such as openness of the economy, consumer price index, and stock market index are drivers of foreign direct investment throughout the long-term and short term. The study results emphasized that foreign direct investment works a tremendous and important role in the country's economic growth and development. In contrast, the study's conclusion highlights the importance of foreign direct investment in Jordan's financial system.

According to Decastro et al. (2013), his study about the epitope of foreign direct investment in both Brazil and Mexico. At the same time, the researchers employed the VEC model to analyze the outcome. The study results showed that market-based strategies dominate in Brazil and Mexico, whereas efficiency-based strategies are prominent in Mexico. Finally, the study emphasized the significance of trade liberation and the historical inflow of enticing foreign direct investment in those Brazil and Mexico. In similar research conducted by Kiran (2011), the investigator studied the foreign direct investment and trade causality in the republic of Turkey while employing the VAR model. Therefore, the study's outcome revealed that there is no grounds of a causal relationship between trade and foreign direct investment in Turkey.

Furthermore, the study showed the existence of a negative and insignificant association between Foreign Direct Investment and trade. Although, researchers of Almsfir, Latif & Bekhet (2011) examined and approximated the factors affecting Foreign Direct Investment in Malaysia by adopting the ARDL model. The study's outcome revealed a positive and significant influence among variables. At the same time, the researchers emphasized the foreign direct investment worked an important role in economic growth and development of the countries.

Unstable panel datasets from 1995-2005 were used by the researchers of Cuyvers, Soeng, Plasmans and Van Den Bulcke to measure and evaluate the determinant elements that may influence inbound foreign direct investment in Cambodia. The study's outcome revealed beneficial effects of foreign direct investment, the home nation's Gross Domestic Product, symmetric and bilateral trade with both the destination country and the rate of exchange on inward FDI flows into Cambodia. In addition, the result showed that foreign direct investment in Cambodia has an insignificant influence on geographical location. Thus, the study emphasizes the significance of foreign direct investment of their significant role in development. The developing countries must create an environment that attracts FDI to reach prosperity and outstanding achievements to their populations. To achieve this although the emerging nations have to increase their infrastructure and other sectors.

Ho (2004) investigated the factors that determine foreign direct investment in China at an industrial level. The study's outcome discovered that neither China and the Guangdong province benefit from a huge market. At the same time, labor costs and government ownership have a detrimental impact on FDI inflows at an industry level. The study showed the prominent status of foreign direct investment as a nation and province in China that participated in the sectoral progress of the country. In contrast, FDI increased the country's labor force while reducing the emerging nations' poverty level. However, most of the developing countries failed to create an environment that attracts FDI.

Kersan-Skabic and Tijanic (2014) investigated the geographical determinants of foreign investment (FDI) in Croatia in order to learn more about the variables that impact it. As a result, the study's findings revealed that education, infrastructure, manufacturing base, dummy variables for regions of specific government interest, and the capital city region

all had a favorable impact on FDI. Nonetheless, unemployment and an explanatory variable have a significant impact on FDI (regions bordering the EU). As a result, the study demonstrates how foreign direct investment plays a significant role in the success of countries, notably Croatia, and that FDI boosts the progress and prosperity of nations, particularly host countries. As a result, the nations who require the greatest FDI must do so.

The researchers of Rodriguez & Pallas (2008) investigated a study about the determining factors of foreign direct investment in Spain. During a period of 1993-2002. The study combines at a regional and sectoral level by diversifying their manufacturing industries. The researcher investigated and measured numerous variables to figure out the fundamental determinants of directed foreign investment (FDI); thus, the study's outcome reveals many different relationships among variables and independent variables (FDI). Moreover, the study's outcome indicates that FDI has an essential role in labour productivity and the cost of labour. Therefore, the crucial variables such as labour productivity and labour cost explore foreign direct investment's significance and optimistic influence. In conclusion, there is an essential correlation among variables that have an impact on foreign direct investment (FDI) in Spain.

Hunady and Orviska (2014) looked at the factors that influence overseas investment inside the EU. The researchers looked at a variety of factors that impact foreign investment in European countries, such as corporation tax, openness, and so on. Some variables showed a negligible influence on foreign direct investment, which was startling. Around the same time, they consider the others to be vital. The study's findings, however, revealed that corporation taxes had a detrimental influence on FDI.

Moreover, the study reveals how foreign direct investment is essential even emerged nations. Thus, most emerging countries should encourage and create an appropriate environment to attract foreign investors to eliminate unemployment and reduce poverty. In contrast, the variables like labour cost and openness of the economy have an essential consequence of the foreign direct investment (FDI) in the European countries. Therefore, Kenya must follow those significant steps to cope with poverty and other related circumstances.

From 1993 to 2013, the examiners Kahouli & Omri (2017) looked into a research on the elements that affect foreign investment in Asia. The researchers utilized panel data and analyzed it with unit root tests as well as other regression tests. The researchers, on the other hand, looked at macroeconomic factors and their influence on foreign investment. The study's outcome reveals that FDI per capita is positively impacted by loan rates, trade openness and money availability, whereas debt, unemployment and environmental pollution are negatively impacted. This empirical study shows how foreign direct investment is crucial in many places globally to enhance general productivity.

Study of foreign direct investment Gary (1972) aimed at understanding the obstacles faced by FDI in countries that participate in international commerce. The researcher examined a crucial study to find out a significant result related to foreign direct investment. Due to explore a determinant of FDI flow, both static and dynamic gravity models, data were employed by the researchers. Moreover, in their research, they selected 14 partners and 39 host nations during 1990 and 2011. The outcome of the study reveals a significant result from the analysis.

In contrast, the study results state that FDI has a crucial benefit on host nations; these benefits include enhanced labour efficiency, job expansion, and the introduction of new technologies and production methods. This emphasizes the previous studies that discover the importance of overseas investment in host nations. Further, a research indicates that additionally, it adds to an increase in the number of people earning a living wage.

The researcher Ballard et al. (2013) investigated a study about bilateral foreign direct investment. The investigator measured several variables due to evaluate and determine their effect on foreign direct investment. In comparison, an examiner used data from twenty-four Organization for Economic Cooperation and Development economies during periods between 1985-2007. Thus, the study's outcome discovered that nominal and real instability significantly affected FDI flows. The gross domestic product (GDP) and a fluctuating currency rate are essential factors in deciding whether to capitalize in a country

Similarly, interest rates on a dollar amount in the capital significant capital expenditure yields contribute to high volumes of FDI. In addition, a research reveals the spirit overseas



investment in different sectors of the nations and their contributions, whether eliminating poverty or developing infrastructures in emerging countries.

According to a study conducted by Ndolo (2017), which is about foreign direct investment in Africa. Data from 1984 to 2000 was used by the researcher in questionnaires and data from collaborating twenty-two African countries. Thus, the variables that the researcher investigated include Mineral wealth, size of the market, policy decisions, organizations, and political turmoil. A study's outcome reveals that all variables influence foreign direct investment in Africa. In addition, a result of the research showed the significant role foreign direct investment plays into the progress and development of Africa's countries. It participates enhancement of gross domestic product and benefits of natural resources.

Le et al. (2021), the investigator examined the consequence of macroeconomic variables on FDI in Kenya. A researcher employed time-series data and used the SPSS package to analyze the outcome of the study. However, the study results revealed that the variables alike inflation, GDP, and exchange rate have no statistically affected overseas investment in Kenya. Furthermore, an outcome of the research showed that foreign investment determined some variables like market factors. The study emphasizes that investors in Kenya face numerous challenges, and the biggest ones were corruption and bribe. Those things always discourage foreign direct investors from investing in host states. In conclusion, Kenya must create an environment that attracts foreign investors to make things better.

Abala (2014) investigated and discovered that foreign direct investment and economic growth are markets seeking. A study-measured variable includes political stability, infrastructure and gross domestic products. However, the researcher employed data from 1970 to 2010 on a time-series basis. Thus, the project's outcome reveals that foreign direct investment has a significant effect on economic growth; similarly, it has a statistically significant impact on good infrastructure and growth domestic product. On the other hand, the study emphasized that corruption is the primary challenger in foreign investors. Consequently, investigators suggest that government should eradicate and continually fight corruption. In addition, Kenya should enhance good governance to attract foreign investors, although the researcher highlights those states should increase and develop infrastructure.

A researcher was undertaken to determine the association between some of the Kenyan currency rate fluctuation and FDI fluctuation. According to Ndolo (2017), the study reveals the importance of these two variables due to the attraction of investors. However, the study's outcome indicated that foreign direct investment and exchange rate has a crucial positive association among them. Simultaneously, the researcher emphasized that uncontrollable economic factors in Kenya's environment were blamed for the low performance. In addition, the researcher suggests that the government must be controlled in order to maintain macroeconomic stability factors for investment. The study discovered the importance of financial stability to foreign investors so, Kenya should control macroeconomic and make its financial sector stability. That would help the attraction and creation of a suitable investment environment. The significant point is the existence of crucial role between foreign investment and exchange rate.

Erdal and Mahmut (2008) investigated the factors that validate FDI in emerging economies. The examiners employed cross-sectional data that covers 38 states in the regression model. The researchers measured numerous variables like interest rate, inflation and GDP on their influence on foreign direct investment. However, the study's outcome indicated a positive correlation between the pace of increase of per-capita gross domestic product, phone mainlines, and degree of openness. Furthermore, there is a significant link between the labour cost and inflation. The research emphasized a significance of the investment for evaluating many sides, while the results showed how FDI is so crucial to developing nations.

The investigator Adams (2009) examined the correlation between FDI and Local investment. The examiner used the OLS model to measure and evaluate the study's outcome, covering Sub-Saharan countries, where data from 1990 to 2003. The result of the study showed that FDI and Domestic investment has a significant correlation. This means the foreign direct investment encourages local businesspersons to enhance their investment. For that reason, we experienced many countries whose domestic investment has increased in recent years after their received foreign direct investment.

In other words, when a host country gets numerous foreign direct investments, the domestic investment increased directly. Thus, the study's findings emphasized that FDI has a key role in boosting domestic investment

Tomohara and Takii (2011) examined that incorporating the employment market into the FDI model can increase the studies on the effectiveness of FDI on African economies. The aim of the study is that foreign investment increases the wages of labour. According to the study results, foreign investment has a crucial role in increasing wages in many host nations. Furthermore, the researchers suggest that FDI caused workers' earnings to be frequently raised far above baseline and market-based rates before FDI influx. Thus, the outcome reveals that overseas investment has an essential role in the progress and prosperity of developing countries. In contrast, the researcher recommended that African nations create an environment to attract external investors to eradicate unemployment and poverty.

Niazi et al. (2011) looked at the relationship involving foreign direct investment, inflation, and GDP in a research. During the years 2001 to 2010, the examiner used time-series data. As a result, the study was analyzed using a regression model. The study's findings, however, revealed that the relationship between foreign capital as well as the Gdp has a constraining impact but is statistically insignificant. At the same time, the findings revealed a negative relationship amongst foreign investment and inflation.

Furthermore, the study emphasized that changes that happened to the inflation would cause an insignificant impact to the investors, particularly overseas investors. Thus, governments should regulate and control every change that occurs to inflation due to enhancing and attracting many foreign investors. Finally, the study discovered that an essential connection exists with GDP and FDI, but the inverse is true for inflation and FDI, according to their data.

Nyarko et al. (2011) investigated a study about Ghana's exchange rate and foreign direct investment. Thus, a study examined and evaluated the exchange rate and FDI variables, so the study's outcome revealed no correlation concerning exchange rate and foreign direct investment in Ghana. The result was remarkable because other studies revealed the actuality of a positive correlation among the various variables. Thus, this study is so unequal according to the previous ones. In addition, foreign direct investment is a crucial country like Ghana because of its emerging stages. Those nations required numerous foreign investors to reduce unemployment and eradicate poverty. The researcher suggests that government should progress infrastructure and established strong institutions.

Wattana dumrong et al. (2014) investigated a study about the factors that influence foreign direct investment in Thailand. The researcher was employed and conducted using a dynamic panel-data technique that examined annual data from 2004. The outcome of the study reveals a foreign investment has positive impact on trade. A researcher measured variables like Thailand's FDI inflows are heavily influenced by trade size, comparable wage rates, and geographical distance. In contrast, economic indicators such as the RGDP and currency rate have much less effect. In contrast, to encourage investment, the researchers suggest that a clear and reasonably healthy tax incentive policy approach, a comprehensive framework and political power be used. Finally, this study inspired the significance of bilateral trade in the development and turnaround of the countries. However, study encouraged trade among nations.

Alguacil et al. (2011) used annual data from twenty-six (26) developing nations from 1976 to 2005 to investigate the connection amid FDI and host nation the variables like macroeconomic and institutional development. Internal and external macroeconomic stability, as well as a solid institutional framework, are necessary to charm and withstand Capital flows of foreign investment into host countries, conferring into the researchers, who utilized the method Generalized Method of Moments (GMM) for energetic panel figures beginning this financial prudence. They went on to look at how absorptive capacities of host economies influence the overall association amongst Fdi and economic growth. Findings suggest that RGDP has significant effect on foreign investment inflows and sustainability, but simply if a solid investment environment is created by a stronger macroeconomic and institutional framework.

Hossain and Hossain (2012) used co - integration and Granger causativeness content evaluation to examine the relationship among both Foreign investment as well as Real gdp for Bangladesh, Pakistan, and India utilizing annual data from 1972 to 2008, and discovered that there is really no protracted or brief relationship among both FDI and GDP for Bangladesh and India. According to the statistics, GDP and FDI in Bangladesh have no connection, but GDP and FDI in India and Pakistan have a unidirectional causal relationship. According to the study, there is a cointegration relationship between Gdp and Fdi in the Pakistan economy in the short and long run.

Hong (2014) looked observed the influence of FDI on China's economic development utilizing yearly data through 1994 to 2010. The study utilized GMM to investigate data from 254 Chinese region level cities, concluding existence of crucial, positive association involving FDI and economic growth in China, as well as there is no correlation among trade openness and FDI. Using Simulation based startup allocation for statistical inference, Yalta (2013) examined the sense of connection between both the macroeconomic factors of FDI and RGDP in China for the time - series data date sourced 1982 to 2008, and concluded an absence of highly important link amongst FDI and RGDP. The study also incorporated capital formation into the model to see if the outcome of the FDI-RGDP connection would alter. The data show that include financial development in the equation has no effect on the connection. According to the research, the government's focus should move from initiatives aimed at attracting FDI, such as tax incentives, to growing domestic investment, upgrading private and semi-private companies, and developing education, among other things.

Sanchez-Martin et al (2014) employed GMM outline to investigate the factors affecting FDI inflows in Latin American economies from 1990 to 2010, and concluded that former standard of FDI, trade openness, low temporary debt levels, balance of payment deficit, and political constancy have become the critical attributes of FDI inflows in Latin American economies. Other important elements include a strong legal framework and a minimal danger of expropriation. They cited a strong institutional structure, macroeconomic and political stability, lower public debt exposure, and trade openness as important factors in fascinating and sustaining FDI to the economies analyzed.

(Ndola, 2017) set out to explore the causes of low inflow, with the primary goal of generating new evidence by evaluating the factors that affecting the FDI. The study used macroeconomic data from other nations to determine FDI based on numerous criteria, including political instability, which was a novel element investigated.

According to the findings, the exchange rate and inflation rate, as well as political instability, have an impact on FDI inflow into Kenya. Kenya's GDP growth rate, on the other word, is a deterrent to FDI. A research was employed on annual data from 1980 to 2010. Data values in cross-section estimations for the years 2000–2004. The results of the data analysis revealed that market size, trade openness, infrastructure, as well as

country's readiness to receive an investment from abroad all these factors had positive impact on FDI, with Per capita real GDP serving because absolute GDP represents population size, it may be used as a measure of market size. In preference to income, the practice of whole GDP or per capita GDP to determine market size revealed that neither factor influences FDI. This conclusion has apparent implications: investors prefer developing economies to mature economies. FDI was promoted by low regulation rates and low inflation. Risk and pay were shown to have little effect on FDI. Market growth. The growth, labor costs and skills, infrastructural accessibility, nation risk, transparency, institutional factors, natural resources, clustering impacts, levels of investment, and monetary policy are all variables that influence FDI flow, according to (Osano & Koine, 2015).

(Ndolo, 2017) revealed that Kenya is similar to further countries and growth rates, term of trade shocks, foreign total debt, and institutional quality all impact FDI. According to a UNCTAD assessment from 2005, Kenya's difficulty to attract FDI was linked to major concerns of corruption and governance, inconsistent economic policies, structural reforms, inadequate provision of infrastructure, and bad infrastructural development.

Kinano (2006) concluded that market openness, human capital, exchange rate, inflation, and FDI in past eras all had a major role in FDI flow in Kenya throughout his investigation.

Inflows of foreign direct investment into Sub-Saharan Africa are influenced by market potential, trade openness, infrastructure, urbanization, as well as the return on investments (2008). A positive impact was also had on macroeconomic stability.

(L. Alfaro, A. Chandab & Sayek, 2004) the researchers investigated numerous associations among factors include foreign direct investment, financial market and economic growth. Moreover, observed research was conducted employing cross-country data from 1975 to 1995. Demonstrates the FDI only has an uncertain effect on growth of the economy. Thus, the outcome of the study revealed that countries, those financially well advanced crucial and important impact from foreign direct investment. In addition, results of an investigation are unchanged by various indicators of financial market growth. In conclusion, the study showed us that the foreign direct investment influenced

or affected economic growth in general and particularly countries those have advanced financial markets.

(Mohammad & Zulkornain, 2009) for this study examined the causal association among the variables of foreign direct investment and economic growth while methodology of a study was Toda-yamamoto's testing, due to the causality association between variables and their bounds to test (ARDL). In addition, the researchers used time series data to measure the correlation between variable during the period 1975 to 2005 in Malaysia. Therefore, the result of the study revealed the absence of robust bi-directional casualty and lack of long-run association amongst the interest of elements. In an additional, a research suggested that foreign investment has indirect influence in economic growth of Malaysia. For this study reveals that FDI has no impact on economic growth at all in the circumstance of Malaysia.

The examiners of this study (Fifeková & Nemcová, 2015) looked into the connection amongst foreign direct investment and economic growth in Pakistan since 1980 to 2016. Although the researchers employed Granger, causality test and autoregressive distributed latency constraints co-integration. Findings of the ARDL restrictions assessment expose that economic growth and FDI co-integrate. The facts add to a one-way fundamental association among economic growth and FDI. However, the findings of the study revealed the presence of bidirectional interconnection among variables especially FDI and economic growth. Thus, an outcome of research is emphasized that the study recommends that strategies that improve human skills be implementing to bring additional FDI for economic growth. Furthermore, the study showed the significance of attracting a more FDI due to enhance economic growth of the countries; this is a policy, which each country requires to implement, to reach progress and prosperity.

According to the study done by (Wang, 2009), which about inward of FDI and economic growth that showed a different outcomes. The researcher used statistical data obtained from numerous Asian economies from 1987 to 1997. Although Research has demonstrated, that FDI inside the industrial segment does have a substantial and beneficial consequence on the home nations 'economic growth. Moreover, Inflows of foreign direct investment into non-manufacturing industries do not exist a major effect on economic growth. Besides that, an outcome of the study revealed that the impact of

manufacturing FDI on hosting country economic growth is underplayed by at least 48% if complete FDI inflows are not decomposed. Therefore, the article discovered that foreign direct investment has a significant influence of economic growth at Asian countries particularly and in general, in terms of economics, it has a statistically favorable influence for the nations involved.

(Sun, 2001) the researcher examined core factors influencing FDI on the economy in this article. On a regional basis, China's export performance initially discussed the theoretical impact of FDI of overseas trade. He emphasized the observed project of an effect of FDI on export performance on China at a regional level. Therefore, the study's result or findings showed that the effect of FDI on export arrangement had been discovered to vary across three macro-regions. Although the research revealed that, the influence is more significant on the coast than it is on the inland provinces. Simultaneously, FDI has an important and substantial influence on export performance in central states; finally, its effect on the western area has been insignificant.

(Metwally, 2004) the researcher of this study uses a simultaneous equations method to observe the association around FDI, exports, and economic growth in multiple Middle East nations: Egypt, Jordan, and Oman, as well as any potential feedback results. Although the outcome of this study revealed that, a higher economic growth caused the superior influence of foreign direct investment. In addition, for a circumstance of Egypt, correlation findings also display that interest rate differentials have a far superior influence on the attractiveness of foreign capital than economic growth. Which means interest rate more attracts and effects foreign investment according to economic growth. Even so, throughout a case of Oman, this variable does not appear to be important. Furthermore, the effects of the simultaneous equations model show that of all the countries surveyed, there is still a voltage differential in the correlation amongst economic growth and capital inflow. A strong inflow of foreign capital causes increase and growth of export in commodities.

In compliance with the econometric specialty for the group-wide time-series calculation, international investment and export in Austrian manufactures are investigated (Pfaffermayr, 1996). This research's empirical findings have indicated that FDI and export take a solid and meaningful association. Besides, it was clarified that FDI, and



export compliments are given (substitution) whether the cause has been positive or negative in both directions. Two variables FDI and Export are complementary, indicating positive or negative interrelationships. The paper also emphasized that two variables of FDI and exports are complementary.

Researcher has analyzed data on FDI flows through industrial countries into 69 emerging economy nations completed the previous two eras to assess the impact of foreign direct investment on economic expansion in a cross-country analysis setting for this paper on FDI and economic growth. Primary objective of the research was an evaluate the effect of FDI on economic growth for those countries. Consequently, an outcome of the research indicated that FDI is an active medium for technology transition; local investment contributes as much to development than foreign investment. Nevertheless, the greater effectiveness of FDI, similarly, is solitary valid while the home nation has a good and well skilled human capital, According to the (Zhang, 2001). Unless the home economy nations has a well potential of advanced technology does FDI lead to economic development. In conclusion, we understand for the research that FDI has a considerable on growth of the economy's nation.

According to the (Iamsiraroj, 2016), who investigated the link among FDI and economic growth has long been a matter of controversy based on contradictory analytical results. For this study, a bi-directional interaction around FDI on economic growth is indeed conceivable. Although, this article utilizes a simultaneous framework of equations methodology to analyze FDI-growth associations employing from 1971 through 2010, 124 cross-country data sets were compiled. In contrast, an examiner measured a numerous variable that has an impact on the study, which include trade openness, FDI, growth and labor force. Consequently, the result of the article revealed that general impact of FDI and growth has a significant association. While the Several elements such as commerce, openness, and the labor force are also considered in the analysis. Have an important determinant of FDI, as a result, income growth is boosted even more.

There is a two important purpose of this research, to begin, examining the connection around foreign direct investment and economic growth, second, from 2002 to 2012, to evaluate the links of foreign investments on economic growth in Eurozone countries. In addition, the study utilized a panel data to measure the association among variables.

According to (Pegkas, 2015) The analytical research shows that FDI stock and economic growth have a strong extensive correlation coefficient. Although, findings also suggest that perhaps the portfolio of foreign direct investment has a substantial effect on economic growth throughout the regions of Eurozone nations. Finally, the consequences of this paper strong emphasize the correlations among FDI and growth of the economy in general and in Eurozone nations in particularly.

## **CHAPTER 2: RESEARCH METHODOLOGY**

This unit tries to focus on the research methodology, data collection, definition of the variables and lastly the different tests used in order to ensure the health of the model and fulfil the aim of the study.

### **2.1. Sources of data**

The dataset of this study is an annual in nature and covers the period from 1970-2020, the data for the study which is composed of the explained variable and the seven explanatory variables of this study like gross domestic product, trade openness, inflation rate, exchange rate, infrastructure, gross saving and the real interest rate are obtained from the World Development Bank indicators.

### **2.2. Definition of Variables**

According to the World Bank, foreign direct investment (FDI) refers to direct investment equity flows in the reporting economy. It's the sum of stock, earnings reinvestment, and other sources of capital. A sort of investing across borders in which an entity from one nation has regulate over or a momentous amount of effect over the managing of a firm in other country is known as direct investment. The holding of 10% or additional of the ordinary shares of voting stock indicates the presence of a direct investment link.

There is no doubt the existence of scarcity of data, particularly for many time series data in underdeveloped nations, including Kenya since the statistical institutions are not functioning well due to many reasons including instability of politics and low level of economy. but, data on the Kenyan exchange rate, trade, interest, inflation, infrastructure, gross domestic product, and gross savings, to name a few, are readily available in enough amount to the literature and analysis section of the study to examine the association among the explained and explanatory variables.

#### **2.2.1. Inflation Rate**

Inflation is used to measure macroeconomic instability of the economy, Inflation or in other words can be defined the general increase of prices which is always computed by

using the consumer price index (CPI), which is estimated to have a negative consequence on foreign direct investment and similarly discourage the inflow of foreign investors.

### **2.2.2. Exchange Rate**

This literally means as an exchange rate between the host and home country is always used to measure the costs of production raw materials, inputs, both local and foreign imported goods and services or simply inputs.

### **2.2.3. Infrastructure**

This means Infrastructure improvements, such as road networks, telecommunications, energy, and internet access, will make it easier for Multi National Enterprises to operate in a given host country. Gross fixed capital formations as a proportion of GDP will be considered as a substitution for infrastructure development, with higher capital formation projected to encourage FDI.

### **2.2.4. Growth Domestic Product Literally GDP**

Can be defined the final worth of products and services produced within a domestic nation's geographic boundaries over a specific time, often a year. The Growth Domestic Product is a key indicator of a nation's economic performance.

### **2.2.5. Gross Domestic Savings GDS**

It is a GDP minus final consumption spending equals gross domestic savings. It is expressed and conveyed as a percentage of gross domestic product. In general, all the various savings made by the individuals, private companies, and the government contribute Gross Domestic Savings which always attracts the investors from abroad.

### **2.2.6. Interest Rate**

By definition the real interest rate is the rate of interest on a loan that has been altered for inflation using the GDP deflator. However, lending rates and terms differ by country, making comparisons difficult.

### **2.2.7. Trade Openness**

The sum of goods or commodities and services exported and imported as a proportion of Growth Domestic Product is known as trade.

### **2.3. Unit Root Tests**

As a researcher when I was analyzing time series data, stationary properties of the variables should be given consideration, therefore in this study the unit root presence of the variables has been checked by employing the Augmented Dickey-Fuller unit root test or simply ADF model. Also, for robustness purpose Philips-Perron unit root has been employed. The ARDL model was then utilized to represent the long-term or long-run dynamics as well as the short-term dynamics between the variables under investigation.

#### **2.3.1. Augmented Dickey-Fuller (ADF) Unit Root Test**

Usually, macroeconomic series are non-stationary at level and if used when  $I(0)$ , that can cause a false regression (Granger and Newbold 1974). Thus, the stationarity of the time series is observed with unit root tests. Stationary time series datasets have a steady mean and variance that do not change overtime. Trending in time, seasonality and cyclical fluctuations causes the series to lose stability and thus it is believed to be non-stationary series (Gujarati & Porter, 1999).

Similarly, Dickey-Fuller test, the Augmented DF test is used to overcome the autocorrelation problem in the series and the lagged version of the response variable is added to the DF equation (Dickey & Fuller, 1979).

### **2.4. ARDL Model**

Empirically when we are analyzing the presence of both long run and short correlations and also the dynamic associations among the variable of interest, there are lot scientific model that the researchers can apply. The most acquainted methodologies that the studies employ include the one developed by Johansen (1988) and Johansen & Juselius (1990) co-integration test, Engle and Granger (1987) co-integration test and also the co-integration test anticipated by Pesaran et al.(2001). When we are in co-integration investigation, variables with distinct order of integration can be revealed their co-integration feature by applying the model developed by Pesaran & Shin (1995). The

method is acknowledged as ARDL (Autoregressive Distributed Lag models). The researchers are frequently employing this method to explore the presences of co-integration between the elements in the analysis, since the model integrates a mixture of both variables that are I (0) and cohesive of order (1). The core objective of why the study applies this methodology is since it offers the advantages: The first, the model is absolutely suitable in the circumstance of limited sample size datasets (Pesaran et al., 2001). More importantly, Autoregressive distributed lag model is the most suitable model that is applicable to examine the correlation among the explained and explanatory variables, also when the variables in concern are a combination or addition of I (0) and I (1), the model is a better estimator. Finally, inside the general-to-specific framework, the method's unobstructed form suggests the most appropriate lag order for displaying the data generation process. Correcting residual serial correlation and the indigeneity problem with the suitable change of the order of the ARDL model is beneficial (Pesaran, Shin & Smith, 1999). Therefore, to observe both the long and short-run associations between the factors affecting the FDI, the following inward FDI-induced practical association is expressed:

As a researcher to check the presence of unit roots in a data of time series. Definitely Augmented Dicky-Fuller (ADF) test is one of the most extensively and frequently used methods of unit root checking. The easiest initial point for checking stationary is an autoregressive approach and methods of instruction one, AR (1) and the DF test models can be calculated or projected in three distinct procedures of AR (1) model as quantified below (Gujrati, 2004).

$Y_t$  is a chance or random tread:  $Y_t = \delta Y_{t-1} + u_t \dots\dots\dots$

$Y_t$  is a chance or random step with drift:  $Y_t = \beta_1 + \delta Y_{t-1} + u_t \dots\dots\dots$

$Y_t$  is a random walk by drift and trend:  $Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + u_t \dots\dots$

Where t stands time or trend variable and  $u_t$  stands a white noise error period.

For uncomplicatedness and the easiness, allowing us regard the above calculation, a chance tread autoregressive model: A suitable or expedient methods and procedure for dealing with the unit root test is to deduct  $Y_{t-1}$  from both dimensions above calculation and to express  $\Phi = \delta - 1$ .

deducting  $Y_{t-1}$  from the two dimensions of the above equivalence show:

$$Y_t - Y_{t-1} = \delta Y_{t-1} - Y_{t-1} + u_t \dots\dots\dots$$

$$\Delta Y_t = (\delta - 1) Y_{t-1} + u_t$$

$$\Delta Y_t = \Phi Y_{t-1} + u_t \dots\dots\dots$$

While  $\Phi = (\delta - 1)$ ,  $\Delta$  is the primary variance or difference operative and  $u_t \sim IN[0, \sigma^2]$

Accurately the ultimate impression behind the Dickey-Fuller (DF) unit root test for stationarity is to merely revert  $\Delta Y_t$  on one-time lagged value of  $Y_t$  and obtain whether the projected  $\Phi$  is mathematically equivalent to zero or not.

After that, the null hypothesis  $H_0: \Phi = 0$  compared to the alternative hypothesis  $H_a: \Phi < 0$  is to be checked.

If  $\Phi = 0$  or  $(\delta = 1)$ , the above formula will go a chance walk deprived of drift and float model, that is, a fixed and stable process.

The conclusion to reject and deny or not to nullify the hypothesis that is null is founded on the Dickey-Fuller (DF) critical values of the  $\tau$  (tau) statistic and the trial technique for unit roots is exposed as shows below:

- The set of the null and alternative hypothesis as:

$$H_0: \Phi = 0$$

$$H_a: \Phi < 0$$

➤ Compute the test measurement employing

$$F = \frac{\hat{\Phi}}{SE(\hat{\Phi})} \text{ where } SE(\hat{\Phi}) \text{ is the standard error of } \hat{\Phi}$$

- Lastly making equivalence the designed and computed test measurement in calculation with the critical value from Dickey-Fuller model to take the rejecting or to take the acceptance of the null hypothesis.

Dicky-Fuller requires that the error terms ( $u_t$ ) are uncorrelated so as to determine the critical values of the (tau) statistic (Enders, 1996). However, the Dickey-Fuller test's error term frequently contains autocorrelation, which must be eliminated if the outcome is to

be true. Furthermore, the critical values of (tau) statistics do not follow the normal distribution function, and the critical value is generally much bigger than the t-distribution's equivalent.

In the ADF model, the parameter of interest is, and the null and alternative hypotheses which is to be evaluated shown below:

$$H_0: \Phi = 0$$

$$H_a : \Phi < 0$$

ADF test process and technique for unit roots is same as to statistical tests for hypothesis and it can be trying out three achievable models as quantified in calculations. But, the critical values of the tau test to check the hypothesis that  $\Phi = 0$ , are unlike for each of the three conditions. 2004 (Gujrati). As a result of the foregoing advantages over the DF test, the researcher has chosen to utilize the ADF stationarity test. In addition, the Akaike Information Criterion determines the ARDL model's lag-length (AIC).

The ARDL method comprises two stages for guessing and projecting the long-run association (Pesaran, Shin, and Smith, 2001). The first step of the process is to analyses the presence of long-run relationship among all the dependent and independent variables in an equivalence and the second step is to evaluate the long-run and short run coefficients of the process or model.

## **2.5. Bounds Testing Procedure**

To check for the presence of co-integration association the Bound test is employed and the general significance of the coefficients are tested. The Bounds test sets upper and lower limits, therefore if the computed F-statistics is a value that is lower than the lower limit of the critical value, the  $H_0$  of no co-integration is accepted. Similarly in the case where the computed F-statistics is a value that is greater than the upper limit of the critical value, then the  $H_0$  is rejected and it said that the variables under consideration are co-integrated (Pesaran et al, 2001).



## CHAPTER 3: FINDINGS AND DISCUSSIONS

In this unit, we summarized the findings of the study along with some discussions.

### 3.1. Descriptive Statistics

This section presents a preliminary analysis of the data used in this research. First, descriptive statistics are presented, followed by a correlation matrix. Initially, descriptive statistics are carried out and provided summary statistics of the mean, standard dev., minim and maximum for the variables used in the study. Then, correlation analysis shows whether a substantial association exists among the independent variables or not. If there is great and substantial correlation exists among the independent variable quantity, this may indicate the existence of multicollinearity, which again affects the outcome of the regression model.

**Table 1:** Descriptive statistics

|              | <b>FDI</b> | <b>GDP</b> | <b>GROSS</b> | <b>INFL</b> | <b>INFRA</b> | <b>INTEREST</b> | <b>EXCHA<br/>NGE</b> |
|--------------|------------|------------|--------------|-------------|--------------|-----------------|----------------------|
| Mean         | 2.84E+08   | 2.33E+10   | 2.90E+09     | 11.69151    | 4.35E+09     | 6.381982        | 40.24361             |
| Median       | 51314091   | 1.05E+10   | 1.66E+09     | 9.897858    | 1.93E+09     | 5.627418        | 31.67210             |
| Maximum      | 1.63E+09   | 9.88E+10   | 7.92E+09     | 45.97888    | 1.60E+10     | 21.09633        | 88.81077             |
| Minimum      | 394430.6   | 1.78E+09   | 4.00E+08     | 1.554328    | 4.04E+08     | -8.009867       | 7.020384             |
| Std. Dev.    | 4.79E+08   | 2.66E+10   | 2.39E+09     | 7.981213    | 4.87E+09     | 7.103393        | 28.74513             |
| Skewness     | 1.679570   | 1.524182   | 0.943124     | 1.967339    | 1.307973     | 0.065660        | 0.289420             |
| Kurtosis     | 4.232556   | 4.170282   | 2.315401     | 8.411662    | 3.193921     | 2.668529        | 1.491236             |
|              |            |            |              |             |              |                 |                      |
| Jarque-Bera  | 26.67295   | 22.21267   | 8.388761     | 93.26618    | 14.33495     | 0.264829        | 5.440466             |
| Probability  | 0.000002   | 0.000015   | 0.015080     | 0.000000    | 0.000771     | 0.875978        | 0.065859             |
|              |            |            |              |             |              |                 |                      |
| Sum          | 1.42E+10   | 1.16E+12   | 1.45E+11     | 584.5754    | 2.17E+11     | 319.0991        | 2012.181             |
| Sum Sq. Dev. | 1.12E+19   | 3.47E+22   | 2.80E+20     | 3121.288    | 1.16E+21     | 2472.452        | 40487.85             |
|              |            |            |              |             |              |                 |                      |
| Observations | 50         | 50         | 50           | 50          | 50           | 50              | 50                   |

Source: Author 2021

As above table indicates, the study had 50 observations. One dependent variable FDI and seven independent variables (GDP, Gross savings, inflation, infrastructure, interest rate and exchange rate). The annual inflow of FDI (as a percentage of GDP) ranges between 9.88e+10 and \$ 1.78e+10 indicating the minimum and the maximum inflows. The average inflow of FDI (as a percentage) is 2.84e+08 and every observation is deviated from this aggregate by the value of 1.679570. The Gross savings as a percentage range between 4.00e+09 and 7.92e+09. The inflation rate is 1.554328 and 45.97888 The value

of deviates every observation from the aggregate is 7.981213. Infrastructure ranges between 4.04E+08 and 1.60E+10. The mean value of interest rate as a percentage is 6.381982 and it has -8.009867 a minimum and 21.09633 maximum value. The standard deviation of this variable is 7.103393 which indicate every observation deviated from the total value by the rate of 7.1034. The exchange rate has a minimum value of 7.020384 and a maximum value of 88.81077.

### 3.2. Correlation Test

**Table 2:** The correlation Matrix

|              | FDI       | GDP       | GROSS     | INFL      | INFRA     | INTEREST  | EXCHANG<br>E |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|
| FDI          | 1.000000  | 0.884921  | 0.836961  | -0.255452 | 0.887436  | 0.041906  | 0.227370     |
| GDP          | 0.884921  | 1.000000  | 0.949699  | -0.318690 | 0.987638  | 0.063185  | 0.244708     |
| GROSS        | 0.836961  | 0.949699  | 1.000000  | -0.232892 | 0.963486  | 0.047001  | 0.361897     |
| INFL         | -0.255452 | -0.318690 | -0.232892 | 1.000000  | -0.318222 | -0.339618 | -0.060345    |
| INFRA        | 0.887436  | 0.987638  | 0.963486  | -0.318222 | 1.000000  | 0.061063  | 0.259686     |
| INTEREST     | 0.041906  | 0.063185  | 0.047001  | -0.339618 | 0.061063  | 1.000000  | 0.360783     |
| EXCHANG<br>E | 0.227370  | 0.244708  | 0.361897  | -0.060345 | 0.259686  | 0.360783  | 1.000000     |

Source: Author 2021

According to the correlation matrix results presented in the above table.

### 3.3. Unit Root Test

A unit root test is commonly used to determine whether or not a time series is stationary and has a unit root. Depending on the test used, the null hypothesis is commonly defined as the presence of a unit root, whereas the alternative hypothesis is either stationarity, trend stationarity, or explosive root.

The researcher of this study applied Augmented Dickey-Fuller and Philip-Peron tests to check the stationarity of the series, and the below table shows the results and significance levels.

**Table 3:** Results of the ADF & PP unit root tests

| Variables        | Level        |              | First difference |               |
|------------------|--------------|--------------|------------------|---------------|
|                  | ADF          | PP           | ADF              | PP            |
| <b>LNFDI</b>     | 0.051288     | -2.805628    | -8.249539***     | -32.41611***  |
| <b>LNGDP</b>     | -0.313693    | -0.313693    | -4.849214***     | -4.665832***  |
| <b>LNEXC</b>     | -1.536517    | -1.535602    | -6.202876***     | -6.202876***  |
| <b>LNINF</b>     | -5.127427*** | -5.138750*** | -8.340422***     | -12.95708 *** |
| <b>LNINTREST</b> | -5.156467*** | -5.156467*** | -7.481969***     | -12.189662*** |
| <b>LNINFRAS</b>  | -0.436202    | -0.488817    | -5.540253***     | -5.462674***  |
| <b>LNGROSS</b>   | -1.547837    | -1.464676    | -6.683625***     | -7.453148***  |
| <b>LNTRD</b>     | -1.016870    | -1.016870    | -7.566611***     | -7.603775***  |

**Note:** \*\*\* denotes significance at 5 % level

**Source:** Author 2021

Stationarity features of the series were tested by employing ADF and PP unit root test. ADF unit root test results are interpreted by considering the probability value. As a result of the ADF test, if the absolute value is less than the critical value, the  $H_0$  hypothesis is accepted and since it is found a unit root in the series it is said that the series isn't stationary. In the unit root test result, if the ADF absolute value is bigger than the critical value, then the  $H_1$  alternative hypothesis which indicates that there's no unit root in the series is accepted, in other words it means that the series is stationary.

As the above findings show, it may be observed from Table 4.3 that our variables are combination of stationary and nonstationary variables of order one. The variables like the inflation rate and the interest rates are combined of order one, similarly the remaining variables are stationary after taking their first differences. This shows us that the model has no problem of stationarity.

### 3.4. ARDL Model

**Table 4: ECM Regression**

| <b>ECM Regression</b> |             |                       |             |          |
|-----------------------|-------------|-----------------------|-------------|----------|
| Variable              | Coefficient | Std. Error            | t-Statistic | Prob.    |
| C                     | -389.7068   | 29.66516              | -13.13685   | 0.0000   |
| D(LNFDI(-1))          | 0.967042    | 0.132927              | 7.274970    | 0.0000   |
| D(LNEXCHANGE)         | -4.846639   | 0.754809              | -6.421018   | 0.0001   |
| D(LNEXCHANGE(-1))     | -7.457605   | 0.815511              | 9.144703    | 0.0000   |
| D(LNEXCHANGE(-2))     | -6.226373   | 0.827986              | 7.519899    | 0.0000   |
| D(LNEXCHANGE(-3))     | -1.923631   | 0.766450              | 2.509793    | 0.0309   |
| D(LNGCF)              | -9.708666   | 1.876525              | -5.173746   | 0.0004   |
| D(LNGCF(-1))          | -7.141339   | 1.469057              | 4.861171    | 0.0007   |
| D(LNGCF(-2))          | -4.026061   | 1.511139              | 2.664256    | 0.0237   |
| D(LNGDP)              | 0.254763    | 2.392228              | 0.106496    | 0.9173   |
| D(LNGDP(-1))          | 11.06012    | 1.972195              | -5.608025   | 0.0002   |
| D(LNGDP(-2))          | 14.49673    | 2.151738              | -6.737217   | 0.0001   |
| D(LNGROSS)            | 4.697559    | 0.555398              | 8.458002    | 0.0000   |
| D(LNGROSS(-1))        | 0.620487    | 0.498953              | -1.243579   | 0.2420   |
| D(LNGROSS(-2))        | 0.448021    | 0.438997              | -1.020556   | 0.3315   |
| D(LNGROSS(-3))        | 0.975858    | 0.478411              | 2.039789    | 0.0687   |
| D(LNINFL)             | -0.170374   | 0.204756              | 0.832085    | 0.4248   |
| D(LNINFL(-1))         | -2.225624   | 0.304808              | 7.301736    | 0.0000   |
| D(LNINFL(-2))         | -1.313302   | 0.209895              | 6.256942    | 0.0001   |
| D(LNINFL(-3))         | -0.292348   | 0.173054              | -1.689348   | 0.1220   |
| D(LNINTEREST)         | 0.056539    | 0.188558              | -0.299848   | 0.7704   |
| D(LNINTEREST(-1))     | 3.987794    | 0.430968              | -9.253114   | 0.0000   |
| D(LNINTEREST(-2))     | 1.664668    | 0.314328              | -5.295952   | 0.0003   |
| D(LNINTEREST(-3))     | 0.238819    | 0.186041              | 1.283687    | 0.2282   |
| D(LNTRADE)            | 4.672090    | 1.723005              | 2.711594    | 0.0219   |
| D(LNTRADE(-1))        | 7.222273    | 1.869045              | -3.864151   | 0.0031   |
| D(LNTRADE(-2))        | 3.556970    | 1.374345              | 2.588120    | 0.0270   |
| D(LNTRADE(-3))        | 3.808761    | 1.291608              | 2.948853    | 0.0146   |
| CointEq(-1)*          | -0.434874   | 0.208098              | -13.14227   | 0.0000   |
| R-squared             | 0.956376    | Mean dependent var    |             | 0.087852 |
| Adjusted R-squared    | 0.884525    | S.D. dependent var    |             | 1.577977 |
| S.E. of regression    | 0.536223    | Akaike info criterion |             | 1.856909 |
| Sum squared resid     | 4.888099    | Schwarz criterion     |             | 3.009748 |
| Log likelihood        | -13.70890   | Hannan-Quinn criter.  |             | 2.288769 |
| F-statistic           | 13.31048    | Durbin-Watson stat    |             | 2.002198 |
| Prob(F-statistic)     | 0.000001    |                       |             |          |

Source: Author 2021

The above table indicates the short run dynamics coefficients of the model. As above table shows us there is positively correlation among the variables of GDP, trade openness,

gross saving and interest rate with Foreign direct investment and most of them are statistically substantial and significant. Where some of the variables like inflation rate, infrastructure and exchange rate have negatively associated with FDI. According to the variable of infrastructure which is negatively correlated with FDI is contrary a lot previous studies that have made to this topic which is revealed that infrastructure is positively associated with foreign direct investment. Better infrastructure attracts more foreign investors as the previous studies discovered.

As the findings above table implies, the error correction based ARDL model is estimated and all the coefficients represent the short run behavior of the series while ECM terms represent the adjustment of the disequilibrium in the long run. According to the estimation output the error correction term has satisfied both conditions as its coefficient is negative and also significant.

The value of the ECM term is -0.434874, meaning that the divergence of the series from their long run equilibrium is not everlasting or permanent and each year about %43 of the short run disequilibrium is adjusted to converge to the long run equilibrium.

### 3.5. Long Run coefficients

**Table 5:** Long run coefficients

| Variable  | Coefficient | Std. Error | t-Statistic | Prob.  |
|---|-------------|------------|-------------|--------|
| LNEXCHANGE  | -2.867985   | 0.247890   | -11.56960   | 0.0000 |
| LNGCF   | -7.395923   | 1.943247   | -3.805962   | 0.0035 |
| LNGDP   | 9.184694    | 1.784735   | 5.146250    | 0.0004 |
| LNGROSS   | 3.388682    | 0.823149   | 4.116728    | 0.0021 |
| LNINFL  | -1.074433   | 0.426440   | -2.519539   | 0.0304 |
| LNINTEREST  | 1.858757    | 0.180434   | 10.30160    | 0.0000 |
| LNTRADE   | 0.363799    | 1.130808   | 9.407422    | 0.0000 |
| EC = LNFDI - (-2.8680*LNEXCHANGE - 7.3959*LNGCF + 9.1847*LNGDP + 3.3887*LNGROSS - 1.0744*LNINFL + 1.8588*LNINTEREST + 10.6380*LNTRADE ) |             |            |             |        |

**Source:** Author 2021

Since the main objective of the study was to find out the determinates and the core factors which have substantial association with the foreign direct investment and the correlation among the variables both the short run and the long period, the study used ARDL in the short run and long run-in order to investigate the real link among the selected variables. After running the data, the findings of this study denote us the presence of significant association of FDI and selected variables such as, exchange rate, GDP, gross saving,

Inflation, infrastructure, interest rate and trade openness, after confirming the existence of long-run co-integration relationship among the variables.

As the above table depicts the long-run outcomes are presented. The coefficient of exchange rate is -2.87 and it is statistically significant which implies that 1% increase in relative exchange rate will lead to 2.87% decrease in foreign direct investment in the long run, which means the depreciation of local currency is a good sign which discourages the foreign investors. So, the government of Kenya and every country who want to promote its investment should appreciate its money since in general the currency depreciation increases the charge of imported inputs, leading to a decline in profits. Diminished returns and profits could discourage firms from investment.

The coefficient of relative GDP growth rate is 9.2 and it is statistically significant which implies that 1% increase in relative GDP growth rate could cause to 9.2% appreciation in foreign direct investment rate in the long run. In general, both the theoretical and empirical link among the foreign direct investment and growth GDP is positively correlated. Since the investment is also the main components of the GDP, every increase in GDP also promotes foreign investment.

As the above shows, the coefficient of relative gross saving is 3.4 and it is statistically significant which implies that 1% increase in relative Gross saving will increase the FDI at 3.4%. literally, apart from the findings of this study all the various savings made by the individuals, private companies, and the government contribute Gross Domestic Savings which always attracts the investors from abroad.

The coefficient of relative inflation rate is -1.1 and it is statistically significant which implies that 1% increase in relative inflation rate will decrease the FDI at 1.1% in the long run. Apart from this study, the findings of this study support the core concepts of economics regarding the inflation and its effects. Surely people are more unsure about what they should spend their money on when inflation is high. Firms are also less willing to spend when inflation is strong since future prices, earnings, and expenses are unpredictable. In the long run, this uncertainty and misunderstanding may result in slower economic growth. One of the major concerns about high inflation rates is that it would lead to a loss of purchasing power, if the demand of the people decreases also the circulations of the money decrease, even the revenue of the government could decrease

which can cause major macrocosmic instability. Countries with low and stable inflation rates outperform those with higher inflation. As a researcher the government of Kenya should regulate the general prices in order to avoid inflations and attracts the foreign investors.

The coefficient of relative interest rate is 1.9 and it is statistically significant which implies that 1% increase in interest rate will cause to 1.9% increase in foreign direct investment in the long run. According to the basic and fundamental concepts of economics, whenever there is high interest rate leads to appreciate and increase the value of the country's local currency which leads that the individuals, enterprise and other entities try to make a saving which untimely this increase of interest rate cause to attract foreign direct investment since the demand and value of home country's currency increased. Conversely, whenever the level of interest rate is lower tending to discourage the foreign investment.

The coefficient of trade is 0.36 and it is statistically significant which implies that 1% increase in relative trade will lead to 0.36% increase in foreign direct investment in the long run the study revealed that openness of trade is good for foreign direct investment, in general the openness of trade is an essential of the economy, because it leads job opportunities also trade provides new market opportunities for local firms, stronger and massive productivity, and innovation through rivalry among the firms and producers. There is no doubt that trade liberalization eliminates or lessens barriers to trade among countries, including tariffs and quotas. whenever a country has a fever restriction of trade, the international firms willing to make an investment and encourages the trade among the nations.

The coefficient of gross capital formation which represent infrastructure is -7.4 which denotes that infrastructure is negatively correlated with FDI. The findings of this variable are contrary to many previous studies made by this topic, since most of the studies reveals that better infrastructure attracts foreign direct investment.

### **3.6. Bound Test**

We applied Bound Test to check whether there is long run relationship among endogenous and exogenous variables. The below table shows that F-statistic is greater

than lower bound and upper bound at 5% significance level, and it indicates the existence of long run association between the explained variable and explanatory variables.

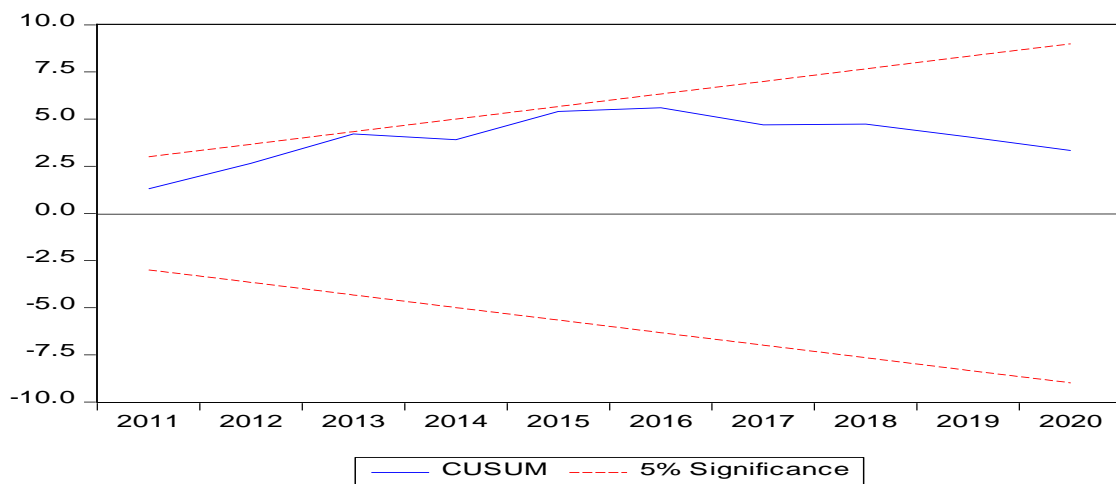
**Table 6:** F-Bounds Test

| F-Bounds Test      |          | Null Hypothesis: No levels relationship |                     |       |
|--------------------|----------|---|---------------------|-------|
| Test Statistic     | Value    | Signif.                                 | I(0)                | I(1)  |
|                    |          |   |                     | N     |
|                    |          |   | Asymptotic: n=1000  |       |
| F-statistic        | 12.69995 | 10%                                     | 2.03                | 3.13  |
| K                  | 7        | 5%                                      | 2.32                | 3.5   |
|                    |          | 2.5%                                    | 2.6                 | 3.84  |
|                    |          | 1%                                      | 2.96                | 4.26  |
| Actual Sample Size | 46       |   | Finite Sample: n=50 |       |
|                    |          | 10%                                     | 2.205               | 3.421 |
|                    |          | 5%                                      | 2.593               | 3.941 |
|                    |          | 1%                                      | 3.498               | 5.149 |

Source: Author 2021

### 3.7. Model Stability

We employed CUSUM Test to recognize the stability of the model. The decision guideline of the stability of model is that the blue line should lie between the two critical red-lines. As the graph shows this model has no stability problem.



**Figure 2:** Model Diagnostics

As the above figure shows the model has not developed any stability problem.



### 3.8. Serial Correlation LM Test

When running a regression, serial correlation develops, and the error terms are correlated with their lagged values Gujarati (2004). As shown by the results below the model doesn't suffer any serial correlation problem since the null hypothesis of no serial correlation couldn't be rejected as the prob. value of the chi-square is greater than %5.

**Table 7:** Breusch-Godfrey Serial Correlation LM Test

|               |          |                     |        |
|---------------|----------|---------------------|--------|
| F-statistic   | 0.003895 | Prob. F(1,9)        | 0.9516 |
| Obs*R-squared | 0.019897 | Prob. Chi-Square(1) | 0.8878 |

Source: Author 2021

### 3.9. Heteroscedasticity

As part of the initial investigation of the ARDL regression model, the errors of the quantified equations were checked for heteroskedasticity. Heteroskedasticity happens whenever the variance of the error terms from a projected regression is not constant Gujarati (2004). In the presence of heteroscedasticity, if the ARDL regression is run, the output generated from the model may be misleading. In this study, however, EViews 10 is used to tests the heteroskedasticity of error terms.

I employed Autoregressive conditional heteroskedasticity (ARCH) test to check if residuals of the model are homoscedastic or not. Homoscedasticity is desirable while Heteroskedasticity is not desirable.

Null hypothesis: there is no Heteroscedasticity.

Alternative hypothesis: there is Heteroscedasticity.

As the below table shows we cannot reject the null hypothesis of there is no Heteroscedasticity rather we accept. This means that our model is Homoscedastic which is desirable for forecasting and making policy recommendations from the results of the model.

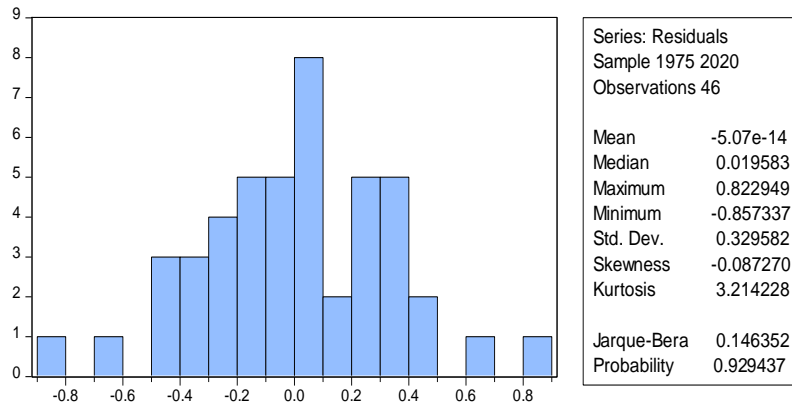
**Table 8:** Heteroskedasticity Test: ARCH

|               |          |                     |        |
|---------------|----------|---------------------|--------|
| F-statistic   | 1.678965 | Prob. F(2,41)       | 0.1991 |
| Obs*R-squared | 3.330835 | Prob. Chi-Square(2) | 0.1891 |

Source: Author 2021

### 3.10. Normality Test

In this study in order to diagnose and check that the model is normally distributed or not, the researcher employed Jarque-Bera. The null hypothesis states that residuals are normally distributed, while the alternative hypothesis states that they are not. We can't reject the null hypothesis because the P-value of the Jarque-Bera test is more than 5%, which indicates that our model is regularly distributed. The normality of the residuals is checked using the Jarque-Bera test, the result suggests the remainders of the model are normally distributed with the p value of 92.9 %. The result is presented in the below Figure.



**Figure 3:** Normality Test

### 3.11. Granger Causality Test

Granger causality is the most effective way for determining and searching causation between two variables in a time series data set. This method is a probabilistic description of causation relationships that employs empirical data sets to determine the form or design of correlations.

**Table 9:** Granger causality Test

| Null Hypothesis:                 | Obs | F-Statistic | Prob.  |
|----------------------------------|-----|-------------|--------|
| GDP does not Granger Cause FDI   | 48  | 13.6903     | 3.E-05 |
| FDI does not Granger Cause GDP   |     | 7.75305     | 0.0013 |
| GROSS does not Granger Cause FDI | 48  | 11.3281     | 0.0001 |
| FDI does not Granger Cause GROSS |     | 0.16147     | 0.8514 |
| INFL does not Granger Cause FDI  | 48  | 0.57446     | 0.5673 |

|  |    |         |        |
|--|----|---------|--------|
| FDI does not Granger Cause INFL          |    | 2.22026 | 0.1209 |
| INFRA does not Granger Cause FDI         | 48 | 12.5562 | 5.E-05 |
| FDI does not Granger Cause INFRA         |    | 3.23996 | 0.0489 |
| INTEREST does not Granger Cause FDI      | 48 | 0.19416 | 0.8242 |
| FDI does not Granger Cause INTEREST      |    | 0.19511 | 0.8235 |
| EXCHANGE does not Granger Cause FDI      | 48 | 0.27707 | 0.7593 |
| FDI does not Granger Cause EXCHANGE      |    | 2.58851 | 0.0868 |
| GROSS does not Granger Cause GDP         | 48 | 1.97931 | 0.1506 |
| GDP does not Granger Cause GROSS         |    | 0.90306 | 0.4129 |
| INFL does not Granger Cause GDP          | 48 | 0.25818 | 0.7736 |
| GDP does not Granger Cause INFL          |    | 1.46124 | 0.2432 |
| INFRA does not Granger Cause GDP         | 48 | 2.75941 | 0.0746 |
| GDP does not Granger Cause INFRA         |    | 1.75081 | 0.1858 |
| INTEREST does not Granger Cause GDP      | 48 | 0.06476 | 0.9374 |
| GDP does not Granger Cause INTEREST      |    | 0.35355 | 0.7042 |
| EXCHANGE does not Granger Cause GDP      | 48 | 2.70271 | 0.0784 |
| GDP does not Granger Cause EXCHANGE      |    | 0.40120 | 0.6720 |
| INFL does not Granger Cause GROSS        | 48 | 0.25407 | 0.7768 |
| GROSS does not Granger Cause INFL        |    | 1.65969 | 0.2021 |
| INFRA does not Granger Cause GROSS       | 48 | 2.53031 | 0.0914 |
| GROSS does not Granger Cause INFRA       |    | 3.23476 | 0.0491 |
| INTEREST does not Granger Cause GROSS    | 48 | 1.43466 | 0.2494 |
| GROSS does not Granger Cause INTEREST    |    | 0.33580 | 0.7166 |
| EXCHANGE does not Granger Cause GROSS    | 48 | 1.33534 | 0.2738 |
| GROSS does not Granger Cause EXCHANGE    |    | 1.40862 | 0.2555 |
| INFRA does not Granger Cause INFL        | 48 | 1.41958 | 0.2529 |
| INFL does not Granger Cause INFRA        |    | 0.13543 | 0.8737 |
| INTEREST does not Granger Cause INFL     | 48 | 1.11602 | 0.3369 |
| INFL does not Granger Cause INTEREST     |    | 2.51779 | 0.0925 |
| EXCHANGE does not Granger Cause INFL     | 48 | 1.03811 | 0.3628 |
| INFL does not Granger Cause EXCHANGE     |    | 0.33987 | 0.7138 |
| INTEREST does not Granger Cause INFRA    | 48 | 0.08460 | 0.9190 |
| INFRA does not Granger Cause INTEREST    |    | 0.11636 | 0.8904 |
| EXCHANGE does not Granger Cause INFRA    | 48 | 4.90496 | 0.0121 |
| INFRA does not Granger Cause EXCHANGE    |    | 0.61549 | 0.5451 |
| EXCHANGE does not Granger Cause INTEREST | 48 | 3.69080 | 0.0332 |
| INTEREST does not Granger Cause EXCHANGE |    | 0.13896 | 0.8707 |

Source: Author 2021

The above table expresses the findings and outcome of the Granger causality test or relationship among the explained variable which is foreign direct investment and the other explanatory elements which are GDP, gross saving, interest rate, infrastructure, exchange rate and lastly the inflation rate. According to the test result, there's no causality from gross domestic product to the foreign direct investment because the P-values are greater than 0.05 or 5% margin of error. But in the other side of the story, causality running from foreign direct investment to gross domestic product has been seen because the P-values are less than 0.05 or 5% margin of error, so this result concludes to the rejection of the null hypothesis  $H_0$  and accepting the alternative  $H_1$  hypothesis. In the above result there is no any causality between inflation to foreign direct investment or foreign direct investment to inflation on the both sides of the equation since their P values are bigger than 0.5. Lastly the other outcomes will follow the same procedure of interpretation

## CONCLUSION

This is the last chapter of the study which is mainly summarizes the results of the study, similarly gives some policy implications to the concerned areas also the unit pointed out the limitations of this study and the areas needed further research.

- Conclusion

This work aimed at examining the factors affecting the Foreign Direct Investment inflow into Kenya by adopting and employing a time series data for the period 1970-2020. The study, in specific, commence and sets out to find the significance of inflation rate, trade openness, interest rate, infrastructure, growth domestic product, gross saving and finally the exchange rate and their effect on FDI inflow in Kenya.

The core objectives of this paper are to check the beingness of long-term nexuses among the Foreign Direct Investment and the seven independent variables using a co-integration method and approach to time series data of Kenya starting from 1970 to 2020. Finally, it can be summarized and concluded that the findings of this work can be a recommendation and provide understanding to policymakers like Kenyan government, national bank of Kenya and other concerned parts like chamber of commerce of Kenya in shaping the policies and procedures to fascinate and appeal more foreign direct investment inflow to Kenya.

These explained and explanatory variables were chosen based on their past study findings and empirical gaps in the previous literature on the factors FDI inflow into Kenya. Before estimating the model, the stationarity of the variables was checked using the Augmented Dicky Fuller and Philipps – Perron tests, as recommended by econometric theories. After making these two tests, it revealed that the variables are stationary at their initial difference level. The variables are either order-level I (0) or order I (0) integrated (1) which has no problem of non-stationarity. Following the unit root test, the researchers used the ARDL Bounds testing approach to verify for cointegration of the dependent and independent variables. The ARDL bound testing revealed that Foreign Direct Investment and the regressors are cointegrated, hence the ARDL Long-Run and ARDL Error Correction models were used to estimate the FDI-repressor connection. While the rate of

exchange, infrastructure and also rate of inflation all have a negative and large effect on FDI influx, the other variables also have a considerable and positive impact. According to the ARDL Error Correction model, the openness of Kenya's economy to international trade, interest rate, GDP and gross saving has a positive influence on FDI inflow. ECM model also revealed that the transition to equilibrium was quick. This outcome, further revealed the presence of a long-run link among Foreign Direct Investment inflow and the other independent factors. The picked out econometric principles and models employed gets through all the Diagnostic Tests and affirms or verifies the lack of serial correlation, heteroscedasticity, and non-normality problems. CUSUM and CUSUMSQ tests supports and sustain the constancy of the model by supporting the relevance in policy decisions in Kenya.

- Recommendation

The paper's output shows that the several factors such as GDP growth, trade openness, infrastructures and gross saving have significantly influenced the flow of FDI into Kenya.

as a researcher it is an important for the Kenyan government to sets ad come up with suitable effective policies and procedures to heighten and raise these elements since Foreign Direct Investment derives with different advantages for example FDI brings to improving efficiency of the economy, general welfare, drops out savings deficiency problems and difficulty, foreign exchange rate inadequacy and gap of the revenues. Also, the inflow of foreign direct investment results improving the standard of living of the citizens since it causes to increase the level of employment and also technical and management advancement (Todaro, 1977, Mwega, 2009 &Feldstein, 2010).

In my experience of Kenya, the Foreign Direct Investment firms are primarily concentrated in metropolitan regions of Kenya, the government should develop policies that encourage small towns to grow into large cities in order to fascinate FDI corporations to establish branches in these locations. This would have a beneficial impact on the flow of Foreign Direct Investment as they move quickly to establish small scale and large-scale industries, particularly as Kenya implements degeneration and causes services of the government to come nearer to people in all the regions of the country.

National growth domestic product, through which Kenya trades with and between economic blocs, was found to have a substantial favorable effect on the flow of Foreign Direct Investment into Kenya. As a result, Kenya should develop acceptable and standard foreign trade policies with its regional countries, who account for a large portion of the market for Foreign Direct Investment-related businesses.

The Kenyan government should lobby for the improvement of the regional integration relations like EAC, IGAD, and COMESA trading connections because when the economic power improves, Kenya gains an economic benefit in terms of FDI flow.

More importantly, Kenya should open up its economy by establishing trade with outside countries across the globe through the import and export of products and services. So finally, this will increase the flow of FDI by engaging the economy more open to the other of the globe. This necessitates sound governmental policies like export and import restrictions, for example customs charges, international standardized requirements, and similar trade impediments.

Lastly, in order to maintain international investors coming to Kenya and boosting their capital, economic measures should be implemented to raise and increase the level of interest rate on their investments. This is also concordant with the thoughts of neoclassical investment theory, which states that investors are motivated to invest because of the projected rate of return on their capital.

- Gap for further research

Considering the huge benefits connected with Foreign Direct Investment, since it has proven to play significant part in the country. The author recommends that there is need to explore other determinants of FDI in Kenya like Political stability and privatization and their effect on FDI.

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