Institutional Quality and Inward Foreign Direct Investment in Africa: The Moderation Effects of Ease of Doing Business

Diana Kayamba

Assistant Lecturer

Department of Accounting and Finance

Tanzania Institute of Accountancy
Corresponding author email: kayambadiana@yahoo.com

Abstract

This article examines the linkage between institutional quality (IQ) performance and foreign direct investment (FDI) inflows in 45 African countries from 2010 to 2019. The study moderates this relationship by ease of doing business (EDB) which reflects friendliness of the country's business environment. In addition, disparities in terms of IQ, EDB and FDI between African countries in different geographical regions and economic development groups are examined. ANOVA and Post-hoc ANOVA results firstly reveal significant variations in between African countries in terms of IQ, EDB and FDI inflows with the Southern and Northern African regions appearing to perform better. The fixed effects regression estimation results show significant disparities in inward FDI, IQ and EDB between different African regions and countries at different levels of economic development. The results secondly depict unidirectional predictive power of IQ indicators and EDB on FDI inflows. In addition, the study finds insignificant linear relationship between IQ indicators and FDI inflows except for rule of law and control of corruption. Moreover, the findings reveal that the impact of these two (2) indicators on FDI inflows is strengthened by EDB. This study adds to existing knowledge since extant literature on the linkage between IQ and FDI inflows has generated mixed findings. Moreover, the role of EDB on the linkage between IQ and FDI inflows has seldom been studied. The findings emphasize the need for policy makers in African countries to work towards combating corruption and improving rule of law while creating conducive business climate for foreign investors.

Key terms: FDI inflows; Ease of doing business; governance; institutional quality.
DOI: *https://dx.doi.org/10.4314/ajasss.v5i1.7*

1. Introduction

Foreign Direct Investment (FDI) has increasingly been recognized as a catalyst for global economic development courtesy of growing globalization forces as well documented by endogenous growth theories (Aluko et al., 2021; Chenaf-Nicet & Rougier, 2016). FDI has been instrumental in channelling technology transfer to less technologically advanced economies thus helping them to create innovative firms with the potential to boost exports (Yakubu, 2020). This has had a spill over effect by enhancing knowledge and skills of host countries' workforce and creating jobs (Anwar & Sun, 2019). Developing countries such as those in Africa have been struggling to create conducive environment to attract FDI with the aim of helping them to achieve their sustainable development goals (Adegboye et al., 2020).

FDI has been at the centre of African countries' development agenda by recognizing its potential to fuel socio-economic development. The majority of FDI inflows in Africa originate from developed countries in North America, Asia and Europe. The top foreign investors in Africa include United States (US), United Kingdom (UK), China, France, Germany, Italy, Hong Kong, Netherlands and Singapore (UNCTAD, 2020). However, FDI inflows have been unparalleled among African countries with economies like Egypt, Algeria, South Africa and Nigeria experiencing more foreign investment than others. Despite these achievements, Africa's potential to attract more FDI and realize economic development is probably inhibited by instability of governance mechanisms (Gangi & Abdulrazak, 2012). Investors regard the continent as a risky investment area with corruption, nepotism, political instability and lack of rule of law (Samimi et al., 2011).

The inward FDI trends for Africa have been promising with a staggering 13% rise being reported in 2018 far above the global average of 11% (UNCTAD, 2019). However, this momentum was cut short by the COVID-19 pandemic in the early 2020s which slashed 16% of FDI inflows to the continent (UNCTAD, 2021). Above all, the exploitation of vast wealth of Africa's natural resources such as oil, gas and minerals is seen as among the significant factors that attract foreign investors to the continent (Ezeoha & Cattaneo, 2012). As a result, natural resource endowed African countries with poor institutions and autocratic leaderships may offer more advantages than disadvantages to foreign investors interested in the resource sector for rent-seeking motives (Asiedu & Lien, 2011). Though other sectors such as manufacturing and services have been picking up the pace, FDI in those sectors is still low which can be attributed to

less conducive business environment and fragile institutions (Institutional Quality).

Institutional Quality (IQ) plays a profound role in fuelling overall macroeconomic development in a country (Singh & Kailashi, 2020). Foreign investors are attracted to countries with sound institutions and economic structures as these guarantee relatively higher rates of return on investment (Sabir et al., 2019). On the contrary, countries which are characterized by nepotism and corruption scare foreign investors off due to increasing business costs (Mengistu & Adhikary 2011). The study employs the Institutional FDI Fitness Theory to postulate the relationship between IQ and FDI inflows (Wilhems & Witter, 1998). The theory narrates that the quality of a country's institutions is the single most important factor that gives the country an advantage in attracting foreign investments by boosting investors' confidence. Previous empirical studies on the linkage between IQ and FDI inflows have generated mixed results. For instance studies conducted both in Africa and other contexts such as Asia, Europe and North America show positive effects of IQ on FDI (Adegboye et al., 2020; Peres et al., 2018; Gangi & Abdulrazak, 2012; Bouchoucha et al., 2019 Ross, 2019; Mahmood et al., 2019; Cole et al., 2008; Sabir et al., 2019). However, another group of studies such as ones by Subasat & Bellos (2012) and Asamoah et al., 2019) have shown either a negative or insignificant influence of IQ on FDI inflows to host countries. Therefore, this study sought to add some fresh insights to this debate on the role of IQ in attracting foreign investors, drawing evidence from Africa.

It has been documented that IQ has a potential to attract FDI inflows, but this relationship can be magnified by attractiveness of host country's business environment (Jiang & Martek, 2021). In this kind of environment, it is fairly easy to start a business, obtain licenses, register property items, obtain credit and pay taxes (Amponsah & Sarpong, 2020; Morris & Aziz, 2011). Moreover, conducive business environment allows easy market entry or exit as well as lowering operating costs (Amponsah & Sarpong, 2020; Morris & Aziz, 2011). Vogiatzoglou (2016) provides evidence to support the tremendous role of host country's business environment in enticing foreign investors to ASEAN countries. These findings are supported by Morris and (Aziz, 2011) whose findings indicated that two factors, namely "registering property" and "trading across borders", were significant in improving FDI inflows in Sub-Sahara Africa. Unlike previous studies that treated EDB as an explanatory variable, the current study employs the variable as a moderator to examine the linkage between IQ and FDI inflows. So, it adds to existing literature by linking IQ, EDB and FDI

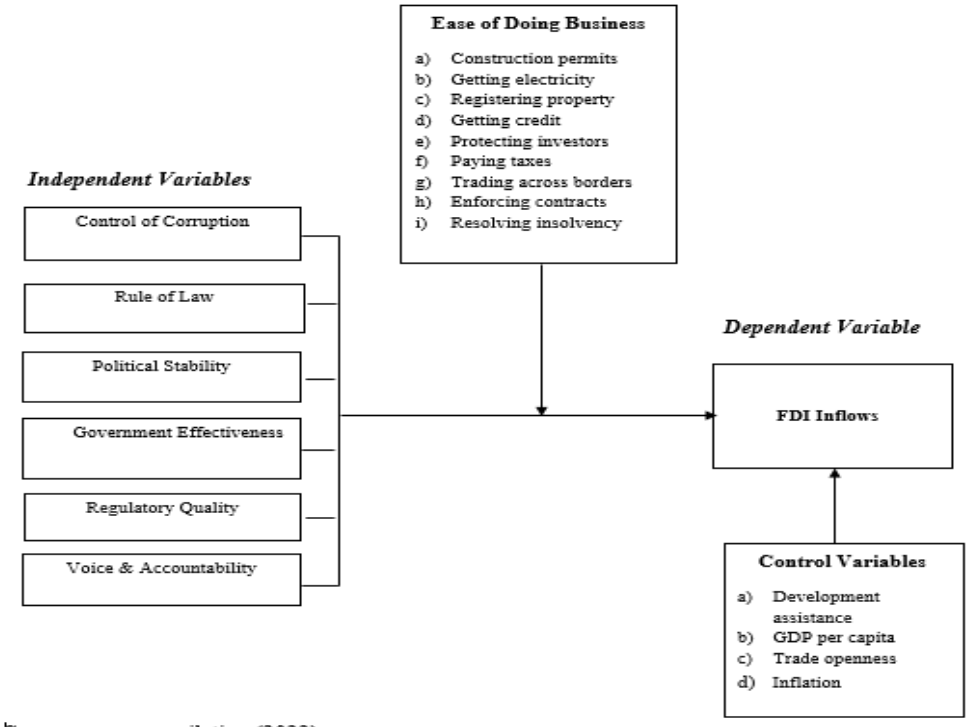
Inflows in the same model as opposed to extant studies, the majority of which have examined effects of EDB and IQ on FDI inflows individually.

Countries in different regions and with distinct levels of economic development have unparalleled levels of FDI inflows, IQ and EDB. This may be a result of disparities in terms of openness to international trade, human skills, macroeconomic stability and market size which may enable them to attract foreign investors at different rates (Botrić et al., 2006). The differences in IQ in different regions can be attributed to these regions' histories, natural resource endowments i.e. resource curse and economic openness (Lehne et al., 2014). The study sought to examine disparities in different African regions in terms of IQ, EDB and FDI inflows to help examine the linkages between the three constructs. The study generally sought to provide answers to following three research questions:

a) Are there disparities in terms of IQ, EDB and FDI inflows in African countries with different economic development levels and geographical locations?
b) Does IQ influence FDI inflows in African countries?
c) How does EDB moderate the effects of IQ on FDI Inflows in Africa?

The relationships between main variables of interest are summarised in the conceptual framework presented in Figure 1.

Figure 1: The conceptual framework



Source: own compilation (2022)

2. Methodology

2.1 Data and Variables

The study employed a dataset of 45 African countries from 2010 to 2019. The timeframe was purposefully selected based on the availability of balanced dataset for the three main variables. The available EDB statistics date back to as far as 2010 with the last of year of publication being 2019, following the suspension of EDB index by the World Bank (World Bank, 2019). Nine countries were dropped from the dataset as they contained incomplete data on some of the variables, especially governance indicators. These are Benin, Cape Verde, Comoros, Eritrea, Lesotho, Malawi, Sao Tome & Principe, Somalia and South Sudan. Studying the African context is vital as the continent has experienced a rapid rise in both Greenfield and Brownfield FDI even surpassing the global average. However, the main obstacle to attraction of more sustainable FDI has been the investment atmosphere in the continent which is generally seen as less attractive (UNCTAD, 2019). The timeframe was purposefully chosen because the EDB statistics accessed dated back to as far as 2010 and the final year of publication was 2019 (World Bank, 2021a). The panel dataset involves a total of 450

observations and it is well balanced. The data sources for each variable are presented in Table 1.

Table 1: Data sources

No.	Variable	Source
1.	FDI Inflows (% of GDP)	https://data.worldbank.org/indicator/BX.KLT.DINV.WD.GD.ZS
2.	Institutional Quality (IQ) indicators	https://databank.worldbank.org/source/worldwide-governance-indicators
3.	Ease of Doing Business (EDB)	https://www.doingbusiness.org/en/data
4.	Development Assistance (DA)	https://data.worldbank.org/indicator/DT.ODA.ALLD.CD
5.	GDP per Capita (GDPC)	https://data.worldbank.org/indicator/NY.GDP.PCAP.CD
6.	Trade Openness (TO)	https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS
7.	Inflation Rate (IR)	https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG

The descriptions of the variables incorporated in the study are presented in Table 2;

Table 2: Variables and their descriptions

Variables	Description
Dependent variable	
FDI Inflows (% of GDP)	This measure is appropriate for comparison purposes as it's not based on the value of FDI inflows; rather it's proportional to a country's GDP. The measure was also used by Odhiambo (2021) and Sabir et al. (2019).
Independent variables	
Institutional Quality	This is represented by 6 measures which were designed by Kaufman et al. (1999). These measures range between $2.5 \geq 0 \geq -2.5$, and country's governance is calculated as an arithmetic mean of scores on the 6 variables (Kaufman and Kraay, 2007). The 6 IQ measures are as follows:

Variables	Description
a) **Voice & Accountability (V&A)**	This examines perceptions of the magnitude at which a country's citizens are free to take part in electing their government as well as freely voice out their opinions on their governments.
b) **Political Stability (PS)**	This examines the perceived possibility that the government will be destabilized or overthrown by unconstitutional or violent means i.e. coup d'état which can incite violence and terrorism.
c) **Government Effectiveness (GE)**	This measures the perceived quality of public services e.g. education and the degree of government independence from political pressures, the quality of policy formulation and their implementation as well as the credibility of the government's commitment to such policies.
d) **Regulatory Quality (RQ)**	This measures the perception of the government's ability to devise and put into action sound policies and regulations that foster the development of the private enterprises.
e) **Rule of Law (RL)**	This measures perceptions of the magnitude at which agents have confidence and respect the rules of society especially the quality of contract enforcement, law enforcement agencies and the possibility of crime and violence.
f) **Control of Corruption (CC)**	This measures the perception of corruption practices in which public power is used for private gain which includes both large i.e. grand and small forms of corruption as well as misappropriation of state resources for private motives.
Moderating variable	
Ease of Doing Business	This is the average of ten (10) indicators which measure perceived simplicity in: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency.
Control variables	
Development Assistance (DA)	This is measured by Net official development assistance (ODA) received as a percentage % of GDP. ODA is crucial for

Variables	Description
	developing countries to foster development projects which attract FDI (Lemi, 2011).
GDP per Capita (GDPC)	This measures the rate of economic growth per capita and is among the factors that make a country attractive to FDI as a growing economy is conducive for business (Botrić and Škuflić, 2006).
Trade Openness (TO)	This is measured as the sum of exports and imports of goods and services measured as a share of gross domestic product. Host country's trade openness for instance engagement in Free Trade Area (FTA) agreements may make it attractive to foreign investors (Liargovas and Skandalis, 2012).
Inflation Rate (IR)	It is measured on the basis of consumer price index or GDP deflator. This is a macroeconomic measure of economic stability; host country's low inflation rate makes it an attractive destination for FDIs (Vasileva, 2018).

2.2 Methods

The study firstly employed ANOVA and Post-hoc ANOVA to estimate the significance of disparities in IQ, EDB and FDI inflows among African countries in different geographical regions and levels of economic development (Kansheba & Marobhe, 2022). Secondly, panel Granger causality test was used to examine the magnitude at which IQ indicators and EDB contain information that can be used to predict FDI inflows (Dumitrescu & Hurlin, 2012). The study then employed fixed effects estimations to examine the postulated relationships between IQ, EDB and FDI inflows (Adegboye et al., 2020). The main advantage of panel FE estimations over classical ordinary least squares (OLS) methods is that it limits potential sources of biases to time-varying variables that correlate with the treatment as well as with the outcome over time (Collischon & Eberl, 2020).

The econometric model used is as follows:

$$Y_{c,y} = \alpha_c + \beta_1(IQ_{i,c,y} \times EDB_c) + \beta_2(IQ_{i,c,y}) + \beta_3(EDB_c) + \sum_{k=0}^{k} \beta_k X_c^k + \acute{\varepsilon}_{c,y} \quad \text{.....(i)}$$

Whereby;

Y = The dependent variable (IQ); c = Country; y = Time in years; i = Individual IQ indicator; α_c = A constant term; β = Coefficient of independent/moderating

variables; $IQ_{i,c,y}$ = Individual IQ indicator for a given country in a given year; $IQ_{i,c,y} \times EDB_c$ = the first interaction term which means the effects of country's IQ on FDI Inflows is contingent upon EDB; X_c^k = a set of country level control variables that include DA, GDPC, TO and IR; $\acute{\varepsilon}_{c,d}$= Error term.

2.3 Regression model goodness-of-fit and panel Granger causality pre-estimation diagnostics

A series of robustness tests were conducted prior to carrying out main analyses. Model specification diagnostics to select between fixed effects (FE) and random effects (RE) models using Hausman test were firstly conducted (Hausman & Taylor, 1981). The results suggested that FE panel regression was more appropriate than the RE in estimating the predefined relationships as the p-value of 0.0343 was less than the 0.05 level (Marobhe & Kansheba, 2022). Secondly, the study carried out Variance Inflation Factor (VIF) test to check for presence of multicollinearity problem among the independent variables and found no evidence of the problem as VIFs for all the variables were below the cut-off point of 5 (Marobhe & Dickson, 2022). Thirdly, the Breush-Pagan test for heteroskedasticity was conducted and found no presence of the phenomenon as the p-value of 0.06341 was greater than the 0.05 level (Marobhe, 2021b). Lastly, the link test for regression model specification indicated that the model was generally correctly specified as indicated by the p-value of 0.06341which exceeds the 0.05 threshold (Marobhe & Kansheba, 2022). The Levin-Lin-Chu unit-root test for panel unit root was also performed before making causality estimations (Levin et al., 2002). The results revealed that for all IQ indicators, EDB and FDI Inflows had p-values less than 0.05 thus indicating absence of unit root. The results for model specification are summarized in Appendix 1.

3. Results and Discussions

3.1 Results

Descriptive statistics

The descriptive statistics for the study variables are presented in Table 3. The results firstly reveal negative average values for all 6 IQ indicators. Since IQ scores range between $2.5 \geq 0 \geq -2.5$, the negative mean for the African continent indicate overall poor IQ performance in relation to Europe and North America. The overall deviations in IQ indicators are not very significant, indicating that the majority of African countries are more or less similar in terms of IQ performance. The mean EDB is 50, which is regarded as average performance in relation to other regions. The mean FDI inflows (% of GDP) for the continent were 5% per annum, which is promising and shows improvements over years.

Table 3: Descriptive statistics

Variable	Mean	SD	Min	Max
FDI Inflows	5.047	9.963	-11.625	103.337
Voice & Accountability	-0.653	0.679	-2.000	0.941
Political Stability	-0.657	0.835	-2.699	1.104
Government Effectiveness	-0.743	0.612	-1.922	1.057
Regulatory Quality	-0.662	0.584	-2.347	1.127
Rule of Law	-0.681	0.586	-1.848	0.975
Control of Corruption	-0.672	0.607	-1.826	1.027
Ease of Doing Business	50.332	10.597	26.850	80.337
Development Assistance	6.125	7.227	0.004	77.868
Trade Openness	75.489	41.750	16.141	347.997
Inflation	5.996	6.875	-3.233	63.293
GDP per capita	3.216	0.452	2.370	4.337

Pairwise Correlations

The correlation results are presented in Table 4. The results firstly show significant positive correlations between FDI inflows and only 2 IQ indicators namely voice & accountability and political stability. Moreover, significant positive correlations are revealed between all 6 IQ indicators and EDB. These preliminary results provide early evidence of the degree of connectedness between IQ indicators, EDB and FDI inflows.

Table 4: Pairwise correlation results

	FDI	V&A	PS	GE	RQ	RL	CC	EDB	DA	TO	IR	GDPC
FDI	1.00											
VA	0.09*	1.00										
PS	0.14*	0.53*	1.00									
GE	-0.06	0.70*	0.63*	1.00								
RQ	-0.04	0.75*	0.63*	0.88*	1.00							
RL	-0.02	0.75*	0.68*	0.94*	0.90*	1.00						
CC	0.04	0.69*	0.64*	0.88*	0.82*	0.90*	1.00					
EDB	-0.06	0.60*	0.55*	0.86*	0.80*	0.85*	0.76*	1.00				
DA	0.42*	-0.06	-0.17*	-0.32*	-0.16*	-0.26*	-0.12*	-0.29*	1.00			
TO	0.30*	0.09	0.37*	0.13*	0.07	0.11*	0.20*	0.10*	-0.05	1.00		
IR	-0.01	-0.14*	-0.21*	-0.15*	-0.17*	-0.11*	-0.15*	-0.04	0.02	-0.21*	1.00	
GDPC	-0.09	0.19*	0.44*	0.46*	0.24*	0.41*	0.33*	0.42*	-0.64*	0.42*	-0.11*	1.00

*Significant @ 0.05

ANOVA and Post-hoc ANOVA results

The study conducted ANOVA and Post-Hoc ANOVA tests to examine disparities in FDI inflows, IQ and EDB among African countries in different regions and economic development levels (Table 5). The results firstly reveal significant differences among countries in different regions and economic development levels in relation to the three (3) aforementioned variables.

Table 4: ANOVA and Post-Hoc ANOVA results

ANOVA & Post-Hoc ANOVA

ANOVA	**FDI Inflows**		**IQ**		**EDB**	
	F-Stat	**p value**	**F-Stat**	**p value**	**F-Stat**	**p value**
Region	11.533	0.000***	12.829	0.000***	3.6931	0.006***
Economic Development	13.176	0.000***	12.841	0.000***	8.9564	0.000***
Post-Hoc ANOVA	**FDI Inflows**		**IQ**		**EDB**	
Regions	diff	p value	diff	p value	diff	p value
Middle Africa - East Africa	-1.255	0.898	-0.672	0.000***	-15.926	0.000***
North Africa - East Africa	-3.862	0.090	-0.402	0.000***	-2.043	0.488
Southern Africa - East Africa	-3.900	0.186	0.647	0.000***	7.887	0.000***
West Africa – East Africa	0.748	0.971	-0.183	0.010***	-8.020	0.000***
North Africa – Middle Africa	-2.608	0.531	0.270	0.006***	13.884	0.000***
Southern Africa–Middle Africa	-2.645	0.637	1.318	0.000***	23.813	0.000***
West Africa – Middle Africa	2.003	0.595	0.489	0.000***	7.906	0.000***
Southern Africa–North Africa	-0.038	1.000	1.049	0.000***	9.929	0.000***

West Africa – North Africa	4.610	0.021	0.219	0.018***	-5.978	0.000***
West Africa – Southern Africa	4.648	0.066	-0.829	0.000***	-15.907	0.000***
Economic Development	diff	p value	diff	p value	diff	p value
L. Income - H. Income	-9.080	0.040***	-1.076	0.000***	-12.320	0.000***
LM. Income – H. Income	-11.717	0.002***	-0.942	0.000***	-8.958	0.028
UM. Income – H. Income	-12.551	0.001***	-0.591	0.005***	-5.743	0.358
UM. Income – L. Income	-4.0794	0.064	0.733	0.000***	14.661	0.000***
LM. Income – L. Income	-2.637	0.178	0.134	0.201	3.362	0.029***
UM. Income – L. Income	-3.471	0.111	0.485	0.000***	6.578	0.000***
UM. Income – LM. Income	-0.834	0.970	0.351	0.000***	3.215	0.085***

L. Income = Low income, H. Income = High Income, LM. Income = Lower Middle Income, UM. Income = Upper Middle Income. *** Statistical significance at 5%

The post-hoc ANOVA was intended to help show which groups were different in terms of categorical variables with more than two groups (Kansheba & Marobhe, 2022). In this case, there were four (4) groups in terms of economic development level as well as five (5) groups with respect to regions. In terms of FDI inflows, the results seem to indicate non-significant differences among different groups of regions. In terms of IQ, the results reveal significant group wise differences among regions with Northern and Southern African regions appearing to outperform others. There also appear to be significant group wise differences between majority of regions in terms of EDB with Northern and Southern African regions showing better performance as opposed to other regions.

For the case of group wise comparisons between countries with different economic development levels, there were significant group wise differences between low income and high income, lower middle income and high income

and upper middle income and high income countries in terms of FDI inflows. There were also significant group wise differences between countries at different economic development levels in terms of IQ with upper middle income countries outperforming other groups. These results are similar with those of group-wise comparisons in terms of economic development in EDB with upper middle income countries performing better than others.

Panel Granger non-causality test results

Panel Granger causality test was conducted to examine the extent to which IQ indicators and EDB contain information that can predict FDI inflows in Africa (Dumitrescu & Hurlin, 2012). The results presented in Table 5 reveal that all the 6 indicators of IQ as well as EDB Granger cause FDI Inflows in Africa. The causality appears to be unidirectional as it runs from IQ indicators and EDB to FDI inflows alone.

Table 5: Panel Granger causality test results

	Z-bar tilde
V&A on FDI Inflows	2.25*
FDI Inflows on V&A	1.2664
PS on FDI Inflows	2.36*
FDI Inflows on PS	0.03
GE on FDI Inflows	2.12*
FDI Inflows on GE	0.72
RQ on FDI Inflows	5.67*
FDI Inflows on RQ	0.99
RL on FDI Inflows	2.77*
FDI Inflows on RL	-0.46
CC on FDI Inflows	1.59*
FDI Inflows on CC	0.13
EDB on FDI Inflows	6.08*
FDI Inflows on EDB	-0.09

***significant at 0.05**

Fixed effects panel estimations results

The study ultimately conducted FE panel estimations to assess linkage between IQ and FDI inflows as well as the moderation role of EDB. A total of 6 estimations were conducted to examine how each IQ indicator was related to FDI inflows and the extent to which EDB moderates the relationship (Table 6). Model 1 is the base line model comprising independent variables: (IQ indicators), control variables and the dependent variable (FDI Inflows). In model 2, the moderating variable i.e. EDB was added to the panel regression model. Lastly in Model 3, the interaction variables, namely (G.E*EDB/ RQ*EDB/ V&A*EDB/

RL*EDB/ CC*EDB/ PS*EDB) were each added to its respective model for final analysis.

Table 6: FE estimates for linkage between IQ indicators, ease of doing business and FDI inflows

FDI Inflows	Government Effectiveness			Regulatory Quality			Voice & Accountability		
	Model1	**Model2**	**Model3**	**Model1**	**Model2**	**Model3**	**Model1**	**Model2**	**Model 3**
GE/RQ/V&A	0.89	1.64	9.11*	0.20	0.36	4.771	0.431	0.55	1.85
EDB	-	0.06	0.16	-	0.01	0.06	-	0.02	0.04
G.E*EDB/RQ*EDB/ V&A*EDB	-	-	0.14	-	-	0.07	-	-	0.02
DA	0.71*	0.70*	0.73*	0.70*	0.70*	0.72*	0.70*	0.70*	0.70*
TA	0.05*	0.05*	0.05*	0.05*	0.05*	0.05*	0.05*	0.05*	0.05*
IR	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.04
GDPC	2.23	2.37	3.10	2.70	2.77	3.29	2.64	2.77	2.95
Cons	-8.97	-5.89	-2.54	-10.95	-10.41	-9.2	-10.69	-10.17	-9.71
R-Square	0.47	0.47	0.51	0.47	0.47	0.49	0.49	0.49	0.50
Number of Observations	450	450	450	450	450	450	450	450	450

	Rule of Law			**Control of Corruption**			**Political Stability**		
	Model1	Model2	Model3	Model1	Model2	Model3	Model1	Model2	Model3
RL/ CC/PS	1.01*	1.93*	10.19*	0.79*	1.25*	11.39*	1.22	1.38	5.05

FDI Inflows	Government Effectiveness			Regulatory Quality			Voice & Accountability		
	Model1	Model2	Model3	Model1	Model2	Model3	Model1	Model2	Model3
EDB		0.07*	0.17*	-0.04*		0.17*	-0.04		0.08
RL*EDB/CC*EDB/ PS*EDB			-0.16*			-0.19*			0.08
DA	0.70*	0.70*	0.72*	0.70*	0.69*	0.71*	0.69*	0.69*	0.70*
TO	0.05*	0.05*	0.05*	0.05*	0.05*	0.05*	0.05*	0.04*	0.05*
IR	-0.05	-0.06	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05
GDPC	2.19	2.39	3.21	2.37	2.56	3.42	1.78	2.03	2.42
Cons	-8.84	-5.25	-2.43	-9.47	-7.58	-2.76	-7.17	-5.87	-5.05
R-Square	0.47	0.47	0.52	0.47	0.46	0.51	0.49	0.49	0.52
No of Observations	450	450	450	450	450	450	450	450	450

*Significant at 0.05

The FE panel estimation results firstly show the results of the relationship between each IQ indicator and FDI inflows. The results, as shown in Model 1, reveal non-significant positive effects of each IQ indicator on FDI inflows in Africa except for rule of law and control of corruption. Secondly, the study introduces the moderation effects of EDB on the relationship between each IQ indicator and FDI inflows, as depicted in Model 2 and 3. The results reveal non-significant positive moderation role of EDB on the relationship between FDI inflows and individual IQ indicators, namely government effectiveness, regulatory quality, voice & accountability and political stability. On a different note, the results reveal significant positive moderation role of EDB on the relationship between two IQ indicators, namely rule of law and control of corruption.

3.2 Discussion

This article examines the linkage between IQ and FDI inflows in the African context. The study specifically moderates this relationship using EDB which reflects individual countries' business environment conduciveness in terms of starting and operating business. Extant literature has shown the tremendous role played by IQ in attracting foreign investors. However, the study postulates that this relationship can be influenced by countries' EDB as for instance a peaceful and tranquil country but with complicated business procedures e.g. registration, obtaining licenses, access to electricity can make it less enticing to foreign firms. The preliminary results firstly confirm overall poor IQ for all 6 indicators for the African continent which can be attributed to presence of bad political institutions rather than cultural diversity and geographical factors as commonly thought (Alhassan & Kilishi, 2019). The results further indicate that the continent is not performing well in terms of EDB as its performance is far below the global average of 63%. The continent still faces headwinds in relation to complexities involved in starting a business, obtaining construction permits, getting electricity and trading across borders (African Union Development Agency-NEPAD, 2020). Moreover, the continent appears to be improving in terms of attracting FDI as its overall figure as a per cent of GDP exceeds the global average of 4.17%. This can be explained by increasing flows of FDI especially from China especially in resources sectors such as oil and gas which are needed to support the massive energy needs of African countries' massive economies (UNCTAD, 2019).

The main results firstly show significant disparities among African countries in different geographical regions and economic development levels in terms of FDI inflows, IQ and EDB. For the case of FDI inflows, disparities can be explained by various factors including economic diversification and resources endowments. For instance in Southern Africa, South Africa is able to attract most foreign investors as its economy is well diversified across different sectors such as services and technology with less reliance on resources sectors as other resource rich African states (Ernest & Young, 2021). For the case of IQ performance Northern and Southern African countries outperformed other regions which can partly explain why these 2 regions are among the top recipients of foreign investment in Africa. The results also indicate a higher magnitude of differences in IQ, EDB and FDI inflows between African countries with different economic development levels. The results support the presence of linkage between economic development and the ability of the country to attract FDI within its borders (Abdouli & Hammami, 2020). Moreover, the results show that

IQ indicators and EDB provide vital information to predict FDI inflows to the continent. The nature of causality supports postulation by Ponce et al. (2019).

In relation to the impact of IQ indicators on FDI inflows, the findings depict a weak linkage between each IQ indicators and FDI inflows with exception of rule of law and control of corruption. The study therefore provides evidence to negate the findings from previous studies conducted in the African context that show pronounced role of IQ in attracting foreign investment to the continent (Adegboye et al., 2020; Sabir et al., 2019; Gangi & Abdulrazak, 2012; Bouchoucha et al., 2019). The findings support those by Asamoah et al. (2019) that also portray an insignificant effect of IQ on FDI inflows in Africa. These results may be explained by the fact that most African countries are endowed with resources such as oil, gas and minerals which have unfortunately turned into a resource curse (Kansheba & Marobhe, 2022). Foreign corporations in the resources sector usually tend to favour autocratic and corrupt systems to win and obtain favourable terms in extraction contracts, leaving host countries dependent on resource rents most of which end up embezzled by corrupt politicians (Asiedu & Lien, 2011). This can be shown by high profile cases opened against multinational corporations such as Royal Dutch Shell, UK's Glencore and Italy's Eni for bribery in obtaining rights to extract resources in Africa. However, after introducing the moderation role of EDB, only 2 IQ indicators, namely rule of law and control of corruption appear to have a pronounced positive impact on FDI inflows to the continent. Since 2010 the African continent has been experiencing gradual rise in foreign investment in non-resource sectors thus making countries like South Africa more economically diversified. These include manufacturing, logistics, communications, IT services, chemicals, and renewable energy (Qiang et al., 2021). These investors prefer countries that are less corrupt and have rules that respect the country's laws which are supported by conducive business environment e.g. access to electricity, simplified procedures to register businesses and obtain licenses and permits.

4.0 Conclusions and Recommendations

This article examines the effect of countries' IQ performance on FDI inflows in 45 African countries. The study moderates this relationship by EDB which reflects how friendly the respective host country's business environment is. Unlike previous studies, the author postulates that IQ can profoundly impact FDI inflows only if the underlying business environment is friendly. The findings firstly reveal pronounced variations in levels of FDI inflows, IQ and EDB between African countries in different regions and with different levels of economic development. Secondly, the findings reveal unidirectional predictive

power of IQ indicators and EDB on FDI inflows. The study further shows that IQ plays an insignificant role in attracting foreign investors to the continent. However, the only way that IQ through rule of law and control of corruption can impact FDI inflows is if the underlying business environment is friendly.

The biggest takeaway for policy makers is the fact that in order to entice foreign investors, countries should strive to do institutional reforms e.g. curbing corruption and enforcing rule of law as well as improve their business environment. Red tapes in starting businesses, obtaining licenses and paying taxes should be removed to entice foreign investors. Furthermore, African countries should step up their efforts to improve infrastructure, e.g. access to cheap and stable electricity, business registration procedures and cross border activities. It would be meaningless to have rule of law and curb corruption while infrastructures are poorly developed and tax procedures are complex and involve multiplicity of taxes with higher rates. The study provides strong theoretical implications by furthering the debate on the presence of a strong direct link between IQ and FDI inflows as depicted by the institutional FDI fitness theory. The study provides evidence to support findings of previous studies on IQ and FDI Inflows which postulate positive relationship between the two constructs. However, the study shows that IQ indicators do not affect FDI inflows similarly; hence it is vital to scrutinize each IQ indicator individually rather than collectively. The study is however not without limitations. Firstly, trends in Africa show varying magnitudes of FDI inflows in extractive and non-extractive sectors, e.g. manufacturing, technology etc. So, future researchers can examine the phenomenon in both of extractive and non-extractive sectors to examine disparities in how IQ influences FDI in different sectors. Unfortunately, complete data on FDI in the extractive sector for African countries could not be retrieved.

REFERENCES

Abdouli, M. & Hammami, S. (2020), 'Economic Growth, Environment, FDI Inflows, and Financial Development in Middle East Countries: Fresh Evidence from Simultaneous Equation Models', Journal of Knowledge Economics, 11, pp. 479–511. https://doi.org/10.1007/s13132-018-0546-9.

Adegboye, F., Osabohien, R., Olokoyo, F., Matthew, O. and Adediran, O. (2020), 'Institutional quality, foreign direct investment, and economic development in sub-Saharan Africa', Humanities and Social Sciences Communications, 7, pp.38-48. doi:10.1057/s41599-020-0529-x.

African Union Development Agency-NEPAD (2020), 'World Bank's ease of doing business 2020: Headwinds in many African economies'

https://www.nepad.org/news/world-banks-ease-of-doing-business-2020-headwinds-many-african-economies (accessed on 12th July 2022).

Alhassan, A. and Kilishi, A.A. (2019), 'Weak economic institutions in Africa: a destiny or design?", International Journal of Social Economics', 46 (7), pp. 904-919. https://doi.org/10.1108/IJSE-12-2018-0651.

Aluko, O., Ibrahim, M. & Atagbuzia, M. (2021), 'On the causal nexus between FDI and globalization: Evidence from Africa', The Journal of International Trade & Economic Development, 30 (2), pp. 203-223. doi:10.1080/09638199.2020.1823460.

Amoroso, S. & Müller, B. (2017), 'The short-run effects of knowledge-intensive greenfield FDI on new domestic entry', Journal of Technology Transfer. doi:10.1007/s1096 1-017-9575-y.

Amponsah, E. & Sarpong, B. (2020), 'Ease of doing business and foreign direct investment: case of Sub-Saharan Africa', International Advances in Economic Research, 26, pp. 209–223. doi:10.1007/s11294-020-09798-w.

Anwar, S. & Sun, S. (2019), 'Firm heterogeneity and FDI-related productivity spillovers: A theoretical investigation', The Journal of International Trade & Economic Development, 28(1), pp. 1-10, DOI: 10.1080/09638199.2018.1482947.

Asamoah, L., Mensah, E. & Bondzie, E. (2019), 'Trade openness, FDI and economic growth in sub-Saharan Africa: do institutions matter? Transnational Corporations Review, 11(1), pp. 65-79. doi:10.1080/19186444.2019.1578156.

Asiedu E, Lien D (2011), 'Democracy, foreign direct investment and natural resources', Journal of International Economics, 84(1), pp. 99–111.

Bontempo, P. (2021), 'Countries' governance and competitiveness: business environment mediating effect', RAUSP Management Journal, pp.1-16. doi:10.1108/RAUSP-11-2020-0253.

Bota-Avram, C. (2014), 'Good governance and doing business: Evidence from a cross-country survey', Transylvanian Review of Administrative Sciences, 10 (41), pp. 27-45.

Botrić, V. & Škuflić, L. (2006), 'Main determinants of foreign direct investment in the Southeast European Countries', Transition Studies Rev, 13, pp. 359–377. doi:10.1007/s11300-006-0110-3.

Bouchoucha, N. & Ismahen, Y. (2019), 'Governance and foreign direct investment: A comparative analysis between low and middle income African countries', MPRA Paper, pp. 95944.

Chakrabarti, S. & Ghosh, I. (2014), 'FDI in Africa: A comparison of the Indian and Chinese experience', Procedia - Social and Behavioral Sciences, 157, pp. 340 – 352.

Chenaf-Nicet, D. & Rougier, E. (2016), 'The effect of macroeconomic instability on FDI flows: A gravity estimation of the impact of regional integration in the case of Euro-Mediterranean agreements', International Economics, 145, pp. 66–91.

Cole, M., Elliott, R. & Zhang, J. (2009), 'Corruption, governance and FDI location in China: A province-level analysis', The Journal of Development Studies, 45(9), pp. 1494-1512. doi:10.1080/00220380902890276.

Collischon, M. & Eberl, A. (2020), 'Let's Talk About Fixed Effects: Let's Talk About All the Good Things and the Bad Things', Köln Z Soziol, 72, pp. 289–299. https://doi.org/10.1007/s11577-020-00699-8

Çule, M. & Fulton, M. (2013), 'Corporate governance and subjective well-being', Applied Economics Letters, 20(4), pp. 364-367. doi:10.1080/13504851.2012.705424.

Dumitrescu, E.-I., and C. Hurlin. 2012, 'Testing for Granger non-causality in heterogeneous panels', Economic Modelling, 29, pp.29: 1450–1.

Ernest & Young (2021), 'Africa Attractiveness Report 2021: Africa poised for a reset', Are investors forward thinking? https://www.ey.com/en_za/attractiveness/21/africa-attractiveness-report-(accessed on 12th July 2022).

Ezeoha, A. & Cattaneo, N. (2012), 'FDI flows to Sub-Saharan Africa: The impact of finance, institutions, and natural resource endowment', Comp Econ Stud, 54, pp. 597–632. doi:10.1057/ces.2012.18.

Gangi, Y. and Abdulrazak, R. (2012), 'The impact of governance on FDI flows to African countries', World Journal of Entrepreneurship, Management and Sustainable Development, 8 (2), pp. 162 – 169. doi:10.1108/20425961211247761.

Hausman, J. & Taylor, W. (1981), 'Panel data and unobservable individual effects', Econometrica, 49 (6), pp. 1377-1398. doi:10.2307/1911406.

Jiang, W. & Martek, I. (2021), 'Political risk analysis of foreign direct investment into the energy sector of developing countries', Journal of Cleaner Production, 302, pp. 1-12. https://doi.org/10.1016/j.jclepro.2021.127023.

Kansheba, J & Marobhe, M. (2022), 'Institutional quality and resource-based economic sustainability: the mediation effects of resource governance', SN Business & Economics, 2(19) https://doi.org/10.1007/s43546-021-00195-x.

Kaufman, D., Kraay, A. & Zoido-lobaton, P. (1999), 'Governance matters', The World Bank.

Kaufmann, D. & Kraay, A. (2007), 'Governance indicators: Where are we, where should we be going?', Policy Research Working Paper, pp. 4370.

Lehne, J., Mo, J. & Plekhanov, A. (2014), 'What determines the quality of economic institutions? Cross-country evidence', European Bank for Reconstruction and Development. Working Paper No. 171.

Lemi, A. (2011), 'Do official development aid and foreign direct investment promote good governance in Africa' In: Nault D.M., England S.L. (eds) Globalization and Human Rights in the Developing World. Global Ethics Series, Palgrave Macmillan, London. https://doi.org/10.1057/9780230316966_6.

Levin, A., Lin, C. & Chu, C. (2002), 'Unit root tests in panel data: Asymptotic and finite-sample properties', Journal of Econometrics, 108, pp. 108: 1–24.

Liargovas, P. & Skandalis, K. (2012), 'Foreign direct investment and trade openness: The case of developing economies', Soc Indic Res, 106, pp. 323–331. doi:10.1007/s11205-011-9806-9.

Mahmood, N., Shakil, H., Akinlaso, M. & Tasnia, M. (2019), 'Foreign direct investment and institutional stability: who drives whom?', Journal of Economics, Finance and Administrative Science, 24(47), pp. 145-156. doi:10.1108/JEFAS-05-2018-0048.

Marobhe, M & Dickson, P (2022), 'Bearish conditions and volatility persistence during COVID-19: Can microchip stocks weather the storm?', Review of Behavioral Finance, pp.1-23. https://doi.org/10.1108/RBF-11-2021-0235.

Marobhe, M & Kansheba, J. (2022), 'Stock market reactions to COVID-19 shocks: do financial market interventions walk the talk?', China Finance Review International, pp.1-23. https://doi.org/ 10.1108/CFRI-01-2022-0011.

Marobhe, M. (2021b), 'Investors' reactions to COVID-19 related announcements: evidence from the cargo shipping industry', Review of Behavioral Finance pp.1-22. https://doi.org/10.1108/RBF-04-2021-0071.

Mengistu, A. & Adhikary, B. (2011), 'Does good governance matter for FDI inflows? Evidence from Asian economies', Asia Pacific Business Review, 17, pp. 281–299.

Morris, R. & Aziz, A. (2011), 'Ease of doing business and FDI inflow to Sub-Saharan Africa and Asian countries', Cross Cultural Management, 18 (4), pp. 400-411. doi:10.1108/13527601111179483.

Mundell, R. (1957), 'International trade and factor mobility', The American Economic Review, pp. 321- 335.

Odhiambo, N. (2021), 'Foreign direct investment and economic growth in Kenya: An Empirical Investigation', International Journal of Public Administration, pp.1-13. doi:10.1080/01900692.2021.1872622.

Peres, M., Ameer, W. & Xu, H. (2018), 'The impact of institutional quality on foreign direct investment inflows: Evidence for developed and developing countries', Economic Research-Ekonomska Istraživanja, 31 (1), pp. 626-644, doi:10.1080/1331677X.2018.1438906.

Ponce, L., Navarro, R. & Ramırez, R. (2019), 'Causality between Chinese investment in Latin America and the governance indicators' Competition and Regulation in

Qiang, C., Kusek, P., Steenber, V. & Viney, G. (2021), 'The road to recovery in Sub-Saharan Africa: Capitalizing on transformative opportunities from shifting FDI patterns'. https://blogs.worldbank.org/africacan/road-recovery-sub-saharan-africa-capitalizing-transformative-opportunities-shifting-fdi (accessed on 13th July 2022).

Ricardo, D. (1817), 'On the Principles of Political Economy and Taxation (John Murray, London)', In: Sraffa, P., Ed., The Works and Correspondence of David Ricardo, Vol. 1, Cambridge University Press, Cambridge, 1951.

Ross, A. (2019), 'Governance infrastructure and FDI flows in developing countries', Transnational Corporations Review, 11 (2), pp. 109-119. doi:10.1080/19186444.2019.1640572.

Sabir, S., Rafique, A. & Abbas, K. (2019), 'Institutions and FDI: Evidence from developed and developing countries', Financial Innovation, 5, pp. 8. doi:10.1186/s40854-019-0123-74.

Samimi, A., Monfared, M., Moghaddasi, R. & Azizi, K. (2011), 'Political stability and FDI in OIC countries', Journal of Social and Development Sciences, 1, pp.1.

Singh, B. & Kailash, P. (2020), 'Institutional quality and economic performance in South Asia', Journal of Public Affairs. doi:10.1002/pa.2401.

Smith, A. (1776), 'An inquiry into the nature and causes of the wealth of nations', London: George Routledge and Sons.

Subasat, T. & Bellos, S. (2013), 'Governance and foreign direct investment in Latin America: A panel gravity model approach', Latin American Journal of Economics-formerly Cuadernos de Economía, Instituto de Economía. Pontificia Universidad Católica de Chile, 50(1), pp. 107-131.

The World Bank (2020) a, 'Doing business 2020: Comparing business regulations in 190 economies'.

The World Bank (2020) b, 'Worldwide governance indicators'. https://info.worldbank.org/governance/wgi/. Accessed on 4th April 2022.

Trading Economics (2019), 'Ease of doing business' https://tradingeconomics.com/country-list/ease-of-doing-business, accessed on 11th July 2022.

United Nations Conference on Trade and Development (2019), 'Foreign direct investment to Africa defies global slump, rises 11%'. Retrieved from: https://unctad.org/news/foreign-direct-investment-africa-defies-global-slump-rises-11.

United Nations Conference on Trade and Development (2020), 'Investment flows in Africa set to drop 25% to 40% in 2020', Retreived from https://unctad.org/news/investment-flows-africa-set-drop-25-40-2020.

United Nations Conference on Trade and Development (2021), 'COVID-19 slashes foreign direct investment in Africa by 16%', Retrieved from: https://unctad.org/news/covid-19-slashes-foreign-direct-investment-africa-16.

United Nations. (2018), 'Addressing the foreign direct investment paradox in Africa', https://www.un.org/africarenewal/web-features/addressing-foreign-direct-investment-paradox-africa (accessed on 29th November 2021).

Vasileva, I. (2018), 'The Effect of Inflation Targeting on Foreign Direct Investment Flows to Developing Countries' Atlantic Economic Journal, Springer; International Atlantic Economic Society, 46 (4), pp. 459-470.

Vernon, R. (1966), 'International investment and international trade in the product cycle' The quarterly journal of economics, pp. 190-207.

Wilhelms, S. & Witter, M. (1998), 'Foreign direct investment and its determinants in emerging economies', United States Agency for International Development, Bureau for Africa, Office of Sustainable Development.

Yakubu, I. (2020), 'Institutional quality and foreign direct investment in Ghana', Review of International Business and Strategy, 30(1), pp. 109-122.

Appendix 1: Regression and panel causality model assumptions

No.	Regression assumptions	Tests	We seek values
1.	Model selection (FE)	Hausman test (Prob>chi2 = 0.0343)	< 0.05
2.	No multicollinearity problem	VIF (all values < 5)	< 5
3.	No heteroskedasticity problem	Breusch-Pagan hottest (Prob>chi2 = 0.06341)	> 0.05
4.	No specification problem	Linktest (Prob>chi2 = 0.06341)	> 0.05
5.	No panel unit root	Levin-Lin-Chu unit-root test (all Prob>chi2 values < 0.05)	< 0.05