Unravelling the Relationship between Governance Indicators and Foreign Direct Investment in Tanzania: An Empirical Analysis

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ABSTRACT

Foreign Direct investment (FDI) is recognized as a significant source of capital inflows that can stimulate economic growth in developing countries. In order to attract and benefit from FDI, governments have implemented various economic reforms and focused on improving governance indicators. This study investigated the causality effect of governance indicators on FDI inflows in Tanzania. The governance indicators examined in this study include; rule of law, regulatory quality, government effectiveness, control of corruption, voice and Accountability, political stability and absence of violence. Before measuring the causality effect between the variables, a stationarity, test was conducted using the Augmented Dickey-Fuller (ADF) test. Then the Granger Causality Test was used to address two-way linkages between variables. The data used in the study was secondary quantitative time series data obtained from the World Bank Worldwide Governance Indicators and the Bank of Tanzania from 1996 to 2021. The findings suggested a long-run causality running from governance indicators to FDI inflows in Tanzania. In the short run, voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption individually influence FDI inflows. Furthermore, the Granger causality test indicates that voice and accountability and political stability and absence of violence Granger cause FDI inflows. The other governance indicators also exhibited significant causality with FDI inflows. These results call for policy makers in Tanzania to focus on strengthening governance framework, ensure accountability, enhance investor protection, ensure political stability, promote the rule of law and prevent corruption in achieving increased FDI for sustained economic growth.

Keywords: Governance Indicators, Granger Causality, Augmented Dickey-Fuller, FDI

INTRODUCTION

Foreign Direct Investment (FDI) has been acknowledged as a reliable source of capital inflows that can spur economic growth in developing economies. Esew & Yaroson, (2014); Mugambi & Murunga, (2017), provided that FDIs typically make long-term commitments to their host nations. It is regarded as an outside source of funding that could be used to implement private sector growth and sustainable development goals (Alla *et al*., 2015; Hassan, 2017). Accordingly, the majority of developing nations have put in place a variety of economic reforms to boost FDI inflow and capitalize on it (Vinesh *et al*., 2014). Majority of governments from developed and developing countries agree that FDI can help them get through stagnation and even circumvent the poverty trap (Brooks *et al*., 2010). FDI is an establishment of production facilities in overseas countries representing a more direct involvement in the local economy with a longer-term relationship. FDI inflows are measured as a percentage of FDI inflows to the Gross Domestic Product (GDP) of a country (Khushnood *et al*., 2020). FDI inflows could be affected by various economic and non-economic factors. The non-economic determinants of FDI can be considered under the governance indicators i.e. regulatory quality, political stability, rule of law, etc. According to World Bank, "Governance consists of the traditions and institutions by which authority in a country is exercised" (World Bank, 2018).

A well-established government plays an active role in defining its investment environment, hence enabling favorable conditions for economic growth (Semenas, 2020). The World Bank (2020) provides six indicator measures for good governance including Rule of law, Government effectiveness, Regulatory Quality, Control of Corruption, Political stability and non-violenceand Voice and Accountability that are used to rank countries based on governance performance. These play an important role in shaping behavior of economic actors and stakeholders when assessing the risk of investments. Tanzania is the 33rd country in sub-Saharan Africa and receives the 4th greatest net inflow of foreign direct investment (FDI) as a percentage of GDP in East Africa, trailing behind the Democratic Republic of the Congo, Rwanda, and Uganda. Governance concerns like regulatory environments, corruption, and legal frameworks have been associated among the reasons Tanzania's FDI inflows have performed poorly in comparison to other nations. For instance, Mfalamagoha & Gwahula (2019) revealed that, corruption had a

negative influence on FDI inflows, whereas rule of law (RL), regulatory quality, government effectiveness, and voice and Accountability posed no influence in the period 1996-2015. Recent data indicates that FDI inflows to Tanzania have experienced a positive trend, reaching USD 922 million in 2021, which represents an increase from the previous year's inflow of USD 685 million (Data Invest Tanzania, 2023). Furthermore, the total stock of FDI in the country reached USD 17.1 billion, equivalent to approximately 24.4% of Tanzania's GDP. These figures highlight the growing significance of FDI in Tanzania's economy. Given this recent development, it becomes crucial to examine the role of governance indicators in contributing to the performance of FDI in Tanzania. The period from 2015 to 2023 has witnessed notable changes in governance, and it is essential to explore whether these indicators have had a causal effect on FDI inflows. Several studies have attempted to investigate the role of governance indicators on FDI in various parts of the world (Kurul & Yalta, 2017; Quaresima & Fiorillo, 2020; Blazys, 2020; Staats & Biglaiser, 2012). Some studies have attempted to focus in Tanzania but limited to few governance indicators mostly corruption and regulatory quality (Mramba, 2015; Paudel, 2016 & Mfalamagoha & Gwahula 2019). Hence, there are insufficient studies covering the role of broad aspects of governance indicators on FDI in Tanzania.

This study will attempt to fill the gap by specifically focusingon Tanzania, coveringa broad range of governance indicators, including rule of law, regulatory quality, government effectiveness, control of corruption, voice and accountability, political stability and violence. With such a comprehensive coverage, the study seeks to achieve a greater level of validity and robustness while offering a holistic view of governance areas that require attention to promote FDI in the country. This study is based on Dunning's (2006) theory of institutional factors, which posits that the inflow of foreign direct investment (FDI) into a foreign market is influenced by attractive institutional factors in the host country. The variables derived from this theory include; control of corruption (CC), government effectiveness (GE), regulatory quality (RQ), rule of law (RL), Voice and Accountability (VA), and political stability and absence of violence (PS) (Kaufmann, 2010; Wernick et al., 2014; Erkekoglu & Kilicarslan, 2016; Kurul & Yalta, 2017) One potential weakness of basing the study on Dunning's (2006) theory of institutional factors is that the theory may not fully capture the complexity and nuances of the relationship between

institutional factors and FDI inflows (Stoian, 2013).While Dunning's theory provides a useful framework for understanding the general influence of institutional factors on FDI, it may not account for all the specific contextual factors that could impact FDI inflows in a particular host country.Additionally, the theory was developed in 2006, and since then, there may have been changes in the global economic landscape and the understanding of institutional factors. Newer theories or frameworks may have emerged that provide a more comprehensive and up-to-date understanding of the relationship between institutions and FDI (Stoian, 2013). A theory that is similar to Dunning's (2006) theory of institutional factors is the "New Institutional Economics" (NIE) theory. It is a theoretical framework that has been developed and expanded upon by multiple scholars over time. Some of the prominent contributors to the NIE theory include Williamson, 2007; North, 1999; Coase, 1937, and Ostrom, 1990. The NIE theory also emphasizes on the role of institutions in shaping economic outcomes, including foreign direct investment (FDI). It focuses on the impact of formal and informal rules, property rights, and governance structures on economic behavior and performance.

Like Dunning's theory, the NIE theory recognizes that the quality of institutions in a host country can influence the attractiveness of FDI. It emphasizes on the importance of property rights protection, rule of law, contract enforcement, and regulatory frameworks in facilitating or hindering FDI inflows. The NIE theory provides a broader understanding of institutions by considering both formal e.g., laws, regulations and informal (e.g., social norms, cultural values) institutions and their interactions. It recognizes that institutions shape the incentives and behavior of economic actors, including foreign investors, and can have a significant impact on investment decisions(Quaresima & Fiorillo, 2020; Blazys, 2020; Zhang et. al (2021; Byaro et. al (2022; Saidi et al., 2013; Lucke & Eichler, 2016; Jadhar, 2012).

Empirical Literature Review

Foreign Direct Investment (FDI) inflows are influenced by various governance indicators, including Rule of Law (RL), Regulatory Quality (RQ), Government Effectiveness (GE), Control of Corruption (CC), Voice and Accountability (VA), and political stability(PS) and absence of violence (Kurul & Yalta, 2017; Bouchoucha, 2022; Saha et al, 2022). Extensive

theoretical and empirical research has consistently demonstrated the significant role of FDI inflows in promoting economic progress in countries. For instance, McGrattan and Waddle (2020) employed the neoclassical growth model in their study and underscored the substantial impact of foreign investment on the economic growth of the United Kingdom. In a case study on Romania, Nistor (2014) established a strong association between FDI inflows and the country's GDP growth rate. Quaresima and Fiorillo (2020) and Blazys (2020) explored the significance of good governance as a crucial driver of economic development. Their research studies highlighted the positive and influential role of institutional reforms in fostering economic growth within a nation. Epstein and Gang (2019) investigated the relationship between fundamental socio-economic challenges (such as poverty, corruption, and underutilization of resources) and good governance. Their findings emphasized that effective and efficient government policies are essential prerequisites for the economic development of a country. Staats and Biglaiser (2012) and Zhang et. al (2021) emphasize on the importance of the rule of law and judicial strength as key determinants of FDI inflows in 17 Latin American countries.

Similarly, Henisz (2000) and Henisz and Williamson (2007) argue that weak protection of property rights exposes multinational companies (MNCs) to the risk of expropriation, thereby affecting their investment decisions.Kapuria-Foreman (2007) and Dussaux et.al (2022) finds that providing greater assurances for contract compliance and respect for property rights are crucial factors in attracting FDI. Daude and Stein (2007) and Saha et al, 2022)found out that governance factors significantly influence inward FDI, while Mauro (1995) and Spyromitros and Panagiotidis (2022) highlights the adverse impact of corruption on investment inflows and subsequent economic growth. Beavan et al. (2004) and Bouchoucha, (2022) also find that governance indicators play a significant role in determining FDI inflows, particularly in relation to the development of the rule of law. Contrary to expectations, Kersan-Skabic (2013) found out that among governance factors, only corruption has a significant negative impact on FDI inflows. Despite their anticipated importance, government effectiveness, rule of law, and political stability do not significantly influence FDI inflows. Maric and Kristina (2017) and Onody et. al (2022) suggest that in countries with rigid regulations and high levels of bureaucracy, corruption can paradoxically help to remove barriers and

expedite investment processes. Erkekoglu and Kilicarslan (2016) and Byaro et. al (2022) discover that an increase in government effectiveness reduces FDI inflows. Similarly, a study by Daude and Stein (2004) concludes that unpredictable policies threaten FDI inflows. Siddica & Angkur (2017) found out that the rule of law positively affects FDI, while government effectiveness has a negative and statistically significant impact. Amal et al. (2010) and Chen et al. (2022) also find a negative relationship between government effectiveness and FDI inflows in eight Latin American countries. Sedik & Seoudy (2012) examined 20 MENA countries between 1999 and 2010 and found out that regulatory quality has a positive and significant effect on FDI inflows in the region. Saidi et al. (2013) investigated the relationship between governance variables and FDI inflows in 20 developed and developing countries from 1998 to 2011, and found that regulatory quality positively impacts FDI inflows. Yonis, Ochi, and Ghadri (2013) & Brkovic (2021) also find a positive and statistically significant impact of regulatory quality on FDI inflows. Lucke and Eichler (2016) study institutional determinants of FDI in 94 countries from 1995 to 2009 and find a positive impact of regulatory quality on FDI inflows. However, Mramba (2015) finds no significant relationship between regulatory quality and FDI inflows in Tanzania. Salem and Baum (2016) reveal that political stability and absence of violence (PSV) positively and significantly impact FDI, particularly in the real estate sector.

Summary of Empirical Literatures

Author(s)	Area	Methodology	Findings
Kurul & Yalta (2017)	Relationship between institutional factors and foreign direct investment (FDI) inflows in developing countries	Two step system GMM	Control of corruption, government effectiveness and voice and accountability have significant positive impacts on FDI flows
Bouchoucha, 2022	Governance and foreign direct investment: is the low and middle income Africa region different?	Two step system GMM	Overall governance indicators attract FDI inflows in African and its sub-regions
Saha et al, 2022	Effects of institutional quality on foreign direct investment inflow in lower-middle income countries	Two step system GMM	Control of corruption and regulatory quality accelerate foreign investment Better rule of law, and voice and accountability impede it foreign investment. No significant effect on other institutional factors
Quaresima and Fiorillo (2020)	Impact of Good Governance Indicators on the Inflow of Foreign Direct Investment (FDI) In Pakistan	Auto Regressive Distributed Lag	There is a significant effect of Political Instability, Regulatory Quality and Government Effectiveness on FDI. Rule of Law and Corruption have insignificant effect on FDI
Maric and Kristina (2017)	**The Role of Institutions in Attracting Foreign Direct Investments**	Comparative statistics	Institutional quality in the host country play significant role in attracting Foreign Direct Investment.
Onody et. al (2022)	**The impacts of corruption and environmental degradation on foreign direct investment: new evidence from the ASEAN+3**	The panel Autoregressive Distributed Lag (ARDL) approach	There is a negative relationship between corruption and FDI

	countries		
Erkekoglu and Kilicarslan (2016)	**Do political risks affect the foreign direct investment inflows to host countries?**	Driscoll-Kraay fixed effects model	Political stability and Government effectiveness, decreases foreign investment
Byaro et. al (2022)	**Does Institutional Development attract Foreign Direct Investments in Sub-Saharan Africa?**	Two step system GMM	Among the six institutional factors only the rule of law and government effectiveness have positive and statistically significant effects in attracting FDI inflows in sub-Saharan Africa.
Siddica and Angkur (2017	**Does Institution Affect the Inflow of FDI?**	Random Effects (RE) and Fixed Effects (FE) panel data models	Investment profile and law and order have positive effect on FDI Bureaucratic quality has negative effect
Saidi et al. (2013)	**The effects of good governance on foreign direct investment inflows in Arab countries**	Panel regression based on an augmented gravity model	FDI is affected significantly by all governance indicators, except the rule of law and control of corruption.
Lucke and Eichler (2016)	**Foreign direct investment: the role of institutional and cultural determinants**	Two step system GMM	Institutional and cultural quality is important for FDI
Salem and Baum (2016)	**Pooled OLS regression**	Pooled OLS regression	Political stability and absence of violence positively and significantly impact FDI in the real estate sector.

Studies above collectively highlight the varying impacts of governance indicators on FDI inflows, emphasizing the importance of factors such as the rule of law, property rights protection, corruption, government effectiveness, and regulatory quality in attracting foreign investment. That is, while some studies acknowledge all the six governance indicators as important drivers in accelerating FDI (Lucke & Eichler, 2016; Salem & Baum, 2016), others find that contribution to be limited to only few indicators, with the rest offering no significant contribution (Kurul & Yalta, 2017; Bouchoucha, 2022; Saha et al, 2022, Quaresima & Fiorillo, 2020; Byaro et. al, 2022). On the other hand, there are also studies proposing the possibility of rigid regulations, high levels of bureaucracy and corruption to be helpful in smoothening the investment processes. Hence it is evident that, literatures provide conflicting results on the relationship between governance indicators and FDI inflows across countries.

Additionally, most of the available studies focus on the relationship between governance indicators and FDI to a group of countries like developing countries (Kurul & Yalta, 2017; Bouchoucha, 2022; Saha et al, 2022) and sub-Saharan Africa (Byaro et. Al, 2022; Ofori et. al, 2021; Ajide et. al, 2014). Although there are other studies focusing on individual countries (Quaresima and Fiorillo, 2020; Khan et. al, 2019), to the best of author's understanding there are insufficient studies focusing on the relationship between the broad range of all six governance indicators and FDI, despite of the dynamics taking place in Tanzania. Hence, this study will not only fill the gap of the conflicting results on the relationship between governance indicators and FDI, but also focus on the broad range of all the six governance indicators in Tanzania so as to provide insights for policymakers and stakeholders seeking to promote FDI inflows in Tanzania for economic development through increased understanding of the relationship between governance indicators and FDI.

Methodology
Data and Variables
This study utilized data from the Worldwide Governance Indicators (WGI) project, which provides comprehensive information on aggregate and individual governance indicators. The variables examined in this study included; Rule of Law, Regulatory Quality, Government Effectiveness, Control of Corruption, Voice and Accountability, and Political Stability and absence of Violence. These indicators were measured on a scale ranging from

-2.5 to +2.5, with higher values denoting enhanced governance quality for more than 200 countries and territories. The dataset covers the period from 1996 to 2021.The indicators used in the analysis were as follows. These aggregate indicators combine the views of a large number of enterprises, citizen and expert survey respondents in industrial and developing countries. They are based on over 30 individual data sources produced by various survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms. The Foreign Direct Investment (FDI) data were obtained from the Bank of Tanzania (BOT) and cover the period from 1996 to 2021.The BOT and TIR datasets are accessible at www.bot-tz.org.

Estimation Strategies and Techniques
Stationary Tests
The stationarity of a series is a significant phenomenon with implications for its behaviour. Time-series stationarity refers to the statistical characteristics of a series over time, such as its mean and variance. If these characteristics remain constant over time, the series is considered stationary; otherwise, it is classified as non-stationary. A series is denoted as I(0) if it is stationary without differencing, whereas a series that requires differencing to achieve stationarity is represented as I(1). In order to analyze multivariate time series and determine the integration of variables, the augmented Dickey-Fuller (ADF) test was proposed and employed. This test, as described by Dritsaki (2004) and Ahmad et. al (2021), provides evidence regarding the variables' integration status.

Model Specification and Estimation of OLS Framework
This study employed an econometric model with "FDI" as the dependent variable and Governance indicators as independent variables, with subscription representing the respective variables at time "t," as demonstrated in the equation below.

$$FDI_{i,t} = \alpha_0 + \beta_1 CC_{it} + \beta_2 RL_{it} + \beta_3 RQ_{it} + \beta_3 GE_{it} + \beta_4 pPSV_{it} + \beta_5 VA_{it} + \varepsilon_t \ldots 1$$

Where;
CC=Control of Corruption,
RL=Rule of Law,
RQ=Regulatory Quality
GE=Government Effectiveness

PSV=Political Stability
VA=Voice and Accountability
T=Time period,
ε= Errorterm
$\beta 1, \beta 2, \beta 3 \dots \beta n$=Coefficients of independent variables.

Johansen Tests for Co-integration

The Johansen test is utilized to analyze co-integration, which refers to a long-term relationship among multiple variables. This statistical method employs the trace test to compare the null hypothesis of "r" co-integrating relationships with the alternative hypothesis of "n" co-integrating relationships. In this context, "r" represents the trace test and "n" represents the number of variables in the formula, for r = 0, 1, 2,... n-1. Its equation was calculated using the following formula:

$$RL_{tr}(r/n) = -T * \sum_{i=r+1}^{n} \log (1 - a_1) \dots\dots\dots\dots\dots\dots\dots\dots..2$$

This study employed Granger Causality Test to measure the causality effect between the variables. According to Granger (1969), Granger Causality test, which was first proposed in 1969, is a statistical hypothesis test for determining whether one time series variable is useful in forecasting the behavior of another variable. In time series analysis, statistical tools and techniques such as; Augmented Dickey–Fuller (ADF) occupy a very important role in having more authentic statistical outcomes (Chen et al., 2019). In this study, all variables are in time series, so Augmented Dickey–Fuller (ADF) is applied to ensure each variable's stationarity. The study conducted the pairwise Granger causality test at level and at different lag order (lag 2 and lag 4).

Granger Causality Test Model

Granger model equations were constructed based on the null and alternative hypotheses as follows;
Ho: governance indicator (x) does not Granger-cause FDI inflows (y)

Ha: governance indicator (x) Granger-cause FDI inflows (y)

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \dots + \alpha_1 y_{t-1} + \dots\dots + \beta_1 x_{t-1} + \dots + \beta_1 x_{t-1} + \varepsilon_t$$

$$y_t = \alpha_0 + \alpha_1 x_{t-1} + \ldots + \alpha_1 x_{t-1} + \ldots\ldots + \beta_1 y_{t-1} + \cdots + \beta_1 y_{t-1} + \mu_t$$

Model Specification

Pair wise Granger Causality Models

Based on Atmadja (2005) approach as applied byKumo (2012), we define pair wise Granger causality models as follows:

$$FDI_t = \alpha_{10} + \sum_{i=1}^{m} \alpha_{1i} FDI_{t-i} + \sum_{j=1}^{n} \beta_{1j} CC_{t-j} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 1$$

$$CC_t = \alpha_{20} + \sum_{j=1}^{n} \beta_{2j} CC_{t-j} + \sum_{i=1}^{m} \alpha_{2i} FDI_{t-i} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 2$$

$$FDI_t = \alpha_{30} + \sum_{i=1}^{m} \alpha_{3i} FDI_{t-i} + \sum_{j=1}^{n} \beta_{3j} RL_{t-j} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 3$$

$$RL_t = \alpha_{40} + \sum_{j=1}^{n} \beta_{4j} RL_{t-j} + \sum_{i=1}^{m} \alpha_{4i} FDI_{t-i} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 4$$

$$FDI_t = \alpha_{50} + \sum_{i=1}^{m} \alpha_{5i} FDI_{t-i} + \sum_{j=1}^{n} \beta_{5j} GE_{t-j} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 5$$

$$GE_t = \alpha_{60} + \sum_{j=1}^{n} \beta_{6j} GE_{t-j} + \sum_{i=1}^{m} \alpha_{6i} FDI_{t-i} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 6$$

$$FDI_t = \alpha_{70} + \sum_{i=1}^{m} \alpha_{7i} FDI_{t-i} + \sum_{j=1}^{n} \beta_{7j} PS_{t-j} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 7$$

$$PS_t = \alpha_{80} + \sum_{j=1}^{n} \beta_{8j} PS_{t-j} + \sum_{i=1}^{m} \alpha_{8i} FDI_{t-i} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 8$$

$$FDI_t = \alpha_{90} + \sum_{i=1}^{m} \alpha_{9i} FDI_{t-i} + \sum_{j=1}^{n} \beta_{9j} RQ_{t-j} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 9$$

$$RQ_t = \alpha_{100} + \sum_{j=1}^{n} \beta_{10j} RQ_{t-j} + \sum_{i=1}^{m} \alpha_{10i} FDI_{t-i} + \mu_t \dots\dots\dots\dots\dots\dots\dots \quad 10$$

$$FDI_t = \alpha_{110} + \sum_{i=1}^{m} \alpha_{11i} FDI_{t-i} + \sum_{j=1}^{n} \beta_{11j} VA_{t-j} + \varepsilon_t \dots\dots\dots\dots\dots\dots\dots \quad 11$$

$$VA_t = \alpha_{120} + \sum_{j=1}^{n} \beta_{12j} VA_{t-j} + \sum_{i=1}^{m} \alpha_{12i} FDI_{t-i} + \mu_t \dots\dots\dots\dots\dots\dots\dots \quad 12$$

Where:
FDI is Foreign Direct Investment, **RL** is Rule of law, **GE** is Government effectiveness, **RQ** is Regulatory Quality, **CC** i**s** Control of Corruption**, PS** i**s** Political stability and non- violence**, VA** i**s** Voice and Accountability**, t** is time series, **β** is coefficient for all variables we want to explain their behaviour ,**α** is a constant term or vertical intercept which represents the value of the selected variable when other variables are set equals to zero, **ε and** μare the error terms.

Vector Error Correction Model
When two series exhibit co-integration, they indicate a long-term equilibrium relationship. Consequently, employing the "VECM" (Vector Error Correction Model) to assess the short-run changes and deviations from equilibrium in the co-integrated series becomes meaningful. Presented below is a depiction of the "VECM" linear regression model.

$$\nabla Y_t = \alpha_1 + p_1 e_1 + \sum_{i=0}^{n} \beta i \Delta Y_{t-i} \sum_{i=0}^{n} \delta i \Delta X_{t-i} + \sum_{i=0}^{n} yi Z_{t-i} \dots\dots\dots 4$$

$$\Delta Y_t = \alpha_2 + p_2 e_{i-1} + \sum_{i=0}^{n} \beta i \Delta Y_{t-i} \sum_{i=0}^{n} \delta i \Delta X_{t-i} + \sum_{i=0}^{n} yi Z_{t-i} \dots\dots\dots 5$$

The "VECM" co-integration test provides information about the number of co-integrating vectors. For example, if there are two linearly independent non-stationary variable combinations with a rank of two, they will be considered stationary. In the previous equations, if the "ECM" (Error Correction Model) coefficient is both negative and large (i.e., e i-1), any short-run fluctuations between the independent variables and the dependent variable will lead to a stable long-run relationship among the variables.

Results and Discussion

Descriptive Statistics

Descriptive statistics were calculated to provide insights into the average levels and variations of FDI inflows and governance indicators. The results indicated an average FDI inflow of approximately 20.20, with moderate levels observed for Voice and Accountability, Political Stability and absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. This suggests that, on average, the country experienced a moderate level of foreign direct investment. The minimum value of 13.17 indicated a relatively lower FDI inflow, while the maximum value of 21.47 represents a higher level of FDI. VA had the mean value of -0.34 which indicated that, on average, there might be some challenges related to the voice and Accountability of institutions in the country. The indicator ranges from -0.73 (lower Accountability) to -0.13 (relatively better Accountability).

PSV had the average value of -0.391 suggests a moderate level of political stability and absence of violence. The indicator ranges from -0.856 (lower stability) to 0.089 (relatively higher stability). GE had the meanvalue of -0.605 implies that, on average, there might be some inefficiencies or limitations in the government's effectiveness. The indicator ranges from -0.832 (lower effectiveness) to -0.424 (relatively better effectiveness).RQ hadthe average value of -0.501 suggests that, on average, there may be room for improvement in regulatory practices and quality. Rule of Law (RL): The mean RL value of -0.417 implies that, on average, the country may face challenges in upholding the rule of law. The indicator ranges from -0.588 (lower adherence to the rule of law) to -0.166 (relatively better adherence).CC had the average value of -0.576 suggests that, on average, there may be issues with controlling corruption within the country. The indicator ranges from -0.841 (lower control of corruption) to -0.229 (relatively better control). Table 1 illustrates the findings.

Table 1: Descriptive Statistics for the Study Variables

Variable	Mean	Std. Dev.	Min	Max
FDI	20.19618	1.644767	13.17496	21.4652
VA	-0.34	0.19	-0.73	-0.13
PSV	-0.3911929	0.2488318	-0.8555472	0.0891812
GE	-0.6046297	0.1057034	-0.8322633	-0.4235085
RQ	-0.500545	0.0996613	-0.6738675	-0.3532739
RL	-0.4174671	0.1119136	-0.587953	-0.1662878
CC	-0.5760494	0.1801729	-0.8409316	-0.2285772

Source: Researcher (2023)

Unit Root Test

The Augmented Dickey Fuller (ADF) test for unit root is reported for the impact of the growth enhancing factors in Table 4.2. The results for constant and no time trend and for constant and time trend are reported for both levels and differenced of the variables. For the ADF test, the null Hypothesis states that the variable has unit root or is not stationary whereas the Alternative Hypothesis states that the variable does not have unit root meaning it is stationary. The ADF test for unit root was applied to the variables at level and after log transformation. Since for both cases the absolute values computed of the Test statistics-Z (t) do not exceed the critical values of 1% and 5% and 10%, following Gujarat (2003) we conclude that all variables are non-stationary at lag 0. One solution for making the data stationary is to difference the variables. After differencing the log values of all variables, as indicated in Table 5, it was found that that, they all become stationary. That is, the computed absolute values of the test exceed the critical values at 1%, 5% and 10% and therefore the null hypothesis is rejected. All the above tests were performed with constant and trend.

Table 5: ADF Test Result for Difference Natural Logs of Variables trend RegressatLag 0

Variables	Test Statistics Z (t)	Critical Values (lag 0) With trend			MacKinnon approximate p-value for Z(t)
		1%	5%	10%	
DLNFDI	-4.335	-4.380	-3.600	-3.240	0.0028
DLNVA	-4.384	-4.380	-3.600	-3.240	0.0023
DLNPSV	-4.935	-4.380	-3.600	-3.240	0.0003
DLNGE	-4.224	-4.380	-3.600	-3.240	0.0041
DLNRQ	-5.148	-4.380	-3.600	-3.240	0.0000
DLNRL	-5.595	-4.380	-3.600	-3.240	0.0001
DLNCC	-4.902	-4.380	-3.600	-3.240	0.0003

Source: Researcher (2023)

Johansen Co-integration Test

The Johansen test for cointegration was conducted to establish relationships amongst the key study variables and is reported in Table 6. The results indicate that the variables in this study have a long term relationship. In this test, the null hypothesis indicates no cointegration amongst the variables against the alternative that there is cointegration. The null hypothesis is rejected because the trace statistic exceeds the 5% critical value.This is indicated in Table 4.11 where the trace statistic for rank 0 is 116.8515 which is greater than the critical value given as 94.15 meaning there is no cointegration. The variables reveal 1 cointegration amongst the variables because at rank 1, the trace statistics of 68.5104* is less than the critical value of 68.52 at 5%. The subsequent rank values indicate rejection of the null hypothesis, so they are all cointegrated. Therefore, as shown in Table 6 the variables are moving together in the long run or have a long-term relationship. The 1 co-integration means the VECM test can now be run.

Table 6: Johansen Cointegration Test

Rank	Parameters	Log Likelihood	Eigenvalue	Trace Statistic	Critical Value (5% level)
0	6	121.02345	-	116.8515	94.15
1	17	145.19398	0.89994	68.5104	68.52
2	26	158.90259	0.72899	41.0932	47.21
3	33	168.84494	0.61205	21.2085	29.68
4	38	175.53323	0.47111	7.8319	15.41
5	41	178.6741	0.25854	1.5501	3.76
6	42	179.44917	0.07116	-	-

Source: Researcher (2023)

Vector Error Correction Model

Following the Johansen cointegration test the **Vector Error Correction**

Model

(VECM) test was run after confirming the variables were cointegrated. The Vector Error Correction Model addresses both the issues of Long Run causality and Short Run Causality. The results are presented in Table 7. The target model is the model having the dependent variable, FDI Inflow. Since VECM converts the variables into first difference the time series variables are a stationary data. The Error term Cointegrating equation 1 in the VECM model has a negative coefficient (-1.411656) and it is significant as its p value is 0.000 which is less than 5%. This means there is long run causality between the variables. The value of the speed of adjustment indicates the model is adjusting fast at the rate of 146% towards the long run equilibrium. Also, the negative sign of the coefficient of the error correction term means there is a long run Causality running from Voice and Accountability, Political stability and absence of violence, Government effectiveness, Regulatory quality, Rule of law and control of corruption to Foreign Direct Investment. Secondly, the short run causality of the individual variable is given by the coefficient of the first difference of the independent variables. Voice and Accountability is significant at Lag and with a positive slope, political stability and violence is significant at lag 2 with negative coefficients, government effectiveness have a positive coefficient at lag 1 and 2 meaning they have short run causality on FDI inflow but significant at lag 2, Regulatory quality is significant at lag 1 and 2 but with a negative slope at lag 2, Rule of Law is significant at lag 1 with a positive coefficient not significant at lag 2 with a negative coefficient, control of corruption is significant in both lag 1 and 2 with a negative

coefficient in lag 1. All the above explanatory variables individually influence dependent variable.

Table 7: Vector Error Correction Model

Variable	Coef.	Std. Err.	z-value	P-value	95% Conf.	Interval
D_LNFDI						
_ce1 L1.	-1.411656	0.3611116	-3.91	0.000	-2.119422	-0.7038903
LNFDI						
LD.	-0.4939065	0.1503599	-3.28	0.001	-0.7886064	-0.1992066
L2D.	-0.5628576	0.1345532	-4.18	0.000	-0.826577,	-0.2991382
VA						
LD.	12.16234	3.102478	3.92	0.000	6.081599	18.24309
L2D.	-26.1623	4.140437	-6.32	0.000	-34.2774,	-18.04719
PSV						
LD.	-1.363231	1.026279	-1.33	0.184	-3.374701	0.6482385
L2D.	-2.443298	1.106549	-2.21	0.027	-4.612095	-0.2745018
GE						
LD.	3.143135	4.431277	0.71	0.478	-5.542007	11.828
L2D.	22.63215	6.878019	3.29	0.001	9.151483,	36.11282
RQ						
LD.	24.82244	5.306487	4.68	0.000	14.42191	35.22296
L2D.	-16.44489	7.61866	-2.16	0.031	-31.37719	-1.512593
RL						
LD.	10.62948	3.698479	2.87	0.004	3.380597	17.87837
L2D.	-5.154501	4.880969	-1.06	0.291	-14.7210	4.412023
CC						
LD.	-12.1097	2.697145	-4.49	0.000	-17.396	-6.82339

Variable	Coef.	Std. Err.	z-value	P-value	95% Conf.	Interval
L2D.	4.269985	1.566633	2.73	0.006	1.199441	7.340529
_cons	0.0176917	0.1625765	0.11	0.913	-0.3009524	0.3363357

Source: Researcher (2023)

Granger Causality Test

The Granger Causality Test shows the direction of causal links between the variables as bi-directional, uni-directional and no causality. Using the granger causality test the results between FDI inflows, VA (Voice and Accountability) PSV Political Stability and Violence), GE (Government Effectiveness), RQ (Regulatory Quality), RL (Rule of Law) and CC (Control of Corruption) performed at lag 2 of all the variables are presented in Table 8.Pair wise granger causality test results are presented in appendix 1. With LNFDI as the dependent variable the null hypothesis is that Lagged VA variable does not Granger cause FDI INFLOW and the Alternative hypothesis is that Lagged VA variable does cause FDI INFLOW. The ganger causality test was conducted at lag 2 and the null hypothesis is rejected because the p value for VA causing FDI INFLOW at 0.013 is less than 5%. Therefore, lagged VA Granger causes FDI INFLOW also LNPSV does Granger cause FDI INFLOW because its p value at 0.0452 is less than 5%. Thus, p value for all the independent variables is significant and hence the Null Hypothesis is rejected because their p value is less than 0.05%, meaning that they jointly Granger cause FDI INFLOW.

Table 8: Granger Causality Wald Test

Equation	Excluded	chi2	df	Prob > chi2
LNFDI	LNVA	8.6308	2	0.013
LNFDI	LNPSV	1.2917	2	0.045
LNFDI	LNGE	68.973	2	0.000
LNFDI	LNRQ	18.106	2	0.000
LNFDI	LNRL	21.18	2	0.000
LNFDI	LNCC	86.38	2	0.000
	ALL	288.95	12	0.000

Source: Researcher (2023)

Discussion of Findings

The Granger causality test results provide valuable insights into the relationships between FDI inflows and the various governance indicators, namely VA (Voice and Accountability), PSV (Political Stability and Violence), GE (Government Effectiveness), RQ (Regulatory Quality), RL (Rule of Law), and CC (Control of Corruption). Similar to the predictions of Dunning's theory and as was found by Zhang et. al (2021) Kurul & Yalta, 2017; Bouchoucha, 2022; the findings of the study reveals that lagged VA and

LNPSV variables significantly affected FDI inflows, indicating that improvements in voice and accountability and political stability could contribute to increased FDI inflows. Additionally, the governance indicators of GE, RQ, RL, and CC exhibit a significant Granger causality relationship with FDI inflows, emphasizing the importance of government effectiveness, regulatory quality, rule of law, and control of corruption in attracting foreign investment.This is consistent with previous studies emphasising the positive relationship between voice and accountability, political stability, and FDI inflows (Kurul & Yalta, 2017). These findings suggest that improvements in governance indicators can enhance the attractiveness of a country for foreign investment. Furthermore, the significant Granger causality relationships of GE, RQ, RL, and CC with FDI inflows underscore the importance of government effectiveness, regulatory quality, rule of law, and control of corruption in attracting foreign investment. These results were aligned with the empirical literature that has highlighted the role of these governance indicators in influencing FDI decisions (Beavan *et al*., 2004; Salem & Baum, 2016).

The Vector Auto Regression (VAR) model results further support the relationship between governance indicators and FDI inflows. The high R-squared values indicate that the governance indicators collectively explain a substantial portion of the variation in FDI inflows. The finding was aligned with previous studies that have emphasized the significant impact of governance indicators on FDI inflows (Maric & Kristina, 2017; Saidi *et al*., 2013). In the same vein, referring empirical study conducted by Mfalamagoha and Gwahula (2019) using data from 1996 to 2015, it was found out that political stability and absence of violence (PS) in Tanzania granger-caused FDI inflows, indicating a positive influence of political stability on FDI but FDI did not granger-cause political stability, suggesting that FDI had no influence on political stability. Additionally, corruption (CC) was found to granger-cause FDI, implying a negative influence of corruption on FDI inflows. However, current study expands on these findings by demonstrating significant causal relationships between all governance indicators and FDI inflows, both in the short run and the long run in the period of 1996-2021.

Conclusion, Recommendations and Research Implications
This study examined the effect of governance indicators on FDI inflows in Tanzania from 1996 to 2021. The findings provided robust evidence of the

relationship between governance indicators and FDI inflows in the country. The findings revealed a moderate level of FDI inflows in Tanzania during the study period. However, there is room for improvement in governance indicators such as voice and Accountability, government effectiveness, regulatory quality, rule of law, and control of corruption. These calls for policy makers in Tanzania to focus on strengthening governance framework, ensure accountability, enhance investor protection, ensure political stability, promote the rule of law and prevent corruption in achieving increased FDI for sustained economic growth. The unit root tests indicated that the variables were initially non-stationary but became stationary after first differencing or taking the natural logs. This suggests that changes in governance indicators can have a long-term impact on FDI inflows. The Johansen cointegration test confirmed the existence of long-term relationships among the variables, indicating that changes in governance indicators can influence FDI inflows in Tanzania over the long run. The findings analysis also demonstrated both long-run and short-run causality between governance indicators and FDI inflows.

This implies that improvements in voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption can lead to increased FDI inflows in the short term and sustain them in the long term. The study provided evidence of the causal impact of governance indicators on FDI inflows. Lagged voice and Accountability, as well as political stability and absence of violence, were found to have a significant causal relationship with FDI inflows. Additionally, government effectiveness, regulatory quality, rule of law, and control of corruption were also found to be significant determinants of FDI inflows in Tanzania. This study's findings have theoretical implications related to Dunning's (2006) theory of institutional factors and his framework of Ownership, Location, and Internalization (OLI) advantages. Firstly, the study identified governance indicators such as; voice and accountability, government effectiveness, regulatory quality, rule of law, and control of corruption as significant determinants of FDI inflows aligns with Dunning's theory. According to Dunning, the ownership advantage of a multinational enterprise (MNE) includes intangible assets such as; managerial skills, technology, and brand reputation. Good governance indicators reflect a conducive institutional environment that supports

foreign investors' effective utilization of these ownership advantages. Therefore, the study's findings reinforce the importance of institutional factors in attracting FDI, as highlighted by Dunning's theory. Secondly, the study's focus on the long-term impact of governance indicators on FDI inflows is consistent with Dunning's Ownership, Location, and Internalization (OLI) framework. Dunning argues that location advantages, including institutional factors, create a favorable environment for foreign investment. The evidence of cointegration between governance indicators and FDI inflows supports the notion that changes in governance can influence FDI inflows in Tanzania over the long run. This implies that improvements in governance indicators enhance the location advantage of Tanzania as an investment destination, making it more attractive for foreign investors. It is recommended that policymakers continuously monitor and evaluate the impact of governance reforms on FDI inflows, making necessary adjustments to ensure their effectiveness. This will ensure Tanzania posit itself as an attractive destination for foreign investment and harness the potential benefits of FDI for its economic development.

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Appendix: 1

Granger Causality Wald tests

. Equation	Excluded	chi2	df	Prob > chi2
LNFDI	LNVA	8.6308	2	0.013
LNFDI	LNPSV	1.2917	2	0.045
LNFDI	LNGE	68.973	2	0.000
LNFDI	LNRQ	18.106	2	0.000
LNFDI	LNRL	21.18	2	0.000
LNFDI	LNCC	86.38	2	0.000
	ALL	288.95	12	0.000
LnVA	LNFDI	75.427	2	0.000
LnVA	LNPSV	14.378	2	0.001
LnVA	LNGE	22.574	2	0.000
LnVA	LNRQ	146.2	2	0.000
LnVA	LNRL	77.442	2	0.000
LnVA	LNCC	30.447	2	0.000
LnVA	ALL	688.16	12	0.000
LnVA	LNFDI	.30717	2	0.858
LnPSV	LnVA	6.7005	2	0.035
LnPSV	LnGE	5.0551	2	0.080
LnPSV	LnRQ	.44575	2	0.800
LnPSV	LnRL	2.8346	2	0.242
LnPSV	LnCC	13.644	2	0.001
LnPSV	ALL	39.261	12	0.000
LnGE	LNFDI	5.5526	2	0.062
LnGE	LnVA	13.697	2	0.001
LnGE	LnPSV	20.571	2	0.000
LnGE	LnRQ	17.609	2	0.000
LnGE	LnRL	1.8193	2	0.403
LnGE	LnCC	4.6427	2	0.103
LnGE	ALL	207.46	12	0.000
LnRL	LNFDI	4.662	2	0.097
LnRL	LnVA	12.072	2	0.002
LnRL	LnPSV	3.1671	2	0.205

. Equation	Excluded	chi2	df	Prob > chi2
LnRL	LnGE	28.349	2	0.000
LnRL	LnRQ	19.371	2	0.000
LnRL	LnCC	8.6967	2	0.013
LnRL	ALL	138.34	12	0.000
LnCC	LNFDI	14.325	2	0.001
LnCC	LnVA	3.7082	2	0.157
LnCC	LnPSV	18.141	2	0.000
LnCC	LnGE	9.1665	2	0.010
LnCC	LnRQ	28.829	2	0.000
LnCC	LnRL	25.097	2	0.000
LnCC	ALL	215.95	12	0.000