




Determinants of foreign direct investment in SADC region: Case of financial development, institutions and openness

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Background: Countries in the Southern African Development Community (SADC) region have experienced low growth coupled with high levels of poverty and inequality. Economic growth has been touted as one of the major factors to deal with these problems. However, the lack of financial resources has hampered the efforts to achieve high levels of growth. This has therefore resulted in the countries putting much effort on attracting foreign capital.

Aim: The study aims to investigate the extent to which financial development (FSD), financial openness, and institutional quality determine the inflow of foreign direct investment (FDI) in the SADC region.

Setting: The study focuses on 15 countries in the SADC region from 2008 to 2022.

Method: The study employs the Generalised Method of Moments (GMM) technique given the problem of endogeneity between the variables of interest.

Results: The findings from the study indicate that FSD and financial openness are important factors determining the flow of FDI to the SADC region. On the other hand, the effect of institutions was found to be significant when taking into account the state of FSD and financial openness.

Conclusion: Policymakers are encouraged to focus on enhancing institutional frameworks, promoting FSD, and increasing financial openness to optimise capital inflows.

Contribution: The study contributes to the available studies by incorporating the role that is played by institutional quality and financial openness to the modelling. This becomes important as the region aims at attracting more foreign capital so as to improve growth as domestic capital supply falls short of domestic capital demand.

Keywords: financial sector development; capital inflows; FDI; financial openness; institutional quality; SADC; GMM.

Introduction

Foreign direct investment (FDI) plays a pivotal role in shaping the economic landscape of regions across the globe. In the Southern African Development Community (SADC) region, FDI serves as a critical driver of economic growth, development, and integration into the global economy. However, the determinants of FDI inflows in the SADC region are multifaceted, covering various socio-economic factors and institutional dynamics (Arventis 2005).

Low levels of savings characterise the SADC region. The African Development Bank outlook (2019) shows that in the Southern African region for the period from 2010 to 2018, average savings in the region stood at 16.5%, which is lower than other regions such as North Africa (23.5%) and East Africa (17.5%). The report further shows that gross domestic savings (GDS) in the region are higher than national savings, which suggests that net foreign savings in the region are negative. At the country level, the situation is dire for some countries such as Lesotho, Malawi, Mozambique, and Zimbabwe. Among the primary challenges faced by the SADC region are persistent issues of low economic growth, high poverty rates, and extensive inequality. These challenges hinder domestic development efforts and influence the region's attractiveness to foreign investors. Low economic growth rates limit the potential returns on investment, while high poverty and inequality levels may aggravate social tensions and pose risks to business operations (Asongu & Eita 2023). Understanding how these factors interplay with FDI inflows is crucial for policymakers and investors seeking to foster sustainable regional development.

Given the low levels of savings, the countries in the region rely more on foreign capital to bridge the gap between investment and savings in the domestic countries. However, the majority of countries in the region have not been attracting enough capital. Anyanwu and Yameogo (2015) show that the average FDI share of the African regions between 2003 and 2012 stood as follows: North Africa (36.6%), West Africa (24.7%), East Africa (13.7%), Middle (Central Africa) Africa (13.3%), and Southern Africa (11.6%). The analysis by Anyanwu and Yameogo (2015) shows that the SADC region, which constitutes the greater component of countries in Southern Africa, still lags behind other areas of Africa.

Moreover, the importance of financial sector development (FSD), financial openness, and institutional quality cannot be overstated in the context of FDI attraction. A well-developed financial sector provides crucial infrastructure and services for efficient capital allocation, risk management, and investment facilitation. Financial openness, characterised by liberalised capital accounts and a supportive regulatory environment, can enhance the ease of capital flows and reduce investment barriers. Similarly, institutional quality influences investor confidence and risk perceptions, including governance standards, rule of law, and regulatory effectiveness. Uddin et al. (2019) indicate that in the SADC countries, the member states face similar institutional weaknesses such as inability or incapacity to enforce corporate governance regulations, a lack of political will, institutional corrupt practices, and weak institutions that are incapable of taking legal action to penalise wrongdoers.

Bara, Mugano and Le Roux (2017) show that the countries in the region are at different levels regarding the development of the financial sector. South Africa has the most advanced financial sector with domestic credit to the private sector of 147% of gross domestic product (GDP), followed by Mauritius at 91.5% and Namibia at 48.5%. However, apart from South Africa, Mauritius, and Namibia, most of the countries in the SADC region are not well-developed. Otchere, Senbet and Simbanegavi (2017) indicate that countries such as Tanzania, Malawi and Zimbabwe have high levels of financial exclusion, standing at 56%, 55%, and 41% respectively. In addition, even though the countries in the region have done much in terms of liberalising the financial sector, the extent to which the financial system is open is still a cause of concern as stated by (Le Roux and Moyo, 2015). Le Roux and Moyo (2015) further indicate that the level of financial openness based on the Chinn-Ito-Index in the SADC is -0.63 against a maximum of 2.44 (Chinn & Ito 2008).

The study thus seeks to examine the role which is played by FSD, institutional quality, and financial openness in attracting capital flows to the SADC region. The study differs from the existing studies on the subject such as those by Kapingura, Ikhida and Tsegaye (2016), Adeola and Evans (2017), Nchoe (2016), and Bara et al. (2017). These studies have analysed the role of the financial sector in determining growth as well as the determinants of the different types of

foreign capital flows, specifically FDI. This study differs in that it analyses the extent to which FSD, institutional quality, and financial openness determine the different forms of capital flows to the region.

The study expands on past research in this area by including institutional quality and financial openness to the model. This becomes important as the region aims to attract more foreign capital to improve growth as domestic capital supply falls short of domestic capital demand. It is also important to note that the countries in the region are at different levels of development and have different sets of institutions. For example, countries such as Botswana, Zimbabwe, and South Africa are endowed with natural resources such as gold and diamonds. However, the extent to which these countries can attract foreign capital inflows and benefit from it is not the same, suggesting that there are other factors, which are important which must be present in a country (Hayat 2019). The rest of the paper is structured as follows: 'Literature review' section discusses the theoretical framework and the literature review on the role which is played by FSD, financial openness, and institutional quality in attracting FDI. 'Data and methodology' section discusses the data and the methodology applied, 'Estimation techniques' section is the estimation techniques, and 'Empirical results' section provides the empirical results of the generalised method of moments (GMM). Finally, 'Summary of the study' section concludes and provides policy recommendations.

Literature review

The theoretical models that explain the role played by FSD, financial openness, and institutions can be explained first of all by the Dunning's Eclectic Paradigm model. According to the Ownership Location Internalization (OLI) paradigm (Dunning 2001), FDI can be explained by ownership advantages related to the acquisition of strategic assets and efficiency gains location advantages explained by access to resources and to markets and cost motives and internalisation factors because of uncertainty and incomplete contracts. A possible explanation is that location factors are a decisive determinant in less-developed economies whereas specific advantages technology, specialised human capital are more common drivers to explain FDI patterns in more developed economies. Location advantages include resources endowment, lower labour costs, and institutional degree of development in host countries. Foreign direct investment investors might discriminate among developing countries according to their institutional quality, as they tend to invest more in countries with credible and sound institutions while poor governance will deter inward FDI. This behaviour is consistent with the economic theory as poor institutions increase negotiation and enforcement costs. As a result, agents prefer locations where their institutional framework facilitates the development of their firm-specific advantages. This is in line with the results of Buchanan et al. (2012), Busse and Hefeker (2007) which provide evidence that FDI inflows are positively associated to institutional quality.

The other model is the neoclassical Global Efficiency theory. The theory argues that foreign capital plays a huge role in reducing the deficit between capital demand and supply in developing countries. This theory suggests that opening up the financial sector stimulates the inflow of foreign capital in its different forms as international investors are able to pull their investment out of the country, if need be, without any challenges. The second theory supporting the opening up of the financial sector is the neoclassical counterrevolution theory. This theory argues that distortions in the financial system must be eliminated. This can be in the form of implementing policies aimed at opening up the financial sector such as financial sector liberalisation. This will result in the financial sector opening up. As the financial sector opens up, several foreign investors can flock into the country.

At the empirical level, there are several studies which have analysed the link between FDI and the variables of focus (Acaravci & Ozturk 2012; Akbar, Naqvi & Din 2000; Alfaro et al. 2004, 2006; Braiton & Odhiambo 2023; Bruno, Campos & Estrin 2018; Coppola et al. 2021; Kapingura, Mkosana & Kusairi 2022; Le Roux et al., 2019; Omran & Bolbol 2003; Qamruzzaman & Jianguo 2020). Of the studies on institutions and FDI, Buchanan and Rishi (2012) examined the importance of institutions in attracting FDI focusing on developed and developing countries. The key findings were that key governance indicators play a crucial role in attracting FDI. In another study, Alvarez (2015) suggests a strong link between institutional quality and attracting capital flows in a country. There is also support that countries with good governance and public sector reliability have a tendency of attracting more FDI. This result was also found to be consistent with Aziz (2017) who also looked at the influence of institutional quality on FDI at the Arab countries. The same result was also found by Igan, Lauwers and Puy (2022), Ahmed (2014), Asif and Majid (2017) and Bowe and Kolokolova (2017) on 66 countries. The authors found that countries with good institutional frameworks tend to attract more capital flows investment and this creates adequate conditions to boost private sector and investment abroad. These studies highlight the fact that institutions do play a very important role in attracting FDI inflows.

On the other hand, Kurul and Yalta (2017) found that some institutional factors matter more than others in attracting FDI flows. This is consistent with Khan et al. (2022) who identified that corruption, political stability, and voice and accountability are important institutional factors in attracting FDI inflows. On the other hand, government effectiveness and regulatory quality were found to dampen FDI inflows, highlighting the nuanced impact of institutional quality on capital flows.

For the studies on financial development and FDI, at the cross-country level, Anyanwu (2012) found that financial development does not play an important role in attracting FDI in African countries. The author suggests that in a well-developed country, credit is readily available and there may be no need for FDI. On the other hand, it is argued that the

negative link between FDI and FSD could be attributed to the manifestation of FDI and other sources of capital such as bank loans.

The studies that established a positive link between FDI and FSD include Varnamkhasti and Mehregan (2014), Chee (2010), Tsaurai (2017), Sahin and Ege (2015), Fromentin (2017), Desbordes and Wei (2017). These studies indicate that a well-developed financial sector does promote FDI inflow through increasing access to external finance as well as indirectly providing support for the overall economy.

It is also argued that the relationship between FSD and FDI inflow is bi-directional (Irandoost 2021). Irandoost (2021) suggests that FDI has the potential to stimulate the local stock market through its investment spillovers. This arises because of the ability of FDI to develop the stock market within the domestic economy through listing on the stock market. The participation of multinational companies does also force developing countries to adopt market-friendly policies. This will in turn attract more companies to list on the stock market. In this case, the stock market will have expanded because of the activities of the multinational companies.

On the literature on financial openness and capital inflows, Bekaert, Harvey and Lundblad (2011), Reinhardt, Rocco and Tressel (2010), Mughogho and Alagidede (2019), Wang, Yang and Chang (2019) found that financial openness does enhance the inflow of FDI into country. These studies highlight the fact that financial openness results in domestic financial markets becoming part of the global markets.

On the other hand, Bush (2015) found that financial openness on its own does not attract capital flows. This argument is also supported by other studies such as Rodrik and Subramanian (2008) and Stiglitz (2000). These studies argue that the effect of financial openness on FDI is ambiguous in the presence of distortions such as macroeconomic imbalances, weak institutions, as well as information asymmetries. In this regard, even though there is financial openness, a country may not realise an increase in FDI inflows.

Methods

The study is underpinned by the Hermes and Lensink financial development model, the North's institutional theory, and the eclectic theory on FDI inflow. The first model indicates that mechanisms such as the quality of financial markets and the availability of local financial markets tend to influence attracting foreign capital and the allocation of technology in the host country. Lucas (1993) and Dunning (1998) suggested that foreign investors prefer locations that offer the best economic and institutional facilities. Hence, foreign investors' decisions depend on the rate of return based on sound institutions and other macroeconomic indicators. Lastly, Desai, Foley and Hines (2009) also alluded to the notion of capital controls as an important factor since they deter profit repatriation, leading to FDI flows being more likely to be channelled to economies with minimal or

TABLE 1: Study variables.

Variable name	Description	Data source
FDI	Foreign direct investment (FDI), used at the first proxy for capital flows in the SADC is a category of cross-border investment in which an investor resident in one economy establishes a lasting interest in and a significant degree of influence over an enterprise resident in another economy (Bussière, Schmidt & Valla 2018).	World bank development indicators
FINDEV	Financial development (Gross fixed capital formation as per cent of GDP, gross savings). Financial development is the enhancement of financial systems' efficiency, depth, breadth, and stability within an economy. It involves improving financial intermediation, market infrastructure, regulations, and institutional capacity to facilitate greater access to financial services, efficient resource allocation, and economic growth (Mbona 2022; Tarchoun & Mili 2024). Financial development is measured by aggregate credit to the private sector by financial organisations including banks as a share of GDP which is consistent with King and Levine (1993). Domestic credit to the private sector as a percentage of gross domestic product is anticipated to have a positive relationship with capital inflows.	World bank development indicators
POLST	Political Stability Index (POL). Institutional quality is measured by polity. The 'Polity Score' captures the regime authority spectrum on a 21-point scale ranging from -10 (known as hereditary monarchy) to +10 (consolidated democracy) (Kapingura et al. 2016; Seleteng et al. 2013).	World bank development indicators
KAOPEN	For financial openness, the capital account openness index (KAOPEN) was employed. This refers to the intensity of capital controls by Chinn and Ito (2008). Chin and Ito (2008) argue that 'KAOPEN is based on the binary dummy variables that codify the tabulation of restrictions on cross-border financial transactions reported in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER)', International Monetary Fund (1994). The index has also further incorporated other types of restrictions such as current account restrictions and not just capital account controls. Also, this index covers many countries for a long-time period.	World bank development indicators
CONTROL	The control variables include: <ul style="list-style-type: none"> • Inflation (INF) to represent institutional quality in respect of governance. Inflation is a broad measure that reflects the overall increase in prices or the cost of living in a country (IMF 2024). • Interest rates (I) are understood to affect investments and borrowing expenses for businesses when they increase (Mlangeni & Buthelezi 2024). • Government expenditure (GDS) includes government consumption, investment, and transfer payments (Mischchenko et al. 2017). • Gross domestic product (GDP) represents the total monetary value of all final goods and services produced within a country's borders over a specific period (Mischchenko et al. 2017). • External debt (EXT_DBT) when high can result in poor social, economic and political status of a country (Mugambi and Murunga 2017). 	World bank development indicators

Note: Please see the full reference list of the article, Makalima, S.O., Nduna, S. & Kapingura, F.M., 2024, 'Determinants of foreign direct investment in SADC region: Case of financial development, institutions and openness', *South African Journal of Economic and Management Sciences* 27(1), a5699. <https://doi.org/10.4102/sajems.v27i1.5699>, for more information.

no restrictions. Based on the three models, the following empirical model was utilised in Equation 1:

$$CAPITALINFLOW_{it} = \beta_0 + \beta_1 (FINDEV)_{it} + \beta_2 (POLST)_{it} + \beta_3 (OPENS)_{it} + \beta_4 (CONTROL)_{it} + \varepsilon_{it} \quad [\text{Eqn 1}]$$

Where i and t represent countries and time, respectively, FINDEV is financial development (Gross fixed capital formation as per cent of GDP, gross savings), POLST political stability index, OPENS capital openness index and inflation variable, and ε is the error term.

The data utilised in the study are from 2008 to 2022 for 15 countries. This was necessitated by the availability of data. A detailed description of the variables is provided in Table 1.

Estimation techniques

To deal with the problem of endogeneity, Arellano and Bover (1995) and Blundell and Bond (1998) established the GMM dynamic panel data estimator, which will be employed in the study. The GMM method is applicable when the period (t) measured is smaller than the sample size, in this case, the number of countries studied. The technique is a dynamic estimator applied to panel data by using instrumental variables to correct for the endogeneity (Mbona 2022). Because of the presence of heteroscedasticity and serial correlation, the two-step standard errors will be estimated using Windmeijer (2005) methodology. The approach deals with matters of endogeneity between variables and possible biases encouraged by country-specific effects.

Given that the specification on equation 1 includes a lagged regressor and country-specific fixed effects, the model was

estimated using a difference GMM approach. The two-step procedure from Arellano and Bover (1995) and the Windmeijer (2005) model were used. The lagged values of the regressors were employed as tools. The robust tests performed are the second order autocorrelation test and the J -statistic. The J -statistic was performed to check for the strength of the instruments.

Hansen introduced the Generalised Method of Moments in his celebrated 1982 paper. Johnston and Dinardo (1997) state that there has been a surge in the use of GMM estimators for two main reasons. The GMM nests many common estimators and provides a useful framework for comparison and evaluation. In addition, the GMM provides a 'simple' alternative to other estimators, especially when it is difficult to specify the maximum likelihood estimator and where there is endogeneity.

The GMM model offers a number of advantages relative to other econometric models. It is often argued that the GMM approach is the second-best identification strategy compared to the IV approach in case of endogeneity of the explanatory variables (Arellano & Bover 1995). Sometimes, it is also stated that the dependent variable lagged one period can be included as additional explanatory variable as stated by Baum, Schaffer and Stillman (2003) and Larios-Meño (2019). Generalised Method of Moments is more of an econometric advantage than a proper solution for endogeneity. Generalised Method of Moments is also a class of estimators that happens to be naturally well-suited to deal with potential endogeneity issues. Generalised Method of Moments is a well-suited method for using dynamic micro panel data.

Past literature has consistently highlighted the presence of endogeneity among the explanatory variables of FDI. For

instance, Alfaro et al. (2004) identify bidirectional causality between financial development and FDI, using instrumental variables (IV) to address endogeneity by employing historical determinants of financial development as instruments. Similarly, Quinn and Inclan (1997) demonstrate that financial openness can both cause and result from FDI, addressing endogeneity by using past policies on financial openness as instruments. Kose et al. (2006) also focus on the endogeneity impact of financial openness, employing dynamic panel data approaches to control for potential endogeneity. Saini and Singhania (2018) highlight the endogeneity impact in FDI determinants while distinguishing between developed and developing countries. Extensive research on FDI-related endogeneity has been conducted, as seen in studies by Taşdemir (2022), Hou et al. (2021), and Paul and Jadhav (2020).

The above studies show how financial indicators such as FSD, financial openness, and institutional quality can have a high likelihood of endogeneity, an element effectively addressed by the GMM. Foreign direct investment inflows are likely to be influenced by their past values because past FDI can have a high impact in current FDI (Larios-Meño 2019). One of the GMM benefits is the ability to capture such a dynamic relationship (Batuo, Guidi & Mlambo 2010). Given the panel data nature of the current study, from a collection of 15 countries, the method can suitably control unobserved country-specific effects and provide efficiency and unbiased estimates. Such a variety of data can potentially lead to heteroskedasticity and autocorrelation, which the GMM's robust standard errors take care of. The robust and reliable estimates GMM provides can guide policymakers in the SADC region. By understanding the true impact of FSD, financial openness, and institutional quality on FDI, policymakers can design better-targeted interventions to attract foreign investment.

In summary, GMM is chosen for this study because of its ability to handle endogeneity, dynamic relationships, and panel data characteristics, while providing robust and efficient estimates that are crucial for making informed policy recommendations in the context of the SADC region's economic development. A test for endogeneity was conducted utilising the Wald test so as to confirm the findings from the previous studies.

Results

The descriptive statistics and correlation test of the observed variables to this study are demonstrated in the Appendix (Table 1-A1 and Table 2-A1). The findings indicate a negative correlation between FDI inflows and inflation. Interestingly, the correlation between FDI inflows and capital account openness stands out, reaching 71%, signifying a substantial relationship.

Before performing the GMM test, a test for endogeneity was performed using the Wald test on Domestic Credit to Private Sector (DCP), one of the major independent variables. The results are reported in Table 2.

TABLE 2: Wald test for endogeneity.

Test statistic	Value	df	Probability
<i>t</i> -statistic	4.485864***	394.000	0.0000
<i>F</i> -statistic	20.12298***	(1.394)	0.0000
Chi-square	20.12298***	1.000	0.0000

Note: *, **, *** indicates significance of the coefficients at 10%, 5% and 1% level of significance, respectively.

The results presented in Table 2 show that both the *t*-statistic and the *F*-statistic are significant at the 1% level. This, therefore, suggests that there is evidence of endogeneity in the model. This thus provides support for the estimation of the GMM model.

This section reports the GMM results in Table 3 in the four models discussed further in the text. There are 15 countries (*n*), over a 14-year period (*t*) and 570 observations. Four models are estimated, where Model 1 is the baseline model containing all observed variables but excluding the interactions observations between variables.

As depicted in Table 3, the empirical findings reveal a positive effect of broad financial development, measured by domestic credit to the private sector, on FDI inflows within the SADC region. Significance was observed at the 5% level, indicating that a 1% increase in credit to the private sector corresponds to a 51.04% rise in FDI inflows, all else being equal. This aligns with the perspectives of Kapingura et al. (2016) and Lane and McQuade (2014), who argue for the pivotal role of domestic credit to the private sector in attracting FDI. Consequently, nations capable of channelling resources to private institutions are poised to attract more FDI than those with lower domestic credit levels to the private sector.

Similarly, a significant and positive relationship between financial openness and FDI is observed in line with existing literature. These findings agree with the FDI theory stating that financial openness reflects a country's accessibility to the global market and resources. Notably, Anyanwu (2011) highlights the fact that much of the foreign investment in Africa is export-oriented. The significance level observed is 5%, implying that an increase in financial openness has the potential to bolster FDI inflows within the region, as foreign investors are inclined to establish businesses in economies with liberalised systems facilitating capital movement without constraints.

Macroeconomic stability plays a crucial role in attracting FDI inflows, as evidenced by the negative coefficient of inflation, signifying a stable macroeconomic environment. This finding resonates with Buckley, Wang and Clegg (2010), who advocate for stable macroeconomic conditions because of their association with lower investment risk. Conversely, a negative relationship is observed between FDI inflows and interest rates, indicating that a 1% increase in interest rates corresponds to a 7% decrease in FDI, although significance levels were not established. Models 3 and 4 maintain consistency with the baseline model coefficient for interest rates. Regarding GDP, results across the baseline model and

TABLE 3: The Generalised Method of Moments estimation results on the relationship between financial sector development, institutional quality, and capital inflows in the Southern African Development Community region, 1980–2019.

Variable	Model 1	Model 2	Model 3	Model 4
C	-7293573 (0.2342)	0.234137 (0.8118)	- -	-4758838 (0.0030***)
FDI (-1)	0.617609*** (0.0018)	0.586361*** (0.0000)	0.541856*** (0.0000)	0.542083 (0.0000***)
DCP	0.510449*** (0.0002)	0.271329** (0.0211)	- -	- -
OPE	0.312654** (0.0275)	0.020438** (0.0339)	0.32000*** (0.0017)	- -
POL	0.078893 (0.7100)	0.038712 (0.5413)	- -	- -
GFCF	0.066617 (0.4938)	-	0.049854 (0.3431)	0.052216 (0.2951)
GDS	0.141502** (0.0109)	-	0.158592 (0.0066***)	0.164876 (0.0030***)
GDP	0.952644** (0.0478)	-	0.229749*** (0.0002)	0.538345*** (0.0000)
I	-0.190652 (0.6700)	-	-0.007715 (0.9445)	-0.005441 (0.9603)
INF	-0.007351 (0.6726)	-	0.000216 (0.9594)	0.000151 (0.9711)
EXT_DBT	-0.018184 (0.2016)	-	-0.020223** (0.0115)	-0.020154 (0.0108**)
DCP*POL	-	-	0.681727** (0.0321)	-
POL*OPE*DCP	-	-	-	0.162524*** (0.0034)
J-statistic	1293535	2083191	4337625	4321518
Prob (J-statistic)	0.255398	0.004027	0.114313	0.228774
Arellano-Bond (AR[1])	0.236058	-0.721294	0.249516	1085942
Arellano-Bond (AR[2])	-1441517	-0.197601	-0.358576	-2372633
Observations	570	570	570	570
Countries	15	15	15	15

Note: Standard errors reported in parentheses.

*, **, *** indicates significance of the coefficients at 10%, 5% and 1% level of significance, respectively.

C, Constant; FDI (-1), Foreign direct investment; DCP, Domestic Credit to Private Sector; OPE, Capital Openness index; POL, Political Stability Index; GFCF, Gross fixed capital formation; GDS, Government expenditure; GDP, Gross Domestic Product; I, Interest rates; INF, Inflation; EXT_DBT, External debt.

both models 3 and 4 align with previous studies, revealing a positive and statistically significant effect of GDP on FDI. Specifically, a 1% increase in GDP is associated with a 95% increase in FDI within the SADC region, consistent with findings by Masipa (2018) and Alshamsi, Hussin and Azam (2015), which emphasise the positive relationship between economic growth, FDI, and GDP growth.

In contrast, concerning external debt, findings from the baseline model and both models 3 and 4 are consistent with past literature, indicating a negative and statistically insignificant effect of external debt on FDI. Specifically, a 1% increase in external debt is associated with a 1.8 unit reduction in FDI. These results align with those of Tanna et al. (2018), who argue that FDI-induced growth depends on external debt constraints, with high indebtedness limiting growth benefits from FDI. Moreover, increasing financial development can mitigate the negative influence of high external debt on the FDI–growth nexus, as suggested by

Mugambi and Murunga (2017), who highlight the negative impact of external debt service on a country's FDI.

The coefficient of Polity, which measures institutional quality, exhibits a positive yet statistically insignificant relationship with regional FDI inflows. This suggests that while good institutions may instil confidence in investors and attract more foreign capital, their influence on the model's significance levels is negligible. However, an environment characterised by unpredictable laws, regulations, and government instability may deter FDI inflows, as exemplified by concerns such as political instability in various SADC countries, such as South Africa's debates regarding the nationalisation of the Reserve Bank and land expropriation (Mahlati 2018).

Gross Fixed Capital Formation (GFCF) demonstrates a positive relationship with FDI, indicating that a 1% increase in GFCF corresponds to a 6.7% increase in FDI, consistently observed across the baseline model and models 3 and 4. This finding underscores the importance of improving the investment climate to attract FDI, as supported by Amighini, McMillan and Sanfilippa (2017), who suggest that FDI positively affects GFCF, particularly when investment projects are directed towards productive activities.

Regarding GDS, the results indicate a significant positive effect on FDI, with a 1% increase in GDS associated with a 14.2% increase in FDI, significant at the 1% level. This finding aligns with Abu and Karim (2016), who found that increased income and savings in sub-Saharan Africa attract more FDI, highlighting the income-driven nature of savings in the region.

The interaction between domestic credit to the private sector and political stability significantly impacts FDI inflows, as evidenced in model 3, with a positive and significant relationship observed at the 5% level. This suggests that countries with developed financial sectors and stable political environments are better positioned to attract FDI. This finding resonates with those of Dutta and Roy (2011), who stress the importance of political stability in the FDI–financial development association, suggesting that higher stability facilitates financial institutions in efficiently leveraging FDI benefits.

Moreover, model four reveals a significant positive relationship between the interaction of domestic credit to the private sector, capital account openness, and political stability with FDI inflows, indicating that a 1% increase in this combination leads to a 16% increase in FDI inflows. This aligns with studies by Kapingura et al. (2016) and Lane and McQuade (2014), suggesting that countries with well-developed financial sectors, financial openness, and political stability are more attractive to FDI.

The Hansen J-test is utilised to assess model validity, indicating that three out of four models have probabilities above the 10% significance level, suggesting the validity of instruments. Furthermore, the Arellano-Bond test for second-

order serial correlation reveals negative coefficients, indicating an absence of autocorrelation, thus validating the models for interpretation. Diagnostic tests play a crucial role in ensuring the robustness of the models, preventing spurious regressions. and enhancing their reliability (Taylor 1993).

Conclusion

The study aimed to analyse the impact of FSD, financial openness, and institutional quality on foreign capital inflows to the SADC region. Additionally, it sought to examine trends in capital flows, FSD, financial openness, and institutional quality in the region. Employing econometric analysis, the study assessed how these factors determine foreign capital inflows in SADC countries and proposed policy implications based on the findings.

Results from four estimated models indicated that domestic credit to the private sector, financial openness, GDP, GFCF, and savings positively influence FDI inflows in the SADC region. Conversely, external debt exhibited a negative effect. Institutional quality emerged as a significant factor in determining FDI, with a positive influence when interacted with FSD and financial openness. This underscores the importance of robust institutional frameworks in attracting foreign capital, albeit contingent on other variables.

These findings suggest that countries with strong institutional frameworks attract more capital inflows, fostering conditions conducive to private sector growth and foreign investment. Accordingly, SADC countries should focus on policies aimed at enhancing institutional quality and FSD. Policy implications include promoting political stability to create a conducive business environment, strengthening the rule of law to combat corruption and protect property rights, and increasing domestic credit to the private sector to reduce government crowding out. Embracing policies that stimulate economic growth and aggregate demand for goods and services is also crucial for attracting FDI inflows in SADC countries.

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Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

S.O.M. developed the theoretical formalism, performed the analytic calculations and performed the numerical simulations. Both S.O.M. and S.N. contributed to the final version of the article. F.M.K. supervised the project.

Ethical considerations

Ethical clearance to conduct this study was obtained from the University of Fort Hare's Research Ethics Committee (UREC), (No. REC-270710-028-RA Level 01), Project number: KAP031SMAK01.

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Data availability

The data that support the findings of this study are openly available in the World Bank development indicators at <https://databank.worldbank.org/source/world-development-indicators>.

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Appendix start on the next page →

Appendix 1

TABLE 1-A1: Descriptive statistic.

Variable	FDI	FIN_DEV	GDP	GFCF	GDS	INF	OPE	POL	I
Mean	3.94	33.67	3.32	23.46	18.87	177.43	-0.46	4.14	8.17
Median	1.64	17.73	3.58	21.33	16.93	12.41	-1.21	6.00	6.69
Maximum	144.52	160.12	20.61	76.69	50.36	24411.03	2.33	10.00	52.43
Minimum	-6.90	3.09	-24.70	9.31	-1.85	-1.22	-1.92	-10.00	-29.22
SD	10.20	36.98	5.34	10.66	10.67	1642.39	1.26	5.89	10.14
Sum	447.00	447.00	447.00	447.00	447.00	447.00	447.00	447.00	447.00

SD, standard deviation; FDI, Foreign direct investment; OPE, Capital Openness index; POL, Political Stability Index; GFCF, Gross fixed capital formation; GDS, Government expenditure; GDP, Gross Domestic Product; I, Interest rates; INF, Inflation; FIN_DEV, Financial development.

TABLE 2-A1: Correlation matrix relationship between foreign direct inflows and the variables used in the study.

Variable	FDI	FINDEV	GDP	GFCF	GDS	INF	OPE	POL	I
FDI	1.000	-	-	-	-	-	-	-	-
FINDEV	0.075 (0.199)	1.000	-	-	-	-	-	-	-
GDP	0.076 (0.194)	0.430*** (0.000)	1.000	-	-	-	-	-	-
GFCF	-0.068 (0.245)	-0.123** (0.034)	0.123 (0.034)	1.000	-	-	-	-	-
GDS	0.025 (0.660)	-0.037 (0.524)	0.196*** (0.000)	0.514*** (0.000)	1.000	-	-	-	-
INF	-0.172*** (0.003)	-0.228*** (0.000)	-0.355*** (0.000)	-0.156*** (0.0072)	-0.253*** (0.000)	1.000	-	-	-
OPE	0.054 (0.354)	0.044 (0.445)	0.719*** (0.000)	0.209*** (0.000)	0.265*** (0.000)	-0.180*** (0.001)	1.000	-	-
POL	0.079 (0.176)	0.377*** (0.000)	0.359*** (0.000)	0.117** (0.044)	0.244*** (0.000)	-0.099* (0.089)	0.351 (0.000)	1.00	-
I	0.073 (0.207)	-0.212*** (0.000)	-0.285 (0.000)	-0.087 (0.134)	-0.185*** (0.001)	-0.166*** (0.004)	-0.095 (0.102)	-0.023 (0.683)	1.00

Note: Probability values reported in parentheses.

***, Correlation is significant at the 0.01 level of significance; **, Correlation is significant at the 0.05 level of significance; *, Correlation is significant at the 0.1 level of significance.

FDI, Foreign direct investment; OPE, Capital Openness index; POL, Political Stability Index; GFCF, Gross fixed capital formation; GDS, Government expenditure; GDP, Gross Domestic Product; I, Interest rates; INF, Inflation; FIN_DEV, Financial development.