INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCE STUDIES
Vol: 16 **No:** 04 **Year:** 2024 **ISSN:** 1309-8055 (Online) (**pp.** 312-338) **Doi:** 10.34109/ijefs.202416415
Received: 11.07.2024 | **Accepted:** 21.10.2024 | **Published Online:** 30.12.2024

-RESEARCH ARTICLE-

COMPLEMENTARY FACTORS IN THE TRADE OPENNESS-GROWTH NEXUS: EVIDENCE FROM SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC) COUNTRIES

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─Abstract─

Trade openness is broadly acknowledged as a critical determinant of economic growth; however, discussions continue regarding its associated benefits and drawbacks. These ongoing debates often arise from analyses that assess its aggregate influence on growth without adequately accounting for the contextual conditions that modulate its effects. This underscores the necessity of considering complementary factors within the trade-growth discourse, as such an approach clarifies the prerequisites an economy must satisfy for trade openness to meaningfully foster economic expansion. Consequently, the present study investigates the influence of trade openness and its accompanying variables on economic growth across sixteen Southern African Development Community (SADC) member states over the period 1980–2019, employing the pooled mean group (PMG) estimation method. The empirical evidence reveals that, in the long term, trade openness exerts a directly positive and statistically significant effect on economic performance. Furthermore, the analysis identifies a noteworthy moderating role played by intermediary variables in the relationship between economic growth and trade openness. This finding suggests that the efficacy of trade policy within SADC economies is not solely dependent on openness itself, but also on the presence of conducive complementary conditions. Based on these insights, the study offers policy recommendations aimed at enhancing growth outcomes through strategic engagement with trade.

Citation (APA): Gonese, D. (2024). Complementary Factors in The Trade Openness-Growth Nexus: Evidence from Southern African Development Community (SADC) Countries. *International Journal of Economics and Finance Studies*, 16(04), 312-338. doi: 10.34109/ijefs.202416415

Vol: 16 **No:** 04 **Year:** 2024 **ISSN:** 1309-8055 (Online) (**pp.** 312-338) **Doi:** 10.34109/ijefs.202416415

Keywords: Trade Openness, Complementary Factors, Economic Growth, SADC, Panel Data, Pooled Mean Group.

INTRODUCTION

International trade openness has long been regarded as a potential driver of global economic advancement (Jalil & and Rauf, 2021; Sachs et al., 1995). The capacity to engage in cross-border trade, access wider markets, and capitalise on comparative advantages has frequently been associated with enhanced economic performance (Minford et al., 1995). Nonetheless, the traditional view of trade openness (TRO) as an isolated catalyst for growth is insufficient for capturing the multifaceted nature of its impact. To fully harness the benefits of trade, it is imperative to consider the role of complementary policies—such as addressing income inequality, reinforcing financial systems, enhancing human capital, and improving institutional quality. This study seeks to clarify the interaction between these complementary dimensions and TRO, underscoring the need for an integrated approach to unlock trade's full potential for fostering economic growth within SADC countries.

Established in 1992, the SADC functions as a regional integration agreement (RIA) aimed at promoting trade, development, and economic cohesion in Southern Africa (Tanyanyiwa & Hakuna, 2014). Its 16 member states currently include Comoros, Botswana, the Democratic Republic of Congo (DRC), Madagascar, Mauritius, Malawi, Mozambique, Namibia, Seychelles, Tanzania, South Africa, Zambia, Zimbabwe, Lesotho, and again Madagascar (le Roux, 2024). A key target outlined in the Regional Integrated Strategic Development Plan (RISDP) is the attainment of a 7% annual gross domestic product (GDP) growth rate (Burgess, 2009; Donaldson, 2019). The establishment of the SADC Protocol on Trade in 1996 and the launch of the SADC Free Trade Area in 2008 contributed to an average 41% increase in regional trade openness between 1990 and 1999 (Behar & Edwards, 2011). Between 2000 and 2011, trade in the region grew markedly—from US$91,089.52 million to US$353,636.4 million (AfDB, 2013; SADC Secretariat, 2019). From 1980 to 2019, the region recorded an average trade openness of 49%, with countries such as Mauritius (63%), Namibia (64%), Lesotho (73%), and Seychelles (97%) demonstrating particularly high openness, while Comoros (23%), Zambia (23%), and Madagascar (19%) exhibited lower levels (Mengistae, 2010).

As regional trade deepened, the average trade-to-GDP ratio in SADC rose to approximately 50% during the 1990s, reflecting growing global economic integration. SADC's total GDP increased from roughly US $100 billion in 1980 to over US $600 billion by 2019. Nations such as Mozambique and Tanzania experienced notable post-1990s expansion, with annual GDP growth rates averaging 6–7%. Tanzania led regional growth performance between 2015 and 2019, consistently exceeding 5% (le Roux,

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2024; Secretariat, 2020). In 2019, other countries including Madagascar, Malawi, Seychelles, the DRC, Mauritius, and Botswana achieved growth rates surpassing 3%. Several years recorded notable improvements in aggregate growth across the region: 3.2% in 1988, 3.1% in 1996 and 2005, 4% in 2010, 3.8% in 2011, 3.4% in 2012, and 3% in 2013. The peak annual growth rate was 4.2% in 2007. Despite regional TRO surpassing 40% post-1992, economic growth has remained below the RISDP's 7% benchmark. For instance, the initial three years following SADC's formal establishment (1992–1994) saw negative growth rates of -2.3%, -1.4%, and -1.8%. From 1998 to 2002, the region averaged a modest 0.8% growth rate. These observations prompt critical examination of whether TRO alone suffices as a growth strategy. Accordingly, this study incorporates additional explanatory variables—such as human capital, financial development, and institutional quality—that have demonstrated gradual progress (Asaleye & Strydom, 2022; Matekenya et al., 2021; Ofori & Asongu, 2021), alongside persistent income inequality (Letsoalo & Ncanywa, 2021) and institutional weaknesses (Cilliers, 2021; Wandeda et al., 2021).

Scholars (Ratnayake, 2019; Stantcheva, 2022) emphasise that while TRO can stimulate GDP, its benefits must be equitably distributed to foster inclusive growth. Yet, in SADC, income inequality (INEQ) has been a longstanding obstacle (Martin, 2022). The World Bank (2022) notes that Southern Africa remains the most unequal subregion in Africa. Between 1980 and 2019, SADC countries recorded Gini Coefficients consistently above 50 (Alvaredo et al., 2019), underscoring the critical need to address INEQ in the trade-growth relationship. Human capital development has been widely recognised as a central economic concern, influencing both internal dynamics and external competitiveness (Lucas, 1988). Within SADC, improving human capital has become a strategic priority due to its contribution to skills acquisition and absorptive capacity (Association, 2012; Union, 2014). The 1997 Protocol on Education and Training fostered greater educational access and attainment across multiple countries—including Madagascar, Zimbabwe, Malawi, Tanzania, Lesotho, the DRC, Zambia, and Mozambique (Association, 2012; Secretariat, 2020). Despite this progress, challenges persist in Malawi and Mozambique regarding educational quality and vocational training (Aggarwal & Gasskov, 2013; Union, 2014), and rural-urban disparities remain widespread (Union, 2014). Given the pivotal role of human capital, its influence on the TRO-growth nexus warrants close evaluation to inform effective policy across the region.

Financial development (FD) has similarly progressed, supported by instruments such as the Financial Investment Protocol (Bank, 2014; Qobo, 2007). Nevertheless, issues of limited depth and access persist (Mlachila et al., 2016). Reforms have aimed to strengthen banking systems and financial intermediation (Triki & Faye, 2013), resulting in incremental progress from 1980 to 2019. In 2013, 42% of Southern African adults had formal financial accounts—surpassing figures in North, East, West, and Central Africa. Countries like South Africa and Mauritius boast advanced financial sectors,

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whereas others face hurdles due to cost barriers (Authority, 2022). While mobile banking has improved access in recent decades, rural areas remain underserved (Secretariat, 2019). Moreover, the sector remains concentrated, particularly with South African banks controlling a significant share of banking assets and deposits in smaller Common Monetary Area (CMA) members (Eswatini, Lesotho, Namibia). Credit access constraints continue to affect small and medium enterprises (Kretzschmar, 2021; Mathumo, 2021). These dynamics highlight the importance of further exploring how FD can underpin trade-driven growth in the region.

Institutional quality continues to pose a challenge for many SADC nations, impacting democratic governance, legal frameworks, and transparency (Malindini, 2021). From 1980 to 2019, governance standards varied significantly (Simard & Viseth, 2022). Botswana, for instance, consistently achieved high governance ratings (Fombad, 2023), while Zambia, Mozambique, and Namibia made regulatory improvements in the 2000s (Omede et al., 2016). Conversely, the DRC, Eswatini, Madagascar, Tanzania, and Zimbabwe continue to grapple with issues such as corruption, bureaucratic inefficiency, and political instability (Cilliers, 2021). It is therefore essential to integrate institutional quality into the trade-growth evaluation framework.

Previous research primarily concentrated on the direct impacts of TRO on growth (Khobai & Moyo, 2021; Oloyede et al., 2021), while other studies explored the effects of specific mediating variables such as skills or governance on economic outcomes (Arif et al., 2022; Ngepah et al., 2021). Although there is strong evidence of positive relationships between these mediating elements and GDP growth, many of these investigations have been conducted in Asia (Amna Intisar et al., 2020; Arif et al., 2022) or in heterogeneous panels combining developed and developing nations (Fatima et al., 2020). Some research includes African and sub-Saharan countries as a broad panel (Zahonogo, 2016), or focuses on isolated mediating variables (Akinlo & Okunlola, 2021; Leyaro, 2015). Mbulawa (2015) uniquely studied SADC economies but limited the analysis to institutional quality and financial openness over a shorter timeframe (1996–2010). Zahonogo (2016) examined three mediating variables in sub-Saharan Africa between 1980 and 2012. In contrast, the current study centres exclusively on SADC states with shared developmental aspirations, extending the analysis across a longer period. It concurrently assesses income inequality alongside three mediating variables to develop a more holistic understanding of the trade-growth dynamic.

This research aims to provide nuanced insight into the roles of human capital, income inequality, institutional quality, and FD in shaping the TRO-growth relationship. Accounting for these variables is essential for enabling inclusive and sustainable economic progress across SADC. The findings can inform regional policymakers in crafting strategies that maximise the advantages of TRO while mitigating drawbacks such as inequality or institutional fragility. Moreover, this study may serve as a reference point for comparative inquiries in other regions and guide international

development bodies such as the World Bank, United Nations Development Program (UNDP), and International Monetary Fund (IMF) in shaping initiatives within SADC and analogous contexts.

The next section presents a review of the relevant literature. The methodological approach is outlined in Section Three, followed by the presentation of empirical findings in Section Four. The final section discusses conclusions, policy implications, and recommendations.

LITERATURE REVIEW

The theoretical foundation of the relationship between trade and economic growth is grounded in classical trade theories. Smith's (1776) principle of absolute advantage and Ricardo's 1817 theory (Robinson & Sraffa, 1951) of comparative advantage argue that trade liberalisation enhances economic growth by fostering specialisation and promoting the efficient allocation of resources. Neo-classical frameworks, including the Heckscher-Ohlin (HO) model (Heckscher & Ohlin, 1991; Ohlin, 1933) and the Stolper-Samuelson Theorem (Samuelson, 1949), also articulate this relationship. According to the Heckscher-Ohlin-Samuelson (HOS) model, nations benefit from trade by specialising in and exporting goods that intensively use locally abundant production factors, while importing goods reliant on scarce resources (Berkum & Meijl, 1998). This specialisation enhances productivity and efficiency, which supports economic expansion. Furthermore, the HOS framework posits that trade facilitates factor price equalisation, narrowing disparities in factor costs across economies, thereby contributing to income convergence and long-term growth (Leamer, 1995). However, the Stolper-Samuelson Theorem highlights that trade may yield unequal income distribution within countries (Berkum & Meijl, 1998). For instance, in developing regions such as SADC, liberalisation may disproportionately benefit sectors requiring skilled labour while exacerbating inequality for unskilled workers, implying that trade may intensify income inequality if benefits accrue predominantly to higher-income groups.

New Trade Theory (Krugman, 1982) introduces the notion that trade generates economies of scale and facilitates product differentiation, allowing firms to expand market access, boost productivity, and consequently spur growth. Complementing this, Endogenous Growth Theory (Lucas, 1988; Romer, 1986) underscores the pivotal role of human capital development, technological innovation, and knowledge accumulation in propelling economic progress. According to this framework, international trade serves as a conduit for technological spillovers and knowledge transfer from advanced to developing economies, thereby enhancing productivity and growth. This model conceptualises technological advancement as an endogenous process, central to accelerating economic performance. Drawing from institutionalist perspectives, such as North (1990), Milgrom et al. (1990), and Acemoglu and Robinson (2010), institutions

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are identified as fundamental determinants of development outcomes. North (1990) further argues that sound governance ensures the efficient allocation of resources and facilitates informed decision-making, thereby fostering sustainable growth trajectories.

While the aforementioned theories delineate the direct influence of trade on economic growth, they inadequately account for the role of complementary variables in mediating this relationship. This underscores the necessity of incorporating such variables in evaluating the trade-growth nexus, particularly in the context of SADC economies. Empirical investigations examining the moderating influence of income inequality and financial development on the trade-growth relationship in developing contexts remain sparse. Existing studies (Kong et al., 2021; Radulović & Kostić, 2020; Raghutla, 2020) predominantly emphasise the direct growth effects of trade openness, collectively concluding that trade facilitates GDP growth.

Conversely, other empirical works (Nguyen et al., 2023; Rakshit, 2022; Wani, 2022) report that trade liberalisation may hinder economic performance in developing nations. Similarly, findings within SADC are inconclusive. Udeagha and Ngepah (2021) contend that lower trade openness fosters long-run growth in South Africa, whereas higher openness has a detrimental effect. In contrast, Moyo and Khobai (2018) suggest that trade openness negatively correlates with growth, while Oloyede et al. (2021) observe an insignificant positive relationship. These divergent outcomes reveal the ambiguous nature of the trade-growth linkage, complicating the formulation of trade-led development policies. Most moderating analyses in the trade-growth literature are confined to developed and ASEAN economies and generally include a single interaction term. For instance, Fatima et al. (2020) examine the mediating role of human capital in the trade-growth dynamic across advanced and emerging economies between 1980 and 2014, concluding that human capital mitigates trade's adverse impacts.

Evidence from developing countries also supports the beneficial moderating role of institutional quality and human capital development in the trade-growth linkage. Akinlo and Okunlola (2021), using Generalised Method of Moments (GMM), analysed governance's influence on this relationship in 38 sub-Saharan African nations (1985–2015), finding that strong institutions counteract trade's negative effects. Additionally, Rachida et al. (2024) indicate that higher education amplifies the favourable impacts of trade on macroeconomic variables such as employment in African economies. Despite its relevance, income inequality—a persistent challenge in many African countries (Martin, 2022)—has received limited attention as a moderating variable. An exception is Leyaro (2015), who examined 100 countries (1980–2010) and found that inequality weakens the positive trade-growth relationship. The current study narrows its focus to SADC economies, which share similar developmental goals and constraints (Secretariat, 2020).

In light of the existing literature, a more comprehensive comparative assessment of the

SADC region is warranted. Previous studies have primarily focused on the direct impacts of trade liberalisation. For example, Moyo and Khobai (2018), analysing eleven SADC countries (1990–2016), concluded that openness impedes growth. However, Khobai and Moyo (2021) later found that trade integration positively influences manufacturing output. Notably, Moyo and Khobai (2018) employed a nominal trade openness metric, critiqued by Alcalá and Ciccone (2004) for failing to capture real trade barriers. Thus, the prevailing literature often overlooks more nuanced indicators and fails to incorporate moderating variables. Further, Farahane and Heshmati (2020) used fixed and random effects models to analyse trade-growth dynamics in SADC between 2005 and 2017, finding that trade openness impairs growth, although export expansion is beneficial. Mbulawa (2015) offers a notable exception by examining governance quality as a moderator in the trade-financial openness-growth nexus (1996–2010), concluding that instability and conflict nullify trade's growth benefits.

This study adopts a real trade openness measure, thereby avoiding distortions arising from cross-national differences in the pricing of non-tradables (Belke & Wang, 2006). For policy relevance, it is crucial to explore key moderating variables such as income inequality within the trade-growth nexus in the SADC context. Accordingly, this research broadens the analytical scope by integrating human capital development, institutional quality, and financial development as additional moderators. Furthermore, the extended temporal coverage (1980–2019) enhances the analysis of long-term relationships. Based on this comprehensive framework, the study tests the following hypothesis:

H_1: *TRO does not affect GDP through complementary factors in SADC countries.*
H_2: *TRO affects GDP through complementary factors in SADC economies.*

The following section delineates the research methodology and identifies the data sources utilised in this study.

DATA AND METHODOLOGY

The dataset for this study was compiled from electronic repositories such as the Global Economy Database (GED), the World Penn Tables (PWT 10.01), and the World Integrated Trade Solution (WITS), encompassing sixteen SADC nations over the period 1980 to 2019 (refer to Appendix 5). The empirical analysis is grounded in the methodological approach formulated by Dollar and Kraay (2001), who investigated the nexus between trade and economic growth through a cross-country regression framework expressed as follows.

$$Y_{ct} = \beta_0 + \beta_1 Y_{ct-k} + \beta_2 X_{ct} + \eta_c + \gamma_t + v_{ct} \dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Where:

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Y_{ct}: economic growth; c:country; t: time; Y_{ct-k}: lagged economic growth; X_{ct}: regressors trade, inflation, government expenditure and financial growth. η_c: error term; γ_t: common unobserved period effect; v_{ct}: idiosyncratic error term. Thus, the model employed in that study is formulated as:

$$lrgdp_{it} = \beta_0 + \theta lrgdp_{it-1} + \beta_1 lrtro_{it} + \beta_2 Z_{it} + \beta_3 lrtro * Z_{it} + \beta_4 X_{it} + w_i + v_t + \varepsilon_{it} \ldots\ldots\ldots (2)$$

Where:

$lrgdp_{it}$ is the logged value of real GDP, the outcome variable, $lrgdp_{it-1}$ is the lagged real growth, $LTRO$ represents trade openness, the main explanatory variable, proxied by real trade openness *(rtro)*. X_{it} denotes the control variables, namely, institutional quality (*iq*), employment (*employ*), human capital development (*hcd*), foreign direct investment (*FDI*), inflation (*infr*), financial development (*fin.dev*), external debt (*exdt*), income inequality (*ineq*) and gross fixed capital formation (*gfcf*). Z_{it} denotes the mediating variables, which include *ineq, hcd, fin.dev,* and *iq*. $lrtro * Z_{i,t}$ represents the interaction variables. Given that real domestic product (*Lrgdp*) is the dependent variable (Equation 2), the interaction term can be interpreted as:

$$lrgdp_{it} = \beta_1 lrtro_{it} + \beta_3 (lrtro_{it} * Z_{it}) \ldots\ldots\ldots (3)$$

Thus, the model explaining how trade affects economic growth, accounting for the listed complementary factors, is formulated as follows:

$$\frac{\partial lrgdp}{\partial lrtro} = \beta_1 + \beta_3 \ldots\ldots\ldots (4)$$

Given that the study employs the panel ARDL estimation method, the growth model specified in Equation 2 is restructured to produce the following ARDL (p, q, ..., q) formulation:

$$\Delta lrgdp_{it} = \theta_i \left[lrgdp_{i,t-1} - \lambda_i lrtro_{it} - \eta_i Z_{it} - \delta_i lrtro * Z_{i,t} - \varphi_i X_{it} \right] + \sum_{j=1}^{p-1} \zeta_{ij} \Delta lrgdp_{i,t-j} + \sum_{j=0}^{q-1} \beta_{ij} \Delta lrtro_{i,t-1} + \sum_{j=0}^{q-1} \vartheta_{ij} Z_{i,t-1} + \sum_{j=0}^{q-1} \varsigma_{ij} \Delta lrtro * Z_{i,t-1} + \sum_{j=0}^{q-1} \varrho_{ij} \Delta X_{i,t-1} + \omega_i + \varepsilon_{it} \ldots\ldots\ldots (5)$$

Where:

$lrgdp_{it}$ is the dependent variable, θ_i is the speed of adjustment. $lrtro_{it}$ is trade openness, which is the main explanatory variable X_{it} and Z_{it} represent the explanatory and mediating variables, respectively. λ_i, η_i, δ_i and φ_i represents the long-run

relationship vector. $[lrgdp_{i,t-1} - \lambda_i lrtro_{it} - \eta_i Z_{it} - \delta_i lrtro * Z_{i,t} - \varphi_i X_{it}]$ denotes the adjustment term. In the error correction model, the outcome variable is treated with a differenced operator (Asteriou & Hall, 2016). Consequently, the differenced ARDL model will have a shorter lag length. Hence, the resultant lag lengths are p-1 and q-1. β_{ij}, ϑ_{ij}, ς_{ij}, and ϱ_{ij} represent the short-term coefficients. ω_i symbolises country-level effects and ε_{it} is the disturbance term.

Estimation Method

This research adopts the panel Autoregressive Distributed Lag (ARDL) framework to examine the impact of trade on economic growth within sixteen SADC member states over the 1980–2019 timeframe. The ARDL framework applied integrates three estimation methods: Dynamic Fixed Effects (DFE), PMG, and Mean Group (MG) approaches, as developed by Shin et al. (1998) and elaborated by Asteriou and Hall (2016). Among these, the PMG estimator is selected as the preferred technique because it effectively utilises the panel structure by accommodating parameter homogeneity across countries, a feature not captured by the DFE and MG estimators (Pesaran et al., 1999). In addition, the PMG estimator delivers superior efficiency relative to the MG and DFE methods by pooling the panel data and properly adjusting for the covariance of errors across cross-sections (Asteriou et al., 2020). This approach is particularly flexible, as it handles heterogeneous panel data structures, including unbalanced panels, and addresses disparities between stationary and non-stationary variables within the dataset (Asteriou & Hall, 2016). To ensure selection of the most appropriate estimator, the Hausman (1978) specification test is employed, facilitating comparison between MG, DFE, and PMG estimators. The next section details preliminary results, commencing with descriptive statistics summarised in Table 1.

Table 1 reveals that, over the period from 1980 to 2019, the mean trade openness for the SADC region stood at approximately 49%, while the average real GDP growth rate was recorded at 3.5%, which is notably only half of the regional target of 7%. The mean Gini coefficient, measuring income inequality, averaged 0.66, highlighting a substantial level of disparity within the region. Institutional quality, as evaluated by Transparency International's scale ranging from -2.5 (denoting weak institutions) to +2.5 (representing strong institutions), averaged 1.25 during the study period. This positive figure reflects some improvement in governance structures, although the relatively modest value suggests that institutional quality remains suboptimal.

Furthermore, the average level of financial development, proxied by domestic credit to GDP, was 23%, while human capital development averaged 2.1%. Other key macroeconomic indicators reported in Table 1 include SFDI at 3.1%, external debt constituting 63% of GDP, employment levels at 5.4%, inflation rates at 84%, and gross fixed capital formation at 22%.

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Table 1: Summary Statistics

Variable	Denotation	Expected *A Priori*	Obs.	Mean	Std.Dev	Min	Max
rgdp	Economic Growth		640	3.454	4.775	-24	26.8
rtro	Real Trade Openness	Positive	456	48.590	29.693	2.064	182.35
ineq	Income Inequality	Negative	467	.655	.070	.528	.833
iq	Institutional Quality	Positive	592	1.245	6.506	-10	10
fdi	Foreign Direct Investment	Positive	629	3.135	5.232	-7.040	57.84
exdt	External Debt	Negative	580	63.133	64.353	.150	581.119
fin.dev	Financial Development	Positive	584	22.575	24.170	.450	131.048
employ	Employment	Positive	628	5.399	6.239	.031	29.837
infr	Inflation Rate	Negative	640	83.973	981.400	-72.7	23773.1
gfcf	Gross Fixed Capital Formation	Positive	633	21.718	10.975	-5.396	76.693
hcd	Human Capital Development	Positive	568	2.059	1.381	1.041	12.334

Source: Author

EMPIRICAL RESULTS

Before discussing the principal findings, it is essential to report the results of stationarity tests for unit root detection to prevent biased regression estimates. Given the presence of missing observations within the panel dataset, the Augmented Dickey-Fuller (ADF) test alongside the Im, Pesaran, and Shin (IPS) test (Im, Pesaran & Shin, 2003) were employed as robust methods appropriate for this study. Although the Levin et al. (2002) is traditionally suited for strictly balanced panel data, the LLC results are also presented here for comparative purposes, as some variables remain responsive to this test despite the unbalanced nature of the panel. Consequently, Table 2 summarises the unit root test outcomes obtained from the LLC, IPS, and ADF approaches.

All three stationarity tests presented in Table 2 indicate that rgdp, rtro, hcd, external debt, and employment are integrated of order one, I(1). Conversely, variables such as infr, fin.dev, and gfcf exhibit stationarity at both their levels and first differences. Due to the mixed integration orders observed among the variables, the PMG estimator is employed in this study, as it accommodates such heterogeneity in integration orders (Shin et al., 1998). The correlation coefficients (refer to Appendix 1) reveal no significant linear multicollinearity among the regressors, thus supporting their joint inclusion in the regression model. An optimal lag length of one was selected for most

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variables; however, FDI, external debt (exdt), and infr utilise a lag length of zero (see Appendix 2).

Table 2: Summary of Unit Root Test Statistics

Stationarity Test	**LLC Test**		**IIPS Test**		**ADF Test**	
Order of Integration	t-stat: 1(0)	t-stat: 1(1)	t-stat: 1(0)	t-stat: 1(1)	t-stat: 1(0)	t-stat: 1(1)
Vars.						
lrgdp	-5.65	-10.84**	-10.88	-17.80**	-9.59	-23.33**
lrtro			0.19	-10.64**	0.58	-8.46**
lineq			3.36	-2.86**	-2.98	-3.25**
liq			-	-	-0.74	-11.63**
lfdi			-6.36**	-17.45**	-3.18**	-19.30**
lexdt			0.400	-12.50**	0.99	-10.65**
lfin.dev			-1.61***	-13.27**	-2.21***	-10.97**
lempoy			12.17	-12.59**	8.12*	-5.55**
linfr	-2.69**	-15.53**	-5.51**	-16.28**	-4.90**	19.04**
lgfcf			-3.54**	-15.75**	-1.89***	-16.39**
lhcd			3.15	-0.74*	0.82	-0.60*
p<0.1*,p<0.05, p<0.01***						

Source: Author

The models are estimated in an ARDL(1) dynamic panel framework, with the specification chosen according to the Akaike Information Criterion (AIC). As displayed in Tables 3 and 4, this study examines both the direct impact of trade on growth (Model 1) and the indirect effects via interaction terms (Models 2 to 5) within the SADC region over 1980 to 2019. Since the probability values of the Hausman (H) test exceed 0.05 (see Tables 3 and 4), the null hypothesis of parameter homogeneity cannot be rejected. Therefore, the PMG estimator is considered the most appropriate technique for analysing the trade-growth relationship in this research.

The statistically significant and ECTs presented in Table 3 indicate the existence of a long-run equilibrium relationship among the variables. For example, deviations from this long-run equilibrium are adjusted at a speed of 86%, as evidenced by the ECT in Model 1. Table 3 demonstrates that trade openness has an insignificant impact on economic growth in the short term. Nevertheless, when controlling for trade openness alongside the human capital index, the effect becomes significant but negative.

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Table 3: Short-Term Growth Effects of Trade Openness

	(Mod. _1)	(Mod. _2)	(Mod. _3)	(Mod. _4)	(Mod. _5)
Vars.					
ECT	-0.86***	-0.90***	-0.84***	-0.82***	-0.68***
	(0.13)	(0.17)	(0.17)	(0.12)	(0.21)
D.lrtro	-0.64	3.28	-52.53**	27.73	-18.10
	(0.69)	(3,35)	(25.56)	(27.43)	(11.14)
D.lineq	-117.8	30,22	19.00	159.2	274.1
	(128.8)	(30,84)	(136.7)	(208.9)	(422.1)
D.lemploy	15.68	51.51	15.63	-44.91	-101.3
	(17.91)	(119.6)	(31.62)	(29.31)	(78.11)
D.lgfcf	1.170*	0.77	1.17**	1.35*	1.642**
	(0.66)	(0.90)	(0.60)	(0.71)	(0.77)
D.lhcd	12.42	9.32	-146.6*	14.21	30.35
	(19.28)	(20.83)	(86.81)	(21.92)	(24.87)
D.lfin.dev	-0.830**	-0.55	-1.276***	33.65	-0.82**
	(0.38)	(0.83)	(0.49)	(36.49)	(0.41)
D.liq	0.14	0.55	0.43	-0.19*	-49.54
	(0.40)	(0.66)	(0.55)	(0.11)	(40.54)
D.lfdi	0.12	-0.003	0.094	0.17**	0.04
	(0.09)	(0.14)	(0.10)	(0.08)	(0.08)
D.lexdt	-1.99**	-2.32**	-2.31*	-1.87**	-3.18*
	(0.88)	(1.10)	(1.31)	(0.91)	(1.90)
D.linfr	0.018	-0.08	-0.06	0.01	-0.10
	(0.15)	(0.19)	(0.16)	(0.16)	(0.17)
Moderating Effects					
D.lrtrolineq		-5,67			
		(5,79)			
D.lrtrolhcd			35.83**		
			(17.67)		
D.lrtrolfin.dev				-6.50	
				(6.93)	
D.lrtroliq					10.10
					(7.79)
Constant	3.20***	-8.18***	14.60***	1.20***	0.13
	(0.46)	(2.41)	(2.55)	(0.26)	(1.42)
H-Test.Sig.Levels	[0.80]	[0.99]	[1.00]	[0.99]	[0.99]
Observations	414	418	414	414	414
ECT: Error Correction Term; Mod.: Model; SR: Short Run; H-Test.Sig.Levels: Hausman Test Significance Levels; Vars.: Variables					

SE. in (parentheses) and prob-values in [squared brackets].
*p<0.1, p<0.05**, ***p<0.01
Source: Author

Model 1 further reveals that a one per cent increase in gfcf enhances economic growth

Vol: 16 **No:** 04 **Year:** 2024 **ISSN:** 1309-8055 (Online) (**pp.** 312-338) **Doi:** 10.34109/ijefs.202416415

by between 1.2% and 1.6%. Table 4 presents the corresponding long-run coefficient estimates.

Table 4: Long-Run Coefficients

	(Mod. _1)	(Mod. _2)	(Mod. _3)	(Mod. _4)	(Mod. _5)
Vars.					
l.lrtro	0.42***	3.91***	-2.72***	1.23***	0.53***
	(0.14)	(1.43)	(0.48)	(0.40)	(0.15)
l.lineq	-2.79**	14.30	-7.20***	-3.50**	-0.42
	(1.41)	(9.81)	(1.43)	(1.52)	(1.99)
l.lemploy	-0.02	-1.09***	0.21	0.13	-0.82**
	(0.37)	(0.38)	(0.35)	(0.38)	(0.38)
l.lgfcf	0.09	-0.03	0.85***	0.002	0.56***
	(0.18)	(0.20)	(0.15)	(0.20)	(0.17)
l.lhcd	-0.36	1.41***	8.65***	-0.40	2.83***
	(0.41)	(0.27)	(1.41)	(0.42)	(0.24)
l.lfin.dev	-0.24**	-0.08	-0.50***	0.69	-0.71***
	(0.12)	(0.13)	(0.12)	(0.52)	(0.09)
l.liq	0.044	0.21***	-0.08*	0.02	0.54**
	(0.06)	(0.06)	(0.05)	(0.06)	(0.23)
Lfdi	0.093*	0.085	0.04	0.17**	0.01
	(0.06)	(0.05)	(0.06)	(0.07)	(0.04)
Lexdt	-0.12*	-0.04	-0.08	-0.09	-0.11*
	(0.08)	(0.07)	(0.07)	(0.08)	(0.06)
Linfr	-0.12*	-0.39***	-0.21***	-0.08	-0.24***
	(0.06)	(0.04)	(0.05)	(0.07)	(0.03)
Moderating Effects					
L.lrtrolineq		-5.31**			
		(2.31)			
L.lrtrolhcd			2.08***		
			(0.32)		
L.lrtro fin.dev				-0.27**	
				(0.13)	
L.lrtroliq					-0.17***
					(0.06)
Constant	3.20***	-8.18***	14.60***	1.20***	0.13
	(0.46)	(2.41)	(2.55)	(0.26)	(1.42)
H-test.sig.levels	[0.80]	[0.99]	[1.00]	[0.99]	[0.99]
Observations	414	418	414	414	414

SE. in (parentheses) and prob-values in [squared brackets].
* p<0.1, ** p<0.05, *** p<0.1
Source: Author

Table 4 reveals that a one-percentage-point increase in trade openness is associated with a 0.42% rise in economic growth. This outcome corroborates the predictions of the HO model and the endogenous growth theory, both of which propose a positive nexus

between trade liberalisation and economic expansion. This finding is consistent with the empirical results of (Radulović & Kostić, 2020), Raghutla (2020), and Kong et al. (2021), who highlight the growth-promoting impacts of greater trade openness. Within Model 1, a 1% increase in foreign direct investment (FDI) corresponds to a 0.09% enhancement in economic growth, significant at the 10% level. This suggests that FDI constitutes a critical mechanism for bridging developmental disparities across SADC countries, echoing the arguments presented by Ciobanu (2020) and Yimer (2023) regarding the positive role of FDI in stimulating growth. Gross fixed capital formation (gfcf) exhibits a robust and statistically significant positive association with rgdp ($p < 0.01$), indicating that increased investment elevates productive capacity and operational efficiency in the SADC region, thereby driving economic output and growth. This positive relationship is further supported by the findings of (Pasara & Garidzirai, 2020). The analysis also demonstrates that increments of 1% in human capital and institutional quality are associated with respective growth improvements of 1.4% and 0.2%, with significance at the 1% level. The growth-enhancing effect of human capital aligns with the work of Fatima et al. (2020) and Ngepah et al. (2021), who emphasise the pivotal role of human capital development in fostering economic advancement. Models 2 and 5 reveal a statistically significant positive impact of institutional quality on economic growth, underscoring that sustained growth within SADC economies is contingent on institutional reforms, particularly in the domains of corruption mitigation and political stability. This supports Nam et al. (2023), who argue that strong institutional frameworks are instrumental in promoting economic growth. Conversely, Model 3 indicates a negative coefficient for institutional quality, which may reflect the adverse consequences of weak governance characterised by corruption, opaque practices, and ineffective legal enforcement. Such governance deficiencies generate uncertainty for investors, deter capital formation, and ultimately suppress economic growth. This negative association echoes the findings of (Akinlo & Okunlola, 2021), who observe that institutional quality can exert a detrimental and statistically significant influence on growth within sub-Saharan African contexts.

Further, Table 4 illustrates that a 1% rise in ineq, fin.dev, inflation, and external debt correspond to respective declines in economic growth of 2.8%, 0.24%, 0.12%, and 0.23%. The negative effect of income inequality corroborates the thesis of Breunig and Majeed (2020), who contend that disparities in income distribution inhibit economic performance. This implies that mitigating income inequality is essential for SADC countries to achieve meaningful and inclusive growth despite liberalised trade regimes. The unexpected negative coefficient on financial development suggests that, rather than uniformly promoting growth, financial sector expansion may exacerbate income inequality by disproportionately benefiting wealthier groups while marginalising the financially excluded. This observation concurs with (Moyo & Le Roux, 2021), who document a long-term adverse effect of financial depth on economic growth in the SADC region.

Moreover, inflation's negative coefficient signals the presence of macroeconomic instability, which constrains economic performance and aligns with (Olamide et al., 2022) findings regarding inflation's detrimental impact in SADC economies. Interestingly, employment exhibits a negative association with growth, contrary to theoretical expectations. This paradox may be attributable to the predominance of SADC labour in low-productivity sectors such as subsistence agriculture and informal economies (Das Nair et al., 2021), which contribute marginally to aggregate output despite rising employment levels. Finally, the negative effect of external debt on economic growth is consistent with Manasseh et al. (2022), who emphasise the growth-inhibiting consequences of foreign borrowing in sub-Saharan Africa. The interaction effects are interpreted through the coefficients of the conditional effect (trade openness, β_1) and the mediating variable (β_3). In Model 2, the interaction between trade openness and income inequality (lrtrolineq) is negative, despite a positive conditional effect. This indicates that income disparity dampens the growth benefits of trade, likely due to economic gains being concentrated among a few, reducing overall growth impact (Stern & Stiglitz, 2021). This supports Aiyar and Ebeke (2020) findings on the detrimental effect of inequality on national growth.

Model 3 reveals a significant positive mediation by human capital development (lrtrolhcd), which counteracts the negative main effect of trade openness on growth. This suggests human capital mitigates trade's adverse impact, consistent with Endogenous Growth Theory, highlighting human capability as vital for technological progress and long-term growth. The result aligns with Fatima et al. (2020), who emphasise human capital's role in enhancing trade-led growth. In Model 4, the negative coefficient for the interaction between trade and financial development (lrtrolfin.dev) implies that financial development weakens trade's positive long-term growth effects. This may reflect financial sector inequalities, where limited access to finance hampers entrepreneurship, skill acquisition, and innovation, thereby restricting growth (Cihak & Sahay, 2020).

Diagnostic Tests

The diagnostic assessments (refer to Appendix 3) reveal no evidence of heteroscedasticity or serial correlation across all groups. Furthermore, the CUSUMQ plots (Appendix 4) demonstrate parameter stability, with the null hypothesis upheld at the $p<0.05$ significance level. The subsequent section provides a summary of the principal conclusions, policy implications, and recommendations arising from this research.

CONCLUSION

This study investigates the complex influence of trade openness on economic growth within SADC economies, employing the dynamic panel heterogeneity estimator, with

a preference for the PMG method. The data reveals considerable variability, as reflected by the large standard deviations. Findings indicate that although the short-term effect of trade openness is statistically insignificant, it contributes positively to economic growth in the long run. Furthermore, the study demonstrates that improvements in human capital and institutional quality have a direct positive impact on economic development in SADC countries. Conversely, income inequality and financial development negatively affect growth. Regarding mediating variables, income inequality, institutional quality, and financial development weaken the beneficial effects of trade openness on growth, whereas enhanced human capital alleviates its adverse impacts.

The strong long-term positive link between trade openness and economic growth affirms the trade-led growth hypothesis in SADC, underlining the region's dependence on external trade. This suggests that reducing trade barriers and streamlining procedures can significantly enhance economic performance. Member states should prioritise trade liberalisation, deepen regional trade agreements, and invest in infrastructure especially transport, energy, and communication—to support efficient trade flows. Trade's impact on growth is shaped by its interaction with inequality, institutional quality, and human capital. Income inequality dilutes the benefits of trade, calling for equitable growth measures such as progressive taxation, wage reforms, and support for vulnerable workers and MSMEs. The negative interplay with financial development reflects limited access to financial services, especially in rural areas and among SMEs, underscoring the need for inclusive financial policies like digital banking and microfinance. Weak institutions constrain trade-driven growth, highlighting the urgency of governance reforms to enhance transparency, reduce corruption, and improve regional policy coordination. Conversely, investment in human capital particularly in technical and vocational education—can mitigate trade's adverse effects. Aligning education with labour market needs and promoting continuous skills development will better position the SADC workforce to benefit from trade expansion.

LIMITATIONS AND AREAS OF FURTHER STUDIES

This study is confined to SADC countries, which may limit the applicability of its findings to regions with different economic and institutional contexts. Data collection posed challenges, especially for complementary factors like human capital and financial development. Nevertheless, the use of alternative data sources and available periods ensured the robustness of the results. Future research should incorporate innovative data sources, such as big data analytics, to investigate the direct and indirect effects of trade integration, with a focus on detailed analyses at country, sectoral, and sub-national levels within SADC. This study employed only one measure each for financial development and institutional quality; subsequent studies should explore various governance and financial indicators individually. Moreover, as only four complementary factors were included, further research should examine additional

mediators such as technological adoption and infrastructure in the relationship between trade liberalisation and economic growth in the region.

CONFLICT OF INTEREST

The author declares no conflicts of interest.

ETHICAL CONSIDERATIONS

This article adhered to all ethical research standards applicable to studies without direct human or animal involvement.

FUNDING INFORMATION

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

DATA AVAILABILITY

The data that support the findings of this study are available from the author, [D.G.], upon reasonable request.

DISCLAIMER

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

REFERENCES

Acemoglu, D., & Robinson, J. (2010). The Role of Institutions in Growth and Development. *Review of Economics and Institutions*, *1*(2), 1-44. https://doi.org/10.5202/rei.v1i2.1.

Aggarwal, A., & Gasskov, V. (2013). *Comparative analysis of national skills development policies: A guide for policy makers*. ILO Geneva. https://www.uat.ilo.org/sites/default/files/wcmsp5/groups/public/%40africa/documents/publication/wcms_224559.pdf

Aiyar, S., & Ebeke, C. (2020). Inequality of opportunity, inequality of income and economic growth. *World Development*, *136*, 105115. https://doi.org/10.1016/j.worlddev.2020.105115

Akinlo, T., & Okunlola, C. O. (2021). Trade openness, institutions and economic growth in Sub-Saharan Africa. *Jurnal Perspektif Pembiayaan Dan Pembangunan Daerah*, *8*(6), 541-560. https://doi.org/10.22437/ppd.v8i6.10653

Alcalá, F., & Ciccone, A. (2004). Trade and Productivity*. *The Quarterly Journal of Economics*, *119*(2), 613-646. https://doi.org/10.1162/0033553041382139

Alvaredo, F., Atkinson, A. B., Piketty, T., & Saez, E. (2019). *World Inequality*

Database., *World Inequality Database*. Retrieved 20 December 2019 from WID.world. http://wid.world/data/

Amna Intisar, R., Yaseen, M. R., Kousar, R., Usman, M., & Makhdum, M. S. (2020). Impact of Trade Openness and Human Capital on Economic Growth: A Comparative Investigation of Asian Countries. *Sustainability*, *12*(7), 2930. https://doi.org/10.3390/su12072930

Arif, A., Misbah, S., Shahzad, S. M., Ghulam, Y., Aysha, Z., & and Bares Lopez, L. (2022). The role of globalization in financial development, trade openness and sustainable environmental -economic growth: evidence from selected South Asian economies. *Journal of Sustainable Finance & Investment*, *12*(4), 1027-1044. https://doi.org/10.1080/20430795.2020.1861865

Asaleye, A. J., & Strydom, K. (2022). Assessing Productivity Channels of Human Capital in the Southern African Development Community: New Insights from Women's Empowerment. *Journal of Risk and Financial Management*, *15*(11), 533. https://doi.org/10.3390/jrfm15110533

Association, S. A. R. U. (2012). Building Higher Education Scenarios 2025: A Strategic Agenda for Development in SADC', SARUA LeadershipDialogue Series. *3*(2), 1-52. https://sarua.africa/vol-3-no-2-2012-building-higher-education-scenarios-2025-a-strategic-agenda-for-development-in-sadc/

Asteriou, D., & Hall, S. G. (2016). *Applied Econometrics.* (3rd ed.). Palgrave Macmillan. https://www.scribd.com/document/516059589/dummy

Asteriou, D., Pilbeam, K., & Pratiwi, C. (2020). Public Debt and Economic Growth: Panel Data Evidence for Asian Countries. *Journal of Economics and Finance*, *45*(2), 270-287. https://doi.org/10.1007/s12197-020-09515-7

Authority, G. A. a. F. S. C. (2022). Financial Sector Outlook Study, Financial Sector Conduct Authority. Pretoria. https://www.fsca.co.za/Documents/FSCA

Bank, S. A. R. (2014). *Financial Sector Development and Economic Growth in SADC: A Research Paper to be Submitted to the Committee of Central Bank Governors in SADC.* . https://www.sadcbankers.org/Lists/News%20and%20Publications/Attachments/197/FSD%20Final%20August%202014.pdf

Behar, A., & Edwards, L. (2011). How integrated is SADC? Trends in intra-regional and extra-regional trade flows and policy. *Trends in Intra-Regional and Extra-Regional Trade Flows and Policy (April 1, 2011). World Bank Policy Research Working Paper*(5625). https://ssrn.com/abstract=1803962

Belke, A., & Wang, L. (2006). The degree of openness to intra-regional trade-Towards value-added based openness measures. *Jahrbücher für Nationalökonomie und Statistik*, *226*(2), 115-138. https://doi.org/10.1515/jbnst-2006-0202

Berkum, S. v., & Meijl, H. v. (1998). A survey of trade theories. https://www.cabidigitallibrary.org/doi/full/10.5555/19981806198

Burgess, R. (2009). The Southern African Development Community's Macroeconomic Convergence PRogra: Initial Performance', . *IMF Staff Position Note.*,

2009(014), 29. https://doi.org/10.5089/9781462321278.004

Cihak, M., & Sahay, R. (2020). Finance and Inequality', Staff Discussion Notes. *20*(1), 1–51. https://doi.org/10.5089/9781513526546.006

Cilliers, J. (2021). *The future of Africa: Challenges and opportunities*. Springer Nature. https://doi.org/10.1007/978-3-030-46590-2

Ciobanu, A. M. (2020). The Impact of FDI on Economic Growth in Case of Romania. *International Journal of Economics and Finance*, *12*(12), 81. https://doi.org/10.5539/ijef.v12n12p81

Das Nair, R., Fessehale, J., Paremoer, T., Levin, S., Makgetla, N., & Vilakazi, T. (2021). *Transforming Southern Africa : harnessing regional value chains and industrial policy for development*. United Nations Conference on Trade and Development. https://unctad.org/publication/transforming-southern-africa-harnessing-regional-value-chains-and-industrial-policy (Accessed 15 May 2022)

Donaldson, M. (2019). Southern African Development Community (SADC), Encyclopedia of Governance. https://doi.org/10.4135/9781412952613.n509

Dollar, D., & Kraay, A. (2001). Trade, Growth, and Poverty. World Bank, Washington, DC. (2615, Issue June 2001). SSRN 632684 https://doi.org/10.1596/1813-9450-2615

Farahane, M. J., & Heshmati, A. (2020). Trade and economic growth: Theories and evidence from the Southern African Development Community. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3691392

Fatima, S., Chen, B., Ramzan, M., & Abbas, Q. (2020). The Nexus Between Trade Openness and GDP Growth: Analyzing the Role of Human Capital Accumulation. *SAGE Open*, *10*(4), 2158244020967377. https://doi.org/10.1177/2158244020967377

Fombad, C. (2023). The state of governance in Africa. In *Contemporary governance challenges in the horn of Africa*. Taylor & Francis. https://doi.org/10.4324/9781003265306-2

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica: Journal of the econometric society*, 1251-1271. https://doi.org/10.2307/1913827

Heckscher, E. F., & Ohlin, B. (1991). *Heckscher-Ohlin Trade Theory, Translated, edited and introduce by Harry Flam and M. Flanders*. MIT Press. https://mitpress.mit.edu/9780262082013/heckscher-ohlin-trade-theory/

Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics*, *115*(1), 53–74. https://doi.org/10.1016/S0304-4076(03)00092-7

Jalil, A., & and Rauf, A. (2021). Revisiting the link between trade openness and economic growth using panel methods. *The Journal of International Trade & Economic Development*, *30*(8), 1168-1187. https://doi.org/10.1080/09638199.2021.1938638

Khobai, H., & Moyo, C. (2021). Trade openness and industry performance in SADC countries: is the manufacturing sector different? *International Economics and Economic Policy*, *18*(1), 105-126. https://doi.org/10.1007/s10368-020-00476-0

Kong, Q., Peng, D., Ni, Y., Jiang, X., & Wang, Z. (2021). Trade openness and economic growth quality of China: Empirical analysis using ARDL model. *Finance Research Letters*, *38*, 101488. https://doi.org/10.1016/j.frl.2020.101488

Kretzschmar, M. (2021). *A Roadmap to support SMEs in the SADC region to prepare for digital transformation* Stellenbosch: Stellenbosch University]. http://hdl.handle.net/10019.1/109836

Krugman, P. (1982). Trade in differentiated products and the political economy of trade liberalization. In *Import competition and response* (pp. 197-222). University of Chicago Press. https://www.nber.org/system/files/chapters/c6005/c6005.pdf

le Roux, A. (2024). *SADC Geographic Futures.* . https://futures.issafrica.org/geographic/regions/sub-saharan-africa/

Leamer, E. E. (1995). The Heckscher-Ohlin model in theory and practice. https://ies.princeton.edu/pdf/S77.pdf

Letsoalo, T. E., & Ncanywa, T. (2021). Effects of external financial flows on income inequality in selected Southern African Development Community member states. *Africa's Public Service Delivery and Performance Review*, *9*(1), 476. https://journals.co.za/doi/abs/10.4102/apsdpr.v9i1.476

Levin, A., Lin, C.-F., & James Chu, C.-S. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of Econometrics*, *108*(1), 1-24. https://doi.org/10.1016/S0304-4076(01)00098-7

Leyaro, V. (2015). *Threshold and interaction effects in the trade, growth, and inequality relationship* (9292308947). https://doi.org/10.35188/UNU-WIDER/2015/894-0

Lucas, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, *22*(1), 3-42. https://doi.org/10.1016/0304-3932(88)90168-7

Malindini, K. (2021). Institutional quality and economic performance in the Southern African development community (SADC) region: a dynamic panel analysis. *African Journal of Governance and Development*, *10*(2), 294-315. https://doi.org/10.36369/2616-9045/2021/v10i1a1

Manasseh, C. O., Abada, F. C., Okiche, E. L., Okanya, O., Nwakoby, I. C., Offu, P., Ogbuagu, A. R., Okafor, C. O., Obidike, P. C., & Nwonye, N. G. (2022). External debt and economic growth in Sub-Saharan Africa: Does governance matter? *Plos one*, *17*(3), e0264082. https://doi.org/10.1371/journal.pone.0264082

Martin, M. (2022). *The Crisis of Extreme Inequality in SADC: Fighting austerity and the pandemic*. Oxfam. https://doi.org/10.21201/2022.8793

Matekenya, W., Clement, M., & and Jeke, L. (2021). Financial inclusion and human development: Evidence from Sub-Saharan Africa. *Development Southern Africa*, *38*(5), 683-700. https://doi.org/10.1080/0376835X.2020.1799760

Mathumo, L. (2021). *The relationship between the banking sector's competitions, firm's access to finance and economic growth in SADC countries*. University of Johannesburg (South Africa). https://www.proquest.com/openview/bb3dd2c73ad81223733eb8ae6324c3c8

Mbulawa, S. (2015). Determinants of economic growth in Southern Africa development community: The role of institutions. *Applied Economics and Finance*, *2*(2), 91-102. https://doi.org/10.11114/aef.v2i2.782

Mengistae, T. (2010). *The Buisness Environment in Southern Africa: Issues in Trade and Market integration.* . http://documents.worldbank.org/curated/en/373261468194328888

Milgrom, P. R., North, D. C., & Weingast*, B. R. (1990). The role of institutions in the revival of trade: The law merchant, private judges, and the champagne fairs. *Economics & Politics*, *2*(1), 1-23. https://doi.org/10.1111/j.1468-0343.1990.tb00020.x

Minford, P., Nowell, E., & Riley, J. (1995). *The elixir of growth: trade, non-traded goods and development*. https://ideas.repec.org/p/cpr/ceprdp/1165.html

Mlachila, M. M., Jidoud, A., Newiak, M. M., Radzewicz-Bak, B., & Takebe, M. M. (2016). *Financial development in Sub-Saharan Africa: promoting inclusive and sustainable growth*. International Monetary Fund. https://doi.org/10.5089/9781475532401.087

Moyo, C., & Khobai, H. (2018). Trade openness and economic growth in SADC countries. https://mpra.ub.uni-muenchen.de/84254/

Moyo, C., & Le Roux, P. (2021). Financial development and economic growth in SADC countries: a panel study. *African Journal of Economic and Management Studies*, *12*(1), 71-89. https://doi.org/10.1108/AJEMS-10-2018-0329

Nam, H.-J., Bang, J., & Ryu, D. (2023). Paradox of trade openness: The moderated mediating role of governance. *Journal of International Financial Markets, Institutions and Money*, *89*, 101887. https://doi.org/10.1016/j.intfin.2023.101887

Ngepah, N., Saba, C. S., & Mabindisa, N. G. (2021). Human capital and economic growth in South Africa: A cross-municipality panel data analysis. *South African Journal of Economic and Management Sciences*, *24*(1), 1-11. https://doi.org/10.4102/sajems.v24i1.3577

Nguyen, V. M., Ho, T. H., Nguyen, L. H., & Pham, A. T. (2023). The Impact of Trade Openness on Economic Stability in Asian Countries. *Sustainability*, *15*(15), 11736. https://doi.org/10.3390/su151511736

North, D. C. (1990). *Institutions, Institutional Change and Economic Performance.* . Cambridge University Press. https://doi.org/10.1017/CBO9780511808678

Ofori, I. K., & Asongu, S. A. (2021). ICT Diffusion, Foreign Direct Investment and Inclusive Growth in Sub-Saharan Africa. *Telematics and Informatics*, *65*, 101718. https://doi.org/10.1016/j.tele.2021.101718

Ohlin, B. G. (1933). *Interregional and International Trade.* . Harvard University Press. https://www.scirp.org/reference/referencespapers?referenceid=3017613

Olamide, E., Ogujiuba, K., & Maredza, A. (2022). Exchange Rate Volatility, Inflation and Economic Growth in Developing Countries: Panel Data Approach for SADC. *Economies*, *10*(3), 67. https://doi.org/10.3390/economies10030067

Oloyede, B. M., Osabuohien, E. S., & Ejemeyovwi, J. O. (2021). Trade openness and economic growth in Africa's regional economic communities: empirical evidence from ECOWAS and SADC. *Heliyon*, *7*(5), e06996. https://doi.org/10.1016/j.heliyon.2021.e06996

Omede, J., Akindola, R., & Ngwube, A. (2016). Democracy and accountable governance in the SADC region. *African Journal of Politics and Administrative Studies*, *9*(1), 20-30. https://www.ajol.info/index.php/ajpas/article/view/248421

Pasara, M. T., & Garidzirai, R. (2020). Causality Effects among Gross Capital Formation, Unemployment and Economic Growth in South Africa. *Economies*, *8*(2), 26. https://doi.org/10.3390/economies8020026

Pesaran, M. H., Yongcheol, S., & and Smith, R. P. (1999). Pooled Mean Group Estimation of Dynamic Heterogeneous Panels. *Journal of the American Statistical Association*, *94*(446), 621-634. https://doi.org/10.1080/01621459.1999.10474156

Qobo, M. (2007). The challenges of regional integration in Africa: In the context of globalisation and the prospects for a United States of Africa. *Institute for Security Studies Papers*, *2007*(145), 16. https://journals.co.za/doi/abs/10.10520/EJC48804

Rachida, N., Mabrouka, B., Zeyneb, M., & Abderrahmane, K. (2024). The moderating effect of education level on the relationship between trade openness and employment in north african economies. *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, *9*(7), 23. https://doi.org/10.26668/businessreview/2024.v9i7.4843

Radulović, M., & Kostić, M. (2020). Globalizacija i ekonomski rast ekonomija Eurozone. *Zbornik radova Ekonomskog fakulteta u Rijeci: časopis za ekonomsku teoriju i praksu*, *38*(1), 183-214. https://doi.org/10.18045/zbefri.2020.183

Raghutla, C. (2020). The effect of trade openness on economic growth: Some empirical evidence from emerging market economies. *Journal of Public Affairs*, *20*(3), e2081. https://doi.org/10.1002/pa.2081

Rakshit, B. (2022). Dynamics between trade openness, FDI and economic growth: evidence from an emerging economy. *Journal of International Trade Law and Policy*, *21*(1), 16-41. https://doi.org/10.1108/JITLP-01-2021-0004

Ratnayake, R. (2019). The Role of Trade in Fostering Inclusive Growth in the Asia-Pacific. *Thailand and The World Economy*, *37*(2), 1-25. https://so05.tci-thaijo.org/index.php/TER/article/view/207762

Robinson, A., & Sraffa, P. (1951). The Works and Correspondence of David Ricardo. Volume I: On the Principles of Political Economy and Taxation. The Economic Journal, 61(244), 848. https://doi.org/10.2307/2226985

Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of political economy*, *94*(5), 1002-1037. https://doi.org/10.1086/261420

Sachs, J. D., Warner, A., Åslund, A., & Fischer, S. (1995). Economic reform and the process of global integration. *Brookings papers on economic activity*, *1995*(1), 1-118. https://doi.org/10.2307/2534573

Samuelson, P. A. (1949). International Factor-Price Equalisation Once Again. *The economic journal*, *59*(234), 181-197. https://doi.org/10.2307/2226683

Secretariat, S. (2019). Status of Integration in the Southern African Development Community. *Gabarone, Botswana: SADC*. https://sadcbc.org/wp-content/uploads/2021/06/Status_of_Integration_in_the_SADC_Region_Report.pdf

Secretariat, S. (2020). *Southern African Development Community (SADC) Regional Indicative Strategic Development Plan (RISDP) 2020–2030*. https://www.sadc.int/sites/default/files/2021-08/RISDP_2020-2030.pdf

Shin, Y., Smith, R. P., & Pesaran, M. H. (1998). *Pooled Mean group estimation of dynamic heterogeneous panels*. https://ideas.repec.org/p/edn/esedps/16.html

Simard, D., & Viseth, A. (2022). *Three Strong Governance Performers in Sub-Saharan Africa: Achievements and Way Forward', in Good Governance in Sub-Saharan Africa,. International Monetary Fund*. https://www.elibrary.imf.org/display/book/9781513584058/CH003.xml

Smith, A. (1776). An Inquiry into the Nature and Causes of the Wealth of Nations. The Glasgow Edition of the Works and Correspondence of Adam Smith, Vol. 2: An Inquiry into the Nature and Causes of the Wealth of Nations, Vol. 1. https://doi.org/10.1093/oseo/instance.00043218

Stantcheva, S. (2022). *Understanding of trade*. https://doi.org/10.3386/w30040

Stern, N., & Stiglitz, J. E. (2021). *The social cost of carbon, risk, distribution, market failures: An alternative approach* (Vol. 15). National Bureau of Economic Research Cambridge, MA, USA. http://www.nber.org/papers/w28472

Tanyanyiwa, V., & Hakuna, C. (2014). Challenges and Opportunities for Regional Integration in Africa: The Case of Sadc. *IOSR Journal of Humanities and Social Science*, *19*, 103-115. https://doi.org/10.9790/0837-19124103115

Triki, T., & Faye, I. (2013). Financial inclusion in Africa. https://www.rfilc.org/wp-content/uploads/2020/08/Financial_Inclusion_in_Africa.pdf

Udeagha, M. C., & Ngepah, N. (2021). The asymmetric effect of trade openness on economic growth in South Africa: a nonlinear ARDL approach. *Economic Change and Restructuring*, *54*(2), 491-540. https://doi.org/10.1007/s10644-020-09285-6

Union, A. (2014). AU outlook on education report. https://www.adeanet.org/sites/default/files/au_outlook_continental_english_2014_w.pdf

Wandeda, D. O., Masai, W., & Nyandemo, S. M. (2021). Institutional quality and economic growth: evidence from Sub-Saharan Africa countries. *African Journal of Economic Review*, *9*(4), 106-125. https://www.ajol.info/index.php/ajer/article/view/214283

Wani, S. H. (2022). Trade openness, capital formation, and economic growth: Empirical evidence from India. *Eurasian Journal of Business and Economics*, *15*(29), 35-49. https://doi.org/10.17015/ejbe.2022.029.03

World Bank. (2022). *Inequality in Southern Africa: An Assessment of the Southern African Customs Union*. https://documents1.worldbank.org/curated/en/099125303072236903/pdf/P1649270c02a1f06b0a3ae02e57eadd7a82.pdf (Accessed 10 May 2024)

Yimer, A. (2023). The effects of FDI on economic growth in Africa. *The Journal of International Trade & Economic Development*, *32*(1), 2-36. https://doi.org/10.1080/09638199.2022.2079709

Zahonogo, P. (2016). Trade and economic growth in developing countries: Evidence from sub-Saharan Africa. *Journal of African Trade*, *3*(1), 41-56. https://doi.org/10.1016/j.joat.2017.02.001

Appendix 1: Correlations Coefficient Analysis

	Lrgdp	**lrtro**	**lineq**	**lemploy**	**lgfcf**	**lhcd**	**lfin.dev**
lrgdp	1.000						
lrtro	0.061*	1.0000					
lineq	0.040*	0.127*	1.000				
lemploy	-0.063*	-0.388*	-0.325*	1.000			
lgcf	0.365*	0.218*	0.067*	0.014	1.000		
lhcd	0.032*	0.301*	-0.017	-0.463*	0.156*	1.000	
lfin.dev	-0.027*	0.295*	0.003	-0.184*	0.234*	0.301*	1.000
liq	0.174*	0.116*	0.090*	-0.149*	0.226*	0.391*	0.325*
lfdi	0.255*	0.188*	0.079*	-0.088*	0.344*	0.194*	0.033*
lexdt	-0.161*	-0.543*	-0.220*	0.405*	-0.220*	-0.486*	-0.390*
linfr	-0.133*	-0.210*	0.031	0.234*	-0.003	-0.3230*	-0.297*
	liq	**lfdi**	**lexdt**	**linfr**			
liq	1.0000						
lfdi	0.226*	1.0000					
lexdt	-0.206*	-0.268*	1.0000				
linfr	-0.111*	-0.060*	0.290*	1.000			

Source: Author's Compilation

Appendix 2: Lag Length Selection

Country	**rgdp**	**rtro**	**ineq**	**employ**	**gfcf**	**hcd**	**fin.dev**	**fdi**	**exdt**	**infr**	**iq**
Angola	1	1	0	0	1	0	0	0	0	0	1
Botswana	1	0	0	0	0	1	0	1	1	0	0
Comoros	1	1	1	1	0	1	0	0	0	0	1
DRC	1	1	0	1	1	1	0	0	1	1	1
Eswatini	1	0	1	1	1	0	0	0	0	0	0
Lesotho	1	1	1	1	0	1	0	0	0	0	0
Madagascar	1	1	1	1	1	0	0	0	0	0	0
Malawi	1	1	0	1	1	0	0	0	0	1	1
Mauritius	1	1	1	0	1	0	0	1	0	0	1
Mozambique	1	0	1	1	0	1	1	0	1	0	1
Namibia	1	1	1	1	1	0	0	0	0	1	0
Seychelles	1	1	1	1	0	0	0	0	0	1	1
South Africa	1	1	1	0	0	0	0	0	1	0	1
Tanzania	1	1	0	0	0	0	0	0	0	0	1
Zambia	1	0	0	1	0	1	1	0	1	1	0
Zimbabwe	1	0	0	1	0	0	1	0	1	0	0
C_lag	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**1**

Source: Author's compilation from STATA panel ARDL Optimal Lag Length Selection *results*

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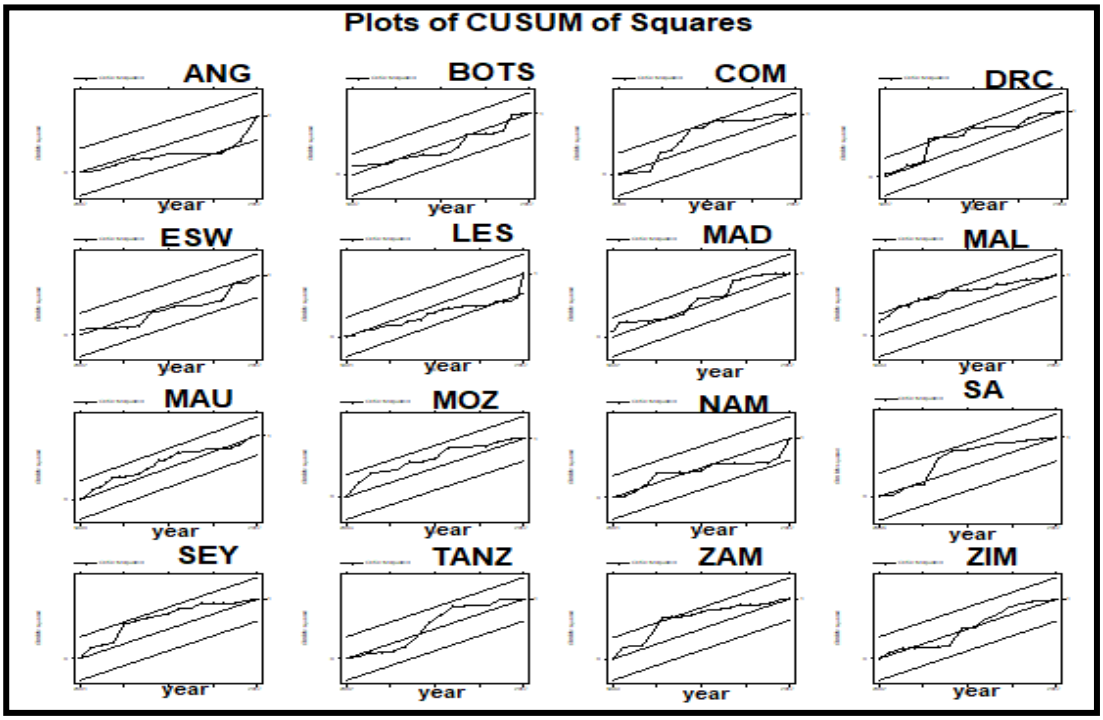
Appendix 3: Diagnostic Tests

Country	Durbin-Watson	B-Godfrey	White	CUSUMQ
1. Angola	2.180	2.822	23.00	stable
2. Botswana	2.289	1.905	33.00	stable
3. Comoros	3.127	14.619	18.00	stable
4. DRC	2.449	9.31	24.00	stable
5. Eswatini	2.063	0.492	28.00	stable
6. Lesotho	2.030	7.20	32.00	stable
7. Madagascar	2.000	0.43	37.00	stable
8. Malawi	2.509	5.516	28.00	stable
9. Mauritius	2.325	2.896	28.00	stable
10. Mozambique	2.591	2.177	27.00	stable
11. Namibia	2.388	13.42	28.00	stable
12. Seychelles	3.137	9.431	17.00	stable
13. South Africa	2.047	0.555	24.00	stable
14. Tanzania	2.001	3.31	28.00	stable
15. Zambia	2.043	0.399	28.00	stable
16. Zimbabwe	2.307	2.443	28.00	stable

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01
Source: Author

Appendix 4: Plot of the cumulative sum of squares of recursive residuals.



The straight lines represent critical bounds at the 5% significance level.
Source: Extract Results from STATA ARDL diagnostic test results

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Appendix 5: SADC Countries

Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, Zimbabwe

Source: SADC Secretariat (2019)