

Effects of infrastructure on inflow of Foreign Direct Investment (FDI) into the Southern
African Development Community (SADC)

by

Babalelang Botlhokwa Kona

4-201-2804-8

Thesis

Submitted in full fulfilment of the requirements for the degree Masters in Commerce in
Business Management Full Dissertation at the University of South Africa

Supervisor:

Professor Adewale R Aregbeshola (PhD Wits)

Submission date:

20 November 2023

DECLARATION OF ORIGINALITY

I, Babalelang Botlhokwa Kona (Student No. 42018048) declare that the dissertation titled: Effects of infrastructure on inflow of FDI into the Southern African Development Community (SADC) is my work and has not previously been submitted to any other University or faculty. All the sources I have used or quoted have been properly acknowledged through referencing.

A handwritten signature in black ink, appearing to be 'B. Botlhokwa Kona', written over a horizontal line.

Babalelang Botlhokwa Kona

ABSTRACT

Historically, a major portion of foreign direct investment (FDI) flowed between and within industrialized countries. Over the last several decades, FDI, which had not been in developing countries, also started, and its proportion increased consistently. Developing countries have a greater need for FDI because they are still lagging behind in several aspects of economic development. The study was conducted because the subject of FDI in Africa is under researched, even though it is a fact that FDI has positive impacts on growth and development on the continent. The study was conducted because it is important to understand factors that affect the determination of FDI direction in relation to the African continent. The study aimed to determine the role of infrastructural amenities on the attractiveness of Southern Africa Development Community (SADC) countries to inflow of FDI. Due to the unavailability of data in some SADC member countries, only the following countries were included in the sample Angola, Botswana, DRC, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe.

A quantitative research was conducted using secondary panel data collected on SADC countries from the World Development Indicators. The data collected were from 1979-2019 and it was focusing on the following variables: Net flow of FDI in USD\$; access to electricity as a percentage of the population; access to primary health care, ICT fixed telephone subscriptions per 100 people; transport services, water and sanitation and natural resources. These variables were selected for this study since they were significant in explaining FDI in the SADC region (Chapfuwa, 2020). The countries make a population of 350 million people and a GDP of \$706.3 billion. Data analysis was conducted using techniques such as estimation techniques, regression analysis and the Baseline Model in order to answer the research questions and achieve the research objectives. Estimation techniques, regression analysis, and the Baseline Model were used for data analysis since they provided valuable information about data distributions, relationships between variables, and predictive capabilities. They provided the researcher with deeper insights to make more informed decisions, and enhance the reliability of the conclusions.

The findings of the study included the following: The study revealed that Electricity and Human Capital were significant in explaining FDI in the SADC region. Birth and population were found to be statistically significant in explaining FDI in the SADC region at 5% level of significance. It also emerged that GDP was a statistically insignificant determinant of FDI in the SADC region at the 5% level of significance.

Some of the recommendations that emerged from the study included that SADC region was supposed to prioritise investment and improvement of infrastructure such as the road network and electricity. The SADC region can also focus on increasing investments in renewable energy sources such solar given the abundance of sun in the region.

KEYWORDS: Foreign Direct Investment; infrastructure; Developing; Africa; South African Development Community; Sub Saharan Africa

DEDICATION

To my brother and angel Tlamelang Sandi Namane (18 April 1997 – 17 June 2018).

This one is for you!

I will love you forever.

ACKNOWLEDGEMENTS

My utmost praise and gratitude goes out to the Almighty God for the ability, strength and resilience to embark on this challenging, thought provoking and mind broadening task. This task has stretched me beyond my own limits and grown me personally, professionally and academically. I thank the Lord for the grace to be able to see this journey through.

I would like to thank my supervisor Professor Aregbeshola for the faith he had in me to take on and complete a Masters study. I would particularly like to thank him for always being there with warm words of encouragement and reassurance when self-doubt and imposter syndrome crept in. Furthermore, for providing the necessary support in times when the task felt heavy and daunting, and for guidance when I felt stuck. Professor Aregbeshola truly gave me the strength and courage to carry on when I thought the journey was an impossible feat. For this, I will forever be indebted to him and grateful. Modimo a go direle tse dintle ka nako tsotlhe, le bana ba bana ba gago ba bone mohao o sa feleng (May God always be good to you and may your future generations receive God's goodness and abundant grace).

To my husband Mbulelo Kona and my children Inathi, Emihle and Onke. I would like to thank you for being ever so understanding and patient with me on this journey, I thank you for the love and encouragement it did not go unnoticed. I love you all, so much.

To my family and friends who have assisted me throughout this journey I appreciate you more than words could ever express. A special thank you to these amazing women in my life Mama Bonolo B.B Namane, Mama Nontuthuzelo Kona, Mamane Omega Sebape and Mme Mamatsitsi Evodia Motholo. I want to thank you for your encouragement and particularly your willingness to always step in, and fill the gap with the children while I was on this journey. I know my win will always be your win. Ke a leboga go menagane, Ndi ya bulela, Enkosi ka khulu, Thank you. Modimo a mpolokele lona a le segofatse. UThixo aniqcine a ni sikelele (May the Lord keep you and bless you).

Table of Contents

DECLARATION OF ORIGINALITY	i
ABSTRACT	ii
DEDICATION.....	iv
ACKNOWLEDGEMENTS.....	v
LIST OF ACRONYMS AND ABBREVIATIONS	xi
LIST OF FIGURES.....	xiii
LIST OF TABLES.....	xiv
CHAPTER 1: INTRODUCTION	1
1.1 BACKGROUND OF THE STUDY	1
1.2 RESEARCH PROBLEM	5
1.3 IMPORTANCE AND RELEVANCE OF RESEARCH STATEMENT	7
1.4 RESEARCH OBJECTIVES	10
1.5 PROPOSED HYPOTHESIS	10
1.6 RESEARCH DESIGN	11
1.7 RESEARCH METHODOLOGY	12
1.8 SAMPLING METHOD	12
1.9.1 Participants	12
1.9.2 Data Collection	12
1.9.3 Data Analysis	12
1.9.4 Operational Definition of variables	13
1.9 ETHICAL CONSIDERATIONS	13
1.10 THE LIMITATIONS OF THE STUDY	14
1.11 ASSUMPTIONS OF THE STUDY	15
1.12 DELIMITATIONS OF THE STUDY	16
1.13 STUDY OVERVIEW	17
1.14 CHAPTER SUMMARY	18
CHAPTER 2: THE HISTORY OF FDI AND ITS EFFECT ON ECONOMIC GROWTH IN THE SADC REGION	19
2.1 INTRODUCTION	19
2.2 DEFINITION OF FDI AND RISKS ASSOCIATED WITH	19
2.3 CONCEPTUAL APPRAISAL OF FDI DYNAMICS IN AFRICA	23
2.3.1 The concept of Foreign Direct Investment	23
2.3.2 Africa and FDI landscape	26

2.3.3	A brief description of the formation of SADC region and it's FDI Attraction.....	31
2.3.1.1	Formation of the SADC region	31
2.3.1.2	SADC's and FDI attraction	32
2.3.4	Infrastructure and infrastructure development.....	33
2.4	THE IMPORTANCE OF FDI IN EMERGING ECONOMIES.....	35
2.4.1	Benefits of FDI.....	38
2.4.2	Shortcomings of FDI.....	39
2.5	INTRICACIES OF INVESTMENT DECISIONS	40
2.5.1	Why do MNCs make investments?	41
2.6	DIFFICULTIES OF INVESTING INTO DEVELOPING COUNTRIES	43
2.6.1	Challenges of investing in Africa	44
2.6.2	Sectors attracting FDI into Africa.....	44
2.7	CHAPTER SUMMARY	46
CHAPTER 3: INFRASTRUCTURE AND INFRASTRUCTURAL CONSIDERATIONS ..		47
3.1	INTRODUCTION.....	47
3.2	DEFINING INFRASTRUCTURE	48
3.2.1	The importance of infrastructure	49
3.2.2	Infrastructural challenges in Africa	50
3.2.3	Types of physical infrastructure.....	51
3.2.3.1	Information and Communications Technology	51
3.2.3.2	Electricity.....	52
3.2.3.3	Transport	53
3.2.3.4	Water and Sanitation	53
3.3	INFRASTRUCTURAL CONSIDERATIONS IN THE SADC REGION	54
3.4	INFRASTRUCTURAL DEVELOPMENT IN SADC.....	55
3.5	INFRASTRUCTURE DEVELOPMENT PROJECTS IN SADC.....	55
3.5.1	N4 Toll Road Project.....	56
3.5.2	Port of Maputo	56
3.5.3	Port Expansion Project Dar-es-Salaam	56
3.5.4	Lesotho Highlands Water Project	57
3.5.5	Development corridors	57
3.6	DEVELOPMENTAL MEASURES OF INFRASTRUCTURE	57
3.7	CHAPTER SUMMARY	58

CHAPTER 4: RESEARCH METHODOLOGY	60
4.1 INTRODUCTION	60
4.2 POPULATION AND SAMPLING	60
4.3 RESEARCH DESIGN	61
4.5 DATA ANALYSIS	62
4.5.1 Descriptive Statistics	62
4.5.2 Estimation techniques	63
4.5.3 Regression analysis	63
4.5.4 Cross-Sectional Dependence	64
4.5.5 Panel Stationarity Test	65
4.5.6 Short and Long Run Tests	65
4.5.7 Hausman Test	65
4.5.8 GMM Test	65
4.5.9 Trend Analysis	66
4.5.10 Literature Review Analysis	66
4.6 RESEARCH QUESTION AND MODELS	66
4.6.1 Proposed hypothesis	66
4.6.2 Model specifications	67
4.6.2.1 Baseline Model	67
4.6 DEFINING VARIABLES	69
4.7.1 Dependent variables	69
4.7.1.1 FDI	69
4.7.2 Explanatory variables	70
4.7.2.1 Access to electricity:	70
4.7.2.2 Access to primary health care	70
4.7.2.3 Access to education	70
4.7.2.4 ICT	71
4.7.2.5 Transportation	71
4.7.2.6 Natural resources	72
4.7.2.7 Human Capital	72
4.7.2.8 Economic Growth	72
4.7.2.9 Inflation	72
4.7.2.10 Active market size	73
4.7 DIAGNOSTICS TECHNIQUES	73

4.8.1	Reliability	73
4.8.2	Multicollinearity (Correlation).....	73
4.8.3	Homogeneity	73
4.8.4	Endogeneity	74
4.8.5	Heterogeneity.....	74
4.8.6	Omitted variables.....	74
4.8.7	Unit root.....	75
4.8.8	Cointegration	75
4.8.9	Auto regressive Distribution Lag	75
4.8	CHAPTER SUMMARY	75
	CHAPTER 5: EMPIRICAL RESULTS.....	77
5.1	INTRODUCTION	77
5.2	VISUAL TREND	77
5.3	CROSS-SECTIONAL DEPENDENCE	84
5.4	DESCRIPTIVE STATISTICS	86
5.5	CORRELATION STATISTICS.....	87
5.6	UNIT ROOT TEST	93
5.7	AUTOREGRESSIVE DISTRIBUTED LAG (ARDL).....	94
5.8	TEST FOR FIXED AND RANDOM EFFECTS.....	96
5.9	HAUSMAN TEST	97
5.10	Hypothesis Tests.....	99
5.11	CHAPTER SUMMARY.....	100
	CHAPTER 6: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	102
6.1	INTRODUCTION.....	102
6.2	SUMMARY OF RESULTS AND CONCLUSION.....	102
6.2.1	Summary of findings from Literature review	102
6.2.1.1	Determination of whether physical infrastructure plays a role in in FDI attraction in SADC region	102
6.2.1.2	Determination of the role of market size on the attractiveness of Southern African countries to inflow of FDI.....	104
6.2.1.3	Determination of whether mineral endowment influences FDI	105
6.2.1.4	Determination of whether growth of a country influences FDI in the SADC region.....	107
6.2.2	Summary of findings from Panel Data Analysis	107

6.2.2.1	Determination of whether physical infrastructure plays a role in FDI attraction in SADC region	108
6.2.2.2	Determination of the role of market size on the attractiveness of Southern African countries to inflow of FDI.....	109
6.2.2.3	Determination of whether mineral endowment influences FDI	110
6.3	CONCLUSIONS LINKED TO THE LITERATURE REVIEW.....	111
6.4	POLICY RECOMMENDATIONS.....	113
6.3.1	Investment and improvement of infrastructure.....	113
6.3.2	Promoting Population Growth and Regional Integration	114
6.3.3	Local beneficiation and value addition of mineral resources	115
6.3.4	Fostering Economic Growth.....	116
6.4	RECOMMENDATIONS FOR FUTURE RESEARCH	116
6.5	CHAPTER SUMMARY	118
	LIST OF REFERENCES.....	121

LIST OF ACRONYMS AND ABBREVIATIONS

AIDI	African Infrastructure Development Index
AFDB	African Development Bank
ARDL	Auto regressive Distribution Lag
BIT	Bilateral Investment Treaties
BRICS	Brazil Russia India and South Africa
BRN	Big Results Now
COVID 19	Coronavirus Disease of 2019
DRC	Democratic Republic of Congo
FDI	Foreign Direct Investment
FPI	Foreign Portfolio Investment
G8	Great Eight Nations
GDP	Gross Domestic Product
GMM	Generalized Method of Moments
ICT	Information and Communications Technology
ITU	International Telecommunication Union
IDI	ICT Development Index
IMF	International Monetary Fund
IQ	Institutional Quality
LLC	Levin, Lin Chu
LHWP	Lesotho Highlands Water Project
MNC	Multi-National Corporation
NEPAD	New Partnership for African Development
OECD	Organisation for Economic Co-operation & Development
PDI	Portfolio Direct Investment
R&D	Research and Development
ROI	Return on Investment
SADC	Southern Africa Development Community

SDG	Sustainable Development Goals
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on trade and Development
US\$	United States Dollar
USA	United States of America
WDI	World Development Index
WIR	World Investment Report
WTO	World Trade Organisation

LIST OF FIGURES

Figure 1.1:Global FDI Inflows	3
Figure 2.1:FDI Inflows to the largest recipients in Africa	28
Figure 2.2: Depiction of the SADC region	381
Figure 2.3: FDI inflows by region 2018 – 2019 (Billions of dollars and percent).....	33
Figure 2.4: Sub-regional comparison of Africa Infrastructure development.....	453
Figure 3.1:Citizens access to services 2014/2015	47
Figure 3.2:Sub-regional comparison of ICT.....	52
Figure 3.3:Regional differences in access to electricity 2011 to 2018	53
Figure 3.4:Water and Sanitation statistics 2018 based on 35 African Country Survey..	54
Figure 5.1:Birth.....	78
Figure 5.2: Electricity	79
Figure 5.3:Labour (Represented by Waged and Salaried workers)	80
Figure 5.4:ICT (represented by Telephone)	80
Figure 5.5:Education.....	81
Figure5.6: Minerals.....	81
Figure 5.7:Transport.....	82
Figure 5.8: Wages and Salaries	82
Figure 5.9:GDP	83
Figure 5.10:Inflation.....	83
Figure 5.11:Population	84
Figure 5.12:FDI	84

LIST OF TABLES

Table 1.1: FDI Projects by sector/industry as well as FDI projects by region for 2018-2019	9
Table 2.1: 3-year comparison of African sub-region Infrastructure development	35
Table 4.1: Proposed hypothesis	67
Table 5.1: Cross-sectional Dependence Test	86
Table 5.2: Descriptive Statistics	87
Table 5.3: Correlation Result.....	89
Table 5.4: Correlation and Probability Result	90
Table 5.5: Panel Unit Root	95
Table 5.6: ARDL Results for Short-Run Estimation.....	97
Table 5.7: ARDL Results for Long-Run Estimation	99
Table 5.8: Hausman Test for the Fixed/ Random Effects.....	99
Table 5.9: Summary Statistics of Hausman Test	100
Table 5.10: Dynamic Panel Estimates using GMM	101

CHAPTER 1: INTRODUCTION

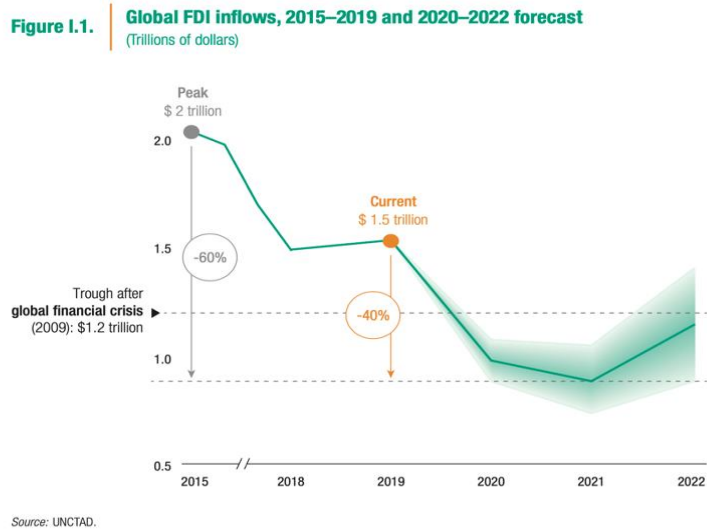
1.1 BACKGROUND OF THE STUDY

Foreign Direct Investment (FDI) is a critical driver of economic growth and development in developing countries (Emako, Nuru & Menza, 2022). Foreign direct investment refers to an investment made by a company or individual in a country other than their own (Otto, 2021). The author states that it involves the establishment of a lasting interest in a foreign entity, such as a subsidiary, joint venture, or branch. FDI plays a significant role in economic development, as it provides access to capital, technology, and expertise. Developing countries are those characterised by relatively low levels of economic, social, and technological development. They typically have low per capita incomes, limited access to education and healthcare, and underdeveloped infrastructure (Chowdhury & Ravi, 2022). It provides access to capital, technology, and expertise, which can contribute to job creation, increased productivity, and improved living standards. Infrastructure plays a crucial role in attracting FDI by enhancing the investment climate and facilitating business operations. Infrastructure encompasses the physical structures and facilities that support economic and social development (Thacker et al, 2019). It includes transportation networks (roads, railways, airports, ports), energy systems (electricity, gas), water and sanitation, telecommunications, and social infrastructure (schools, hospitals, housing). Adequate infrastructure is crucial for businesses to operate efficiently and for communities to thrive (Ndhlovu & Majova, 2023). The Southern African Development Community (SADC) recognises the importance of FDI and has been working to improve its investment climate. South African Development Community (SADC) is a regional economic community of 16 countries in Southern Africa. It aims to promote economic integration, cooperation, and development within the region (Mlambo, 2020). The bloc plays a key role in facilitating infrastructure development and attracting FDI to its member states. Nasir (2022) explain that one key factor that can influence FDI inflows is the availability and quality of infrastructure. This research study on 'Effects of Infrastructure on Inflow of FDI into SADC' was investigated to examine the relationship

between infrastructure development and FDI inflows into SADC countries, so as to identify the specific types of infrastructure that are most attractive to foreign investors in order to determine their impact on FDI inflows in different sectors of the economy.

A large share of foreign direct investment (FDI) flow was traditionally between and within developed countries. The share of FDI has increased steadily to developing countries over the past decades (Alfaro & Chauvin, 2020). In 2019, the share of FDI to developed countries fell, however the trend in developing countries showed a sturdy upward trend. In the same year FDI in developing countries accounted for 47% of the global FDI stocks (Jaiblai & Shenai 2019). According to the United Nations Conference on trade and Development (UNCTAD) 2021, in 2017 FDI inflows to the Sub-Saharan Africa (SSA) region stood at US\$32 billion. Sub-Saharan Africa refers to the region of Africa located south of the Sahara Desert. It is characterised by diverse cultures, economies, and political systems. Sub-Saharan Africa faces significant development challenges, including poverty, inequality, and limited infrastructure. In 2018 FDI inflow to the region increased to US\$40 billion. The increase is however disproportionate across the region (Qiang & Kusek, 2020).

Figure 1.1: Global FDI Inflows



Source: World Investment Report (2020:21)

TradeMark East Africa (2021) stated that in 1970, FDI into Africa accounted for 32.8% of FDI to developing countries, with a nominal value of US\$1.6 billion. Africa is the second-largest continent and is home to a diverse range of countries with varying levels of development (Binns et al., 2023). It faces significant challenges, including poverty, conflict, and disease, but also has vast potential for economic growth and social progress. Of all developing regions, Africa has historically attracted the lowest rates of FDI and it seems this status quo has not changed in recent decades (Yana Mbena, 2022). When comparing Africa with other developing regions, Asia has attracted 71% of FDI in 2017, the Caribbean islands received 23% in the same year while Africa attracted a dismal 6% (Jaiblai & Shenai, 2019). This picture has not changed much in 2019. The United Nations (UN) Investment Trends Monitor reported that in 2019, developing countries attracted US\$685 billion of FDI. The source further suggests that African countries however, accounted for only US\$51 billion of this total FDI which is a mere 6.6% (United Nations Economic Commission for Africa (UNECA, 2022).

The slow growth in FDI attraction is attributed to factors that include the fact that Africa, has unfortunately suffered decades of immense indebtedness and slow growth compared to its counterparts due to the lack of FDI attraction. The average GDP per capita of Sub-

Saharan Africa for 2019 was around US\$1,611 to US\$1,618 (World Bank, 2023). This is considerably lower in relation to that of other developing countries, especially the countries in Southeast Asia where the GDP per capita revolves around US\$4,920. This is a GDP per capita that is in line with what is suggested by the Independent Monetary Fund (IMF) (IMF, 2020). This low growth is sometimes linked to the resource curse which is an observation made by many authors (Awolusi & Mbonigaba, 2022). The resource curse refers to the facts that resource rich countries tend to develop slower than those countries which lack resources (Biresselioglu et al., 2019).

For decades, African leaders were sceptical of allowing FDI and free trade. The leaders felt that FDI could result in the loss of sovereignty. Furthermore, African leaders were concerned that Multinational corporations (MNCs) would drive local firms out of business, pushing them to bankruptcy (Trade Mark East Africa, 2021). Recently, literature has pointed out that FDI has contributed to pollution and the degradation of the environment in less developed countries (Dhrifi, Jaziri & Alnahdi, 2020). Where FDI was in the natural resources sector, leaders were fearful that the exploration of natural resources would lead to a speedy degradation of the environment (Khan et al., 2023).

Recent studies have indicated that FDI is a possible, potential, important and necessary feature for economic development (Osei & Kim, 2020). The concept of FDI in Africa has gained so much popularity that African leaders now embrace outward foreign direct investment (Diko & Sempijja, 2021). For decades, FDI has been recognized by developing countries and developed nations alike for its positive results that include advanced growth and development, increased employment, technology advancement and increased research and development (Emako et al., 2022).

Despite being perceived as an undeveloped continent, Africa is said to have a wealth of mineral resources (Kola, 2019). The majority of FDI in SSA has been in natural resource exploration, extraction, and processing (Trade Mark East Africa, 2021). Natural resources amenity is viewed as a critical factor for attracting FDI in SSA (Kwakwa et al., 2023). Coulibaly and Camara (2022) asserts that FDI in mining, as a single industry, is essential

to the economies of many emerging nations. Ennin and Wiafe (2023) note that when 53 African countries were examined it was found that FDI into the mining sector is viewed as playing a significant role towards developmental growth in various regions and countries. Infrastructure development and development growth are seen as facilitators of FDI (Ross, 2019). Studies that tested determinants of FDI in Organization for Economic Cooperation and Development (OECD) countries have revealed that human capital, trade openness and infrastructure density have a positive impact on FDI inflows (Rehman & Islam, 2023).

This study performs a series of econometric analyses as informed by the formulation of regression models. The model formulation has been informed by literature review of previous studies, and the analysis was based on secondary data. This study depicts the impact of physical infrastructural amenity on investment decisions into the Southern African Development Community region (SADC). The region consists of 16 member countries namely; Angola, Botswana, Comoros, Democratic Republic of Congo (DRC), Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic Tanzania, Zambia and Zimbabwe (Oberholzer & Buys, 2023). SADC is a region situated on the southern side of the African continent. This region recognizes the importance of FDI and relies heavily on FDI to enhance the economies of member states, and assist in the achievement of economic trajectories (Khomuṅala, 2021).

1.2 RESEARCH PROBLEM

The research problem informing this study is *“Effects of infrastructure on inflow of FDI into the Southern African Development Community (SADC)”*. FDI is widely recognised as a key driver of economic growth and development (Radmehr et al., 2022). It provides access to capital, technology, and expertise, which can help countries to improve their infrastructure, create jobs, and boost productivity. The SADC is a regional economic bloc that comprises 16 countries in southern Africa (Enaifoghe, 2019). The region has a significant potential to attract FDI, given its abundant natural resources, large population, and growing middle class (Adika, 2022). However, FDI inflows into SADC have been relatively low compared to other regions of the world. One of the key factors that may be

hindering FDI inflows into SADC is the region's lack of adequate infrastructure. Poor infrastructure can make it difficult for businesses to operate efficiently and can increase the cost of doing business (Maruyama Rentschler, 2019). This can deter foreign investors from investing in the region.

There is a limited body of research on the effects of infrastructure on FDI inflows into SADC (Chamisa, 2020). Most of the existing studies have focused on the effects of individual infrastructure sectors, such as transportation or energy, on FDI. However, there is a need for a more comprehensive study that examines the effects of all infrastructure sectors on FDI inflows into the region (Chamisa, 2020). This study aims to fill this gap by investigating the effects of infrastructure on FDI inflows into SADC. The study will examine the effects of different infrastructure sectors, such as transportation, energy, availability of primary health care, telecommunications, and population size on FDI inflows. The study will also investigate the effects of infrastructure quality on FDI inflows. The findings of this study will have important implications for policymakers in SADC. The study will provide evidence on the importance of infrastructure for attracting FDI and will help policymakers to prioritise infrastructure investments. The study will also provide insights into the effects of infrastructure quality on FDI inflows, which will help policymakers to develop policies to improve infrastructure quality.

Pradhan et al. (2019) states that FDI has garnered a large interest in academic studies because of the positive impact it has on economic development. The authors do admit that there are varying results and opinions from studies on the growth benefits of FDI. Sauvart (2021) agrees with Wang et al. (2022) on this assertion. Chamisa (2020) asserts that it is important to conduct research on FDI in Africa for several reasons. According to Yimer (2023) the subject of FDI in Africa is under researched, despite the fact that FDI enhances growth and development on the continent. It is thus considered important to understand factors that affect the determination of FDI direction in relation to the African continent. The author further suggests that it would be important to understand the factors that affect FDI attraction into the African continent as these factors could be very different from factors that attract FDI into other regions.

To determine the role of infrastructural amenities on the attractiveness of African countries to inflow of FDI, Adegboye et al. (2020) addresses foreign direct investment from institutional adequacy perspective. The study is broad in nature and it focuses on a large number of countries. In that study, the issue of impacts of infrastructure was not addressed, or any documented related study on Africa's attractiveness to inflow of FDI. It is foreseen that gaining insight into the effect of infrastructure amenity in the SADC region will generate interest in further investigation of other parameters (Shezi, 2020). Singh and Kapuria (2022) has also stated that there is an area which needs attention in the literature and that is the role of sustainable development in FDI which could have an impact on infrastructure. Given the increasing prospects of infrastructure development in the African region, the research problem is considered highly relevant and practical.

1.3 IMPORTANCE AND RELEVANCE OF RESEARCH STATEMENT

Alfaro and Chauvin (2020) stated that FDI is regarded as a dependable source of capital that can be used for development in a region. Haudi et al. (2020) agrees with this opinion expressed by Alfaro and Chauvin (2020). The inflow of FDI is regarded by most developing countries as an important source of economic development which impacts mainly five areas namely domestic investment, technological growth, employment enhancement, development of labour, increased environmental and export competitiveness (Geda & Yimer, 2018).

Hlongwane, Mmutle and Daw (2021) agree with Mapfumo and Chitiga (2020) that much of the FDI in Africa has been channeled to a select number of countries, these countries are also usually the focus of researchers. Aregbeshola (2018) declares that these countries are South Africa, Morocco, Nigeria and Egypt. Most of the research that has been carried out has focused on Sub-Saharan Africa as a region (United Nations Economic Commission for Africa (UNECA), 2022). Even with such a big region being chosen, only a handful of countries provide adequate information in order to be studied (Iammarino, 2018).

Aregbeshola (2018) in his study has included a large number of countries and has also taken into account the dynamics specific to each country. Akpinar (2020) state that in accordance with the location specific theory, MNCs choose a host country which shows a certain comparative advantage over other countries. Africa's comparative advantage is said to be in mineral extraction and processing (Signé & Johnson, 2021). In determining the feasibility of mining projects infrastructure plays an important role, countries that have better infrastructure stand at an advantage for FDI inflow (Ross, 2019). Infrastructure is seen an enabler for such mineral extraction and processing however in developing countries, infrastructure is mostly underdeveloped or non-existent (Jonker & Robinson, 2018).

Ngepah, Saba and Mabindisa (2021) has conducted a panel data analysis of the mining and economic growth in Southern Africa the countries in the study are the same as those in the proposed study. However, this study is totally different from the proposed study in that it does not seek to establish whether the amenity of infrastructure forms a distinguishing comparative advantage in the SADC region. Africa has made strides to create a thriving environment which can attract FDI, however investors still have a picture of Africa being an unstable, war-torn, poverty stricken, lawless and corrupt continent (Bond, 2018).

Table 1.1: FDI Projects by sector/industry as well as FDI projects by region for 2018-2019

Table C.	Announced greenfield FDI projects by sector/industry, 2018–2019 (Millions of dollars)			
	Africa as destination		Africa as investor	
	2018	2019	2018	2019
Sector/industry				
Total	77 104	76 637	8 885	12 056
Primary	17 032	2 829	42	113
Mining and quarrying	16 782	2 640	2	113
Manufacturing	33 053	32 621	2 969	6 973
Chemicals and chemical products	11 159	6 189	1 226	3 710
Coke and refined petroleum products	6 483	7 727	-	1 413
Food, beverages and tobacco	4 660	2 448	25	280
Motor vehicles and other transport equipment	2 563	4 015	43	-
Services	27 019	41 186	5 874	4 970
Construction	4 779	9 576	1 393	86
Electricity, gas, steam and air conditioning supply	5 712	10 228	664	1 017
Information and communication	3 923	4 639	1 316	1 817
Transportation and storage	5 203	5 402	490	213

Table D.	Announced greenfield FDI projects by region/economy, 2018–2019 (Millions of dollars)			
	Africa as destination		Africa as investor	
	2018	2019	2018	2019
Partner region/economy				
World	77 104	76 637	8 885	12 056
Developed economies	38 793	39 993	2 215	1 166
European Union	25 725	28 305	1 495	534
United Kingdom	5 569	3 102	113	158
United States	10 565	3 226	254	549
Switzerland	910	2 973	15	-
Developing economies	35 915	36 286	6 496	10 839
Africa	5 485	10 002	5 485	10 002
Nigeria	326	2 897	1 330	2 912
China	11 907	11 915	81	231
United Arab Emirates	4 118	5 631	80	89
Saudi Arabia	2 311	4 443	44	190
Transition economies	2 395	358	174	51

Source: World Investment Report (2020:29)

There has been a number of studies that have focused on institutional and cultural determinants of FDI, however the majority of studies have focused on corruption or religion (Trade Mark East Africa, 2021). There however, has been no literature that delves into infrastructure amenity and its effect on FDI from a regional basis.

This study is important as it highlights the impacts of infrastructure and infrastructural development on FDI, from a regional perspective. This study has been conducted to act as a framework that will easily be replicated in other parts of the African continent and in other parts of the world. This study can also be duplicated in other sectors. The SADC region will receive recommendations from this study on how to position itself better to attract FDI in the future.

1.4 RESEARCH OBJECTIVES

The study seeks to achieve the following objectives:

- To determine whether physical infrastructure plays a role in the attraction of FDI in the SADC region. Physical infrastructure is the enabling environment
- To determine the role of market size on the attractiveness of Southern Africa countries to inflow of FDI. Market size will be determined by population size.
- To determine whether mineral endowment influences FDI. Mineral endowment will be regarded as the abundance of mineral resources in a country.
- To determine whether the economic growth potential has impact on attracting FDI.

1.5 PROPOSED HYPOTHESIS

It is proposed that the motive for embarking on FDI into the SADC region are similar to any other region and the most important being that FDI attracts much needed capital for investment. FDI is considered an important source of economic growth in many countries (Hayat, 2018). The motives for FDI into the SADC region by MNCs are proposed to be similar to any other region and will be informed by the propositions given by Chapfuwa (2020) in their study determining whether FDI promotes economic growth in Africa. The objective of this study is not to duplicate the findings of Nketiah-Amponsah and Sarpong (2021) but to ascertain whether infrastructure in the identified Southern African countries has any bearing on FDI inflow. It has therefore developed four hypothesis which will be tested through the comparing with research findings.

Hypothesis for Determinants of FDI Inflows in the SADC Region

Objective 1: Physical Infrastructure

Hypothesis 1: Physical infrastructure, such as transportation, energy, and telecommunications, positively influences the attraction of foreign direct investment (FDI) in the SADC region.

Objective 2: Market Size

Hypothesis 2: Larger market size, as measured by population size, enhances the attractiveness of Southern African countries to FDI inflows.

Objective 3: Mineral Endowment

Hypothesis 3: Countries with abundant mineral resources (mineral endowment) are more likely to attract FDI in the mining and extractive industries.

Objective 4: Economic Growth

Hypothesis 4: Economic growth, as measured by population growth and GDP, positively correlates with FDI inflows. Countries with higher growth rates are more attractive to investors seeking opportunities for expansion and profitability.

The first hypothesis was based on the premise that physical infrastructure has significantly positive effects on FDI. The second hypothesis the study was based on the sentiment that market size has a significant impact on attracting FDI. The third hypothesis was also supported and this hypothesis stated that natural resources have a positive statistically significant influence on attracting FDI. The fourth hypothesis found that the economic growth potential has a positive statistically significant influence on attracting FDI (Ghazalian, 2023).

1.6 RESEARCH DESIGN

This section provides details of the SADC region. The SADC region is the selected region that forms part of the study as well as participants to the study, furthermore it explains the correlational research design that has been utilised and the data collection used and analysis approach in the proposed investigation.

1.7 RESEARCH METHODOLOGY

The study mainly consists of secondary data that was gathered from various sources, including but not limited to the World Bank, the World Trade Organisation (WTO) database, the African Infrastructure Development Indices (AIDI), United Nations commodity trade statistics, as well as the United Nations Statistics databases. The study consists of a series of econometric regression models. The focus of the study is 12 countries of the SADC region over a period between 1979 and 2019 due to data unavailability (Hlalefang & Clement, 2021).

1.8 SAMPLING METHOD

1.9.1 Participants

The study is based on a region within the African continent. The population of the study consists of the 16 member countries of the SADC region. The sample was based on data availability, data behaviour and series analyses.

1.9.2 Data Collection

Data were collected from relevant databases, such as the African infrastructure development indicators (AIDI) from the ADB, statistical bodies in each of the sampled SADC countries, as well as other related aggregate databases including the World Bank. This data collection method was purely extractive from various certified databases.

1.9.3 Data Analysis

Quantitative methods were used to analyse the data. Statistical packages were used in analysing the data. The proposed statistical approach was multiple regression models using a panel regression model (Aregbeshola, 2018). To ensure reliability, a series of diagnostic techniques were used. Kelley and Maxwell (2018) define multiple regression as a statistical technique for obtaining the line that best fits the data points according to an objective statistical criterion, so that all researchers looking at the same data will get exactly the same result.

Tanni, Patino and Ferreira (2020) state that regression allows for investigating the relationship between variable. Usually, the variables are labelled as dependent or independent. An independent variable is an input, driver or factor that has an impact on a dependent variable (which can also be called an outcome). Weisburd et al. (2021) describe multiple regression as the effect that separates each independent variable and measures it. These analyses were conducted through cross-sectional dependence, panel stationary test, short and long run test, Hausman test, GMM test, and trend analysis. In addition, the literature review analysis was also used.

1.9.4 Operational Definition of variables

The study consists of secondary data that was gathered from various sources including but not limited to the World Bank, the World trade organisation (WTO) database, the African Infrastructure Development Indices from the World Bank, United Nations commodity trade statistics, United Nations Statistics database. The study consists of an econometric regression model. The focus of the study was select SADC countries for a period between 1979 and 2019.

Some authors state that nations that have good physical infrastructure possess an advantage when it comes to the inflow of FDI (Haudi et al., 2020 and Ross, 2019). While some companies may be willing to provide infrastructure, and invest in healthcare and education facilities this is all highly dependent on other matters being positive (TradeMark East Africa, 2021).

1.9 ETHICAL CONSIDERATIONS

No direct participation of humans or animals was required during the study. Secondary data was relied on for this study. Such data was acquired from the internet, public domain databases as well as statistical records. All data and findings made was accurately recorded. Regulations of the University regarding plagiarism were complied with fully. All sources that are used in the study have been appropriately acknowledged and listed in the list of references.

1.10 THE LIMITATIONS OF THE STUDY

Kinyondo and Pelizzo (2018) concedes that there is a difficulty in finding data on all required variables when conducting a study on Africa. Aregbeshola (2018) has also excluded a number of African countries citing that variables were unavailable in those countries. This demonstrates that there are gaps in some of the data for African nations.

Africa consists of 54 countries, these countries are further classified into five regions being North Africa, Western Africa, Eastern Africa, Central Africa and Southern Africa (Wiafe-Amoako, 2018). The study is focused on a specific regional bloc and only limited to 16 member countries within that region. Furthermore, the study could possibly reveal that not all of the 16 SADC member countries have adequate data to contribute to the study. There are limited studies and statistics on infrastructure amenity and its impact on FDI in the SADC region.

The data from developing countries tends to show low reliability levels, which heightens the likelihood of bias as well as measurement errors (Angrist et al., 2021). Since the majority of the data came from published papers, it was challenging to validate and verify the information. The data will mainly be historic and not forward looking. The data may exclude countries where there is historically poor data and thus the sample may be less than the 16 SADC countries. This work is easily replicable not only in other parts of Africa but also in other parts of the world, and it may also suggest new research areas.

The study relies on secondary data from various sources, which may vary in accuracy and completeness. Data on infrastructure indicators may not be consistent across all SADC countries, leading to potential biases.

The study focuses on a specific time period, which may not capture long-term trends or the effects of recent infrastructure developments. The impact of infrastructure on FDI may have changed over time due to changing economic conditions and technological advancements.

The study considered a limited range of infrastructure sectors, such as transportation, energy, primary health care, mineral endowment and telecommunications. FDI inflows are influenced by various factors beyond infrastructure, such as political stability, economic growth, and labour market conditions. The study does not exhaustively account for these factors, which may limit its ability to isolate the specific effects of infrastructure. However the study does include GDP as a measure.

1.11 ASSUMPTIONS OF THE STUDY

Assumptions are beliefs or principles that are taken for granted as true without empirical evidence. They provide a foundation for the study and guide the researcher's approach to the research problem. The assumptions made on this study are based on the premise that physical infrastructure has impact on attracting FDI.

- **Direct Relationship between Infrastructure and FDI:** The study assumes a direct and positive relationship between infrastructure development and the inflow of foreign direct investment (FDI) into SADC countries. Improved infrastructure is expected to enhance connectivity, reduce transportation costs, and provide a favourable investment climate.
- **Macroeconomic Stability:** The study assumes that SADC countries will maintain macroeconomic stability, characterised by low inflation, stable exchange rates, and sound fiscal policies. Such stability is considered essential for attracting and sustaining FDI.
- **Political Stability and Governance:** Political stability and good governance are assumed to be conducive to FDI inflows. Countries with stable political systems, transparent institutions, and strong rule of law are more likely to attract foreign investors.
- **Availability of Skilled Labour:** The study assumes that SADC countries have access to a skilled labour force that can support the development and operation of

foreign-invested enterprises. Education and training programs are expected to contribute to the availability of qualified personnel.

- Favourable Investment Policies: The study assumes that SADC countries have adopted investment policies that are attractive to foreign investors. These policies may include tax incentives, investment guarantees, and dispute resolution mechanisms.

1.12 DELIMITATIONS OF THE STUDY

Delimitations are specific boundaries or limitations that are placed on the study. They define the scope of the investigation and exclude certain aspects that are not relevant or feasible to examine.

- Scope of Infrastructure: The study focuses on infrastructure related to transportation (roads, railways, ports), energy (electricity, gas), and telecommunications. Other types of infrastructure, such as social infrastructure (schools, hospitals), are not considered in detail.
- Geographic Scope: The study is limited to some SADC member countries, which include Angola, Botswana, DRC, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe.
- Time Frame: The study covers a specific time period, which is clearly defined. The duration and starting point of the period may vary depending on data availability and the research objectives.
- Data Availability: The study is subject to the availability of reliable and comprehensive data on infrastructure, FDI inflows, and other relevant indicators. Limitations in data availability may affect the accuracy and generalisability of the findings.

- **Methodological Limitations:** The study employs specific research methods, such as statistical analysis or case studies. The choice of methods may limit the scope and depth of the investigation and may introduce some degree of bias.

1.13 STUDY OVERVIEW

Chapter 1: Introduction

This chapter presented the background for the study, statement of the research problem, research questions and assumptions, significance of the study, and scope and delimitations.

Chapter 2: Literature Review

Chapter 2 presented the reviewed literature and empirical evidence from previous studies, the gaps in the literature and research questions, conceptual framework: Infrastructure and FDI, and the theoretical perspectives on the relationship between infrastructure and FDI.

Chapter 3: Infrastructure and Infrastructural Considerations

This chapter presented an overview of infrastructure development in SADC countries, trends and patterns of FDI inflows into SADC countries and correlation analysis between infrastructure and FDI.

Chapter 4: Methodology

Chapter 4 showed the research design and data collection methods, the study area: Southern African Development Community (SADC) region, data sources and data analysis techniques, and measurement of infrastructure and FDI variables.

Chapter 5: Empirical Results

Chapter 5 presented an in-depth analysis of collected data using various statistical techniques such as visual trend, cross sectional dependence, descriptive and correlation statistics, unit root test, Hausman test and test for fixed and random effects.

Chapter 6: Conclusions and Recommendations

This chapter presented the summary of key findings and conclusions, the policy recommendations for improving infrastructure and attracting FDI, recommendations for policymakers and stakeholders, and future research directions and areas for further study.

1.14 CHAPTER SUMMARY

In this chapter the concepts of interest that were analysed in this study were discussed. These key concepts are identified as FDI and infrastructure. The region of interest was also identified and described. The primary and secondary objectives of the study were tabled. The chosen research methodology was briefly discussed and is elaborated on in Chapter 3 of this dissertation. The contribution of this study to the body of knowledge as well as any limitations the study may have were also discussed in this chapter. Finally, the ethical considerations that guide the study were stated.

The following chapter discusses existing literature on FDI and infrastructure in the SADC region. In Chapter 3, the research methodology of the study is discussed in detail. Chapter 4 presents the results and the analyses and chapter 5 provides a conclusion to the study.

CHAPTER 2: THE HISTORY OF FDI AND ITS EFFECT ON ECONOMIC GROWTH IN THE SADC REGION

2.1 INTRODUCTION

FDI is considered an imperative form of economic activity (Hayat, 2018). Many scholars have determined that FDI has a positive effect on economic growth (Bermejo Carbonell & Werner, 2018). According to Sabir, Rafique and Abbas (2019), FDI is the most dependable source of investment into developing nations, according to the research. The UNCTAD supports the opinion that FDI is an instrument through which economies are being integrated at the level of production into the globalising world economy by bringing a package of assets, including capital, technology, managerial capacities and skills, and access to foreign markets (Domazet, 2018). This economic activity takes place in the form of cross border flows of capital (Kugler et al., 2018). An and Yeh (2021) agree that FDI is considered as an effective method to accelerate growth and development of a country. This chapter focused on providing the history of FDI and its effects on economic growth in the SADC region. The previous chapter, chapter 1 provided the research background, the problem statement, the research questions, the significance and delimitations of the study.

2.2 DEFINITION OF FDI AND RISKS ASSOCIATED WITH

2.2.1 The definitions of FDI

Danzman (2019) cites the International Political Economy definition of FDI, which states that it is a form of cross-border investment in which a resident or corporation based in one country owns a productive asset located in a second country. Such investments are made by multinational corporations. Kingori (2022) concur with Salahaddin (2022) in that FDI can involve the construction of, or the purchase of an existing plant or factory.

A second definition of FDI states that FDI is the control of production facilities abroad, which is typically characterised by an investment that amounts to control of 10% or more of a company's equity (TradeMark East Africa, 2021). In Chapter 1 of this study, a number of definitions of FDI were given. These definitions include the definition by Salahaddin

(2022). The authors define FDI as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor, FDI enterprise or affiliate enterprise or foreign affiliate.

For the purpose of this study the concept of FDI needs to be broken down and each word needs to be understood separately. This is done to have a full understanding of the concept. Grubel (2018) states that FDI is made up of two adjectives which are the words foreign and direct as well as a noun which is the word investment. Alfaro and Chauvin (2020) opine that there are two ways to define foreign and this can firstly be in accordance to the control or funding. By control, the author refers to whether or not the firm is controlled by a foreign entity, and funding refers to a firm being funded by a foreign entity. In this context Biondi (2020) states that for an investment to be direct, it must have significant ownership in the entity and this must provide the investor with some sort of corporate control. Mintzberg (2019) emphasises that corporate control is important for two reasons among many, firstly being that with corporate control the management is likely to be trained and picked by the foreign country entity. Secondly, this control also means commitment that is usually of a longer term.

Shah (2019) states that ownership of 10% of a foreign firm is the point where Foreign Portfolio Investment (FPI) ends and FDI begins, this is however seen as merely a guideline. Practically it has been reported in some countries that there has been a deviation from the 10% ownership threshold (Makonda and Ngakala, 2021).

2.2.2 of FDI and the risks associated with FDI

Youmans and Tomlinson (2018) states that many people and companies seek to invest for different reasons. The future value of an asset differs from one individual to another; thus, two people may have conflicting views of the same asset in relation to the value of that asset. Some investors may perceive an asset to have higher value and this perception may differ from one investor to another who may deem the investment to be of low value. The difference in opinion does not mean that one investor is correct and the

other is incorrect (Cookson & Niessner, 2020). This difference in opinion is brought about by the difference in the plans and goals that the investor has. Huber et al. (2019) further states that the perception of the value placed by the investor on an asset is also dependent on the return that the investor envisages to receive from such an asset. Widagdo et al. (2020) define the return on investment as the earnings an investor receives from a particular asset. These earnings can be in the form of income or capital gains. Baltussen et al. (2018) states that there could be a mismatch between the expected return by the investor and the actual return received and this level of uncertainty is called risk.

Baltussen et al. (2018) describes risk as the uncertainty that the anticipated return will be realised. Although most people identify the word risk with negative outcomes, in this context, risk can be defined as uncertainty, and this uncertainty could go either way (Makonda & Ngakala, 2021).

Popova et al. (2021) states that there are various types of risk however the most important risks are highlighted as business risk, financial risk, market risk and purchasing power risk. Not all businesses carry the same type of risk. Opening a franchise is significantly less risky (relatively speaking) than mining, which requires large investment and involves great risk (Lanchimba, Windsperger & Fadairo, 2018).

The second risk is called financial risk. This risk relates to the fact that someone needs to invest in the business either to start it or to ensure that it is running daily (Trade Mark East Africa, 2021). Money that is borrowed from financial institutions to run a business will increase the risk of such a business (Syadali, Segaf & Parmujianto, 2023). The third risk is called market risk. This risk relates to the fact that the value of the asset does not remain the same but rather fluctuates. The fourth risk is called purchasing power risk. This risk relates to how inflation affects the buying power of an investor.

Laopodis (2020) state that there can be more than one meaning given to the word investment. The author explains that in economist terms investment refers to firms acquiring physical assets which include plant, equipment or inventory and in the case of

an individual the purpose of a new home and that to the lay man investment can but does not always include plant, equipment and inventory this lay definition is rather limited is rather limited. Nguyen (2022) describes the difference in the definitions as being the aggregate change in productive assets which comes as a result of the investment. The author states that when individuals invest there is no increase in productive assets which is the case when firms invest in plant and equipment. In the case of individuals, the sale of assets takes place on the stock market and is usually a second-hand stock that is being sold. Zupok (2022) gives two definitions for investment. Firstly, he describes investment as “the purchase by an individual or institution of a financial asset that produces a yield that is proportional to the risk assumed over some future investment period”. Nguyen (2022) argues that this definition is narrow. The author of the research paper concurs with both writers; this definition is mainly for the purpose of individuals and will also not be sufficient for the purpose of this study.

Nukala and Prasada Rao (2021) further discusses economic or business investments, stating that they are "any investment in real assets that results in the production of goods and services for the purpose of maximising the present value of the owners' equity." Laopodis (2020) also emphasises that an investment has three components: yield, risk and reward, and time factor. The author defines yield as the return on investment in terms of current income, capital gains, or losses that occur from either an increase or decrease in the security's value. Concerning reward and risk, according to Leuker et al. (2018), there is a clear correlation between risk and reward, with reward being higher where risk is greater. The author then emphasises that a degree of risk should correspond to a level of benefit because high risk does not necessarily entail great gain. The factor is related to the length of the investor's investment, which is typically a component of the investment expectations (Ferreira-Schenk & Dickason-Koekemoer, 2023). In addition, Pond and Zafeiridou (2020) supports this claim by stating that determining the liquid assets is one of the crucial political science criteria used to evaluate what should or should not be considered investments.

2.3 CONCEPTUAL APPRAISAL OF FDI DYNAMICS IN AFRICA

This section of the study focuses on four important components namely, a brief description of FDI and its advantages and disadvantages, a review of the challenges of FDI with regards to the African context, the SADC region and attraction of FDI into the region and finally a look at infrastructure and what it entails in the context of this study. A discussion of these components assists in providing the framework of analysis and discussion.

2.3.1 The concept of Foreign Direct Investment

Increased capital flow has come as a result of globalization and trade liberalisation among countries. This capital flow is divided into two forms which are FDI and Portfolio Direct Investment (PDI). FDI is said to have been historically higher than PDI in developing countries (Awolusi et al, 2018). Furthermore, Bajrami and Zeqiri (2019) agree that FDI is more stable than PDI, and is thus a preferred investment method.

Ghahroudi, Hoshino and Turnbull (2018) define FDI as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate).

FDI has been described by Ghahroudi, Hoshino and Turnbull (2018) as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate). FDI is divided into two categories which are market seeking and non-market seeking FDI (Dunning, 2015). The author elaborates that market seeking FDI is described as FDI that is driven by domestic demand and non-market seeking FDI refers to goods or services intended for international markets. FDI itself stems from a multiple number of economic theories.

Dass and Jamal (2018) state that one of the theories from which FDI emanates is the theory of Multinational Corporations (MNCs). The author further states that FDI emanates from the two other theories which are the location specific advantage theory and the industrial organisation theory. In terms of the industrial organization theory, there are several advantages to having operations in another country. These are resource advantage, market diversification, human capital advantages, the ability to tap into advanced technology that is more cost effective in the region and being able to benefit from a favourable economy (Khemraj, 2023). Previous studies have shown that growth of agriculture, manufacturing, the empowerment of natural resources, development in regards to infrastructure, economic openness and finally the development of the human capital in the host country are determinants of FDI (Awolusi, 2016).

Joo, Shawl and Makina (2022) states that economic growth and growth potential of the country, inflation openness, openness of the economy, and the international reserves of the country are elements that can be argued as important for FDI attraction into a host country. Shahbaz, Balsalobre-Lorente and Sinha (2019) argues that the most important factors that investors consider before making an investment are the political stability, security of a country, the legal and regulatory environment and finally the business friendliness. Shan et al (2018) believes that market size is a factor that affects the attraction of FDI.

Makonda and Ngakala (2021) concur with the literature review of Shahbaz et al. (2019) that the endowment of natural resources is a definite factor that attracts FDI into African countries. These authors further agree that good infrastructure, education level of the workforce, the stability of the macro economy, openness to FDI, legal systems that are efficient and a stable political environment are factors that also promote the attraction of FDI. Shahbaz et al. (2019) contends that while these factors are important, they are only secondary. Hayat (2018) highlights the fact that the impact of FDI on economic growth has produced varying results.

Unver and Koyuncu (2018) asserts that the lack of physical infrastructure is one of the deterrents of FDI attraction. However, the author finds that lack of urbanization is not a factor that negatively affects FDI inflow. While Srinivasu and Rao (2013) agrees with this statement, they state that where there is highly developed infrastructure there is increased productivity and thus in the long run there is a higher level of profitability. This higher level of productivity, the author says will increase FDI to a country. Rehman et al. (2011) discovers that infrastructure was an insignificant factor in the attraction of FDI.

Kingori (2022) notes that the following factors contribute towards attraction of FDI: market size, natural resource endowment, government policies, labour quality/cost, and transport and physical infrastructure. Rehman et al. (2011) also agree with the previous authors in that good physical infrastructure plays a role and assists in attracting FDI. Shahbaz et al. (2019) further state that the quality of labour and labour cost also contribute to FDI inflow into a country.

Kotey (2019) states that FDI has both advantages and disadvantages, however the author does not state these advantages and disadvantages. The author only states that there are four factors that are determinates of FDI which are, natural resources, market size, political economy and the legal aspects of the country. Newman et al (2020) states that FDI brings important positive spin offs to a region which are, advanced growth and development, increased employment, managerial skills and technology. Aregbeshola (2018) argues that there are some competitive advantages that MNCs enjoy that locally based companies do not enjoy and these include access to and use of advanced technology and better marketing skills.

Furthermore, due to the fact that MNCs are better established in their parent countries the author states that MNCs usually incur less sunk costs due to research and development and that MNCs usually have far much better access to capital than locally based companies (Trade Mark East Africa, 2021). Some of the possible benefits of FDI for African countries, are the fact that; FDI assists in generating income and providing growth, FDI assists in supplementing growth savings for African countries lastly, FDI

assists in the integration of the host country into the global economy (Joo et al., 2022). Santos and Khan (2019) argue that FDI assists in increasing and enhancing the skills that are possessed by local people furthermore FDI is used by the MNC to transfer modern technology to the host country and finally FDI can assist to increase the general efficiency of the host country.

In a study conducted by Yimer (2023), the author sought to determine factors that limit FDI into the African continent. In order to determine this the author analysed the results of four different surveys which are the world business environment survey, the world development report survey, the world investment report survey and the centre for research into economics and finance in Southern Africa survey. In all four surveys that were studied, corruption has emerged very high on the list of obstacles to FDI. The author identified other deterrents to FDI attraction as the regulations in the host country, the constraints in obtaining financing in the host country and finally, weak infrastructure also emerged as a deterrent to FDI (Shahbaz et al., 2019). Makonda and Ngakala (2021) reiterate further that some of the deterrents to achieving faster economic growth are weak democratic institutions and poor governance. One other deterrent identified specifically in the SADC region is corruption.

The flow of FDI has increased immensely all over the world in the past two decades and this has been due to the fact that many developing and developed countries have realized that FDI is an important source of economic development. The realisation of the importance of FDI across the world has motivated many countries to improve their business climate to attract FDI (Contractor et al., 2020).

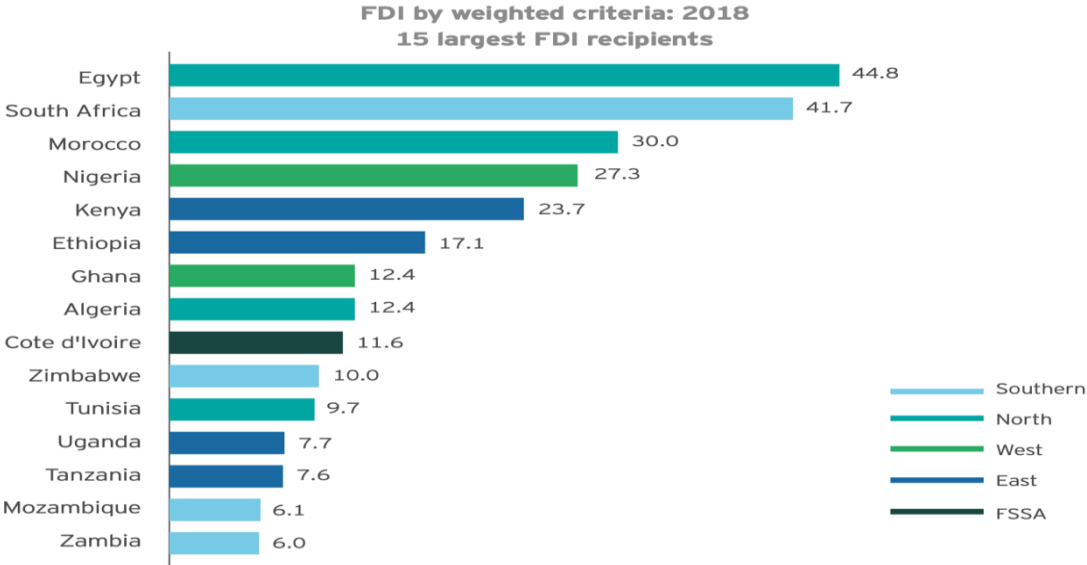
2.3.2 Africa and FDI landscape

Historically Africa has not been a major recipient of FDI (Shahbaz et al., 2019). The author says this has been largely due to the fact that Africa is viewed as a continent plagued with civil unrest, disease, hunger and economic disorder. Iammarino (2018) states that FDI has increased dramatically in many regions in the world. However, Africa still has dismal results when it comes to FDI, with FDI of 1.8% between 1986-1990 and 0.8% between

1999-2000 a slight increase to 2.3% was seen in 2000-2001 (Anyanwu & Erhijakpor, 2004). There has been a further increase in 2014 where FDI inflows to African countries were 4.4%, which is dismal compared to Asia at 37.9% and Latin American and the Caribbean at 13.0% (UNCTAD, 2015). Zhang (2020) concur that the FDI inflow into Africa has been somewhat dismal. These authors state that Africa has only received US\$ 8.3 billion worth of FDI inflows between 1990 and 1999 while Brazil alone in the same period received \$29 billion in the same period, however the author states that African FDI has mixed results, showing a decline in relative terms but an incline in absolute terms (UNCTAD, 2015).

Morgan, Farris and Johnson (2022) agree with this view point stating that Africa's FDI has increased from \$18 billion in 2004 to \$36 billion in 2006 which is in relative terms but the share of FDI has fallen from 3.1% in 2015 to 2.9% in 2017. In the first half of 2019 Africa's FDI flow had fallen by 2% compared to the same period in 2018 and was only \$23 billion which was a sharp decline from the FDI flows in 2016. This decline was caused (among other things) by slow economic growth, trade tensions, and the instability of the political environment in some countries (Dalyop, 2019).

Figure 2.1: FDI Inflows to the largest recipients in Africa



Source EY (2019:20)

Most of the FDI into the African region has been generated from oil exploration together with mineral exploration and mining activities (Signé & Johnson, 2020). Due to the fact that FDI in Africa is mostly generated in the primary sector, Africa has not benefitted from FDI as significantly as East Asia (Aregbeshola, 2018). Mineral exploration is a very strategic sector for Africa with at least half of the world’s platinum, vanadium and diamonds being mined in the region (Signé & Johnson, 2020).

Though mineral resources have shown high potential growth and have been the cornerstone of African development and growth Africa has not shown large investment (Signé & Johnson, 2020). Africa has been plagued by a large number of problems including but not limited to the global financial crisis of 2008 as well as the recent downturn in commodity prices (Balchin, 2009). Zhang (2020) concur that there are several problems in Africa and further identify reasons for the poor attraction of FDI in Africa as the high level of political and macro-economic uncertainty, and the regulatory environment that is hostile at times and not conducive for the attraction of FDI. Masipa (2018) also states that that the low GDP growth rate is also a hindrance to the attraction of FDI and that the

African region has inadequate support structures and has high barriers to entry for foreign investment, furthermore the export market in Africa is highly dependent on commodities.

Lastly, the authors state that there has been increased competition for FDI among developing countries making it very difficult for Africa to attract FDI. The authors state that the lack of economic freedom in Africa also scares off investors. The inability of Africa to attract FDI has become crucial to the region as FDI assists in attraction of capital (Masipa, 2018). Africa has suffered decades of immense indebtedness and therefore more and more African countries are looking at FDI as an option for sourcing development finance (Smith, 2021).

Yero (2023) states that SSA region has been seen as a lucrative destination for FDI due to its abundance in natural sources however there are several factors that enhance the attractiveness of SSA as an investment destination. These factors include the emergence of a middle class; the fact that Africa is starting to show signs of strong economic growth. Bleck and Van de Walle (2019) also state that the political landscape in SSA is starting to stabilise. These authors further state that SSA region is showing a return on investment that is higher than anywhere in the world due to its improving monetary and physical policies.

Ugwunna and Obi (2023) agree that there have been many studies that have been undertaken to gain a better understanding on factors that determine economic growth in developing countries, however very few studies have had a specific focus on Africa. The studies conducted on FDI attraction to Africa have highlighted that FDI attraction remains one of the biggest challenges in the African region (Shan et al., 2018).

Furthermore, most of the FDI flow into Africa has gone to a handful of countries on the continent (Marandu, Mburu & Amanze, 2019). Many academics have argued that in order to attract FDI, many countries in Africa need to show evidence of a salient democracy, transparent and reliable policy and good governance (Ofori & Asongu, 2021). Other scholars point out that FDI is attracted by a stable macro-economic environment (Asongu

et al., 2018). Other studies have been conducted by scholars mainly focused on the fact that FDI is attracted by the endowment of natural resources as well as market size (Hayat, 2018).

The income and domestic savings of developing countries specifically in Africa, are relatively low and there is a high reliability of funding that comes from foreign nations (Cavallo, Eichengreen & Panizza, 2018). These resources that are required for growth will usually emanate from FDI. A large share of FDI was traditionally between developed countries however the share of FDI has increased steadily to developing countries with 24% of all FDI in 2000 being to developing countries (Alfaro & Chauvin, 2020). This figure further increased in 2014 to 34.6% (Alfaro & Chauvin, 2020). In 2018 FDI inflows to developing countries accounted for close to 50% of global FDI inflows (Zambia Development Agency, 2021).

The United States of America (USA) was seen as the most important source of FDI in Africa, accounting for 37% of the FDI flowing into Africa between 1996 and 2000 (Zambia Development Agency, 2021). Abegunrin and Manyeruke (2019) states that in 2016 the largest investors in Africa by FDI stock were USA US \$57 billion, United Kingdom (UK) \$55 billion, France \$49 billion, China \$40 billion, and South Africa \$24 billion. The World Investment Report of 2020 confirms that the USA does only have the highest FDI outflow but is also the highest recipient of FDI. It is noted in the literature that other countries that are important sources of FDI are France, the United Kingdom, Germany and Portugal (Glaister, Driffield and Lin, 2020). In the previous decade, Asian countries were also increasingly playing an active role as a source of FDI in Africa, China being at the forefront of such investment (Zhang, 2022). Between 2006 and 2016 China's outward FDI in agriculture to developing countries had increased by 33% (Chen, Lin & Yabe, 2019). The outward FDI from emerging economies has increased largely in recent years and this has led to an increase in studies focusing on this phenomenon (Zhang, 2022).

2.3.3 A brief description of the formation of SADC region and it's FDI Attraction

Figure 2.2: Depiction of the SADC region



Source: (SADC, 2020)

2.3.1.1 Formation of the SADC region

Mensah (2018) argued that due to the fact that Africa was not a historically desirable destination for FDI, efforts from both regional and international players were needed in order to improve the continent's FDI inflow prospects. The New Partnership for Africa's development (NEPAD) and G8 (Great Eight) nations are seen as forums for African countries and their development partners to form new relationships. These organisations believe that this new relationship should be one of joint responsibility and the main basis of the relationship would be to reverse the continuous dismal FDI attraction record of Africa (Mpofu, 2021). Furthermore, various African countries have entered into bilateral investment treaties (BITs) with other countries. These treaties do not only encourage investment but also contain terms detailing how investment will take place (Salacuse, 2021).

The formation of the SADC region is yet another regional effort which has had a positive impact on FDI inflows into the African continent. The SADC region was formed in 1980 it has 16 member states namely, Angola, Botswana, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic of Tanzania, Zambia and Zimbabwe as shown in Figure 2.2 above.

SADC is a very important region in relation to growth in the African continent, the region on its own contributed towards 37% of Africa's GDP between 2003 and 2012. The SADC region is highly progressive and promotes integration, growth of member economies, security as well as peace within the region (Enaifoghe & Adetiba, 2019). The SADC region's member states are however notably not on the same economic level (Hambury, 2019).

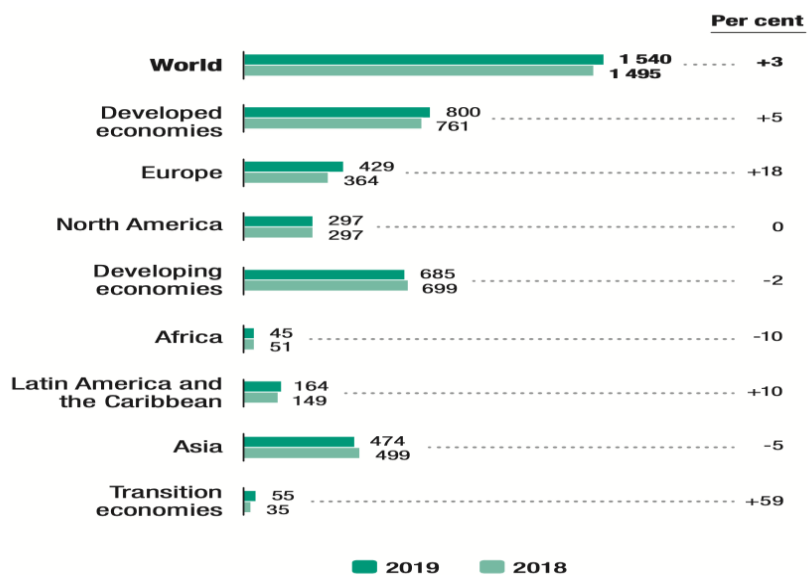
2.3.1.2 SADC's and FDI attraction

The SADC region recognises the importance of FDI in job creation as well as the development of infrastructure within the region. SADC also recognizes that for a region to attract FDI the region must compete with other nations. Due to this imperative realisation the SADC region has developed the Regional Indicative Strategy Development Plan (RISDP) level (Hambury, 2019). This plan has outlined factors that are considered by nations seeking to invest into a country which is located within the SADC regional bloc. The factors that are outlined by this strategic plan are: a stable political and macroeconomic environment, favourable regulations, quality economic infrastructure, qualified human resources and a transparent legal system (Lee, 2019). Furthermore, this strategic plan states that the "integration of the national markets into and expand regional market with a high level of liquidity" and "a harmonised business regime and business environment" are factors considered in the RISDP for attraction of FDI (UNECA, 2022).

The SADC region has diverse mineral endowment ranging from nickel to diamonds, coal, platinum, gold, iron ore, copper and other natural resources level (Nyangoni, 2020).

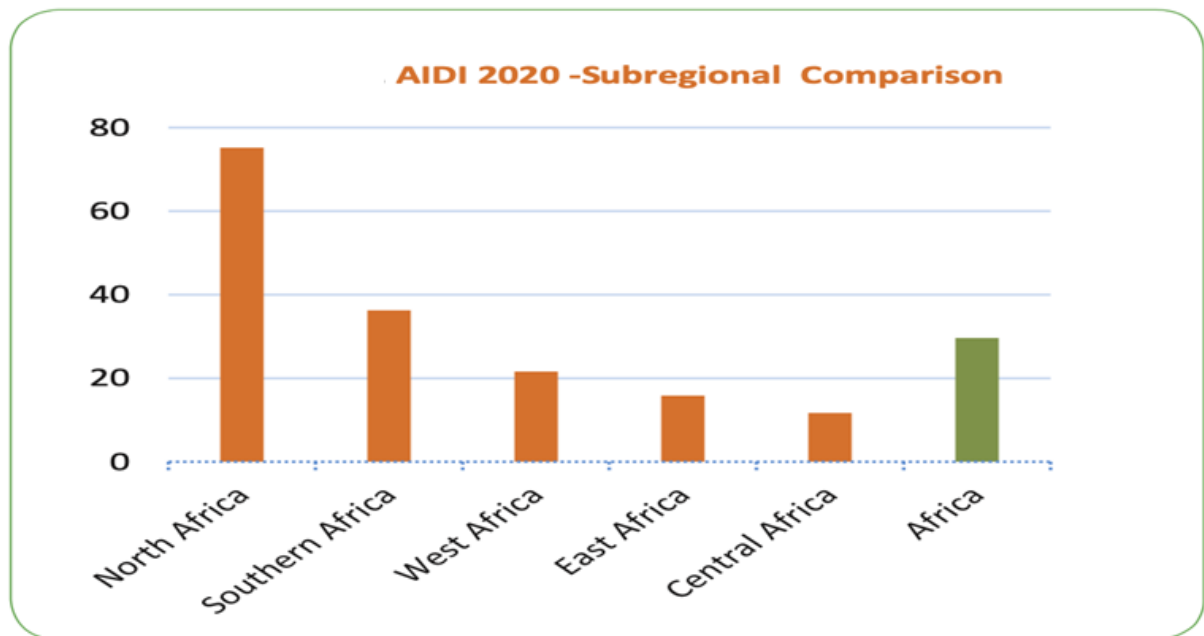
2.3.4 Infrastructure and infrastructure development

Figure 2.3: FDI inflows by region 2018 – 2019 (Billions of dollars and percent)



Source: African Development Bank (2020:5)

Figure 2.4: Sub-regional comparison of Africa Infrastructure development



Source: African Development Bank (2020:5)

According to Nyamkure (2022), the Global Competitiveness Report reveals that about \$3.7 trillion which translates to 4.1% of GDP annually needs to be invested worldwide to close the infrastructure gap. According to the John Gachunga and Kuso (2019), Africa has regressed in certain areas of infrastructure such as transport and energy infrastructure. The report also states that transport infrastructure has dropped by 6% in comparison to 2019 and that the quality of energy has dropped by 3% in comparison to OECD countries further widening the gap between Africa and OECD countries. The report acknowledges that while there are some improvements in areas of individual countries general attention needs to be given to improving infrastructure in Africa level (Calderon, Cantu, & Chuhan-Pole, 2018).

The African Infrastructure Development Index (AIDI) which is developed by the African Development Bank (ADB) is a good point of departure in formulating a suitable definition of infrastructure for the proposed study (Lufumpa, Letsara & Saidi, 2017). The latest index was published in July 2020, the index mainly focuses on a few major types of physical

infrastructure namely transport, electricity, ICT and water and sanitation (Zambia Development Agency, 2021)

For the purpose of this study infrastructure is viewed as physical infrastructure such as ICT (represented by the availability of telephone lines) electricity, access to electricity, access to primary health care and natural resource amenity and access to human capital.

Table 2.1: 3-year comparison of African sub-region Infrastructure development

Africa Infrastructure Development Index 2018–2020 by Subregion

Rank	Subregion	2018	Rank	Subregion	2019	Rank	Subregion	2020
1	North Africa	72.961	1	North Africa	74.008	1	North Africa	75.188
2	Southern Africa	35.461	2	Southern Africa	35.505	2	Southern Africa	36.247
3	West Africa	20.467	3	West Africa	20.962	3	West Africa	21.605
4	East Africa	14.607	4	East Africa	15.268	4	East Africa	15.825
5	Central Africa	11.043	5	Central Africa	11.16	5	Central Africa	11.684
	Africa	28.444		Africa	28.997		Africa	29.633

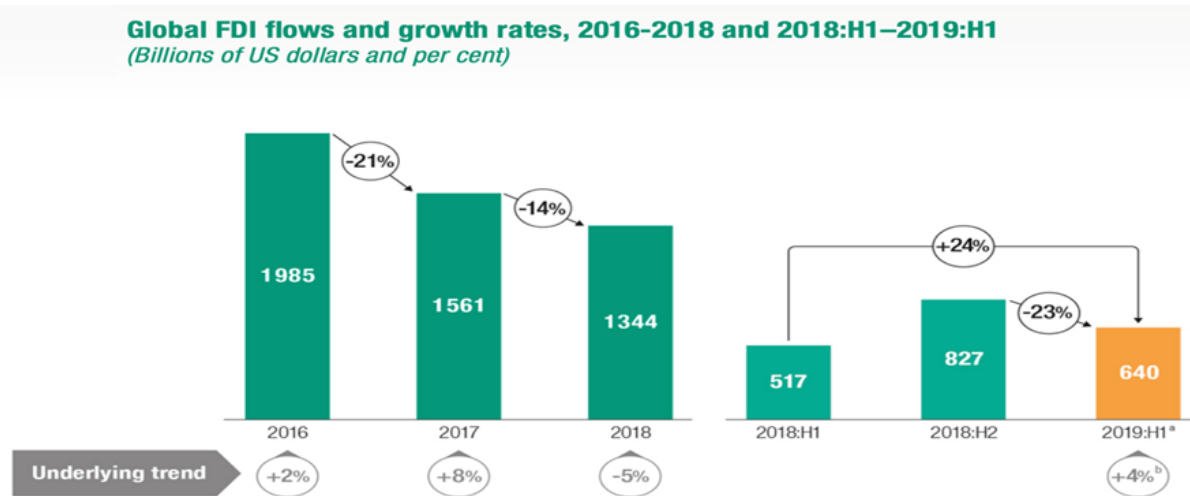
Source: African Development Bank (2020:14)

2.4 THE IMPORTANCE OF FDI IN EMERGING ECONOMIES

Haggard, Maxfield and Lee (2019) acknowledge that developing countries do not have enough financial resources domestically to fund capital and stimulate growth. This is why Africa and other developing countries rely on FDI. Qiang and Kusek (2020) states that international transfers are significant features of the global economy. FDI is one of the most important components of such transfers.

According to Anand (2019), FDI is one of the fastest-growing economic sectors in the world, which will definitely garner a lot of attention in the literature. The total stock of FDI worldwide has increased from an average of US\$142 billion in the period 1985–1990 to US\$1.2 trillion in the year 2010 (Frederick, Daly, & Center, 2019). In the first half of 2019, the stock of FDI was estimated at US\$640 billion, which is 24% higher than the same time in 2018 however, significantly lower than the second half of 2018 (Frederick et al., 2019).

Figure 2.5: Global FDI Flows and Growth rates 2016-2018 (Billions of USD and percent)



Source: UNCTAD.
^a Estimates. ^b Annualized.
 Note: Excluding Caribbean offshore financial centers.

Source (UNCTAD 2019:1)

Bird and Choi (2020), who claims that, FDI has become the main source of external finance for developing countries and is more than twice as large as official development aid. According to Hayat (2018), this significant growth in the role that FDI plays in many economies has increased its significance and sparked interest in literature research.

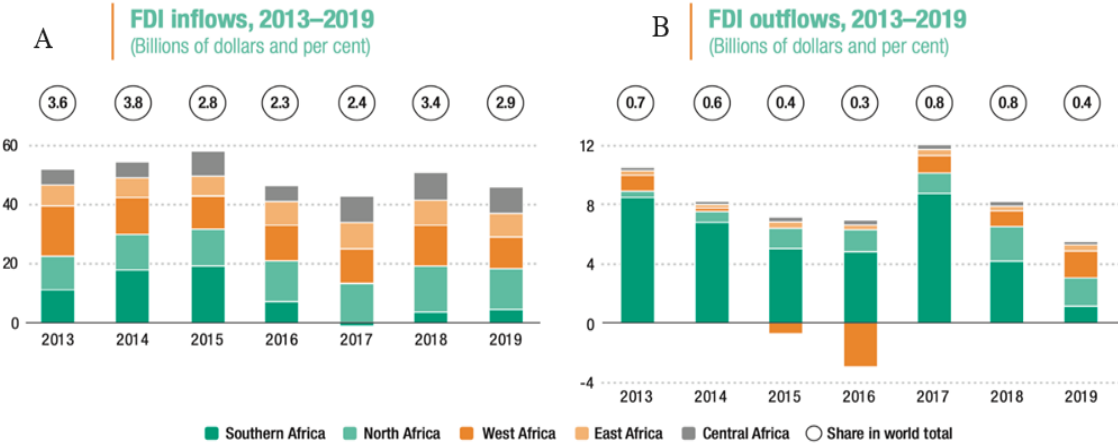
Rafat and Farahani (2019) state that a lot of studies have been conducted on the influences of FDI, its benefits and risks. The authors say that these studies were motivated by the fact that in both empirical and theoretical literature alike there have been various arguments that suggest that with large flows of FDI comes economic growth and prosperity. Zambia Development Agency (2021) concurs that, the majority of the studies conducted confirm that FDI does show positive economic benefits either in the long term or in the short term. Alfaro and Chauvin (2020) correctly state that emerging economies are specifically hungry for capital. Hayat (2018) argues that the reason why most developing nations target FDI is for its potential long term economic growth prospects,

together with the possibility of attracting other additional resources that may be possessed by the host country. UNECA, (2022) add that, including the above stated reasons, there are other more compelling reasons that support FDI attraction such as advanced technology, attractions of high and specialised skills, possibility of more research and development (R&D) being conducted by MNCs in the host country. According to the author, R&D is encouraged in host nations when such countries may not have the necessary means to carry out the R&D on their own (Rojec & Knell, 2018).

Furthermore, the host country could increase productivity through FDI. Through FDI, MNCs are also given a platform to showcase their products in and new prospective markets. The host country can also be used by the MNC as a platform for export, which in some developing countries is necessary for trade stimulation in the region (Rojec & Knell, 2018). Additionally, it is agreed upon by Rafat and Farahani (2019) that FDI flows have increased to Africa as a result of improved investor friendliness amongst African countries. More African countries have opened up their economies to international trade and have aligned their political and economic policies.

Kotey (2019) note that FDI in Africa increased from making up just 0.5% of global GDP in 1970 to more than 3% in 2008. Joshua, Rotimi and Sarkodie (2020) also cited data from the World Bank showing that 37% of FDI inflows in 2010 went to developing countries. This amount is triple the share of FDI inflows to developing countries in 2000. It is crucial that literature focus on developing nations in order to more effectively comprehend them and help their development through factual research and reports that will enable improved policies that encourage the attraction of FDI.

Figure 2.6: FDI Inflows and Outflows in Africa by Region



Source: WIR (2020:29)

Sabir, Rafique and Abbas (2018) that FDI is an imperative economic aspect for developing countries. Bakar et al (2022) believes that if an MNC produces certain products in its product line in a foreign country or buys an existing business in a foreign country there are various benefits that the host nation will reap. These benefits include possible economic development, access to better managerial skills, availability of financial resources that the country otherwise would not have had, provides marketing expertise and leads to increased employment (Bakar et al., 2022).

2.4.1 Benefits of FDI

Economic growth stimulation has been viewed by many host countries as a very important and direct result of FDI (Hayat, 2018). Together with economic growth stimulation, FDI provides a source of external capital. In some instances, FDI assists in filling the gap between the host nations targeted investment and its domestic savings (Bakar et al., 2022).

Other benefits of globalisation to host countries (especially poor ones) include the increased employment, the improvement of labour standards as well as improved managerial skills (Erixon, 2018). Most MNCs will want their own employees from the country of origin to maintain a certain standard of living while living and working in the host country (Mpofu, 2021). These MNCs will (in most cases) provide the same benefits to the host nation citizens employed by the MNC as they do to expats (Mpofu, 2021). Due to the MNC hiring citizens of the host country there will be an inevitable transfer of knowledge and skills. FDI occasionally exhibits favourable productivity spill overs to both staff and domestic enterprises (Anand, 2019).

Foreign firms usually bring new technology to host countries thus FDI enhances technological progress in host countries (Qasim & Su, 2022). Furthermore, FDI can also contribute to growth indirectly through improved infrastructure and institutions (Arimah, 2017).

Zambia Development Agency (2021) have noted in their studies that FDI can only contribute to economic growth when there is sufficient absorptive capability in the in the host country. Emako et al. (2022) further states that Africa's economic growth potential that could be brought about by FDI could be limited by the absence of absorptive capabilities. Alfaro and Chauvin (2020) state that one of the advantages of FDI is that it stimulates competition in domestic economies, thus increasing productivity even in domestic firms.

2.4.2 Shortcomings of FDI

One of the unfortunate things the world has come to see due to FDI is environmental degradation. Areas that have been hit hard by pollution of the environment include North America, Latin American and countries such as Brazil, Russia, India, China, and South Africa (World Bank, 2021). According to Contractor et al (2020), several academics believed that FDI had the ability to enhance environmental quality by utilising energy-efficient technologies.

The IMF position paper indicated that though host countries are always optimistic about the FDI and its positive spinoffs, the high capital inflow which is temporary in most cases can cause problems (World Bank, 2021). The temporary capital inflow could cause an interest rate differential. Bajrami and Zeqiri (2019) however acknowledge that the role of FDI can be somewhat controversial. The reason for this, according to the authors, is that foreign companies may occasionally gain control of domestic technological know-how and productive capability.

Shah (2019) points out that foreign firms are most likely to have better technology and know-how which host country firms possibly lack. The use of better technology and know-how could result in a crowding out (Qasim & Su, 2022). Adika (2022) notes that this phenomenon occurs in markets with few or no investment options.

2.5 INTRICACIES OF INVESTMENT DECISIONS

Isaac et al. (2020) state that MNCs' reasons for investing are mainly economical. Mpofu (2021) point out that the evidence in literature shows that the decision by MNCs to invest are rather complex. The authors state that these reasons need to be looked at in conjunction with other key factors such as labour and GDP. Although this may be the case, Bakar et al (2022) notes that a favourable institutional environment is now a crucial factor in FDI decision-making. Sabir et al. (2019) cite that good institutions help to define the business and investment environment of a country, and thus can create favourable conditions for attracting FDI.

Although the majority of studies recognise the quality of institutions as a significant determinant of FDI, it was pointed out that this opinion is not shared by all (Bakar et al., 2022). The authors state that some studies fail in displaying a positive and significant link between institutional adequacy and FDI (Magombeyi & Odhiambo, 2019). The authors further state that there are other factors that MNCs look at instead of institutional adequacy and these include democracy. Other authors have also argued that MNCs prefer to invest in countries where civil liberties are low but the political liberties are high.

Though there are many different motivations for entering a market, these motivations can be divided into three groups: efficiency-seeking motives, market-seeking motives, and resource-related motives (Sanjeev et al., 2021).

2.5.1 Why do MNCs make investments?

The strategic intent of a firm determines the type of investments that a firm makes. El Namaki (2023) stated that the phrase “Strategic intent” could be defined as “a mentality of focusing on future opportunities and long-term objectives for global leadership beyond short-term strategic planning”. Sakr (2018) also noted that it is imperative for firms that experience slow or relatively delayed growth to “catch-up” with competitors or industry leaders. One of the ways in which a firm can “catch-up” is to apply an asset seeking strategy which includes to invest in FDI.

Although the main aim of making an investment is to make money, money is not the sole reason why individuals or corporations chose to invest. Investments usually also reflect the personal values of the investor and in the case of corporations the core values of such a corporation (Brest, Gilson & Wolfson, 2018).

Sakr (2018) seeks to understand what considerations are taken by hospitals in various countries when making investment decisions. Two theories were applied in this study, firstly the institutional theory which suggests that environment of an organisation is shaped by “the elaboration of rules and requirements to which the individual organization must conform if they are to receive support and legitimacy”. Secondly the decision theory was applied, using this theory one can differentiate between three types of research, being normative research which describes how people should take decisions, descriptive research which describes how people actually make decisions and prescriptive research which pertains to assisting individuals in making better decisions (Brunsson, 2019).

The sample of this study consisted of hospitals in different countries, this is a positive aspect which indicated that the study was international. The author of this research project concurs with Mudehwe (2021) on the matter of sample size. It was argued by Sakr

(2018) that the study's sample size was very small and thus not representative. The study results show that various factors that influence the investment decisions which are country factors and these consist of health care systems influences which in this case refer to the fact that investment decisions are affected by a countries' health care system (World Bank, 2021). Cultural influences refer to a country's culture and the influence that it will have on investment decisions made and finally in relation still to country level factors such as market influences of a country (Bonna & Amoah, 2021). The market influences of a country which include competition and patient demand also impact on a hospital's investment behaviour.

The second factor is multi-object decision making, this refers to the fact that hospitals do not rely on a single criterion but compare investment projects against multiple criteria in order to reach an investment decision (Vassolo et al., 2021). The final factor that influences investment decisions is bottom-up decision making. This factor simply highlights that the recommendations and opinions of workers in the frontline are considered highly when hospitals are making investment decisions (Marques, Serrasqueiro & Nogueira, 2021). This study is a good starting point indicating the intricacies of investment decisions. However, given the fact that the hospitals are already established firms, the study is not in relation to firms that seek to expand to new territories, hence it is a bit narrow (World Bank, 2021).

Menglan (2020) observe investment decision making in the upstream oil industry. The authors find a number factors that are vital in investment decision making. Firstly, they state that the expected price for the sale of the commodity in the industry is very important. In the case of oil, the commodity price can be highly volatile. Secondly, they state that the expected cash flow per annum to be received from an investment. Thirdly, the capacity of credit which the cash flow can support. Fourthly, the portfolio of opportunities that are presented by the cash flow generated from the investment. In the fifth case, the level of risk associated with making the investment for it to be deemed acceptable. Finally, there are other factors that include but are not limited to factors of supply, demand for the commodity in the market, the availability of the commodity and resource accessibility.

Laopodis (2020) go into detail describing seven special features of investment decisions and these are time, uncertainty and risk, economic profitability, the strategic element of the decision, the tactical element of the decision, the irreversibility of the decision as well as withdrawal from the economic circuit. These are interesting concepts that have been brought to the fore by the authors and they provide interesting reasons which explain why investment decisions are taken (Laopodis, 2020). When unpacking these concepts; the special feature of time refers to the fact that companies make investment decisions to ensure their existence over a long period. Every investment entails a level of uncertainty and risk which are general characteristics of the business environment.

The business environment can be categorised as unstable in its very nature. Investment decisions can be seen as economically profitable as they are made to ensure that companies remain financially viable over longer periods (this goes hand in hand with the concept that was previously discussed stating that businesses exist to make a profit) and maintain a level of long-term high performance (World Bank, 2021). Some investment decisions in relation to long term expansion projects are in relation to the long-term goals of companies, thus the authors state that there is a strategic element to decision making. The tactical element can be categorised as the furtherance of the daily operation of the business, for example the replacement or upgrade of machinery (El Namaki, 2023). Tactical element can assist with the current profitability of the company. Other authors contend that MNCs make investments to take advantage of the host countries economic and institutional context (Luo et al., 2019).

2.6 DIFFICULTIES OF INVESTING INTO DEVELOPING COUNTRIES

Luo, Zhang and Bu (2019) pointed out that in most cases developing countries are unable to reap any benefits from their abundance in natural resources. This is due to the fact that most developing countries have inadequate human and physical capital as well as technological knowhow. Additionally, policy inefficiencies afflict many developing nations. Some of the common areas of policy deficiency include weak protection of property rights, corruption, and severe civil, political and economic instability. These become stumbling

blocks in making use of the existing resources (Mayer Pelicice, 2019). Abdu et al (2021) point at corruption, political instability and lack of accountability as challenges to the attraction of FDI in the BRICS group of countries. However, UNECA (2022), acknowledge that developing countries have made efforts in developing political and economic policies that encourage FDI.

2.6.1 Challenges of investing in Africa

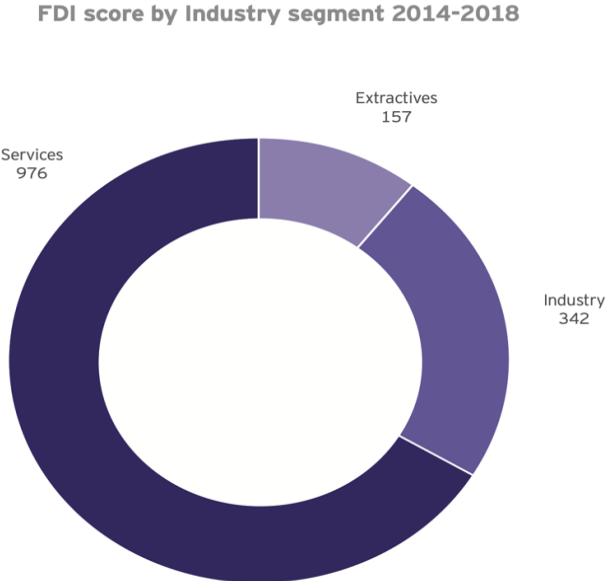
Asongu and Odhiambo (2020) re-iterate that Africa is increasingly becoming an important player in global economic development. The authors state that, although this is the case, one of the challenges of investing in Africa is political instability in some countries on the continent. In a study conducted by Turyakira (2018) focusing on African business ethics, it was indicated that there are serious concerns in relation to ethical practice on the continent. The authors point out that African ethics differ from Western ethics as well as Asian ethics.

Another challenging aspect in Africa is corruption. While it is generally accepted by the majority of scholars that corruption affects FDI negatively, literature has conflicting opinions when it comes to the effect of corruption on FDI. Some authors are of the opinion that corruption could make a country more attractive for (World Economic Forum, 2020). This could be due to the *“helping hand theory”*. In terms of this theory, corruption assists MNCs to enter countries where there is low governance (Juliao-Rossi et al., 2023). The majority of scholars believe that there is a negative relationship between corruption and FDI.

2.6.2 Sectors attracting FDI into Africa

Figure 2.7 provides details of the sectors that have been driving FDI into Africa. According to the Ernst & Young (2021) Africa Attractiveness Report, FDI is primarily drawn to the services sector. This sector comprises of telecommunications, media and technology. The report notes that in terms of technology Africa is still trailing behind the curve of tech maturity. African is seeing a decline in FDI in the financial services sector due to factors such as declining GDP.

Figure 2.7: Africa FDI Score by Industry based on data of 2014 to 2018 scores



Source: EY (2019:23)

Figure 2.8: Africa FDI Projects by sector 2018

FDI projects by sector: 2018 Total projects 710



Source: EY (2019:24)

2.7 CHAPTER SUMMARY

This chapter provided a theoretical explanation of the FDI concept. The factors that determine FDI as well as its benefits and drawbacks were also thoroughly discussed. The intricacies of investments were also discussed in detail in this chapter. This chapter also covered the reasons why MNCs invest. Finally, a detailed account of the challenges of investing in developing countries and in Africa were deliberated.

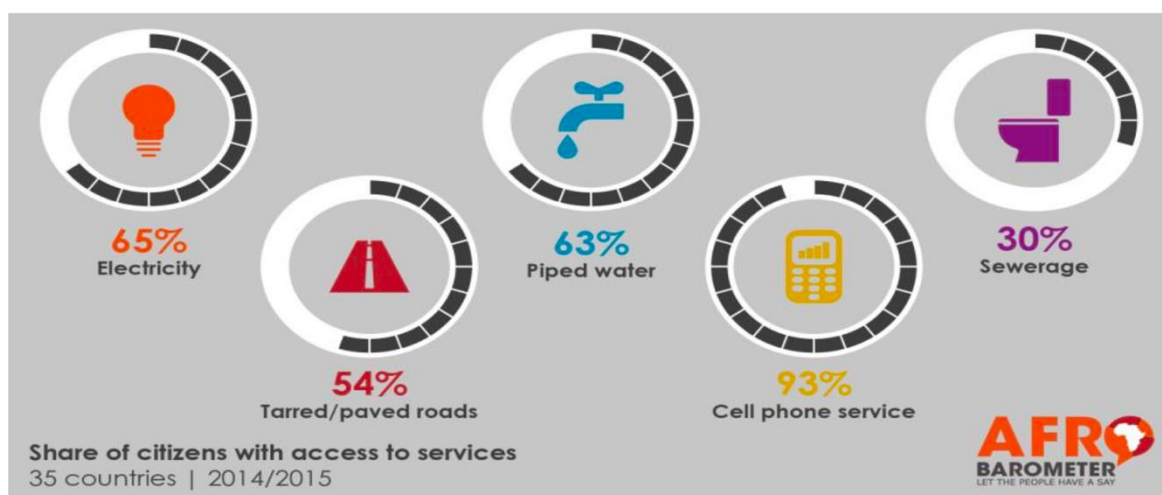
The primary scope of the study is FDI in the SADC region. It therefore has been important in this chapter to focus on this concept in the African context. The next chapter (Chapter Three) is literature review which provides a theoretical understanding on the concept of Infrastructure and infrastructural considerations in Africa.

CHAPTER 3: INFRASTRUCTURE AND INFRASTRUCTURAL CONSIDERATIONS

3.1 INTRODUCTION

Khatri (2022) stated that infrastructure is a bedrock for development. As an essential part of a supportive environment for investment and livelihood, adequate infrastructure promotes economic growth, reduces poverty, and improves delivery of health and other services.

Figure 3.1: Citizens access to services 2022/2023



Availability of infrastructure varies widely by region – with North Africa ranking first and East Africa last on most services – as well as by country. Rural residents remain particularly disadvantaged; on average, less than half of rural residents have access to electricity, piped water, sewerage, or tarred/paved roads, and urban-rural access gaps within countries range up to 90 percentage points.

Source: Bratton et al. (2019:2)

The African Industry Development Indicators Report of 2019 echoes the same sentiments (Bratton et al., 2019). Hafner, Tagliapietra and De Strasser (2018) state that according to the international energy agency (IEA) 97% of the world population which is without proper access to power resides in two continents namely SSA region and Asia. The authors then note that the United Nations in its 2022 report has highlighted that, access to affordable, sustainable and modern energy is critical for these regions. Access to affordable,

sustainable and modern energy will ensure that these two continents attain their Sustainable Development Goals (SDG) (Sanusi, 2023).

Though Africa holds about 12% of the world's hydro potential, the continent only produces a mere 3% of hydropower in the world and uses less than 10% of its technical capacity. These figures are the lowest amongst all of the regions of the world. Due to this fact, there have been many large hydropower projects planned for Asia and Africa in order to increase access to energy (Siciliano & Urban, 2017).

Binns et al (2023) state that many international organisations have written reports which call for the compilation of a comprehensive strategy that will promote the sustainable and inclusive growth of the African continent. They reported that also to be included in such a strategy should be policies on political and macroeconomic stability. Furthermore, policies on how countries would create favourable conditions for businesses to operate should be included in such strategies. The policies should furthermore encourage proper and functional financial markets, sufficient human capital and the investment into infrastructure (Nkemgha, Nchofoung & Sundjo, 2023).

3.2 DEFINING INFRASTRUCTURE

Nkemgha et al. (2023) cited the definition of infrastructure given by Jochimsen in 1966 as the first systematic definition. Torrisi (2009) defined infrastructure as the sum of material, institutional and personal facilities and data which are available to the economic agents and which contribute to realising the equalisation of the remuneration of comparable inputs in the case of a suitable allocation of resources, that is complete integration and maximum level of economic activities. The author breaks down infrastructure into institutional infrastructure, personal infrastructure and material infrastructure. Torrisi (2009) acknowledge that there are a number of varying definitions that describe what infrastructure is. The authors quote a definition that was provided by in the World Development Report of 1994 which states that infrastructure can be defined as the permanent engineering building equipment or facilities (Pheng & Hou, 2019).

Kasper (2015) point out that though there is no clear definition for infrastructure as all definitions seem to have two characteristics, which are firstly technical features, and secondly, economic features. Technical features include things such as economies of scale while economic features are features such as the spread of the user to user (Van den Berg, 2016).

Proag (2020) define public infrastructure in their research article as the physical installations such as highways and roads, airports, telecommunication facilities, water supply systems, electricity, waste treatment facilities and the like. The authors explain that the role of public infrastructure is to provide services that form a part of residents' consumption bundles and augments capital and labour as an input in the production process.

3.2.1 The importance of infrastructure

Proag (2020) agree that infrastructure plays a very important role in economic growth of a country.

The provision of public infrastructure to citizens is believed by Lemanski (2020) to not only enhance sustainable economic growth but also to enhance economy and trade activities. Infrastructure enables, sustains and enhances the living conditions of society through the commodities and services (Thacker et al., 2019). It is the opinion of many scholars that the lack of infrastructure is one of the key elements that limits the economic development and millennium goals of developing nations (Davies et al., 2019). Investing in infrastructure and the maintenance thereof, can be extremely expensive especially in Africa. This is due to the fact that most of the infrastructural materials are purchased outside of the continent (Van den Berg, 2016).

Though SSA is said to be trailing far behind other poor countries around the world in terms of infrastructure development, it has been argued that the infrastructure currently found in the region is largely responsible for improvement in growth performance between 1990 and 2005 (Calderon et al., 2018). Furthermore, Proag (2020) note that there are various

key ways in which infrastructure affects a country's competitiveness and growth. The first benefit of having a sufficient infrastructure is that it lowers production costs while increasing the productivity of private inputs. Secondly, infrastructure significantly reduces the cost of doing business in an area. Thirdly infrastructure stimulates a country's growth and thus alleviating poverty. Lastly, infrastructure reduces distribution costs which affect market prices. Nevertheless Proag (2020) added that infrastructure contributes to the provision of necessary social services within a country.

3.2.2 Infrastructural challenges in Africa

Bankole, Osei-Bryson and Brown (2015) state that the trade capability of Africa can be improved by factors such as ICT infrastructure, physical and human capital and trade facilitation. There has been rapid growth in mobile network infrastructure which is an outcome of high levels of investment. This rapid growth of ICT varies from one country to another. For example, only 17% of the people in Eritrea and Somalia were reported to be cellphone users in 2011, which is relatively low (Stremlau & Tsalapatani, 2022). Comparatively speaking, South Africa, Botswana, Gabon, and the Seychelles all had a subscription rate of 100% during the same year. In 2018, South Africa accounted for 86% of the African continent's mobile subscribers, this figure dropped significantly in 2011 to 15%. The penetration of the fixed line telephones in Africa was 1.3 subscribers per 100 people in 1998, this number has remained the same in 2021 according to the World Bank (Van den Berg, 2016).

The connection of broad band internet on the African continent has increased significantly from 0 at the beginning of 2000 to 19 million in 2010 (Evans, 2018). A composite index that monitors and compares development of ICT across countries was developed by the International Telecommunication Union (ITU) in 2021 (Saba & David, 2023). This index reflects the ICT readiness, ICT intensity and ICT skills respectively in a country. Only three African countries were ranked in the top 100 of the IDI in 2021. These countries were Mauritius, Seychelles and South Africa. South Africa, Mauritius were the only countries in the SADC region ranked medium in the IDI.

3.2.3 Types of physical infrastructure

Jayasinghe, Derrible and Kattan (2023) refer to physical infrastructure as public infrastructure. The authors state that public infrastructure entails those services that are provided to residents such as electricity, highways, roads, airports, telecommunication facilities, waste treatment facilities and water.

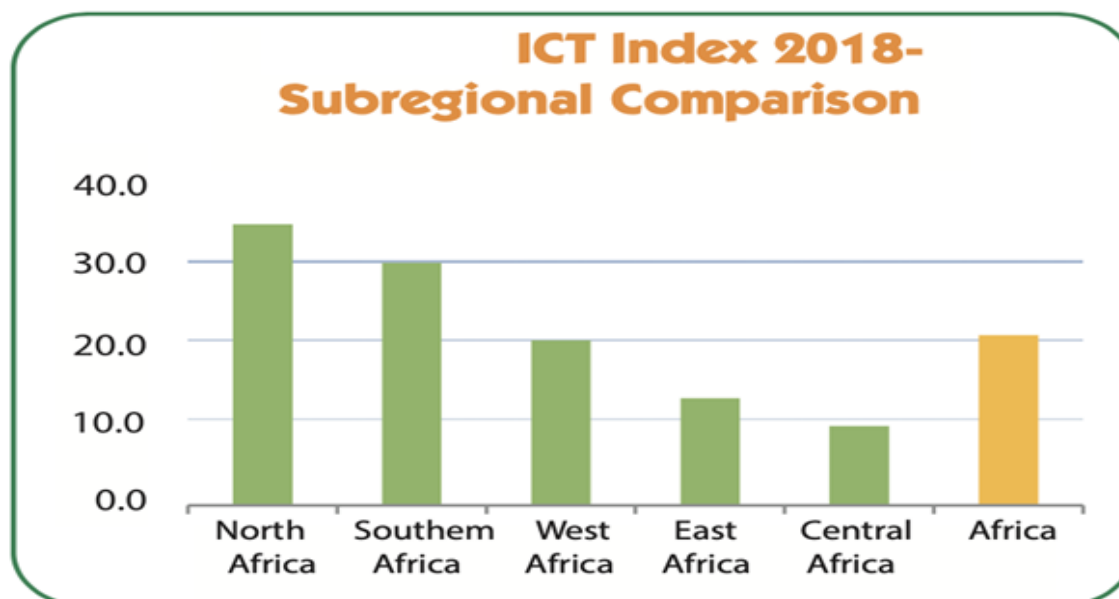
SADC has protocols on a number of key infrastructures that it seeks to develop for the betterment of the region. These are electricity generation, tourism, meteorology, ICT and telecommunications, transport, water and sanitation and lastly maritime, ports and inland waterways (Wentworth & Cloete, 2022).

In Chapter 1 of this study, it was indicated that infrastructure for the purpose of this study will refer purely to physical infrastructure as per the measures in the African Infrastructure Development Index. These are ICT, transportation, electricity and water and sanitation.

3.2.3.1 Information and Communications Technology

One of the key objectives of SADC is the development of a vibrant information and communications technologies sector. This is because SADC leadership understands that the region needs to focus on increasing undersea optical cables, expanding voice telephony and finally ensure constant internet access to the world (Van den Berg, 2016). This will allow rapid transfer of data and information and ensure immediate global contact.

Figure 3.2: Sub-regional comparison of ICT

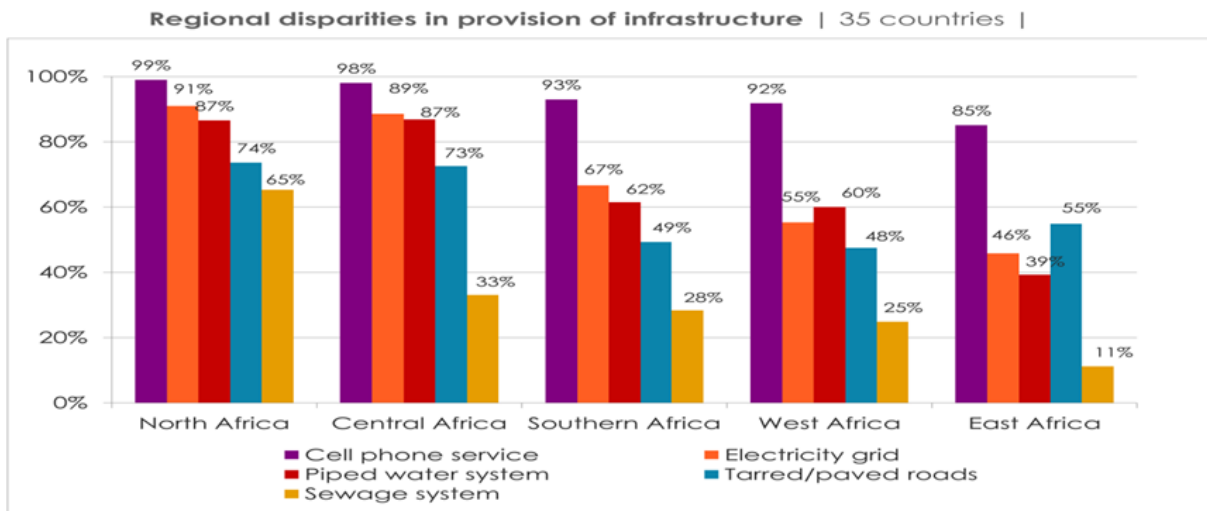


Source: African Development Bank (2018:5)

3.2.3.2 Electricity

With its development SADC is relying more on electricity in order to attract infrastructure projects. The electricity production and consumption of member states in the SADC region varies vastly as shown in Figure 3.3 below. The World Bank has predicted that the energy demand for the region will increase by about 40% in the next ten years (SADC 2021).

Figure 3.3: Regional differences in access to electricity 2018 to 2022



Source: Lee et al. (2022:14)

3.2.3.3 Transport

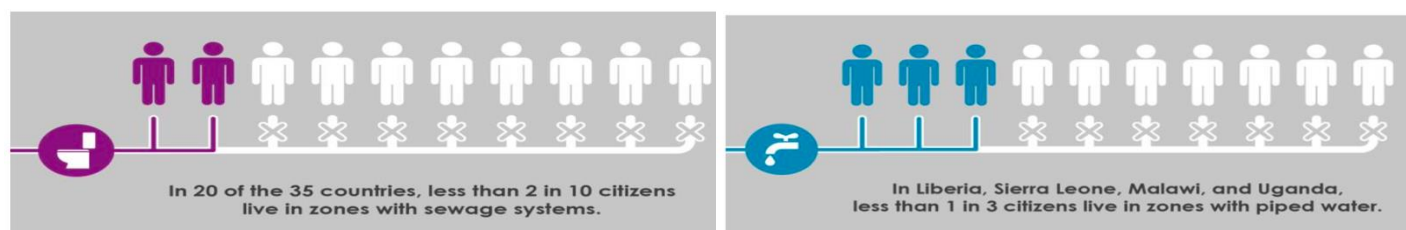
SADC has broken down transportation into the following; roads and road transport, railways, air and aviation, transport corridors and spatial development initiatives (Enaifoghe & Adetiba, 2018). It is noted by Chamisa (2020) that the SADC region has a large network of road transport. The author notes that the conditions and quality of such networks vary among member states. The transportation needs in the region may seem to adequately meet the needs to the population but may in the near future be inadequate (Van den Berg, 2016). There are a number of projects that the region is engaged in to improve and increase the capacity on its transport network.

3.2.3.4 Water and Sanitation

Due to its high reliance on agriculture, the SADC region relies heavily on water availability. This water supports agriculture which in turn supports livelihoods. With growing concerns of water scarcity due to global warming, the region needs to find more efficient ways of water utilisation (Jayasinghe et al., 2023).

In SADC, only 61% of the population has access to safe drinking water as illustrated in Figure 3.4 below. The situation is however dire when it comes to access to proper sanitation, a measly 39% of the population has access to proper sanitation (Nhamo et al., 2019). According to Davies et al. (2019), in order to achieve the SDGs, set by the World Bank, Africa has to focus on improving health and access to water of citizens.

Figure 3.4: Water and Sanitation statistics 2019 based on 35 African Country Survey



Source: Armah-Attah (2022:7-9)

3.3 INFRASTRUCTURAL CONSIDERATIONS IN THE SADC REGION

When summarising the viewpoint of the studies that have been undertaken in recent years on infrastructure, Thusi and Mlambo (2023) state that the majority of empirical literature has identified unreliable infrastructure as one of leading causes of the slow development in Africa. But in recent years, Africa has had stronger economic results, partly as a result of infrastructure investments (Van den Berg, 2016).

SADC sees infrastructural development programs as important to the region. The SADC member states would like to deepen economic integration through free trade (Bronauer & Yoon, 2018). SADC still has major constraints in communication systems and transport and if these are not addressed, they can cause barriers to free trade (Habiyaemye, 2020). The SADC region consists mostly of land locked countries which makes road and rail transport very important and highly strategic as they link cities with remote towns. These modes of transport will link the mostly land locked countries to the ports of Angola, Mozambique Namibia and South Africa (Forbes, 2021).

Onokala and Olajide (2020) describe the challenges of transport infrastructure as being in three-fold. The first problem is that the road and rail infrastructure is lacking. The author states that while on a regional level there is sufficient transport and communication networks. The second problem according to the author, the rail and transport policies of the regions are not in harmony, this problem often leads to the delay of passenger and goods vehicle that are moving from one-member country to another (Khatri, 2022).

3.4 INFRASTRUCTURAL DEVELOPMENT IN SADC

Habiyaremye (2020) states that though the region has extensive roads, less than 20% of the road network of the region is paved and even with the paved roads, some of them are in an unsatisfactory condition due to (among other reasons) civil wars, floods, lack of maintenance, overloading due to diversion of rail cargo. Of the SADC member countries, Mauritius was rated as having the best road conditions in 2015 with 100% of the roads being paved or tared, Botswana came in second with 94% of the roads regarded as being in good condition (Munuhwa et al., 2020). Tanzania was reportedly having the worst road conditions. Angola and the DRC have suffered long periods of civil war which have resulted in damage to their infrastructure (Udelsmann Rodrigues et al., 2021). Transport infrastructure serves as one of the most important sectors that open up trade and economic activity within a country and across borders. Many countries have been able to form Private Public Partnerships (PPP) successfully in order to develop transport infrastructure as many governments do not have enough capital to fund road projects (Kang et al., 2019).

3.5 INFRASTRUCTURE DEVELOPMENT PROJECTS IN SADC

The SADC regions projects that the traffic at its ports will increase from 92 million tonnes to 500 million tonnes by 2027 (Joseph, 2023). Furthermore, the region believes that the traffic in its land locked countries will have an annual growth of 8.2%. Thus, meaning that the traffic will increase from 50 million tonnes to about 148 million tonnes by 2040 (Joseph, 2023). By the year 2030, OR Tambo International Airport is expected to add two million passengers a year and an additional one million by 2040. SADC realises the need to expedite its infrastructural development.

The projects discussed in the subsections below are only a few examples of the initiatives that have been undertaken in the SADC region in order to upgrade infrastructure and achieve anticipated growth potential (Wentworth & Cloete, 2022).

3.5.1 N4 Toll Road Project

In terms of PPP implementation over the past 20 years, the SSA region has been one of the worst-performing areas. There have been efforts by various SSA countries to utilise the PPP approach in the development of transport infrastructure. Ngwenya and Taylor (2018) case study showcases some of these various transport infrastructure projects in SSA including the N4 toll road project and the Port of Maputo. The N4 road project is the first cross-border transport PPP to develop in SSA. This partnership is between two governments, namely the Mozambican and the South African governments (Nkhoma, 2021). The goal of this project, which began in 2019, was to rehabilitate the road between Pretoria, the capital of South Africa, and Maputo, the capital of Mozambique. The reason for the rehabilitation was mainly to enhance economic activities between the two countries. This toll road was a success and its success was attributed to the competitive tendering process which was transparent. Furthermore, this project was completed on time (Ngwenya & Taylor, 2018).

3.5.2 Port of Maputo

The Port of Maputo is the first port in Africa to be delivered using the PPP platform. The project was accomplished through a partnership between the Mozambican government and a private consortium (Ngwenya & Taylor, 2018). The consortium owns 51% of the shares in the joint venture and the government owns 49% of the shares. The port started operating in 2003, and the operation of the port has made a large contribution to the export and import of not only Mozambique but for neighbouring countries (Massangaie, 2018).

3.5.3 Port Expansion Project Dar-es-Salaam

In 2013, President Jakaya Kikwete of Tanzania revealed the Big Results Now initiative. This initiative identified transport as one of the six key Big Results Now (BRN) areas. This was an outstanding proposal because it would complement the World Bank-funded Maritime Gateway project (Anselem Tengecha & Zhang, 2020). These initiatives were aimed at increasing the efficiency of the port.

Dar-es-Salaam Port is Tanzania's main port handling 95% of the country's international trade (Anselem Tengecha & Zhang, 2020). The port services Tanzania's landlocked neighbours namely Burundi, DRC, Malawi, Rwanda, Uganda and Zambia. Due to the magnitude of cargo that goes through this port, it is important to develop it and ensure that it is highly efficient (Tengecha et al, 2022).

3.5.4 Lesotho Highlands Water Project

The Lesotho Highlands Water Project (LHWP) is a project that is being jointly implemented by the Lesotho and South African governments. The main aim of this project is to direct water from the Orange-Senqu River in Lesotho to Vaal River in South Africa. The majority of the construction work that is required for this project was done in Lesotho. The construction of this project was divided into four phases. This project was mainly for water supply and also to create a Hydro Power Station to supply power to Lesotho (Lekhanya, 2020).

3.5.5 Development corridors

There are about ten development corridors that were also included in the SADC transport Protocol. These are interconnected country developments and are for the benefit of the whole region (Habiyaremye, 2020).

3.6 DEVELOPMENTAL MEASURES OF INFRASTRUCTURE

According to the African Development Bank (2021), there are a number of apparent deficiencies in relation to infrastructure namely the lack of secure and reliable energy,

efficient transportation network, reliable communication systems, good sanitation. Population health is measured by determinants that are multi-dimensional. These determinants can be grouped into five classes namely health care, individual behaviour, economic and social environment and lastly genetic determinants of the population (Chen & Antonelli, 2020).

Electricity is measured by power generation capacity which should be high access and supply of electricity to the population at a relatively low cost (Jahangiri et al., 2023). Transportation is measured using the paved road network within a country or region. Transportation is also measured by the effectiveness of linkages of the different modes of transport (Sharifi, 2021). Market size is usually determined by GDP and population size.

The level of ICT readiness is reflected in an index called the ICT Development Index. The level of ICT readiness, the ICT skills available in a country as well as the ICT intensity are reflected in this index. According to the index, ICT readiness indicators include the level of mobile-cellular telephone and fixed line penetration (Mwananziche, 2023). Fixed line penetration has been used in Africa as a measure of ICT (David & Grobler, 2020).

3.7 CHAPTER SUMMARY

This chapter included a lengthy exploration of the concept of infrastructure generally and in the SSA region of Africa in particular. In addition, a thorough explanation of what infrastructure is in the context of the study was provided in this chapter. In addition, a summary of the kinds of infrastructure that were taken into account for this specific study was provided. Additionally, the challenges associated with infrastructure in an African setting were also highlighted. Also provided was a thorough overview of the region's infrastructure needs. The SADC member states' efforts to improve the region's infrastructure were highlighted in this section along with the region's infrastructure-related concerns.

The next Chapter (Chapter 4) provides a detailed explanation of the research methodology that was used to test the hypotheses. Chapter 4 also goes into detail explaining the methods for the study.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

This chapter contains a detailed explanation of the chosen methodology that was used to analyse the data collected for the purpose of this study. Contained in this chapter is also a description of the population of the study, the proposed sample and the rationale behind the chosen sample. Furthermore, the chapter elaborates on how data was collected as well as the sources of the data, with justification on the choice of variables used in the study. The hypotheses of the study which are informed by the research questions and review of literature, are also stated in this chapter. Furthermore, the pre-estimation diagnostics used in the study are discussed, and the estimation approaches are also discussed and justified.

4.2 POPULATION AND SAMPLING

According to Adika (2022), the SADC region plays a very important role in terms of supplying the world with natural resources. Furthermore, according to Pinto (2020), the SADC region extracts almost half of the world's vanadium, platinum, and diamonds and generates around 36% of the world's gold and 20% of its cobalt. The extraction of these minerals also creates job opportunities (SADC, 2020). According to the Ernst & Young Attractiveness Program of 2018, the 10 biggest economies on the African continent (in alphabetical order) are Angola, Cote d'Ivoire, DRC, Ethiopia, Ghana, Kenya, Nigeria, South Africa, Tanzania and Zambia. It is notable that 50% of these countries belong to the SADC region.

For the mining industry to function effectively, transport infrastructure plays an important role. However, there is a general perception that African countries, and those in the SADC region, lack requisite infrastructure to support the mining industry. For instance, Calderon et al (2018) compared the infrastructure endowment of five sub-regions on the African continent. Although, the results of this study showed that the SADC region was the region with the second most developed infrastructure, the concentration of road network and railroads are sparse, and very inadequate (Habiyaremye, 2020).

The SADC region consists of 16 member countries. The population of the study was the SADC region's 16 member states. The region also recognises the importance of FDI and has put systems in place that focus on FDI attraction (Iammarino, 2018). The SADC region gained traction in this study because of its huge concentration of natural resources and the skewed infrastructural development of member states.

Given that a number of countries in the SADC region are not highly endowed in natural resources, the study adopted a sampling approach that considers the largest mining-related FDI receivers in the region. Another important consideration in the sampling approach was the availability of usable data. As such, the population was trimmed down to a sample of 12 member countries, namely Angola, Botswana, DRC, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe. It must be admitted that the sampling approach did not completely eliminate data challenges (Hasanin et al., 2019). The challenge in the data of some countries was that it presented major gaps in the data dating back to 1979 (SADC, 2020). The gaps were so large that a five-year moving average method could not be applied to the data (World Economic Forum, 2020). These countries were therefore excluded from the study. The excluded four countries were Comoros, Eswatini, Madagascar and Seychelles.

4.3 RESEARCH DESIGN

This study followed a quantitative design approach. Ghanad (2023) states that in simple terms, quantitative research design can be described as a method of collecting and analysing data which can be represented numerically and structured for easy comprehension. The quantitative approach consists of the use of secondary dataset, which is inputted into statistical packages that are used to analyse the data.

4.4 DATA COLLECTION

All the data used in this study was collected from the World Development Indicators (WDI), which is a credible source and one of the largest global reservoirs of macroeconomic dataset. A few of the dataset were also collected from the SADC

database over a period of forty years, from 1979 to 2019. The data was collected for the following variables: Net flow of FDI in USD\$; access to electricity as a percentage of the population; ICT fixed telephone subscriptions per 100 people; transport services; access to water and sanitation. The variables that were used in this study are similar to those used in previous studies (Aregbeshola, 2018).

The data is considered reliable due to the stringent processes followed by the World Bank in collecting it. The researcher agrees with Kinyondo and Pelizzo (2018), who stated that it can be difficult to obtain data on African nations since, in some cases, the information that is accessible is inadequate and does not provide enough history, such as going back to the 1970s. It is also not easy to find the right data because of the World Bank database's navigational difficulties.

4.5 DATA ANALYSIS

4.5.1 Descriptive Statistics

Descriptive statistics is a broad category of summarising data. According to Salkind and Frey (2021), the first step in analysing data is to describe it. Salkind and Frey (2021) further explains that describing data entails computing a set of descriptive statistics. The author explains that this diagnostic analysis gives a researcher a first impression on what the data actually looks like and the extent to which it is normally distributed. Alem (2020) refer to descriptive statistics as instruments that organise and highlight the data in such a way that the researcher can make certain perceptions from it. Cooksey (2020) states that the numerical findings of a study should be presented clearly, concisely, and in such a manner that an observer can quickly obtain a feel of the essential characteristics of the data.

Alem (2020) state that tables and graphs are helpful tools for displaying data. In particular, this type of graphical display can disclose whether the data is normally distributed or if it follows a *Gaussian* distribution that is consistent with the regression criteria of the dataset's normal distribution. These important features are the distribution of scores, the mean and the standard deviation (Salkind & Frey, 2021). This initial diagnosis assists with

uncovering skewedness of the data as well as kurtosis. If there is skewness in the data, a logarithm or transformation will be used.

4.5.2 Estimation techniques

When conducting an analysis with just two variables, Thrane (2019) claims that there is evidence to support the use of ordinary least squares regression. Salkind and Frey (2021) acknowledges that a study may involve an investigation of the relationship between more than two variables. Dehalwar and Sharma (2023) correctly points out that in business and finance, the analysis usually entails more than one variable. Sarstedt and Mooi (2018) states that multivariate analysis of variance as well as factor analysis can be used in case of equations that contain more than two variables. When an analysis becomes more complex and involves numerous variables, multiple regressions can also be used as the appropriate statistical estimation tool to analyse the variables Knight, 2018). Multiple regression will be the favoured method, especially when using a panel approach, due to the wide range of factors taken into account in this study (Knight, 2018).

4.5.3 Regression analysis

Dehalwar and Sharma (2023) explain that one of the fundamentals of any academic discipline is understanding the relationships between variables. Regression can be described as a tool used in statistics to explain the relationship between two or more variables (Thrane, 2019). According to Sarstedt and Mooi (2018), regression is a frequently employed technique that is especially helpful in situations when there are numerous variables and a complex relationship between them.

The statistical strategy which applies multiples regression models in a panel setting was utilised for the purposes of this study.

Sarstedt and Mooi (2018) noted that multiple regression is a widely used technique in econometric-related investigations, such as this one, for analysing data. Multiple regression is a technique that helps researchers comprehend the link between a set of independent factors and dependent variables, according to the author. This approach is

particularly relevant because it allows the researcher to explain or to predict a dependent variable (Ledford, Lane & Gast, 2018). Thrane (2019) asserts that a regression model can also be referred to as an econometric model. The author further explains that multiple regression is a quantitative analytical tool in which the behaviour of some variables is explained by other variables (Sarstedt & Mooi, 2018). Furthermore, it is added that a single equation regression model has the form of an equation (a mathematical function) which quantifies a relationship between a dependent variable (which is explained by the model) and one or more explanatory variables, which are also called regressors) and which have statistical or causal relationships with the dependent variable) (Pesaran, 2021).

According to Sarstedt and Mooi (2018), who concur with the aforementioned authors, regression analysis is a statistical tool that lets researchers explain how one variable is related to another. The authors proceed to suggest that the calibration of an econometric equation reflects the complexity of the problem. This is because complex problems can only be diagnosed with complex mathematical models (equations) (Thrane, 2019). A basic simple (linear) equation involves two variables, namely the dependent and independent variables. Yet, there are instances where an equation might be complicated, have several variables, or even be more than one equation, as in the case of the current study (Pesaran, 2021).

Nayebi (2020) further explains that multiple regression is a statistical analysis technique that builds on linear regression by incorporating many independent variables into an equation to investigate their relationship with a dependent variable. Kelley and Maxwell (2018) also point out that researchers employ multiple regression in order to analyse quantitative data and shed light on the relationship between variables. Researchers largely prefer multiple regression when there is more than one variable that affects the dependent variable.

4.5.4 Cross-Sectional Dependence

Cross-sectional dependence refers to the correlation between observations within a cross-section (e.g., countries in a panel dataset) (Pesaran, 2021). It can arise due to common factors (e.g., global economic shocks) or unobserved heterogeneity. Ignoring cross-sectional dependence can lead to biased and inefficient estimates (Pesaran, 2019).

4.5.5 Panel Stationarity Test

Panel stationarity tests assess whether the time series data in a panel dataset are stationary, meaning their mean and variance are constant over time. Stationarity is important for time series modelling and forecasting. Common panel stationarity tests include the Levin-Lin-Chu (LLC) and Im-Pesaran-Shin (IPS) tests (Levin et al., 2002; Asogwa et al., 2022).

4.5.6 Short and Long Run Tests

Short and long run tests are used to determine the persistence of relationships between time series variables (Müller & Watson, 2018). Short run tests assess the immediate impact of one variable on another, while long run tests capture the long-term relationship (Pesaran, 2015). Common short run tests include the Granger causality test and impulse response analysis (Van Dinh, 2020). Long run tests include the cointegration test, which examines the existence of a stable long-term equilibrium relationship (Engle & Granger, 1987).

4.5.7 Hausman Test

The Hausman test is used to compare the estimates obtained from two different estimation methods (e.g., fixed effects versus random effects) (Baltagi & Liu, 2016). It tests whether the difference between the estimates is statistically significant. A significant difference suggests that the choice of estimation method matters (Patrick, 2021).

4.5.8 GMM Test

The generalised method of moments (GMM) is a powerful estimation technique that can handle endogeneity and measurement errors. It involves constructing moment conditions

that are assumed to hold in the data and then finding the parameter estimates that minimise the weighted sum of squared deviations from these conditions (Hansen, 2018).

4.5.9 Trend Analysis

Trend analysis involves identifying and describing the long-term trend in a time series dataset (Mudelsee, 2019). Common methods include moving averages, exponential smoothing, and regression analysis. Trend analysis can help researchers understand the underlying dynamics of the data and make predictions about future outcomes (Zakhidov, 2024).

4.5.10 Literature Review Analysis

A thorough literature review was conducted to gather insights into the relationship between infrastructure and FD as observed by Cassia et al. (2020).

In this study, descriptive statistics, estimation techniques, regression techniques, cross-sectional dependence, panel stationarity, short and long run tests, Hausman tests, GMM tests, trend analysis and literature review were main methods used for analysing data. These methods helped the researcher to identify potential biases, ensure the validity of the models used, and draw meaningful conclusions from empirical data (Goldkuhl, 2019). By understanding the assumptions and applications of these methods, the researcher improved the quality and reliability of the research findings.

4.6 RESEARCH QUESTION AND MODELS

This section, often known as the a priori expectations, lists and discusses the impacts that the study questions are expected to have.

4.6.1 Proposed hypothesis

The literature review presented in Chapters 2 and 3 forms the basis of this study's hypothesis.

Table 4.1: Proposed hypothesis

Baseline model	Hypothesis 1: Infrastructural determinants of FDI	
Dependant variables	Independent variables	Hypothesised effect
Foreign direct investment, net inflows (% of GDP) FDINFL	Electricity (% of population) (ELEC)	Positive
	Fixed telephone subscriptions (per 100 people) (FTEL)	Positive
	Access to Health care (Birth rate, crude (per 1,000 people)	Negative
	Transport services (% of commercial service exports) (TRAE)	Positive
	Access to education (primary school enrolment %)(EDU)	Negative
	Active market size (Population, total) (POP)	Positive
	Wages (salaried and waged employees%)(WGS)	Positive
	Natural Resource endowment (total natural resources rents as a % of GDP) (NRE)	Positive
	GDP (GDP growth (annual %))	Negative
	Inflation (GDP Inflation annual %) (INFL)	Negative

The above was used to formulate the following proposed hypotheses. These hypotheses are used to gauge the statistical importance of the various determinants on infrastructural amenity on FDI inflow into the SADC region. Part 1 of the analyses examines the effects of infrastructural amenity on FDI. In Part 2, an analysis was conducted on whether a country's growth potential has any effect on FDI. Finally, in Part 3, an analysis was done on whether the institutional variables have any effect on FDI.

4.6.2 Model specifications

The study's objectives, research questions, and research hypotheses were taken into account when developing the models for this investigation. The models were developed using the data gathered from the literature review that was presented in Chapters 2 and 3. A Baseline Model was specified (as informed by the a priori expectations expressed in the preceding paragraphs) in order to answer the research questions and to achieve the research objectives.

4.6.2.1 Baseline Model

Rehman and Noman (2021) states that good infrastructure stimulates foreign and domestic investments. The model specified below is used to address Hypothesis 1. In addition, the equation seeks to address the research question. The literature review contained in Chapters 2 and 3 suggest that infrastructure is one of the determinants of inflow of foreign direct investment. However, the question that is to be answered is whether infrastructural amenity has a direct effect on FDI inflow in the SADC.

Baseline model:

$$FDINFL_{it} = \alpha_{it} + \beta_1 EDU_{it} + \beta_2 ELEC_{it} + \beta_3 FTEL_{it} + \beta_4 HEAL_{it} + \beta_5 TRAE_{it} + \beta_6 WGS_{it} + \beta_7 POP_{it} + \beta_8 NRE_{it} + \beta_9 GDP_{it} + \beta_{10} INFL_{it} + u_{it} + \varepsilon$$

After the Baseline Model the unit effects were estimated by introducing:

A. Macroeconomic determinants:

a. $FDINFL_{it} = \alpha_{it} + \beta_1 POP_{it} + \beta_2 NRE_{it} + \beta_3 GDP_{it} + \beta_4 INFL_{it} + u_{it} + \varepsilon$
 $FDINFL_{it} = \alpha_{it} + \beta_1 POP_{it} + \beta_2 NRE_{it} + \beta_3 GDP_{it} + \beta_4 INFL_{it} + u_{it} + \varepsilon$

B. Infrastructure determinants:

a. $FDINFL_{it} = \alpha_{it} + \beta_1 EDU_{it} + \beta_2 ELEC_{it} + \beta_3 FTEL_{it} + \beta_4 HEAL_{it} + \beta_5 TRAE_{it} + \beta_6 WGS_{it} + u_{it} + \varepsilon$
 $FDINFL_{it} = \alpha_{it} + \beta_1 EDU_{it} + \beta_2 ELEC_{it} + \beta_3 FTEL_{it} + \beta_4 HEAL_{it} + \beta_5 TRAE_{it} + \beta_6 WGS_{it} + u_{it} + \varepsilon$

Where:

- FDINFL*=Foreign direct investment, net inflows
- EDU*=Access to education
- ELEC*=Access to electricity
- HEAL*= Access to primary health care
- FTEL*=Fixed telephone subscriptions
- TRAE*=Transport services exports
- WGS*=Salaried and Waged Employees
- POP*=Active Market Size Population
- NRE*= Natural Resources
- GDP*= Growth Domestic Product (Economic Growth)
- INFL*=Inflation

i = represents the country

t = represents time

$\varepsilon\varepsilon$ = error term

4.6 DEFINING VARIABLES

The variables that were selected for the purposes of this study are based on the literature review contained in Chapters 2 and 3. These variables are explained in detail in this section. Furthermore, the proxies for the variables that cannot be easily measured, as well as the motivation for using these variables are provided in this section. These proxies have been employed in research, including Seltzer (2021) and Bastani (2021) that are related to the investigation carried out in this study.

4.7.1 Dependent variables

A dependant variable is also called a treatment variable. Salkind and Frey (2021) describes a dependant variable as a measure that reflects the outcome of a research study. The dependant variables for this study are FDI, imports and exports. The decision to use these variables was based on the importance that documented studies cited in Chapters 2 and 3. As stated in Chapters 2 and 3, the SADC region values inflow of FDI and efforts have been made to improve importation of critical input materials in ways the enhance the exports of finished products.

4.7.1.1 FDI

Opoku et al. (2019) state that in the period between 2001 and 2011, the inflow of FDI into African domestic markets amounted to 16% of global total, which was higher than that of other parts of the world which stood at 11%. Treaties, bilateral agreements, and other initiatives have been signed to promote FDI inflow (Shah, 2018). SADC member countries also have a number of projects to improve the region's infrastructure. This variable has been used in a number of studies, such as in Aregbeshola (2018).

4.7.2 Explanatory variables

According to Chen, Hribar and Melessa (2018), an independent or explanatory variable is one that is manipulated in order to see how it affects a dependent variable. Grace and Irvine (2020) share a similar understanding of material infrastructure which is also in line with this particular study. The above-mentioned authors have used the following explanatory variables as elements to represent infrastructure in their studies and these are: access to electricity, ICT which is represented by fixed telephone lines, transportation and water and sanitation. The definitions of the aforementioned variables are presented in the subsections that follow.

4.7.2.1 Access to electricity

The following nations have complete universal access to electricity: Algeria, Egypt, Mauritius, and Tunisia (Sanusi, 2023). While countries such as Burundi, Burkina Faso and Sierra Leona all had a coverage of way below 30%. Ensuring energy availability for the populace is crucial for Africa to achieve its Sustainable Development Goals (Omisore, 2018). Hoicka and MacArthur (2021) uses electricity as a measure of infrastructure. According Ayaburi et al. (2020), access to electricity is a more important indicator than the quality-of-service delivery where electricity is concerned. Harrison and Bennett (2021) indicate in their study that electricity is measured using bulk measures. For the purpose of this study electrical infrastructure was expressed as access to electricity as a percentage of the population. This proxy was used in previous studies by Rehman et al. (2018) and Ajide et al. (2023).

4.7.2.2 Access to primary health care

Yang (2020) pointed out that health outcomes are imperative for growth and development of a country as well as for human capital. Modibbo and Inuwa (2020) use the live birth rate as a proxy.

4.7.2.3 Access to education

Education level is considered to have an impact on a country's ability to innovate and, consequently, its ability to compete internationally (Jafari-Sadeghi, Kimiagari & Biancone, 2020). Gorard et al. (2019) use primary school enrolment as one of the proxies for access to education in their studies.

4.7.2.4 ICT

Horst and Miller (2020) recognise that the introduction of mobile telephones about two decades ago has largely improved the voice and text communication and allows for endless possibilities for developing countries. Empirical studies have proven that the use of a mobile telephone line can reduce asymmetry of information (Asongu et al., 2019). Mobile telephone networks are rapidly becoming the foundation of the knowledge economy. The rise in mobile subscription network has far surpassed projections. In 2006 the data shows that there was, 6,2 million mobile network subscriptions and by the end of 2021 this figure had shot up to 160.6 million (Moyo & Munoriyarwa, 2021).

According to Singh (2022) it is important to invest in access to broadband and fibre as they have emerged as major trends going into the future. The study further elaborates that there has been an increase in transmission capabilities along the coast of Africa. This has been due to the installation of sub-marine and terrestrial cables between 2015 and 2020. Nevertheless, from 1979, there is data available on mobile technologies because that technology did not exist at the time. This will be represented by fixed telephone subscriptions per 100 people. This proxy was used in previous studies (Fischer, 2023; Porter et al., 2020).

4.7.2.5 Transportation

Transport infrastructure plays a vital role in supporting inclusive growth (Velas-Suarin, 2021). One of the key sectors which assists in the opening up of economic activity and trade is transportation (Rodrigue, 2020). Zhang and Cheng (2023) recognise the importance of transport infrastructure as a contributor to economic growth. The author emphasizes that transportation underpins the logistical operations of services, people and goods. Roads and road transport, railroads, air and aviation, transport corridors, and

spatial development initiatives are all considered forms of transportation as discussed in the previous chapter. The African Development Bank (2020:2) only makes reference to paved roads. For the purpose of this study that would have been a limited definition. The transportation index was represented for transport services (% of commercial service exports) (TRAEX).

4.7.2.6 Natural resources

Literature recognises natural resource abundance as a driver of FDI in developing countries (Hayat, 2018). The bulk of FDI in Africa is deemed to be in the natural resources sector Ndikumana & Sarr (2019). This proxy has been used in a number of previous studies (Hayat, 2018; Chen et al., 2020).

4.7.2.7 Human Capital

Henok & Kaulihowa (2022) states human capital development is one of the absorptive capacities that attracts FDI into a country. The author states that countries often depend on this capacity. Kray (2019) uses this proxy and uses data from the World Banks World Development Indexes. This proxy has been used in a number of previous studies (Kraay 2018; Basyariah et al., 2021).

4.7.2.8 Economic Growth

Hayat (2018) emphasises that a number of studies have indicated a positive relationship between FDI and economic growth. Raza, Shah and Arif (2021) also assert that the literature agrees with this assertion. Wang et al (2022) recognise that there two views when it comes to the relationship between FDI and economic growth. These are modernisation and dependency views. Economic growth was represented by GDP per capita; this proxy has been used in previous studies by Pastor et al. (2018).

4.7.2.9 Inflation

Inflation is a macroeconomic factor that has been deemed to have a negative impact on FDI in previous studies (Sujit, Kumar & Oberoi, 2020). This proxy has been used in previous studies.

4.7.2.10 Active market size

Hansen (2018) state that long run growth can be explained by population growth. Nicotra et al. (2018) uses population size as a proxy for market size. The authors used the annual growth percentage in population which was derived from the World Development Indicators.

4.7 DIAGNOSTICS TECHNIQUES

4.8.1 Reliability

Salkind and Frey (2021) says reliability occurs when a test measures the same thing more than once and it results in the same outcome. Matheson (2019) describes reliability as being able to repeat the research using the same methods and obtaining the same result. The unit root test was used for this study. The unit root test was conducted using the Levin, Lin and Chu (2002) technique. Yahaya & Jalingo (2021) lauds this technique as being reliable in estimating panel data. This test is regarded as being reliable because it takes into account fixed effects, individual deterministic trends and heterogeneous serially correlated errors in the series. The sample used in this study was small; and Aregbeshola (2018) states that this test is reliable because it accommodates small samples. Furthermore, the Durbin-Watson statistic was used as a diagnostic measure to test for reliability (Kumar, 2023).

4.8.2 Multicollinearity (Correlation)

Correlation analysis has been defined as a term used to denote the association or relationship between two (or more) quantitative variables (Temizhan, Mirtagioglu & Mendes, 2022). This analysis is fundamentally based on the assumption of a straight – line. The authors further state that the analysis measures the association and or the strength of a relationship between two or more variables.

4.8.3 Homogeneity

Prior to the selection of a model, specification tests need to be run to verify homogeneity of the model (Juodis et al, 2021). The Hausman test was used to ascertain whether random effects or fixed effects would be suitable for the data (Baltagi, 2018).

4.8.4 Endogeneity

The literature highlighted a key concern relating to the kind of analysis that this study seeks to run. The concerns stem from the possibility that some of the regressors used to estimate FDI inflows were predetermined (Ghazalian & Amponsem, 2019). Due to this concern, the generalized method of moments (GMM) was used to account for the potential of endogeneity (Ullah et al., 2018). This method has been used in various studies, such as in Cameron and Trivedi (2013).

4.8.5 Heterogeneity

Nunes, Trappenberg and Alda (2020) define heterogeneity as the existence of variation. The author further admits that though there is a difference between heterogeneity and variability the difference is not as distinct as it may seem at first. Nunes et al. (2020) acknowledge that there are many definitions of heterogeneity. The authors go on to suggest another definition which states that heterogeneity is the dispersion in factors that are relevant and known to individual agents when making a particular decision. Bohren and Hauser (2021) caution that heterogeneity should be clearly distinguished from model misspecification, variation and measurement error.

Time series data, according to Tröger (2019), can handle heterogeneity more effectively than cross-sectional data. The data in this study was in the form of time series.

4.8.6 Omitted variables

According to Josselin and Le Maux (2017), a common issue that is often described as "forgetting something important" or missing variables arises while performing either a qualitative or regression study. Radaelli and Wagemann (2019) note this as a problem that usually presents itself in regression analysis and qualitative comparative analysis. The literature on research design explains that the ability of a researcher to correctly

measure the causal relationship between variables becomes limited if important explanatory variables are not considered (Arellano and Bond, 1991). GMM was used in this study to ensure that the model does not suffer from omitted variables (Ullah et al., 2018).

4.8.7 Unit root

There are various available tests used in the literature to tests for the level of stationarity of data. Some of the leading approaches include Levin, Lin Chu (t-stat) (LLC), Im, Pesaran and Shin (W-sta), P.P. Fisher (Chi-sq), ADF Fisher (Chi-sq) as well Dickey-Fuller (DF)/Augmented Dickey-Fuller (ADF) to name a few (Josselin & Le Maux, 2017).

For the purpose of this study, the LLC test was selected. Cameron and Trivedi (2013) argue that LLC is one of tests that is widely used in the field. The author states that the test is designed to test the null hypothesis of a common unit root in the panel versus the alternative of stationarity when the cross-sectional units are independent of each other.” Josselin & Le Maux (2017) points out that this test has been particularly successful in the area of cross-sectional dependent panels.

4.8.8 Cointegration

LLC technique that was used in this study has another important feature in that it tests panel data for cointegration. This technique is not only important for applied research but also among econometricians (Bidirici & Bohur, 2015).

4.8.9 Auto regressive Distribution Lag

Ilu (2020) state that “Auto regressive Distribution Lag (ARDL) cointegration technique is preferable when dealing with variables that are integrated of different order, $I(0)$, $I(1)$ or combination of the both”. The authors state that ADRL is regarded as a robust analysis when there is a single long run relationship between the underlying variables in a small sample size.

4.8 CHAPTER SUMMARY

This chapter provided the details of the data and the all the aspects of the methodology that were utilised to analyse in the study. These details included the data selection and collection. The challenges in collection of the data were also discussed. The population and sample were also discussed in this chapter. A further discussion was held on the rationale of the selected sample. This chapter also included a discussion on research design, and proposed approaches for data analysis.

Furthermore, the hypothesis and the research questions of the study were discussed. The models that were used to analyse the hypotheses were also formulated Three models were formulated each module was divided into two equations. The two selected independent variables (FDI and Exports) were explained. There were nine selected dependant variables for the study and they were all described and discussed in detail. The diagnostic techniques that assisted in addressing the bias associated with panel data sets were discussed. The chapter went into detail about how reliability would be ensured in the study. Further detailed discussions were also conducted regarding the statistical methods used to address possible homogeneity, heterogeneity, endogeneity and omitted variables. Various unit root tests and justification for the choice of selected unit root test were explained.

The next chapter (Chapter 5) contains an application of the methodologies and the results of the application. The analyses of the results and recommendations are also presented in the chapter.

CHAPTER 5: EMPIRICAL RESULTS

5.1 INTRODUCTION

In the previous chapter, the methodology that was utilised in the study was described. The hypothesis of the study was also stated in the previous chapter. Furthermore, the econometric models that were informed by literature were specified. In the current chapter, the empirical analyses and results of the study are presented. Such results are presented in the same sequence that was proposed in the research methodology chapter. The analyses begin with visual trends for each of the variables, and the results of the computation are presented graphically. This is closely followed by a test for cross-sectional dependency. The cross-sectional dependency test is considered necessary because each of the countries in the sample belongs to the same regional trade bloc which is SADC.

The descriptive statistics of the study is then computed. The descriptive statistics is followed by co-integration test, which was followed by sample-wide GMM. The pre-estimation tests included the panel unit root test to gauge the level of stationarity of the dataset, after which the Hausman Test is conducted to validate the deterministic properties of series effects.

5.2 VISUAL TREND

Figure 5.1: Birth

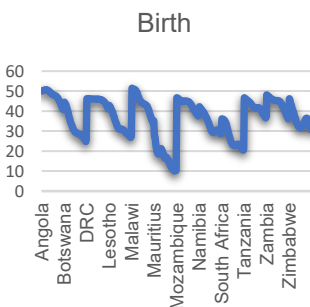
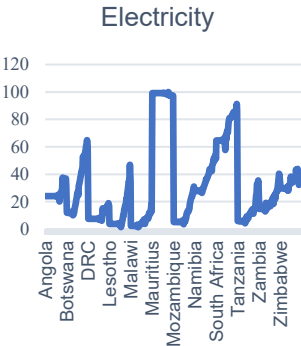


Figure 5.2: Electricity



Birth and electricity provision visual trend of countries under review is as shown in Figures 5.1 and 5.2 respectively. In the graph, the highest and lowest record are shown for each of the countries, which explains why each of the countries are represented twice in the graph. From the former, birth rate indicates a zigzag trend for all observations. That is, from Angola through to Zimbabwe, birth rate recorded up-down swing throughout the time in the sample. However, a significant decline is recorded for Mauritius, and that of Botswana and South Africa compared with other countries.

Reversely, electricity for the same period showed that Malawi, Mauritius, South Africa, Botswana, and Lesotho recorded the highest levels of electricity supply in that order, compared to the other countries under study (Bowa et al., 2021).

Figure 5.3: Labour (Represented by Waged and Salaried workers)

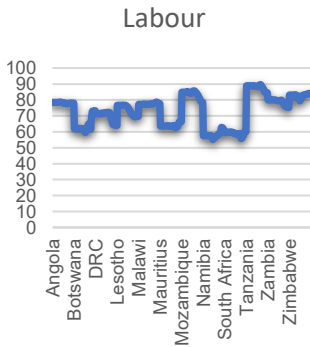


Figure 5.4: ICT (represented by Telephone)

Movement trend in ICT penetration and labour pool as shown in Figures 5.3 and 5.4, showed that Mauritius South Africa, Botswana and Namibia have the highest telephone penetration rate than the rest of the countries in the sample. Reversely, labour decline is significant in Namibia and South Africa (Amutenya, 2021). There is also decline of labour in Botswana and DRC, which dwarfs any other country under review.

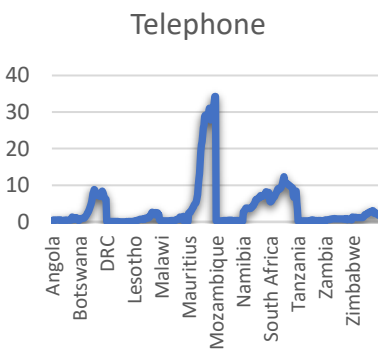


Figure 5.5: Education

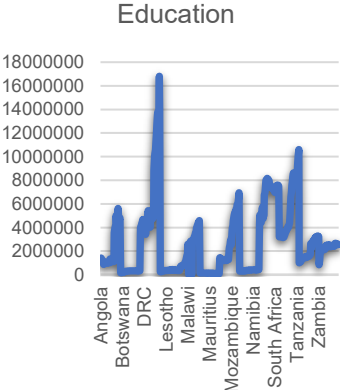
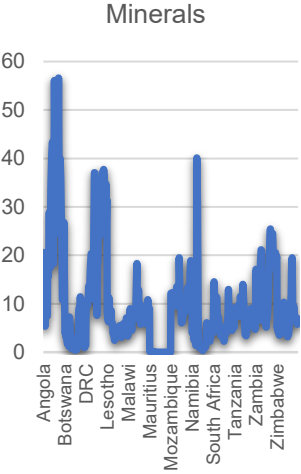


Figure 5.6: Minerals



The amount of government spending on education appears higher in DRC than other countries in the visual. Close beneficiary of investment in education after DRC is Tanzania (Donath et al., 2023). Next in terms of expenditure in education is South Africa, Mozambique, Angola, and Botswana respectively, as depicted in Figure 5.5. In Figure 5.6, earnings from mineral resources showed that Angola, Namibia, and DRC are the highest beneficiary in that order. Likewise, Zambia, Zimbabwe, Malawi and Mozambique

are next in that order as well. It is however puzzling to observe that South Africa and Tanzania tails the other countries in the sample.

Figure 5.7: Transport

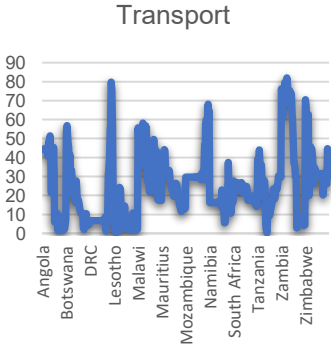
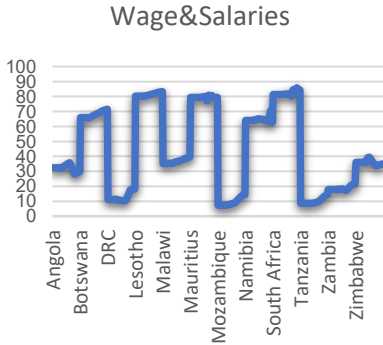


Figure 5.8: Wages and Salaries



Figures 5.7 and 5.8 depicts the trend in transport services and wages and salaries respectively. In the transportation depiction, it is evident that Zambia benefits from efficient and functional transportation system, far more than the other countries in the sample. This is closely followed by the DRC, Zimbabwe, Mozambique, Malawi, Botswana, and Angola respectively. In wages and salaries, South Africa ranked slightly higher than Lesotho and Mauritius. Botswana and Namibia tails slightly behind the sample leaders.

Figure 5.9: GDP

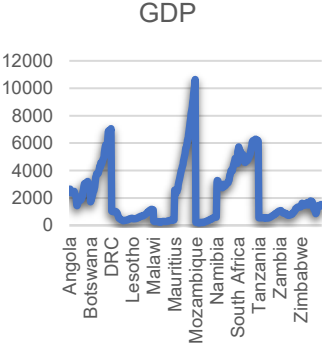
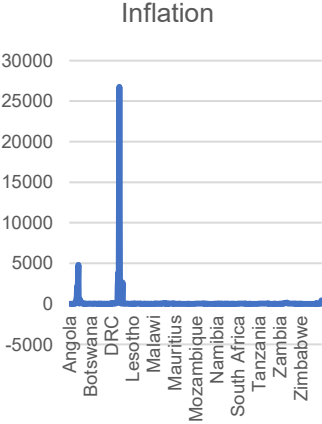


Figure 5.10: Inflation



The trend of economic growth, which uses GDP as a proxy (Figure 5.9) suggests that Mauritius is a clear leader in growth over the sampled period. The trend analysis also showed that there is a relatively wide gap between the country that is ranked next. Botswana and South Africa are ranked next accordingly, but their growth levels are significantly lower than that of Mauritius; and Namibia is found to trail closely behind South Africa. In Figure 5.10, there is a relatively steady maintenance of parallel-line inflationary level as shown in the visual. However, the DRC recorded the highest inflation, and it is followed by Angola.

Figure 5.11: Population

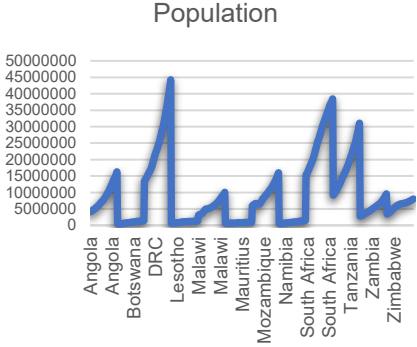
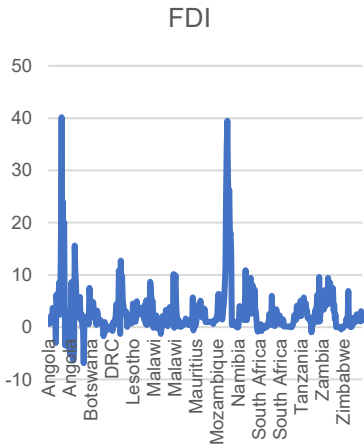


Figure 5.12: FDI



Figures 5.11 and 5.12 show the trend in population growth and that of FDI. From the former, DRC recorded the highest population growth. This is closely followed by South Africa and Tanzania. Angola, Mozambique and Malawi also recorded moderate growth respectively. In the latter (Figure 5.12), total FDI across sectors examined indicate that Angola and Mozambique are ranked at par with the most beneficiary of FDI. There is a wide gap between these countries with the countries that follow which are: Botswana, DRC, Malawi and Namibia. Lesotho and Zambia are ranked at par respectively, albeit feebly as compared to leading recipients. Other countries in review are next to these identified countries.

5.3 CROSS-SECTIONAL DEPENDENCE

One of the critical assumptions of a cross-section data is ascertainment of whether or not the data are cross-dependent (Pesaran, 2021). This analysis pre-confirms the individual cross-sectional variability, which is particular to time effect invariant attributes, and the distinct observations across individual countries. Prior to deploying the data for further analysis, Pesaran (2021) proposed a H_0/H_a assumption in which the dataset is tested using the Breusch-Paga LM, Scaled LM, Bias-corrected scaled LM, and Pesaran CD test. The main goal of this is to make sure that the data are appropriate for use or adoption. In this case, the analysis helps to uncover the extent to which the countries in the sample depend on one another. This is important to ensure that there is no cross-sectional series “drag/similarity” in the dataset.

Table 5.1: Cross-sectional Dependence Test

Series	Breusch-Pagan LM	Pesaran Scaled LM	Bias-Corrected Scaled LM	Pesaran CD	Remark
FDI	0.0000	0.0000	0.0000	0.0000	Fit
Birth	0.0000	0.0000	0.0000	0.0000	Fit
Elec	0.0000	0.0000	0.0000	0.0000	Fit
Tel	0.0000	0.0000	0.0000	0.0000	Fit
Labr	0.0000	0.0000	0.0000	0.3861	Fit
Edu	0.0000	0.0000	0.0000	0.0000	Fit
Min	0.0000	0.0000	0.0000	0.0000	Fit
Trnspt E	0.0000	0.0000	0.0000	0.0000	Fit
W_S	0.0000	0.0000	0.0000	0.0000	Fit
GDP	0.0000	0.0000	0.0000	0.0000	Fit
Infl	0.0000	0.0000	0.0000	0.0000	Fit
Pop	0.0000	0.0000	0.0000	0.0000	Fit

As contained in Table 5.1, the outcome of the cross-sectional dependence tests showed that dataset is suitable for further estimation. Clearly, Juodis and Reese (2022) assumption of no cross-section dependence is not rejected across the parameters. Hence, it is concluded that the data are fit for further estimation path.

5.4 DESCRIPTIVE STATISTICS

Table 5.2: Descriptive Statistics

Variables	Obs	Mean	SD	Min	Max
FDI	490	2.854641	4.792061	-6.897680	40.16725
Birth	490	36.99601	9.649895	10.10000	51.48000
Elec	490	30.88481	28.45247	1.328174	100.0000
Tel	490	3.621165	6.333791	0.005988	34.27280
Labr	490	73.16170	9.834709	55.19500	89.65400
Edu	490	2721026.	2880866	85730.00	16807014
Min	490	10.04114	9.972944	0.001176	56.61044
TrnsptE	490	25.36371	18.14145	0.236106	81.95777
W_S	490	44.30720	28.05954	7.334000	85.87100
GDP	490	2222.567	2144.068	167.2458	10643.77
Infl	490	119.8091	1257.697	-27.04865	26765.86
Pop	490	9138630	9840392	417071.0	44247273

Note(s): The descriptive statistic include observation, mean, standard deviation, minimum and maximum of the dependent and explanatory variables used in the study. Birth, electricity (Elec), telephone (Tel), labour (Labr), education (Edu), minerals (Min), transporte (TrnsptE), wages and salaries (W_S), gross domestic product (GDP), inflation (Infl) and population (Pop) represents the explanatory variables. Foreign direct investment (FDI) represents the dependent variable.

Cooksey (2020) state that descriptive statistics as they are called are statistics that describe the data. According to Kuznets (2019), measuring a data set's central tendency as well as its dispersion is often one of the best approaches to analyse it. The measure of both central tendency and dispersion reveals if the dataset passed the assumptions of normal distribution, which is necessary to achieve valid and reliable results. Table 5.2 represents the descriptive statistics for the data.

The standard deviation, as mentioned in Chapter 4, is a measure of variability that is frequently employed in quantitative investigations since it determines how far the dataset deviates from the mean. The results of the standard deviation are as follows: The independent variables of Birth (9,649895), Education (2880866), Labour (9,834709) Electricity (28,45), Export, (117.38) Transport (18,14), Waged and Salaried employees

(28,05954), Inflation (1257.697), and GDP (2114) show large standard deviations that give an indication that there is a large variation in data behaviour/dispersion within the countries in some instances. These dispersions from the mean are largely regarded as outliers. FDI (4.79) which is the dependant variable together with the independent variables of Tel (6,33), Inflation (1257,7), and Minerals (9,97) indicate a smaller standard deviation.

5.5 CORRELATION STATISTICS

The correlation statistics is used to determine whether a potential multicollinearity in the model is present or not (Kim, 2019). The individual variables are checked against the associated correlating relationships. Thus, since the correlation between any pair of the independent series is less than ± 0.8 , it implies here that there is absence of multicollinearity in the study (Shrestha, 2020).

Table 5.3: Correlation Result

	FDINFL	Brth	Electr	Tel	Lbr	Edu	Min	TrnsptE	TrnsptI	W/S
FDINFL	1.000000	0.165156	0.198248	0.075398	0.146283	0.362502	0.018306	0.036341	-0.038713	0.062881
Brth	-0.165156	1.000000	-0.829711	-0.786981	0.57927	0.128524	0.553000	0.307010	0.308026	-0.767673
Electr	0.198248	0.829711	1.000000	0.769341	0.569345	-0.034262	-0.327687	-0.106333	-0.081982	0.625809
Tel	0.075398	0.786981	0.769341	1.000000	0.507347	-0.179905	-0.383742	-0.177598	-0.166630	0.563508
Lbr	-0.146283	0.57927	-0.569345	-0.507347	1.000000	0.067807	0.242660	0.234380	0.080562	-0.746268
Edu	0.362502	0.12852	-0.034262	-0.179905	0.06780	1.000000	0.344009	0.024642	0.140034	-0.337570
Min	0.018306	0.55300	-0.327687	-0.383742	0.24266	0.344009	1.000000	-0.023714	0.041207	-0.498136
TrnsptE	0.036341	0.30701	-0.106333	-0.177598	0.23438	0.024642	-0.023714	1.000000	0.422559	-0.286152
TrnsptI	-0.038713	0.30802	-0.081982	-0.166630	0.08056	0.140034	0.041207	0.422559	1.000000	-0.368148
W/S	0.062881	0.767673	0.625809	0.563508	0.746268	-0.337570	-0.498136	-0.286152	-0.368148	1.000000

Table 5.4: Correlation and Probability Result

Correlation										
Prob	FDinfl	Brth	Electr	Tel	Lbr	Edu	Min	TrsptE	TrsptI	W/S
FDinfl	1.00000 0									

	-									
Brth	0.16515 1.00000 6 0	1.00000								
	0.0002 -----	-----								
	-									
Electr	0.19824 0.82971 1.00000 8 1 0	0.82971 1.00000	1.00000							
	0.0000 0.0000 -----	0.0000 -----	-----							
	-									
Tel	0.07539 0.78698 0.76934 1.00000 8 1 1 0	0.78698 0.76934 1.00000	0.76934 1.00000	1.00000						
	0.0955 0.0000 0.0000 -----	0.0000 -----	0.0000 -----	-----						
	-									
Lbr	0.14628 0.57927 0.56934 0.50734 1.00000 3 4 5 7 0	0.57927 0.56934 0.50734 1.00000	0.56934 0.50734 1.00000	0.50734 1.00000	1.00000					
	0.0012 0.0000 0.0000 0.0000 -----	0.0000 -----	0.0000 -----	0.0000 -----	-----					
	-									
Edu	0.36250 0.12852 0.03426 0.17990 0.06780 1.00000 2 4 2 5 7 0	0.12852 0.03426 0.17990 0.06780 1.00000	0.03426 0.17990 0.06780 1.00000	0.17990 0.06780 1.00000	0.06780 1.00000	1.00000				
	0.0000 0.0044 0.4492 0.0001 0.1339 -----	0.0044 -----	0.4492 -----	0.0001 -----	0.1339 -----	-----				
	-									
Min	0.01830 0.55300 0.32768 0.38374 0.24266 0.34400 6 0 7 2 0 9	0.55300 0.32768 0.38374 0.24266 0.34400	0.32768 0.38374 0.24266 0.34400	0.38374 0.24266 0.34400	0.24266 0.34400	0.34400	1.00000			
	0.6860 0.0000 0.0000 0.0000 0.0000 0.0000	0.0000 -----	0.0000 -----	0.0000 -----	0.0000 -----	0.0000 -----	-----			
	-									
Trnspt E	0.03634 0.30701 0.10633 0.17759 0.23438 0.02464 1 0 3 8 0 2	0.30701 0.10633 0.17759 0.23438 0.02464	0.10633 0.17759 0.23438 0.02464	0.17759 0.23438 0.02464	0.23438 0.02464	0.02464	0.02371 1.00000			
	0.4222 0.0000 0.0185 0.0001 0.0000 0.5863	0.0000 -----	0.0185 -----	0.0001 -----	0.0000 -----	0.5863 -----	0.6005 -----	-----		
	-									
TrnsptI	0.03871 0.30802 0.08198 0.16663 0.08056 0.14003 3 6 2 0 2 4	0.30802 0.08198 0.16663 0.08056 0.14003	0.08198 0.16663 0.08056 0.14003	0.16663 0.08056 0.14003	0.08056 0.14003	0.14003	0.04120 0.42255 1.00000			
	0.3925 0.0000 0.0698 0.0002 0.0748 0.0019	0.0000 -----	0.0698 -----	0.0002 -----	0.0748 -----	0.0019 -----	0.3627 0.0000 -----	-----		
	-									
W/S	0.06288 0.76767 0.62580 0.56350 0.74626 0.33757 1 3 9 8 8 0	0.76767 0.62580 0.56350 0.74626 0.33757	0.62580 0.56350 0.74626 0.33757	0.56350 0.74626 0.33757	0.74626 0.33757	0.33757	0.49813 0.28615 0.36814 1.00000			
	0.1646 0.0000 0.0000 0.0000 0.0000 0.0000	0.0000 -----	0.0000 -----	0.0000 -----	0.0000 -----	0.0000 -----	0.0000 0.0000 0.0000 -----	-----		

The outcome of the correlation relationship demonstrates a mixed result among the variables as shown in Table 5.3. The correlation relationship between $Fdinfl$ and $Brth$ (representing health care) is negatively signed at -0.1652 but statistically significant at 0.0002 . This outcome is weak such that if $Fdinfl$ rises, $Brth$ decrease at a rate 16% and vice versa. Kuznets (2019) discovered that birth rate and life expectancy had positive significant and insignificant effects on FDI inflows across a sample of African nations, respectively.

The correlation relationship subsisting between $Electr$ and $Fdinfl$ and $Brth$ are both positive and negatively signed at 0.1982 and -0.8297 , respectively. However, these relationships are statistically significant. By implication, as the relationship between $Electr$, $Fdinfl$ and $Brth$ rises, that of $Fdinfl$ rises and $Brth$ falls and vice versa respectively. Infrastructure which encompasses electricity has a favourable impact on net FDI inflows because it demonstrates the conduciveness of the investment climate and hence the ease of doing business (Kingori, 2022). Kuznets (2019) furthermore argues that in contrast, poor population health, while signalling to foreign investors that their health is not secure in the prospective recipient country, would also lead to absenteeism among workers due to illness, lowering productivity and profitability, as well as overburdening foreign firms through sick leave and funeral costs, deterring FDI inflows. For the purposes of this study, $Brth$ represented primary health care.

Further, the outcome of the correlation relationship subsisting between Tel , $Fdinfl$, $Brth$ and $Electr$ is equally mixed. That of $Fdinfl$ is positively signed, $Brth$ is negatively signed at -0.7869 and $Electr$ is positively signed at 0.7693 respectively. However, the relationship between Tel and $Fdinfl$ is statistically insignificant while that of $Brth$ and $Electr$ are significant. Kingori (2022) discovered that telecommunications was a significant predictor of FDI in a two-stage regression. The study by Sattar et al. (2022) has demonstrated the existence of a positive relationship between electricity and FDI as well as between primary health care ($Brth$) and FDI. The presence of electricity and primary health care serve as pull factors for FDI into a country.

Similarly, the outcome of the correlation relationships subsisting between Lbr, FDinfl, Brth, Electr and Tel are also mixed. For Lbr and Fdinfl, a negatively signed outcome is reported and significant. For Lbr and Brth, a positive outcome at 0.5792 is recorded and it is significant. That of the correlation relationship between Lbr, Electr and Brth are negatively signed but are all significant at 0.05 level of significance. The birth rate decreases when unemployment rises, but the number of infants born rises as participation rises (Sukneva et al., 2020). Economic and social development has been associated with major reductions in birth rates and the emergence of smaller families (Kuznets, 2019). The availability of electricity in this case can be used to imply economic development.

Also, the outcome of the correlation relationship among Edu, FDinfl, Brth, Electr, Tel and Lbr are also mixed. It is recorded that the result between Edu and FDinfl is positive and significant at 0.362 and 0.000 level respectively. Likewise, that of Brth is 0.1285 and 0.0044 level of significant. However, the result of Electr and Tel are both negative. Moreso, Electr showed that it is insignificant while that of Tel is significant. The outcome for Lbr is positive but insignificant. There is a significant and positive association between education levels and FDI, implying a mutually reinforcing link in which most of the foreign knowledge is conveyed through the local human capital base (Abbas, Moosa & Ramiah, 2022).

Likewise, the correlation relationship result between Min and FDinfl, Brth, Electr, Tel, Lbr and Edu show that they are a mixture of positive and negatively signed correlations as illustrated in Table 5.4 above. They also demonstrate a mix of significant and insignificant outcomes. The correlation result between Min and FDinfl is positive at 0.0183 but insignificant. Conversely, the correlation result between Min and Brth is positive and significant at 0.553 and 0.000 level respectively. Reversely, again, the result subsisting between Min and Electr is negative and significant at -0.3276 and 0.000 level. Also, the correlation relationship between Min and Tel is negative at -0.3837 and significant. Conversely, Min and Lbr correlation result is positive and significant at 0.2426 and 0.000 level. Finally, the correlation result between Min and Edu is positively signed and statistically significant at 0.3440 and 0.000 level. A study conducted using a sample of

Commonwealth of Independent States to examine the relationship between natural resources and FDI, revealed that natural resources encouraged flows of FDI (Hayat, 2018).

In addition, a mixed sign of correlation and significance results are reported for the following variables: TrnsptE, FDinfl, Brth, Electr, Tel, Lbr, Min and Edu. For instance, the correlation result between TrnsptE and FDinfl is positive and insignificant. That of the relationship subsisting between TrnsptE and Brth is positive and significant, while that of TrnsptE and Electr is negative at -0.1063 and significant. The outcome between TrnsptE and Tel is also negative at -0.1775 and significant. The correlation relationship between TrnsptE and Lbr is positive and significant at 0.2344 and 0.000 level respectively. That of TrnsptE and Min is also positive but insignificant at 0.02464 and 0.586 level. Lastly, the outcome of TrnsptE and Edu is negative but also insignificant at -0.0237 and 0.6005 level. A study with a sample of 25 African nations conducted to examine the effect of transportation infrastructure in attracting FDI discovered that the availability of transportation infrastructure contributed to the relative attractiveness of the countries in the sample for inbound FDI (Saidi & Hammam, 2018). According to the study's results, transportation and other infrastructure improvements are critical components of the strategy to attract FDI inflows.

Furthermore, TrnsptI, FDinfl, Brth, Electr, Tel, Lbr, Min, Edu and TrnsptE results all show a mix of positive and negative outcomes. The outcome between TrnsptI and FDinfl is negative and insignificant at -0.0387 and 0.392%. The correlation outcome between TrnsptI and Brth is positive and significant at 0.0308 and 0.000 level. The result between TrnsptI and Electr is negative and insignificant at -0.0819 and 0.0698%. Likewise, TrnsptI and Tel is negative but significant. Further, the outcome between TrnsptI and Lbr is positive at 0.0805 but insignificant at 0.0748%. Inversely, the outcome of TrnsptI and Min is positive and significant at 0.1400 and 0.0019. Also, that of the outcome between TrnsptI and Edu is positive at 0.04120 but insignificant at 0.3627 level. Similarly, the outcome between TrnsptI and TrnsptE is positive at 0.4222 and significant at 0.000 level. The study

by Saidi and Hammam (2018) revealed that transportation and other infrastructure improvements were important in the strategy to attract FDI inflows.

In conclusion, the correlation relationship result recorded for W/S, FDinfl, Brth, Electr, Tel, Lbr, Min, Edu, TrnsptE and TrnsptI is also a mixture of positive and negative relationships. For instance, W/S and FDinfl is positive at 0.0628 but insignificant at 0.1646. Likewise, that of W/S and Brth is negatively signed at -0.767 but significant at 0.000 level. Also, the correlation outcome between W/S and Electr is positive and significant at 0.625 and 0.000 % respectively. Similarly, that of W/S and Tel is also positive at 0.563 and significant at 0.000 percent level. Inversely, that of correlation between W/S and Lbr is negative at -0.7462 but statistically significant. Likewise, the outcome of the correlation relationship between W/S and Min is negatively signed at -0.3375 and significant. Similar outcome is recorded between W/S and Edu, where it shows that the correlation is negative at -0.4981 but significant at 0.000. Also, that of the correlation outcome between W/S and TrnsptE and TrnsptI are negative at -0.2861 and -0.3681 but statistically significant respectively. According to the findings of a study done with 20 English and Dutch speaking Caribbean nations, FDI is positively and significantly associated to employment (Fabre, 2021). However, the greatest influence appears to occur within the first year, and then progressively fades.

5.6 UNIT ROOT TEST

Table 5.5: Panel Unit Root

Variables	Cross-sections	Levin, Lin & Chu t* (LLC t*)		ADF-Fisher Chi-square		PP-Fisher Chi-square		Order
		Statistic	Prob.**	Statistic	Prob.**	Statistic	Prob.**	
	12							
D(FDI)	12	-4.5300	0.0000	60.0851	0.0001	97.8985	0.0000	I(0)
D(Birth)	12	-4.4200	0.0000	69.2527	0.0000	51.5134	0.0000	I(1)
D(Elec)	12	-17.1262	0.0000	490.801	0.0000	763.684	0.0000	I(1)
D(Tel)	12	-12.7665	0.0000	249.403	0.0000	374.212	0.0000	I(1)
D(Labr)	12	-7.91170	0.0000	145.473	0.0000	143.766	0.0000	I(1)
D(Edu)	12	-11.2085	0.0000	267.854	0.0000	303.951	0.0000	I(1)
D(Min)	12	-4.28957	0.0000	61.4673	0.0000	64.9490	0.0000	I(0)
D(TrnsptE)	12	-3.28745	0.0005	47.3219	0.0031	125.277	0.0000	I(0)
D(W S)	12	-5.71083	0.0000	156.391	0.0000	354.956	0.0000	I(1)
D(GDP)	12	-7.64769	0.0000	163.917	0.0000	183.298	0.0000	I(1)
D(Infl)	12	-5.23493	0.0000	86.1464	0.0000	106.837	0.000	I(0)
D(Pop)	12	-1.70921	0.0437	36.4082	0.0501	10.2886	0.9933	I(0)

Having affirmed the suitability of the cross-sectional dependency of the series for estimation, the study proceeded to further check its stationarity status. Chudik and Pesaran (2019), laid claim on the essential need for performing a stationarity test of any economic data that is collected over-time. However, consensus as to unavailability of subjecting panel data to stationarity confirmation whenever the cross section is more than time or time is greater than the time series (that is, either $N > T$ or $N < T$) is still elusive in the literature. However, for the purpose of this study, the stationarity test is performed to test the mean-reverting status of the series.

Conventionally, the LLC t*, ADF –Fisher Chi-square, and PP Fisher Chi-square are used as parameter estimates. As a rule, the outcome of either of the LLC t*, ADF –Fisher Chi-square, or PP Fisher Chi-square is considered along the results that are common to the variables in the series, and decision on the presence of unit roots is based on the probability value and level of integration of the dataset. The decision on what level of integration to factor into model analysis would generally be influenced by the dominating level of integration in the estimation.

The result of the panel stationarity test that is contained in Table 5.4 suggests that the levels of integration varies between I(0) and I(1). In practical sense, D(FDI), D(Min), D(TrnsprtE), D(Infl) and D(Pop) are all integrated at levels. That is, they are level-order

variables. In other words, these series are integrated of I(0). The remaining variables: D(Birth), D(Elec), D(Tel), D(Labr), D(Edu), D(W_S) and D(GDP) are all integrated of order one. In essence, they are first difference variables. These results suggest that the dataset will yield optimal results if estimated in first difference.

5.7 AUTOREGRESSIVE DISTRIBUTED LAG (ARDL)

Given the mixed nature of the level of integration in the series, it would be inappropriate to deploy dynamic panel instrumentation or ordinary least squares. As such, the Autoregressive Distributed Lag (ARDL) cointegration technique is deployed. This technique is considered the most efficient in panel estimations with dataset that are integrated in different orders (Chudik & Pesaran, 2019). Based on the ARDL approach, the study proceeded to ascertain the short-run and long-run relationship subsisting between the dependent and explanatory variables. In Table 5.5, the results of short-run relationship subsisting between the explanatory variables and the dependent variable are presented.

Table 5.6: ARDL Results for Short-Run Estimation

Variables	Coefficient	Std. Error	t-Statistic	Prob.*
Cointeq01	-0.8313232	0.104002	-7.993352	0.0000
D(Birth)	0.311144	0.473322	0.657362	0.5114
D(Elec)	0.050214	0.067639	0.742384	0.4584
D(Tel)	-1.592916	2.140584	-0.744150	0.4573
D(Labr)	-2.615151	2.938699	-0.889901	0.3742
D(Edu)	2.390005	1.460005	1.629730	0.1041
D(Min)	-4.160775	4.127887	-1.007967	0.3142
D(TrnsptE)	0.026483	0.032995	0.802648	0.4228
D(W_S)	2.569586	0.975433	2.634303	0.0088
D(GDP)	0.002300	0.004113	0.559123	0.5765
D(Infl)	-0.000646	0.009023	-0.071546	0.9430
D(Pop)	1.210005	9.040006	1.334924	0.1828

According to Table 5.6, most of the variables exhibit probability outcomes that exceed the acceptable decision levels of 5% error levels (0.05). That is, birth, electricity, telephone, labour, education, minerals, transport, gross domestic product, inflation and population showed that they are 0.511, 0.458, 0.457, 0.374, 0.104, 0.374, 0.104, 0.314, 0.422, 0.576, 0.943 and 0.182 respectively. Thus, since these outcomes are > 0.05 percent, the null hypothesis of no deterministic effect is not rejected. By implication, it means FDI is not influenced by any of these variables in the short-run. However, only wages and salaries have significant impact on FDI in the short-run.

Table 5.7: ARDL Results for Long-Run Estimation

Variables	Coefficient	Std. Error	t-Statistic	Prob.*
D(Birth)	-0.030763	0.050419	-0.610147	0.5422
D(Elec)	-0.055328	0.028054	-1.972203	0.0494
D(Tel)	0.034314	0.035215	0.974420	0.3306
D(Labr)	-0.038093	0.097907	-0.389076	0.6975
D(Edu)	-1.330008	1.430007	-0.092631	0.9263
D(Min)	-0.023304	0.025478	-0.914672	0.3610
D(TrnsptE)	-0.018255	0.011135	-1.639384	0.1021
D(W_S)	-0.097210	0.113218	-0.858611	0.3912
D(GDP)	9.4300005	0.000272	0.347217	0.7287
D(Infl)	-0.000182	8.440005	-2.151811	0.0322
D(Pop)	1.200007	4.650008	2.583544	0.0102

Further, in the long-run estimation outcome that is contained in Table 5.7, Birth, Tel, Labr, Edu, Min, TrnsptE, W_S and GDP, all demonstrated that they are statistically insignificant in explaining FDI judging by the corresponding probability outcomes. The displayed outcome shows that, they fall above the acceptable probability decision level of 5% error level (that is, greater than 0.05 percent level of significance). Hence, the null hypothesis of no explanatory effect is not rejected. However, three variables, namely electricity, inflation and population showed statistically significant results in explaining FDI across-section in the long-run. That is, the inflow of FDI to the sampled countries are influenced

by power supply, inflation rate and population of the countries. This result is consistent with the findings of Aregbeshola (2018) whereby the role of population and inflation rates were found to have influenced the attractiveness of selected African countries to inflow of FDI.

Due to inherent characteristics of panel dataset, which may include heterogeneity and homoscedasticity (also referred to as the homogeneity of variances in the dataset), and the possibility of omitting individual country specific nuances, it is considered important to determine the series effects of time variation or period variances (Kropko & Kubinec, 2020). To fix these errors, the specific effect estimation is performed, using the Hausman approach. Again, this is considered against the 0.05 percent significant value.

5.8 TEST FOR FIXED AND RANDOM EFFECTS

Table 5.8: Hausman Test for the Fixed/ Random Effects

	Fixed Effect				Random Effect			
	<i>Coef</i>	<i>Std. Er</i>	<i>t-stat</i>	<i>Prob</i>	<i>Coef</i>	<i>Std. Er</i>	<i>t-stat</i>	<i>Prob</i>
C	-33.489	11.6549	-2.8734	0.0042	19.185	4.4364	4.3246	0.000
D(Birth)	-0.1118	0.08199	-1.3645	0.173	-0.2816	0.0632	-4.4542	0.000
D(Elec)	0.03484	0.036025	0.96734	0.333	-0.0430	0.0172	-2.500	0.012
D(Tel)	0.37303	0.1003	3.7170	0.000	-0.0612	0.0684	-0.8939	0.371
D(Labr)	-0.0648	0.10979	-0.5904	0.555	-0.0674	0.0346	-1.9456	0.052
D(Edu)	1.2807	2.2007	0.5823	0.560	5.0407	2.2607	2.2266	0.026
D(Min)	0.0447	0.0331	1.3499	0.177	0.1490	0.0280	5.3061	0.000
D(TrnsptE)	0.0275	0.0150	1.8371	0.066	0.0537	0.0136	3.9333	0.000
D(W_S)	1.0500	0.1524	6.8896	0.000	-0.0420	0.0162	-2.5786	0.010
D(GDP)	-0.001	0.000	-3.9614	0.000	-2.8005	0.000	-0.1222	0.902
D(Infl)	-1.9405	0.000	-0.1321	0.894	-0.000	0.000	-0.7262	0.468
D(Pop)	-1.4007	8.570	-1.6288	0.104	-1.8807	6.6408	-2.8356	0.004

Based on the fixed effect estimation for the study, Birth, Elec, Labr, Edu, Min, TrnsprtE, Infl and Pop showed that they are statistically insignificant in explaining FDI. Whereas, Tel, W_S and GDP indicate that they are statistically significant in explaining FDI

investment. The inherent fixing of unique country specific observations that characterise the fixed effect estimation assumptions are considerably weak in this estimation parameter. The essence is that the fixed effects consideration would not necessarily have peculiar characteristics that could potentially impact the general outcome of the estimations. By this, the random effect estimation is proposed. In random effect, individual country's observation is made to vary randomly along individual country effect. In essence, it assumes individual-specific effects as uncorrelated with the independent variables.

5.9 HAUSMAN TEST

Based on the random effect outcome as contained in Table 5.8, Tel, GDP and Infl showed that they are statistically insignificant in explaining FDI. However, Birth, Elec, Labr, Edu, Min, TrnsprtE, W_S and Pop are statistically significant judging by their corresponding probabilities, in explaining FDI. Given the domination of random effects models in this study, that approach is deployed with a test of robustness to ascertain model stability and validity. To further ascertain the efficiency of the specific effect, the test summary of the Hausman is conducted as presented in Table 5.9.

Table 2.9: Summary Statistics of Hausman Test

Test summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
	73.237824	11	0.0000

The outcome of the Hausman test is predicated on acceptance or a rejection of either Ho/Ha of a random effect model or fixed effect model as predicated on the probability statistics of the estimation. From the results contained in Table 5.9, the probability of the Hausman Test is statistically significant at 0.000, which means that the random effect is rejected, and fixed effect is accepted. In other words, judging from the outcome of the fixed effect, it shows that only three variables: Tel, W_S and GDP, are statistically significant in explaining FDI across-sections. This result further reinforces the justification for deploying the random effect models in the study. The random-effects model posits

that the genuine impact may change from one study to the other due to variations (heterogeneity) among studies (Kanters, 2021).

Having decided on the dominant cross-sectional specific effect, the study proceeds to estimate the models through the dynamics panel approach. As indicated in Chapter 4, dynamic panel approach is utilised in estimations because of its efficiency in diagnosing system endogeneity and various other cross-sectional biases in panel dataset. More crucially, the GMM offers a number of approaches to verify each country's specific effects' true causation in order to overcome reverse causality and other unobserved country-specific mistakes (Kanters, 2021). The merit of this is that it deploys instrumental variables (IVs) as valid estimation tools to diagnose possible existence of endogeneity, thereby providing a robust output of the cross-sectional variance (Chudik & Pesaran, 2019). Furthermore, the autoregressive process [AR (1)] and [AR (2)] are deployed to capture the essence of the random that characterise the time-varying specific effects in the cross-sectional time series dataset during the immediate past and two previous periods. The result of the GMM is presented in Table 5.10.

Table 5.10: Dynamic Panel Estimates using GMM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Birth	-0.281646	0.066193	-4.254894	0.0000
Elec	-0.043056	0.018023	-2.388985	0.0173
Tel	-0.061214	0.071684	-0.853933	0.0336
Labr	-0.067439	0.036285	-1.858593	0.0637
Edu	5.04E-07	2.37E-07	2.126960	0.0339
Min	0.149049	0.029406	5.068686	0.0000
TrnsptE	0.053752	0.014306	3.757312	0.0002
W_S	-0.042024	0.017060	-2.463282	0.0141
GDP	-2.80E-05	0.000240	-0.116778	0.9071
Infl	-0.000116	0.000168	-0.693782	0.4882
Pop	-1.88E-07	6.95E-08	-2.708700	0.0070
C	19.18588	4.644261	4.131095	0.0000

AR(1)	0.955
AR(2)	0.510

5.10 Hypothesis Tests

The role of efficient infrastructural systems, such as transportation was documented in this study. Given the statistical significance of this variable as a driver of inflow of FDI to the sampled countries, it may be suggested that an improved transportation system would further aid the attractiveness of sampled countries to inflow of FDI.

This finding proves that Hypothesis 1 is acceptable:

Hypothesis 1: MNCs would like to extend their business to Africa in order to take advantage of the infrastructure.

This result is similar to the findings of Saidi and Hammam (2018) where efficient transportation system was established as a strong determinant of the attractiveness of countries to the inflow of FDI. On human capital development, the role of education and technology deployment (as measured by telephone penetration rate) are found to be important in driving inflow of FDI to the sampled countries. In addition, the provision of electricity and water supply as measures of basic infrastructure are a vindication of the critical roles played by infrastructural development in enhancing inflow of FDI into the sampled countries

From the GMM result, Birth, Elec, Edu, Min, TrnsprtE, W_S and Pop are statistically significant in explaining FDI in SADC (Prob. Column ≤ 0.05 statistical level of significance). This means the growing population in the region encourages inflow of FDI as a potential market growth imperative. This is further confirmed by the statistical significance of population increase.

This finding has led to the acceptance of the Hypothesis 2 that:

Hypothesis 2: The expansion motives of any corporation are usually based on the growth and profitability potentials to the potential market size growth.

This is in line with the findings of Aregbeshola (2018), as well as (Chudik & Pesaran, 2019).

The GMM result also reflects that Labr, GDP, Infl, AR(1) and AR(2) are statistically insignificant determinants of FDI in the SADC region (Prob. Column > 0.05 statistical level of significance). These factors, however, may contribute to the overall macroeconomic environment outlook they do not sway the decision making when it comes to FDI in SADC.

The literature findings have provided with the evidence that Hypothesis 3 should be accepted:

Hypothesis 3: FDI is attracted into SADC countries which are well endowed with natural resources such as minerals, with necessary infrastructure to exploit them.

This finding is in line with the findings of (Chudik & Pesaran, 2019) where the role of natural resources was found to be important in driving inflow of FDI to African countries. High economic growth potential essentially helps to explain the FDI trends in SADC. It maybe suggested that the economic growth potential can be mitigated in other effective ways therefore, but affecting the decision making on FDI in SADC.

This finding provided results to confirm that Hypothesis 4 is correct:

Hypothesis 4: FDI is likely to flow to countries that have high economic growth potential.

The results related to economic growth are consistent with the findings of Chudik and Pesaran (2019) where the authors stated that economic growth is manifested in low inflation, which plays a significant role in the attraction of FDI.

5.11 CHAPTER SUMMARY

The trends graphs provided a summarised version of the trend movements of each variables used in the study.

The cross-sectional dependence test indicated that there was no cross sectional dependence thus indicating that the data is fit for further estimation. A descriptive estimation was performed on the individual variables and it indicated the absence of multilinearity. The results of the panel stationarity test were mixed thus resulting in the decision to run the short run and long run relationship test. The short run test revealed that only wages and salaries were significant in the short run. While the long run test revealed that electricity, inflation and population showed were significant for FDI in the long run. The outcome of the Hausman test indicated that the random effects should be rejected and fixed effects should be accepted. Furthermore, only ICT (represented by Telephone), wages and salaries and GDP are statistically significant in explaining the movement in FDI. The GMM test revealed that there is no autocorrelation among the variables.

The next chapter presents a summary of the results and the relationships between the variables are also discussed. Various inferences are also drawn based on the results and this is followed by policy recommendations.

CHAPTER 6: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

6.1 INTRODUCTION

In Chapter 5 the empirical results of this study were shared and discussed. The analyses contained in the previous chapter was in line with the model specification that was detailed in Chapter 4. The models that were specified in Chapter 4 were seen as appropriate to firstly achieve the research objectives and secondly to test the hypotheses.

The final chapter of the study presents a summary of the results from the literature and primary study that was conducted. The summary of the results is discussed as per research objectives that were presented in the first chapter. The study was aimed at finding out the effects of infrastructure on inflow of FDI into the SADC. In order to achieve the aims of the study, the following objectives were used: The objectives of the study were as follows: the determination of whether physical infrastructure plays a role in the attraction of FDI in the SADC region; the determination of the role of market size on the attractiveness of Southern African countries to inflow of FDI; the determination of whether mineral endowment influences FDI and the determination of whether growth of a country has an influence on FDI in the SADC region.

6.2 SUMMARY OF RESULTS AND CONCLUSION

The summary of the results is divided into two subsections, the first subsection focussed on the finding focussed on the findings from literature study and the second focussing on the findings from the panel study analysis. The presentation of the summary is guided by the research objectives.

6.2.1 Summary of findings from Literature review

The key findings as per research objective are as follows:

6.2.1.1 Determination of whether physical infrastructure plays a role in in FDI attraction in SADC region

The literature reviewed in this study indicated that physical infrastructure played a significant role in attracting FDI. The research found out that physical infrastructure has a positive and significant impact on FDI inflows in Southern African countries. The following specific aspects of infrastructure are likely to be found as particularly important: Transportation: Efficient road, railway, and port infrastructure reduces transportation costs and improves connectivity, making it easier for businesses to access markets and supply chains. Energy- Reliable electricity supply is essential for industrial activities and the provision of services. Telecommunications: Advanced telecommunications infrastructure facilitates communication.

Arimah (2017) indicated that physical infrastructure as public infrastructure which is responsible for the provision of services such as electricity, highways, roads, airports, telecommunication facilities, waste treatment facilities and water. According to Chin, Ong, Wai and Kon (2021), infrastructure plays a very important role in economic growth of a country. Hayat (2019) also added that FDI could also contribute towards economic growth indirectly through improved infrastructure and institutions. Despite the fact that Africa has been trailing far behind other developing countries in terms of infrastructure development, it could be argued that the current infrastructure has been largely responsible for the improvement in growth performance between 1990 and 2005 (Calderon et al., 2018).

Physical infrastructure plays an important role in the determination of the feasibility of mining projects and countries that have better infrastructure possess an advantage in terms of attracting higher levels of FDI inflows (Ross, 2019). Adika (2022) further said that the bulk of FDI in the SSA area, of which the SADC region is a part, originates from natural resource exploration, extraction, and processing, as well as the agricultural sector.

Ranganathan and Foster (2011) however, indicated that even though the SADC region has extensive roads, only 20% of the region's road network was paved even with those that are paved some of them are in an unsatisfactory condition due to (among other reasons) civil war, floods, no maintenance, overloading due to diversion of rail cargo. According to Billion and Rodriguez-Crespo (2020), variables such as ICT infrastructure,

physical and human resources, and trade facilitation can help Africa's trading capabilities. Azolibe & Okonkwo (2021) state that where there is highly developed infrastructure there is increased productivity and thus in the long run there is a higher level of profitability. The authors also agree with the previous authors in that good physical infrastructure play a role and assists in attracting FDI. Khan et al. (2022) added that the quality of labour and labour cost also contribute to the physical infrastructure and the FDI inflow into a country. This higher level of productivity, the author says will increase FDI to a country. Unver and Koyuncu (2018) discovered that infrastructure was an insignificant factor in the attraction of FDI.

The findings of this study indicate that physical infrastructure plays a crucial role in attracting FDI. Well-developed transportation, energy, and telecommunications networks enhance the efficiency and productivity of businesses, reduce transaction costs, and facilitate access to markets. Countries with superior physical infrastructure are more likely to attract investments in sectors such as manufacturing, logistics, and services.

6.2.1.2 Determination of the role of market size on the attractiveness of Southern African countries to inflow of FDI

The second objective looked at the role of market size on the attractiveness of Southern African countries to FDI inflow. This study found that market size is a significant factor in determining the attractiveness of Southern African countries to FDI. Larger markets offer a wider consumer base, more potential for revenue generation, and reduced risk for investors. However, the impact of market size is likely to be influenced by other factors, such as, political and economic stability, infrastructure development, labour costs and regulatory environment.

Bucci (2023) stated that long run growth can be explained by population growth. The size of the population is used in most studies to refer to market size. According to Bakar et al (2022), market size is unquestionably a factor influencing FDI appeal. A study by Chen and Zhou (2023) identified market size together with government policies, labour quality, transport as well as physical infrastructure as some of the most critical factors in the

attraction of FDI. Kang (2018) further said that previous research has mostly focused on the notion that FDI is attracted by natural resource endowment as well as market size.

Hayat (2018) states that there are four factors that are determinates of FDI which are, natural resources, market size, political economy and the legal aspects of the country. Chen and Zhou (2023) states that FDI brings important positive spin offs to a region which are, advanced growth and development, increased employment, managerial skills and technology. Aregbeshola (2018) argues that there are some competitive advantages that MNCs enjoy that locally based companies do not enjoy and these include access to and use of advanced and better skills in a population. However, Ross (2019) identified some population related deterrents to FDI attraction as the regulations in the host country, the constraints in obtaining financing in the host country and finally, weak infrastructure also emerged as a deterrent to FDI. Kouadio and Gakpa (2022) reiterate further that some of the deterrents to achieving faster economic growth are weak democratic institutions and poor governance. One other deterrent identified specifically in the SADC region is corruption.

Market size, as measured by population size, also has a positive impact on FDI attraction. Larger markets provide greater opportunities for businesses to expand their operations and generate profits (Teece, 2018). Countries with large populations tend to have a more diverse and sophisticated consumer base, which makes them more attractive to foreign investors seeking new markets.

6.2.1.3 Determination of whether mineral endowment influences FDI

The third objective focussed on the determination of whether mineral endowment influenced FDI. It has been revealed in these findings that Southern Africa is endowed with a wealth of mineral resources, including diamonds, gold and platinum. These resources have historically been a major attraction for FDI. Mining companies invest in these countries to exploit these resources and gain access to global markets. The mineral endowment of a country can have a significant impact on its FDI inflows. For example, countries with large diamond reserves, such as Botswana and Namibia, have attracted

substantial FDI in the mining sector. Similarly, countries with significant gold reserves, such as South Africa and Zimbabwe, have also benefited from FDI in this sector (Samanga, 2019).

This is in line with the literature that the bulk of FDI into the African continent has come from oil exploration, as well as mineral exploration and mining operations (Signé & Johnson, 2022). The SADC area contains a diversified mineral endowment which includes nickel, diamonds, coal, platinum, gold, iron ore, copper, and other natural resources (Nyangoni, 2020). The African continent has a comparative advantage in mineral extraction and processing (Ayuk et al., 2020). Mineral exploration is a particularly critical area for Africa, with at least half of the world's platinum, vanadium, and diamonds mined on the continent (Nex & Kinnaird, 2018).

Adika (2022) observed that the SADC region plays a very important role in terms of supplying the world with natural resources. Furthermore, the SADC region extracts almost half of the world's vanadium, platinum, and diamonds and generates around 36% of the world's gold and 20% of its cobalt. The extraction of these minerals also creates job opportunities (Christmann, 2018). According to the Ernst & Young Attractiveness Program of 2018, the 10 biggest economies on the African continent (in alphabetical order) are Angola, Cote d'Ivoire, DRC, Ethiopia, Ghana, Kenya, Nigeria, South Africa, Tanzania and Zambia (Polte, 2023). It is notable that 50% of these countries belong to the SADC region.

Mineral endowment, while potentially beneficial, can have complex effects on FDI attraction. While abundant mineral resources can attract investments in the mining sector, they can also lead to Dutch disease effects, where the appreciation of the local currency makes other sectors less competitive (Boire & Nell, 2021). Therefore, countries with mineral endowments need to carefully manage their resources and diversify their economies to sustain FDI flows.

6.2.1.4 Determination of whether growth of a country influences FDI in the SADC region

The final research objective focussed on whether the growth of a country influences FDI in the SADC region. It has been found that the growth potential of a country is also an important factor in attracting FDI. Countries with growing economies provide investors with confidence in the stability and potential of their markets. Population growth, in particular, indicates a growing labour force and potential consumers, which can be attractive to businesses seeking to expand their operations. Investors are more likely to invest in countries with strong economic growth prospects. This is because these countries offer the potential for higher returns on investment. Southern African countries have varying levels of growth potential. Some countries, such as Botswana and Rwanda, have consistently achieved high economic growth rates, which has made them attractive to FDI. Other countries, such as Zimbabwe and South Africa, have faced economic challenges in recent years, which has reduced their attractiveness to investors.

According to Raza, Shah and Arif (2021), numerous studies have shown a positive relationship between FDI and economic growth. According to Joo et al. (2022), characteristics that might be argued as crucial for FDI attractiveness into a host country include economic growth and growth potential, inflation openness, economic openness, and the country's international reserves. Hayat (2018) agreed that the combination of FDI and economic growth generated positive results.

African Union Commission (2023) agreed with the view that Africa's FDI increased from \$18 billion in 2018 to \$36 billion in 2022 which is in relative terms but the share of FDI had fallen by 2% compared to the same period in 2023 and was only \$23 billion which indicated a sharp decline from the FDI flows in 2022. Yimer (2023) indicated that this decline was caused by among other factors such as slow economic growth, trade tensions and unstable political environment in some countries. Hayat (2018) concluded that many scholars have determined that FDI has a positive effect on economic growth.

6.2.2 Summary of findings from Panel Data Analysis

This section presents the summary of findings from the quantitative analysis of the panel data. The summary is presented in line with the study objectives.

6.2.2.1 Determination of whether physical infrastructure plays a role in in FDI attraction in SADC region

The study found a strong positive relationship between physical infrastructure and FDI inflow. Countries with better infrastructure, including transportation, energy, and telecommunications, were more attractive to foreign investors. This is because infrastructure provides the necessary enabling environment for businesses to operate efficiently and transport goods and services.

The provision of electricity and water supply were used as measures of basic infrastructure in the data analysis. The analysis revealed that these measures of infrastructure were critical in enhancing the inflow of FDI in the sampled SADC countries.

The correlation relationship between elements that represented infrastructure such as Human Capital, Electricity, ICT (Telephone), Transport and FDI revealed a mixed positive and negative relationship. For example, Human Capital and FDI had a positive relationship at 0.0628 and a negative relationship at 0.1646.

The GMM results showed that Electricity and Human Capital were significant in explaining FDI in the SADC region. The data analysis also revealed that the relationship between transportation infrastructure and FDI revealed a positive but insignificant correlation.

When using the Autoregressive Distributed Lag (ARDL) co-integration technique for long-run estimation, it was discovered that Telephone, Transportation and Water Supply were insignificant in explaining FDI. It however emerged that power supply influenced FDI inflows.

The Hausman Test for the Fixed Effects estimation revealed that elements representing infrastructure such as Transportation and Electricity were statistically insignificant in explaining FDI. The same test on elements such as Water Supply and Telephones

revealed a statistically significance in explaining FDI inflows in the SADC region. The Hausman test for random effects on the other hand revealed that Electricity and Transportation were statistically significant in explaining FDI in the SADC region.

The regression analysis reveals that physical infrastructure has a significant positive effect on FDI inflow into the SADC region. The presence of adequate transportation, energy, and telecommunications infrastructure facilitates the movement of goods, services, and labour, making the region more attractive to foreign investors.

6.2.2.2 Determination of the role of market size on the attractiveness of Southern African countries to inflow of FDI

Market size, as measured by population size, is also found to have a significant positive relationship with FDI inflow. Larger markets provide greater potential for revenue and profit, which encourages foreign investors to establish operations in the region. Primary Health care rates influence population size and can be used to explain market size. The outcome of correlation statistics revealed that FDI and availability of Primary Health Care had a negative correlation relationship at -0.1652 but statistically significant at 0.0002. This means that an increase in the birth rate does not necessarily result in a rise in the FDI inflows.

Using GMM technique, birth and population were found to be statistically significant in explaining FDI in the SADC region at 5% level of significance.

The ADRL results for long-run estimation revealed that the population in the SADC countries that were part of the study sample positively contributed towards the attractiveness of the countries to FDI inflow.

The Hausman Test for the Fixed Effects estimation revealed that population and birth size were statistically insignificant in explaining FDI. The Hausman Test for the Random Effects estimation on the other hand revealed that population and birth size were

statistically significant in explaining FDI. This meant that population growth attracted flows of FDI.

6.2.2.3 Determination of whether mineral endowment influences FDI

Mineral endowment is another important factor influencing FDI inflow into the SADC region. Countries with abundant mineral resources, particularly in the mining and energy sectors, were more likely to receive higher FDI inflows. This is due to the strong demand for minerals and the potential for high returns on investment.

The correlation between Minerals and FDI inflow was positive at 0.0183 but insignificant. This means that mineral wealth positively influenced the inflows of FDI into the SADC region even though the relationship between these variables was insignificant. When using the GMM technique, minerals were found to be statistically significant in explaining FDI in the SADC region at 5% level of significance.

The ADRL results for long-run estimation revealed that the mineral wealth in the SADC countries in the sample was not statistically significant in explaining FDI. On the other hand, the Hausman Test for the Fixed Effects estimation revealed that minerals were statistically insignificant in explaining FDI. The Hausman Test for Random Effects estimation revealed that minerals were statistically significant in explaining FDI in SADC.

Determination of whether growth of a country influences FDI in the SADC region

Economic growth, measured by both GDP growth and population growth, is positively associated with FDI inflow. Countries with higher population growth rates and GDP growth rates were more attractive to foreign investors. This is because economic growth indicates a stable and growing economy, which provides opportunities for investment and profit.

The ADRL results for long-run estimation revealed that GDP of the SADC countries in the sample was statistically insignificant in explaining FDI. The Hausman Test for the Fixed Effects estimation on the other hand revealed that GDP was statistically significant in

explaining FDI investment. The Hausman test based on the random effects revealed that GDP was statistically insignificant in explaining FDI.

Using the GMM technique it emerged that GDP was a statistically insignificant determinant of FDI in the SADC region at the 5% level of significance. This means that economic growth cannot be used to explain FDI inflows in any of the SADC member countries used in the study Mugowo (2017).

6.3 CONCLUSIONS LINKED TO THE LITERATURE REVIEW

Conclusions Linked to the Literature Review on Infrastructure and FDI Inflows into the Southern African Development Community (SADC) have been presented in this section.

The literature review reveals a strong positive correlation between infrastructure development and FDI inflows. It also showed that well-developed infrastructure, including transportation, energy, and communication networks, reduces investment costs, increases market access, and improves the overall investment climate. The findings have shown that countries with superior infrastructure attract higher levels of FDI, as investors seek locations with reliable access to essential services and efficient transportation systems.

It was also concluded that transportation infrastructure, including roads, railways, and ports, is consistently identified as the most critical infrastructure sector for FDI attraction. As a result, improved transportation networks are requisite to facilitate the movement of goods and people, reducing transaction costs and enhancing market connectivity. In addition, energy infrastructure, particularly reliable electricity supply, is also essential for FDI, as it powers industries and supports economic activity. It has been noted that that SADC countries face several challenges in infrastructure development, including limited financial resources, technical capacity constraints, and political instability. These challenges hinder the expansion of infrastructure networks and deter FDI inflows. To address these challenges, a concerted effort by governments, private sector partners, and international development organisations is required.

The literature has shown that that market size, measured by population size, has a positive impact on FDI inflows. Larger markets provide greater opportunities for sales, distribution, and profit generation, making them more attractive to foreign investors. SADC countries with larger populations are better positioned to attract FDI. Governments can implement policies that promote population growth and improve the quality of life to enhance the attractiveness of their markets.

The literature analysis shows that mineral endowment has a significant influence on FDI inflows into SADC countries. Countries with abundant mineral resources attract higher levels of FDI, particularly in the mining sector. Foreign investors are drawn to the potential for extracting and exporting valuable minerals. SADC countries have not leveraged their mineral resources to attract FDI and diversify their economies. Therefore, it is important to ensure that mineral extraction is sustainable and benefits the local population.

The study literature has shown that economic growth, measured by population growth and GDP, has a positive impact on FDI inflows. Growing economies provide opportunities for expansion and investment, making them more attractive to foreign investors. SADC countries should focus on promoting economic growth through sound macroeconomic policies and investments in human capital. By creating a stable and prosperous environment, they can enhance their attractiveness for FDI.

In conclusion, this study demonstrates that a combination of factors, including physical infrastructure, market size, mineral endowment, and economic growth, influence the attractiveness of SADC countries to FDI. By addressing these factors, SADC countries can enhance their competitiveness and create a more favourable environment for foreign investment. Policymakers in the region should prioritise investments in physical infrastructure, promote population growth and economic diversification, and manage mineral resources sustainably. By creating a conducive environment for businesses, SADC countries can attract FDI, stimulate economic growth, and improve the well-being of their citizens.

6.4 POLICY RECOMMENDATIONS

The policy recommendations are based on the findings from both the literature review as well as the panel data analysis. The policy recommendations are discussed in the following:

6.3.1 Investment and improvement of infrastructure

The SADC region just like the rest of SSA has a deficit of infrastructure especially power, water supply, ICT and transportation. The inadequacy of the key infrastructure presents severe constraints in attracting quality FDI in the region. The governments of these regions have to invest new infrastructure and at the same time improving existing infrastructure as this would in turn enhance the levels of competitiveness and productivity. In the absence of reliable power, businesses are not able to operate unhindered and this makes the region unattractive. The road network in the region is largely unpaved, and this makes it difficult for businesses to move their goods to and fro in their markets. The governments can consider entering into public private partnerships in order to expedite the construction of key infrastructure which is critical in attracting FDI inflows such as the roads, water supply, availability of quality Primary Health Care and power generation.

The governments of these countries must also ensure that they come up with policies that enable improved access to this critical infrastructure. For example, electricity must be affordable and supply must be reliable in order for it to be useful in attracting FDI inflows.

Invest in reliable and efficient infrastructure: Reliable transportation, energy, and telecommunications networks are essential for attracting FDI. Governments should prioritize infrastructure development to create a conducive environment for businesses.

Focus on regional infrastructure projects: Cross-border infrastructure projects, such as roads, railways, and energy grids, facilitate trade and investment within the SADC region.

Collaboration among member states is crucial for successful implementation.

Private sector participation can complement government efforts in infrastructure development. Encourage PPPs to mobilise additional funding and expertise. The study recommended that regional infrastructure cooperation, such as cross-border transportation and energy projects, should be significantly enhanced to facilitate FDI inflows into SADC countries. As such, joint infrastructure projects should be created to have larger markets, reduce investment risks, and attract investors seeking regional connectivity. Such integration can be achieved through the SADC Protocol on Transport, Communications, and Meteorology to provide a framework for regional infrastructure cooperation and facilitate successful projects.

The SADC region is a primary warm area which has an abundance of solar energy yet there is limited use of solar energy to address the shortage of power in the region. The SADC region can also generate significant amounts of energy from wind power. Regional governments require clear policies that encourage and not tax businesses and households when using renewable energy for example solar energy. The governments of the SADC countries cannot afford to shift entirely towards renewable sources of energy as they do not have adequate infrastructure to harness solar energy and other renewable sources of energy such as wind. The policy direction should be characterised by gradually making investments in renewable sources of energy until such a time that the infrastructure gap in terms of power has been closed and then gradually disinvest from non-renewable sources such as coal. The region has a massive potential in terms of solar energy but cannot afford to let go of non-renewable sources of energy before adequately investing in renewable sources of energy and the relevant infrastructure to channel that power into their national power grids.

6.3.2 Promoting Population Growth and Regional Integration

A larger population size indicates a potential market for goods and services, making countries more attractive to investors. Governments should implement policies to promote population growth, such as improving healthcare and education. In addition, the

governments can promote regional integration. By integrating regional markets, SADC countries can create a larger and more attractive market for FDI. This can be achieved through initiatives such as the SADC Free Trade Area (FTA).

6.3.3 Local beneficiation and value addition of mineral resources

While mineral resources can attract FDI, it is essential to ensure responsible and sustainable mining practices. Governments should establish clear regulations and enforce environmental standards. More so, instead of solely exporting raw materials, SADC countries should focus on value addition through processing and manufacturing. This creates employment opportunities and reduces reliance on commodity exports.

Furthermore, in order for SADC countries to attract quality FDI investment owing to its vast mineral resources, it is crucial that the policy direction must move towards value addition and beneficiation being done locally. The governments of the SADC countries that were part of the study must encourage foreign investors to establish plants to process minerals mined within their borders. Local value addition of mineral resources is more likely to result in quality FDI and far greater impact on economic growth.

The governments can also create an environment which makes it easy for foreign investors in mining to be able to partner with local businesses, undertake skills training and create relationships with local suppliers. Essentially the governments must create policies that simplify rather than complicate the operations of a foreign investors whilst ensuring that these foreign investors are contributing towards quality FDI.

The SADC countries must also ensure that there is clarity in terms of legal framework offering or guaranteeing equal treatment of investors before the law. This is one way that the governments can enhance the investment towards various sectors of the economy and especially mining given that the SADC countries possess vast mineral wealth. The inadequacies of the law to protect investors in any sector would likely impact FDI inflows towards mining sector.

6.3.4 Fostering Economic Growth

A stable economic environment, with low inflation and a predictable regulatory framework, should be created to build confidence among investors. Governments should implement sound macroeconomic policies to maintain economic stability. The SADC government should promote sustainable growth. Thus economic growth should not compromise environmental sustainability. Encourage investments in renewable energy, clean technologies, and other sustainable practices.

By addressing the factors identified in this research, SADC countries can enhance their attractiveness to FDI. Investing in infrastructure, increasing market size, managing mineral endowment responsibly, and promoting economic growth will create a conducive environment for foreign investment. This will ultimately contribute to economic development, job creation, and improved living standards in the region.

6.4 RECOMMENDATIONS FOR FUTURE RESEARCH

This study presents some suggestions for future research to further explore the effects of infrastructure on FDI inflows into the SADC region.

1. The Impact of Specific Infrastructure Projects on FDI:

- * Conduct case studies of major infrastructure projects in the SADC region to assess their specific impact on FDI inflows.
- * Examine the types of FDI attracted by different infrastructure projects (e.g., manufacturing, services, natural resource extraction).
- * Analyse the long-term sustainability and economic viability of infrastructure projects in attracting FDI.

2. The Role of Regional Infrastructure Integration:

- * Investigate the impact of regional infrastructure integration on FDI inflows into the SADC region as a whole.

- * Examine the effectiveness of regional infrastructure cooperation initiatives in attracting FDI and fostering economic development.

- * Analyse the potential for harmonising infrastructure standards and regulations to facilitate cross-border FDI flows.

3. The Impact of Infrastructure on FDI Determinants:

- * Conduct empirical research to determine the specific infrastructure factors that most influence FDI decisions in the SADC region.

- * Examine the relationship between infrastructure quality, availability, and cost on FDI inflows.

- * Analyse the role of factors such as political stability, labour market conditions, and taxation policies in moderating the effects of infrastructure on FDI.

4. The Impact of Infrastructure on FDI Sectoral Distribution:

- * Investigate the impact of infrastructure on the sectoral distribution of FDI in the SADC region.

- * Examine how different infrastructure projects attract FDI in specific sectors (e.g., energy, transportation, telecommunications).

- * Analyse the potential for infrastructure development to diversify FDI inflows and promote economic growth in various sectors.

5. The Role of Public-Private Partnerships (PPPs):

- * Examine the role of PPPs in financing and developing infrastructure projects in the SADC region.

- * Analyse the impact of PPPs on FDI inflows and the efficiency of infrastructure delivery.

- * Investigate the challenges and opportunities associated with implementing PPPs in the context of attracting FDI.

6. The Impact of Infrastructure on Sustainable Development:

- * Explore the relationship between infrastructure development and sustainable development in the SADC region.

- * Examine the environmental and social impacts of infrastructure projects and their potential effects on FDI inflows.
- * Analyse the role of infrastructure in promoting inclusive economic growth and reducing poverty in the region.

Future research on the effects of infrastructure on FDI into the SADC region is crucial for informing policy decisions and maximising the potential benefits of infrastructure investment. By exploring the specific impact of infrastructure projects, the role of regional integration, and the interaction with other FDI determinants, researchers can provide valuable insights for policymakers and investors alike.

6.5 CHAPTER SUMMARY

The final chapter of the study provided a summary of the findings from the study. These findings were divided into literature findings and the panel data analysis findings. The study revealed that physical infrastructure played a key role in attracting FDI into SADC countries who were part of the study sample. The key infrastructure needed to support FDI included road networks, electricity and water supply. The study also revealed that market size was inarguably an essential factor in attracting FDI into any country. The SADC region is endowed with diverse minerals and this is yet another factor that is responsible for attracting FDI into the region. There was a need for investments in physical infrastructure which would increase FDI into the mining sector. The study further found out there were mixed findings in terms of the impact of economic growth in attracting FDI. Other data analysis tests such as the Hausman Test for the Fixed Effects estimation revealed that GDP was statistically significant in explaining FDI investment whilst the Hausman test based on the random effects revealed that GDP was statistically insignificant in explaining FDI (Mirkin, 2019). The literature findings largely argued that economic growth or GDP had a positive relationship with FDI. The chapter also provided policy recommendations aimed at increasing FDI which included investment and improvement of physical infrastructure and a focus on ensuring that FDI was improving the local beneficiation and value addition of mineral resources.

The study comprised of the following chapters: Chapter 1: Background, in which the background of the study, the problem statement, the research questions and assumptions, the significance of the study, and the scope and delimitations were all presented. Chapter 2: Literature Review, examined the literature, empirical data from earlier studies, research issues, gaps in the literature, conceptual framework for the relationship between infrastructure and FDI, and theoretical viewpoints on this relationship. Infrastructure and Infrastructural Considerations, Chapter 3 covered an overview of infrastructure development in SADC nations, FDI inflow trends and patterns, and a correlation analysis between infrastructure and FDI. Chapter 4: Methodology, in Chapter 4, the study area—the Southern African Development Community (SADC) region—the research design, data collection procedures, data sources, data analysis strategies, and infrastructure and foreign direct investment (FDI) variable measurement were all covered. Chapter 5: Empirical Results provided a comprehensive statistical analysis of the data, utilising a range of methods including visual trend analysis, cross-sectional dependence, descriptive and correlation statistics, unit root testing, Hausman testing, and tests for fixed and random effects. Chapter 6: Summary, Conclusions and Recommendations presented the main findings and conclusions, and recommendations for FDI attraction and infrastructure improvement, recommendations for stakeholders and policymakers, and future research topics were all summarised in this chapter. Overall, this chapter serves as a comprehensive guide for further action and development in the field. However, this study had numerous limitations. It focused on only 12 member countries in the SADC region, highlighting gaps in data for African nations. The data from developing countries tends to show low reliability levels, heightening the likelihood of bias and measurement errors. The study relies on secondary data from various sources, which may vary in accuracy and completeness. It also focuses on a specific time period, which may not capture long-term trends or the effects of recent infrastructure developments. The study considered a limited range of infrastructure sectors, such as transportation, energy, and telecommunications, and does not exhaustively account for factors beyond infrastructure, which may limit its ability to isolate the specific effects of infrastructure. This study will however, contribute to the understanding of the relationship between

infrastructure and FDI inflows in the SADC region and provide valuable policy recommendations to improve infrastructure and attract more foreign investment.

LIST OF REFERENCES

- Abbas, A., Moosa, I., & Ramiah, V. (2022). The contribution of human capital to foreign direct investment inflows in developing countries. *Journal of Intellectual Capital*, 23(1), 9-26.
- Abdu, M., Selvasundaram, K., & Sagathevan, S. (2021). The role of corruption control in determining foreign direct investment in Brics countries. *Annals of the Romanian Society for Cell Biology*, 25(6), 9151-9162.
- Abegunrin, O., & Manyeruke, C. (2019). China and Resource (Oil) Diplomacy in Africa. In *China's Power in Africa: A New Global Order* (pp. 59-74). Cham: Springer International Publishing.
- Adegboye, F. B., Osabohien, R., Olokoyo, F. O., Matthew, O., & Adediran, O. (2020). Institutional quality, foreign direct investment, and economic development in sub-Saharan Africa. *Humanities and social sciences communications*, 7(1), 38.
- Adika, G. (2022). Regional economic integration, natural resources and foreign direct investment in SADC. *Journal of Economics and Development*, 24(1), 33-46.
- African Development Bank. (2018). *Economic brief: The Africa Infrastructure Development Index (AIDI) 2018*. African Development Bank. Available from: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Economic_Brief_-_The_Africa_Infrastructure_Development_Index_July_2018.pdf
- African Development Bank. (2020). *The Africa infrastructure development index (AIDI) 2020*. African Development Bank. Available from: https://www.afdb.org/sites/default/files/documents/publications/economic_brief_-_the_africa_infrastructure_development_index_july_2020.pdf
- African Union Commission. (2023). *Africa's Development Dynamics 2023 Investing in Sustainable Development: Investing in Sustainable Development*. OECD Publishing.
- Ajide, K. B., Dauda, R. O., & Alimi, O. Y. (2023). Electricity access, institutional infrastructure and health outcomes in Africa. *Environment, Development and Sustainability*, 25(1), 198-227.

- Akpinar, M. (2020). The fit of competitive strategies and firm-specific advantages with country-specific advantages in explaining manufacturing location choices. *Competitiveness Review: An International Business Journal*, 30(3), 245-268.
- Alem, D. D. (2020). An overview of data analysis and interpretations in research. *International Journal of Academic Research in Education and Review*, 8(1), 1-27.
- Alfaro, L., & Chauvin, J. (2020). Foreign direct investment, finance, and economic development. *Faculty & Research*, 1, 231-258.
- Amutenya, F. (2021). *Space-time modelling of unemployment rate in Namibia* (Doctoral dissertation, University of Namibia).
- An, T. H. T., & Yeh, K. C. (2021). Growth effect of foreign direct investment and financial development: new insights from a threshold approach. *Journal of Economics and Development*, 23(2), 144-162.
- Anand, A. (2019). FDI and its Role in Developing Economy. *Research Review Journals*, 4(04), 2102-2104.
- Angrist, N., Goldberg, P. K., & Jolliffe, D. (2021). Why is growth in developing countries so hard to measure?. *Journal of Economic Perspectives*, 35(3), 215-242.
- Anselem Tengecha, N., & Zhang, X. (2020, December). Status, Constraints and Strategies of Marine Traffic Flow on Dar es Salaam Port, Tanzania. In *Proceedings of the 2020 2nd International Conference on Robotics Systems and Vehicle Technology* (pp. 54-59).
- Anyanwu, J. C., & Erhijakpor, A. E. (2004). Trends and determinants of foreign direct investment in Africa. *West African Journal of Monetary and Economic Integration*, 2(2), 21-44.
- Aregbeshola, R. A. (2018). The machination of foreign direct investment flow to emerging markets—a focus on Africa. *African Journal of Economic and Management Studies*, 9(4), 430-448.
- Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The review of economic studies*, 58(2), 277-297.
- Arimah, B. (2017). Infrastructure as a Catalyst for the Prosperity of African Cities. *Procedia Engineering*, 198, 245-266.

- Armah-Attoh, D. (2022). *Water and sanitation: On-the-ground realities challenge African governments to act* (Afrobarometer Dispatch No. 503). Afrobarometer. Available from: <https://www.afrobarometer.org/publication/ad503-water-and-sanitation-ground-realities-challenge-african-governments-act/>
- Asogwa, F. O., Onyeke, Q. O., Kuma, P. M., Arazue, W. O., & Nkalu, C. N. (2022). Do macroeconomic indicators determine income inequality in selected African countries?. *Journal of Public Affairs*, 22(4), e2560.
- Asongu, S. A., & Odhiambo, N. M. (2020). Challenges of doing business in Africa: A systematic review. *Contemporary issues and prospects in business development in Africa*, 105-114.
- Asongu, S., Akpan, U. S., & Isihak, S. R. (2018). Determinants of foreign direct investment in fast-growing economies: evidence from the BRICS and MINT countries. *Financial Innovation*, 4(1), 1-17.
- Asongu, S., Le Roux, S., Nwachukwu, J., & Pyke, C. (2019). Reducing information asymmetry with ICT: a critical review of loan price and quantity effects in Africa. *International Journal of Managerial Finance*, 15(2), 130-163.
- Awolusi, O. D. (2016). Mining sector and economic growth in Southern African economies: A panel data analysis. *Durban: University of KwaZulu-Natal*.
- Awolusi, O. D., & Mbonigaba, J. (2022). Economic growth and sustainable developments within the BRICS, MINT and G-7 countries: a comparative panel data analysis. *International Journal of Sustainable Development*, 25(3-4), 191-219.
- Awolusi, O. D., Mbonigaba, J., & Tipoy, C. K. (2018). Mineral resources endowment and economic growth in Southern African countries. *International Journal of Diplomacy and Economy*, 4(1), 59-79.
- Ayaburi, J., Bazilian, M., Kincer, J., & Moss, T. (2020). Measuring “Reasonably Reliable” access to electricity services. *The Electricity Journal*, 33(7), 106828.
- Ayuk, E., Pedro, A., Ekins, P., Gatune, J., Milligan, B., Oberle, B., ... & Mancini, L. (2020). *Mineral Resource Governance in the 21st Century: Gearing extractive industries towards sustainable development*. International Resource Panel, United Nations Enviro, Nairobi, Kenya.

- Azolibe, C. B., & Okonkwo, J. J. (2020). Infrastructure development and industrial sector productivity in Sub-Saharan Africa. *Journal of Economics and Development*, 22(1), 91-109.
- Bajrami, H., & Zeqiri, N. (2019). Theories of foreign direct investment (FDI) and the significance of human capital. *International journal of business & management*, 7(1), 11-24.
- Bakar, A. H. A., Sinnappan, P., Salim, F. A. A., & Teo, P. C. (2022). Factors influencing foreign direct investment (FDI) location selection: a review of the literature. *International Journal of Academic Research in Business and Social Sciences*, 12(7), 1271-1291.
- Balchin, N. (2009). The impact of the global financial crisis in Africa. *Africagrowth Agenda*, 2009(7), 12-15.
- Baltagi, B. H. (2018). Fixed effects and random effects. In *The new Palgrave dictionary of economics* (pp. 4786-4790). Palgrave Macmillan, London.
- Baltagi, B. H., & Liu, L. (2016). Random effects, fixed effects and Hausman's test for the generalized mixed regressive spatial autoregressive panel data model. *Econometric Reviews*, 35(4), 638-658.
- Baltussen, G., Van Bekkum, S., & Van Der Grient, B. (2018). Unknown unknowns: Uncertainty about risk and stock returns. *Journal of Financial and Quantitative Analysis*, 53(4), 1615-1651.
- Bankole, F. O., Osei-Bryson, K. M., & Brown, I. (2015). The impact of information and communications technology infrastructure and complementary factors on Intra-African Trade. *Information Technology for Development*, 21(1), 12-28.
- Bastani, H. (2021). Predicting with proxies: Transfer learning in high dimension. *Management Science*, 67(5), 2964-2984.
- Basyariah, N., Kusuma, H., & Qizam, I. (2021). Determinants of sukuk market development: macroeconomic stability and institutional approach. *The Journal of Asian Finance, Economics, and Business*, 8(2), 201-211.
- Bermejo Carbonell, J., & Werner, R. A. (2018). Does foreign direct investment generate economic growth? A new empirical approach applied to Spain. *Economic geography*, 94(4), 425-456.

- Bidirici, M., & Bohur, E. (2015). Design and economic growth: Panel cointegration and causality analysis. *Procedia-Social and Behavioral Sciences*, 210, 193-202.
- Billon, M., & Rodriguez-Crespo, E. (2020). Ict use and trade facilitation: impacts on bilateral trade of sub-Sahara countries. *Studies of Applied Economics*, 38(2).
- Binns, T., Nel, E., Dixon, A., & Lynch, K. (2023). *Africa: Diversity and development*. Routledge.
- Biondi, Y. (2020). Ownership (lost) and corporate control: An enterprise entity perspective. *Accounting, Economics, and Law: A Convivium*, 10(3), 20190025.
- Bird, G., & Choi, Y. (2020). The effects of remittances, foreign direct investment, and foreign aid on economic growth: An empirical analysis. *Review of Development Economics*, 24(1), 1-30.
- Biresselioglu, M. E., Demir, M. H., Gonca, A., Kolcu, O., & Yetim, A. (2019). How vulnerable are countries to resource curse?: A multidimensional assessment. *Energy Research & Social Science*, 47, 93-101.
- Bleck, J., & Van de Walle, N. (2019). *Electoral politics in Africa since 1990: Continuity in change*. Cambridge University Press.
- Bohren, J. A., & Hauser, D. N. (2021). Learning with heterogeneous misspecified models: Characterization and robustness. *Econometrica*, 89(6), 3025-3077.
- Boire, S., & Nell, K. S. (2021). The enclave hypothesis and Dutch disease effect: A critical appraisal of Mali's gold mining industry. *Resources Policy*, 74, 102398.
- Bond, P. (2018). Africa's extreme uneven development worsens during global economic turmoil. In *Handbook of African development* (pp. 477-491). Routledge.
- Bonna, A., & Amoah, R. A. M. (2019). Influence of culture on investment decisions: a cross-sectional study of Ghanaian population. *Journal of Economics and Behavioral Studies*, 11(6), 32-45.
- Bowa, K. C., Mwanza, M., Sumbwanyambe, M., Ulgen, K., & Pretorius, J. H. (2021). Assessment of electricity industries in SADC region energy diversification and sustainability.
- Bratton, M., Seekings, J., & Armah-Attoh, D. (2019). *Better but not good enough? How Africans see the delivery of public services* (Afrobarometer Dispatch No. 290). Afrobarometer. Available from: <https://www.afrobarometer.org/publication/ad290-better-not-good-enough-how-africans-see-delivery-public-services/>

- Brest, P., Gilson, R. J., & Wolfson, M. A. (2018). Essay: How investors can (and can't) create social value. *J. Corp. L.*, 44, 205.
- Bronauer, J., & Yoon, J. (2018). Regional Economic Development in SADC: Taking stock and looking ahead. *South African Institute for International Affairs (SAIIA). Report*, 25.
- Brunsson, N. (2019). The irrationality of action and action rationality: decisions, ideologies and organizational actions. In *Management Control Theory* (pp. 395-410). Routledge.
- Bucci, A. (2023). Can a negative population growth rate sustain a positive economic growth rate in the long run?. *Mathematical Social Sciences*, 122, 17-28.
- Calderon, C., Cantu, C., & Chuhan-Pole, P. (2018). Infrastructure development in Sub-Saharan Africa: a scorecard. *World Bank Policy Research Working Paper*, (8425).
- Cameron, A. C., & Trivedi, P. K. (2013). *Regression analysis of count data* (No. 53). Cambridge university press.
- Cassia, A. R., Costa, I., da Silva, V. H. C., & de Oliveira Neto, G. C. (2020). Systematic literature review for the development of a conceptual model on the relationship between knowledge sharing, information technology infrastructure and innovative capability. *Technology Analysis & Strategic Management*, 32(7), 801-821.
- Cavallo, E., Eichengreen, B., & Panizza, U. (2018). Can countries rely on foreign saving for investment and economic development?. *Review of World Economics*, 154(2), 277-306.
- Chamisa, M. G. (2020). Does Corruption Affect Foreign Direct Investment (FDI) Inflows in SADC Countries?. *Journal of Applied Accounting and Taxation*, 5(2), 166-174.
- Chapfuwa, D. F. (2020). The Role of Institutions in Determining FDI Flows into the SADC Region. *Review of Socio-Economic Perspectives*, 5(2), 1-24.
- Chen, J., & Zhou, Z. (2023). The effects of FDI on innovative entrepreneurship: A regional-level study. *Technological Forecasting and Social Change*, 186, 122159.
- Chen, P. J., & Antonelli, M. (2020). Conceptual models of food choice: influential factors related to foods, individual differences, and society. *Foods*, 9(12), 1898.
- Chen, T. G., Lin, G., & Yabe, M. (2019). Impact of outward FDI on firms' productivity over the food industry: evidence from China. *China Agricultural Economic Review*, 11(4), 655-671.
- Chen, W. E. I., Hribar, P., & Melessa, S. (2018). Incorrect inferences when using residuals as dependent variables. *Journal of Accounting Research*, 56(3), 751-796.

- Chen, Y., Zhai, R., & Zhang, K. H. (2020). Natural resources and foreign direct investment in Africa: Evidence from Chinese firms. *Sustainability*, 12(22), 9616.
- Chin, M. Y., Ong, S. L., Wai, C. K., & Kon, Y. Q. (2021). The role of infrastructure on economic growth in belt and road participating countries. *Journal of Chinese Economic and Foreign Trade Studies*, 14(2), 169-186.
- Chowdhury, J., & Ravi, R. P. (2022). Healthcare accessibility in developing countries: A global healthcare challenge. *J Clin Biomed Res*, 4(152), 2-5.
- Christmann, P. (2018). Towards a more equitable use of mineral resources. *Natural Resources Research*, 27(2), 159-177.
- Chudik, A., & Pesaran, M. H. (2019). Mean group estimation in presence of weakly cross-correlated estimators. *Economics Letters*, 175, 101-105.
- Contractor, F. J., Dangol, R., Nuruzzaman, N., & Raghunath, S. (2020). How do country regulations and business environment impact foreign direct investment (FDI) inflows?. *International Business Review*, 29(2), 101640.
- Cooksey, R. W. (2020). Descriptive statistics for summarising data. In *Illustrating statistical procedures: Finding meaning in quantitative data* (pp. 61-139). Singapore: Springer Singapore.
- Cookson, J. A., & Niessner, M. (2020). Why don't we agree? Evidence from a social network of investors. *The Journal of Finance*, 75(1), 173-228.
- Coulibaly, S., & Camara, A. (2022). The end of tax incentives in mining? Tax policy and mining foreign direct investment in Africa. *African Development Review*, 34, S177-S194.
- Dalyop, G. T. (2019). Political instability and economic growth in Africa. *International journal of economic policy studies*, 13(1), 217-257.
- Danzman, S. B. (2019). The political economy of bilateral investment treaties. In *Research Handbook on foreign direct investment* (pp. 11-38). Edward Elgar Publishing.
- Dass, M. G., & Jamal, A. (2018). Multinational corporation and foreign direct investment: an implication for third world States. *Arts and social sciences journal*, 9(5), 1-4.
- David, O. O., & Grobler, W. (2020). Information and communication technology penetration level as an impetus for economic growth and development in Africa. *Economic research-Ekonomska istraživanja*, 33(1), 1394-1418.

- Davies, I. E. E., Nwankwo, C. O., Olofinnade, O. M., & Michaels, T. A. (2019, November). Insight review on impact of infrastructural development in driving the SDGs in developing nations: a case study of Nigeria. In *IOP Conference Series: Materials Science and Engineering* (Vol. 640, No. 1, p. 012112). IOP Publishing.
- Dehalwar, K., & Sharma, S. N. (2023). *Fundamentals of research writing and uses of research methodologies*. Edupedia Publications Pvt Ltd.
- Dhrifi, A., Jaziri, R., & Alnahdi, S. (2020). Does foreign direct investment and environmental degradation matter for poverty? Evidence from developing countries. *Structural Change and Economic Dynamics*, 52, 13-21.
- Diko, N., & Sempijja, N. (2021). Does participation in BRICS foster South-South cooperation? Brazil, South Africa, and the Global South. *Journal of Contemporary African Studies*, 39(1), 151-167.
- Domazet, I. (2018). Improving competitiveness and economic development through FDI. In *Developmental State and Millennium Development Goals: Country Experiences* (pp. 169-189).
- Donath, L., Morrissey, O., & Owens, T. (2023). Benefits of enhanced access to education in Tanzania. *Development Policy Review*, 41(3), e12674.
- Dunning, J. H. (2015). The eclectic paradigm as an envelope for economic and business theories of MNE activity. In *International business strategy* (pp. 60-84). Routledge.
- El Namaki, M. S. S. (2023). Strategic Intent. In *Neo Strategic Management: Conceptual and Operational Foundations of Tomorrow's Strategic Thinking* (pp. 145-149). Cham: Springer Nature Switzerland.
- Emako, E., Nuru, S., & Menza, M. (2022). The effect of foreign direct investment on economic growth in developing countries. *Transnational Corporations Review*, 14(4), 382-401.
- Enaifoghe, A. O., & Adetiba, T. C. (2018). South African Economic Development and the SADC Sub-regional Integration. *Journal of Economics and Behavioural Studies*, 10(1), 135-145.
- Engle, R. F., & Granger, C. W. (1987). Co-integration and error correction: representation, estimation, and testing. *Econometrica: journal of the Econometric Society*, 251-276.
- Ennin, A., & Wiafe, E. A. (2023). The impact of mining foreign direct investment on economic growth in Ghana. *Cogent Economics & Finance*, 11(2), 2251800.

- Erixon, F. (2018). The economic benefits of globalization for business and consumers. *European Centre for International Political Economy*, 3-20.
- Ernst & Young. (2019). *EY Africa attractiveness report 2019*. Ernst & Young Global Limited. Available from: https://www.ey.com/en_gl/attractiveness/africa
- Evans, O. (2018). Connecting the poor: the internet, mobile phones and financial inclusion in Africa. *Digital Policy, Regulation and Governance*, 20(6), 568-581.
- Fabre, A. J. B. (2021). *The Relationship Between English Proficiency and Foreign Direct Investment: An Econometric Analysis* (Doctoral dissertation, Inter-American University of Puerto Rico (Puerto Rico)).
- Ferreira-Schenk, S., & Dickason-Koekemoer, Z. (2023). Analysing the factors affecting the long-term investment intention of investors. *International Journal of Economics and Financial Issues*, 13(1), 112-120.
- Fischer, C. S. (2023). *America calling: A social history of the telephone to 1940*. Univ of California Press.
- Forbes, V. L. (2021). Ports, shipping and transportation. In *The Blue Economy in Sub-Saharan Africa* (pp. 97-111). Routledge.
- Frederick, S., Daly, J., & Center, D. G. V. C. (2019). Pakistan in the apparel global value chain. *Duke Global Value Chains Center, Duke University, Durham, North Carolina, United States*.
- Geda, A., & Yimer, A. (2018). Determinants of Foreign Direct Investment Inflows to Africa. In *Determinants of economic growth in Africa* (pp. 55-93). Cham: Springer International Publishing.
- Ghahroudi, M. R., Hoshino, Y., & Turnbull, S. J. (2018). *Foreign direct investment: Ownership advantages, firm specific factors, survival and performance*. World Scientific.
- Ghanad, A. (2023). An overview of quantitative research methods. *International journal of multidisciplinary research and analysis*, 6(08), 3794-3803.
- Ghazalian, P. L. (2023). Does economic growth attract FDI inflows? A dynamic panel analysis. *Economies*, 12(1), 1.
- Ghazalian, P. L., & Amponsem, F. (2019). The effects of economic freedom on FDI inflows: an empirical analysis. *Applied Economics*, 51(11), 1111-1132.

- Glaister, K. W., Driffield, N., & Lin, Y. (2020). Foreign direct investment to Africa: is there a colonial legacy?. *Management International Review*, 60(3), 315-349.
- Goldkuhl, G. (2019). The generation of qualitative data in information systems research: the diversity of empirical research methods. *Communications of the Association for Information Systems*, 44, 572-599.
- Gorard, S., Boliver, V., Siddiqui, N., & Banerjee, P. (2019). Which are the most suitable contextual indicators for use in widening participation to HE?. *Research Papers in Education*, 34(1), 99-129.
- Grace, J. B., & Irvine, K. M. (2020). Scientist's guide to developing explanatory statistical models using causal analysis principles. *Ecology*, 101(4), e02962.
- Grubel, H. G. (2018). Foreign investment. In *The New Palgrave Dictionary of Economics* (pp. 4874-4878). Palgrave Macmillan, London.
- Habiyaremye, A. (2020). *Fast tracking the SADC integration agenda to unlock regional collaboration gains along growth corridors in Southern Africa* (No. 2020/95). WIDER working paper.
- Hafner, M., Tagliapietra, S., & De Strasser, L. (2018). *Energy in Africa: Challenges and opportunities* (p. 112). Springer nature.
- Haggard, S., Maxfield, S., & Lee, C. H. (Eds.). (2019). *The politics of finance in developing countries*. Cornell University Press.
- Hambury, R. G. R. (2019). *Regional Economic Integration in the SADC: the poor implementation of the RISDP*. University of Pretoria (South Africa).
- Hansen, A. H. (2018). Economic progress and declining population growth. In *The Economics of Population* (pp. 165-182). Routledge.
- Harrison, G., & Bennett, A. (2021). Electricity measurements. In *Springer Handbook of Atmospheric Measurements* (pp. 431-456). Cham: Springer International Publishing.
- Hasanin, T., Khoshgoftaar, T. M., Leevy, J. L., & Bauder, R. A. (2019). Severely imbalanced big data challenges: investigating data sampling approaches. *Journal of Big Data*, 6(1), 1-25.
- Haudi, H., Wijoyo, H., & Cahyono, Y. (2020). Analysis of most influential factors to attract foreign direct investment. *Journal of Critical Reviews*, 7(13).

- Hayat, A. (2018). FDI and economic growth: the role of natural resources?. *Journal of Economic Studies*, 45(2), 283-295.
- Hayat, A. (2019). Foreign direct investments, institutional quality, and economic growth. *The Journal of International Trade & Economic Development*, 28(5), 561-579.
- Henok, W., & Kaulihowa, T. (2022). The impact of FDI on human capital development in SACU countries. *International Journal of Social Economics*, 49(2), 268-279.
- Hlalefang, K., & Clement, M. (2021). Trade openness and industry performance in SADC countries: is the manufacturing sector different?. *International Economics and Economic Policy*, 18(1), 105-126.
- Hlongwane, N. W., Mmutle, T. D., & Daw, O. D. (2021). THE relationship between government expenditure and economic growth in South Africa from 1981-2019: An ardl and ecm approach. *International Journal of Economics and Finance Studies*, 13(2), 131-159.
- Hoicka, C. E., & MacArthur, J. (2021). The infrastructure for electricity. In *The Oxford handbook of energy politics*. Oxford Univ. Press.
- Horst, H., & Miller, D. (2020). *The cell phone: An anthropology of communication*. Routledge.
- Huber, J., Palan, S., & Zeisberger, S. (2019). Does investor risk perception drive asset prices in markets? Experimental evidence. *Journal of banking & Finance*, 108, 105635.
- Iammarino, S. (2018). FDI and regional development policy: Simona Iammarino. *Journal of International Business Policy*, 1(3), 157-183.
- Ilu, A. (2020). Analysis of key determinants of exchange rate stability in Nigeria: An autoregressive distributed lag (ARDL) and nonlinear autoregressive distributed lag (NARDL) approach. *Available at SSRN 5294299*.
- International Monetary Fund. (2020). *World economic outlook database*. Available from: <https://www.imf.org/en/publications/weo/weo-database/2020/october>
- Isaac, K. S., Ibadunni, A., Kehinde, O. J., Ufua, D., Elizabeth, K. B., Oyo-Ita, D., & Mathias, C. M. (2020). The role of multinational corporations in global economic practice: Literature review. *Journal of Management Information and Decision Sciences*, 23(5), 619-628.
- Jafari-Sadeghi, V., Kimiagari, S., & Biancone, P. P. (2020). Level of education and knowledge, foresight competency and international entrepreneurship: A study of human capital determinants in the European countries. *European Business Review*, 32(1), 46-68.

- Jahangiri, M., Khorsand Dehkordi, M., & Khorsand Dehkordi, S. (2023). Potential measurement of electricity supply. *International Journal of Low-Carbon Technologies*, 18, 1067-1076.
- Jaiblai, P., & Shenai, V. (2019). The determinants of FDI in sub-Saharan economies: A study of data from 1990–2017. *International Journal of Financial Studies*, 7(3), 43.
- Jayasinghe, P. A., Derrible, S., & Kattan, L. (2023). Interdependencies between urban transport, water, and solid waste infrastructure systems. *Infrastructures*, 8(4), 76.
- John Gachunga, M., & Kuso, Y. (2019). Contribution of infrastructure to economic growth in Africa. *International Journal of Business Marketing and Management (IJBMM) Volume*, 4, 43-51.
- Jonker, K., & Robinson, B. (2018). Infrastructure: The Most Important Enabler of Organic Growth in Africa. In *China's Impact on the African Renaissance: The Baobab Grows* (pp. 77-110). Singapore: Springer Singapore.
- Joo, B. A., Shawl, S., & Makina, D. (2022). The interaction between FDI, host country characteristics and economic growth? A new panel evidence from BRICS. *Journal of Economics and Development*, 24(3), 247-261.
- Joseph, J. (2023). SADC'S transport infrastructure: enhancing the AFCFTA's prospects through regional economic integration. *EUREKA: Social and Humanities*, (1), 27-42.
- Joshua, U., Rotimi, M. E., & Sarkodie, S. A. (2020). Global FDI inflow and its implication across economic income groups. *Journal of Risk and Financial Management*, 13(11), 291.
- Josselin, J. M., & Le Maux, B. (2017). Econometric analysis. In *Statistical Tools for Program Evaluation: Methods and Applications to Economic Policy, Public Health, and Education* (pp. 137-187). Cham: Springer International Publishing.
- Juliao-Rossi, J., Losada-Otalora, M., & Católico-Segura, D. F. (2023). MNEs' corporate governance disclosure: a strategic response to corrupt environments. *Corporate Governance: The International Journal of Business in Society*, 23(1), 72-108.
- Juodis, A., & Reese, S. (2022). The incidental parameters problem in testing for remaining cross-section correlation. *Journal of Business & Economic Statistics*, 40(3), 1191-1203.
- Juodis, A., Karavias, Y., & Sarafidis, V. (2021). A homogeneous approach to testing for Granger non-causality in heterogeneous panels. *Empirical economics*, 60(1), 93-112.

- Kang, S., Mulaphong, D., Hwang, E., & Chang, C. K. (2019). Public-private partnerships in developing countries: Factors for successful adoption and implementation. *International Journal of Public Sector Management*, 32(4), 334-351.
- Kang, Y. (2018). Regulatory institutions, natural resource endowment and location choice of emerging-market FDI: A dynamic panel data analysis. *Journal of Multinational Financial Management*, 45, 1-14.
- Kanters, S. (2021). Fixed-and random-effects models. In *Meta-research: Methods and protocols* (pp. 41-65). New York, NY: Springer US.
- Kasper, E. (2015). *A definition for infrastructure-characteristics and their impact on firms active in infrastructure* (Doctoral dissertation, Technische Universität München).
- Kelley, K., & Maxwell, S. E. (2018). Multiple regression. In *The reviewer's guide to quantitative methods in the social sciences* (pp. 313-330). Routledge.
- Khan, Q. R., Xinshu, M., Qamri, G. M., & Nawaz, A. (2023). From COVID to conflict: Understanding the deriving forces of environment and implications for natural resources. *Resources Policy*, 83, 103700.
- Khan, Y., Hassan, T., Shukai, C., Oubaih, H., Khan, M. N., Kootwal, J., & Rehim, U. U. R. (2022). The nexus between infrastructure development, economic growth, foreign direct investment, and trade: an empirical investigation from China's regional trade data. *SN Business & Economics*, 2(7), 81.
- Khatri, L. (2022). *Improving design and construction of transportation infrastructure through bedrock characterization*. University of Wyoming.
- Khomunala, A. (2021). *Southern African Development Community's Foreign Direct Investment and Its Significance: A Systematic Review Study*. University of South Africa (South Africa).
- Kim, J. H. (2019). Multicollinearity and misleading statistical results. *Korean journal of anesthesiology*, 72(6), 558-569.
- Kingori, Z. I. (2022). *Effect of infrastructure on FDI behaviour in Kenya: A growth nexus analysis* (Doctoral dissertation, University of South Africa (South Africa)).
- Kinyondo, A., & Pelizzo, R. (2018). Poor quality of data in Africa: What are the issues?. *Politics & Policy*, 46(6), 851-877.

- Knight, G. P. (2018). A survey of some important techniques and issues in multiple regression. In *New methods in reading comprehension research* (pp. 13-30). Routledge.
- Kola, T. T. (2019). *Mineral Beneficiation: A continuing African paradox or a panacea for economic growth and skills development* (Master's thesis, University of Pretoria (South Africa)).
- Kotey, R. (2019). Foreign direct investment and spillover effects in Africa: an empirical review. *International Journal of Science and Management Studies (IJSMS)*.
- Kouadio, H. K., & Gakpa, L. L. (2022). Do economic growth and institutional quality reduce poverty and inequality in West Africa?. *Journal of Policy Modeling*, 44(1), 41-63.
- Kraay, A. (2018). Methodology for a World Bank human capital index. *World Bank Policy Research Working Paper*, (8593).
- Kraay, A. (2019). The World Bank human capital index: a guide. *The World Bank Research Observer*, 34(1), 1-33.
- Kropko, J., & Kubinec, R. (2020). Interpretation and identification of within-unit and cross-sectional variation in panel data models. *PloS one*, 15(4), e0231349.
- Kugler, M., Levintal, O., & Rapoport, H. (2018). Migration and cross-border financial flows. *The World Bank Economic Review*, 32(1), 148-162.
- Kumar, N. K. (2023). Autocorrelation and heteroscedasticity in regression analysis. *Journal of Business and Social Sciences*, 5(1), 9-20.
- Lanchimba, C., Windsperger, J., & Fadaïro, M. (2018). Entrepreneurial orientation, risk and incentives: the case of franchising. *Small Business Economics*, 50(1), 163-180.
- Laopodis, N. T. (2020). *Understanding investments: Theories and strategies*. Routledge.
- Ledford, J. R., Lane, J. D., & Gast, D. L. (2018). Dependent variables, measurement, and reliability. In *Single case research methodology* (pp. 97-131). Routledge.
- Lee, H. E., Kim, W. Y., Han, K., & Kang, H. (2022). *Still lacking reliable electricity from the grid, many Africans turn to other sources* (Afrobarometer Dispatch No. 514). Afrobarometer. Available from: <https://www.afrobarometer.org/publication/ad514-still-lacking-reliable-electricity-from-the-grid-many-africans-turn-to-other-sources/>
- Lee, Y. S. (2019). Political governance, law, and economic development. *Law and Development Review*, 12(3), 723-759.

- Lekhanya, L. (2020). *Analysis of Quthing River and Letseng-laLetsie for Hydropower Potential* (Doctoral dissertation, National University of Lesotho).
- Lemanski, C. (2020). Infrastructural citizenship: The everyday citizenships of adapting and/or destroying public infrastructure in Cape Town, South Africa. *Transactions of the Institute of British geographers*, 45(3), 589-605.
- Leuker, C., Pachur, T., Hertwig, R., & Pleskac, T. J. (2018). Exploiting risk–reward structures in decision making under uncertainty. *Cognition*, 175, 186-200.
- Levin, A., Lin, C. F., & Chu, C. S. J. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of econometrics*, 108(1), 1-24.
- Lufumpa, C. L., Letsara, N., & Saidi, S. (2017). Infrastructure development index. In *Infrastructure in Africa* (pp. 25-88). Policy Press.
- Luo, Y., Zhang, H., & Bu, J. (2019). Developed country MNEs investing in developing economies. *Journal of international business studies*, 50(4), 633-667.
- Magombeyi, M. T., & Odhiambo, N. M. (2019). Poverty alleviation policies in Tanzania: Progress and challenges. *EuroEconomica*, 38(1).
- Makonda, J., & Ngakala, O. (2021). Natural resource endowments and foreign direct investment flows in Sub-Saharan African countries. *Modern Economy*, 12(1), 154-173.
- Marandu, E. E., Mburu, P. T., & Amanze, D. (2019). An analysis of trends in foreign direct investment inflows to Africa. *International Journal of Business Administration*, 10(1), 20-32.
- Marques, I., Serrasqueiro, Z., & Nogueira, F. (2021). Managers' competences in private hospitals for investment decisions during the COVID-19 pandemic. *Sustainability*, 13(4), 1757.
- Maruyama Rentschler, J. E., Kornejew, M. G. M., Hallegatte, S., Braese, J. M., & Obolensky, M. A. B. (2019). Underutilized potential: The business costs of unreliable infrastructure in developing countries. *World Bank policy research working paper*, (8899).
- Masipa, T. S. (2018). The relationship between foreign direct investment and economic growth in South Africa: Vector error correction analysis. *Acta Commercii*, 18(1), 1-8.
- Massangaie, A. T. (2018). Mozambique in the integration process in Southern Africa Development Community (SADC). *Revista Brasileira de Estudos Africanos= Brazilian Journal of African Studies*, 3(6).

- Matheson, G. J. (2019). We need to talk about reliability: making better use of test-retest studies for study design and interpretation. *PeerJ*, 7, e6918.
- Mayer Pelicice, F. (2019). Weak democracies, failed policies, and the demise of ecosystems in poor and developing nations. *Tropical Conservation Science*, 12, 1940082919839902.
- Menglan, D. U. A. N. (2020). Engineering Economy in Upstream Oil & Gas Field Development: A Concise Appraisal Technique for Investment Decision in Upstream Oil/Gas Projects. In *Engineering Economy in Upstream Oil & Gas Field Development*. EDP Sciences.
- Mensah, C. (2018). trends, challenges and prospects: The impact of fdi, imports, and remittances on economic growth; The role of institutions on growth in sub-saharan Africa. *PQDT-Global*.
- Mintzberg, H. (2019). Who should control the corporation?. In *Corporate governance* (pp. 189-214). Gower.
- Mirkin, B. (2019). *Core data analysis: Summarization, correlation, and visualization*. Cham: Springer International Publishing.
- Mlambo, D. N. (2020). The quest for post-colonial regional integration: examining the Southern African Development Community (SADC) in Southern Africa post-1992. *Journal of African Foreign Affairs*, 7(1), 23-48.
- Modibbo, H., & Inuwa, N. (2020). Health outcomes and economic growth nexus: Evidence from Nigeria. *Journal of Business and Economic Options*, 3(2), 46-55.
- Morgan, S., Farris, J., & Johnson, M. E. (2022). Foreign direct investment in Africa: recent trends leading up to the African continental free trade area (AfCFTA).
- Moyo, D., & Munoriyarwa, A. (2021). 'Data must fall': mobile data pricing, regulatory paralysis and citizen action in South Africa. *Information, Communication & Society*, 24(3), 365-380.
- Mpofu, L. M. (2021). *The intricacies of outward FDI strategies of South African-originated agribusiness MNCs in sub-Saharan Africa*. University of South Africa (South Africa).
- Mudehwe, T. (2021). *The impact of foreign direct investment on domestic investment in Zimbabwe* (Doctoral dissertation).
- Mudelsee, M. (2019). Trend analysis of climate time series: A review of methods. *Earth-science reviews*, 190, 310-322.
- Mugowo, O. (2017). *Foreign direct investment and economic growth in SADC countries: A panel data analysis* (Doctoral dissertation).

- Müller, U. K., & Watson, M. W. (2018). Long-run covariability. *Econometrica*, 86(3), 775-804.
- Munuhwa, S., Govere, E., Samuel, S., & Chiwira, O. (2020). Managing road traffic accidents using a systems approach: Case of Botswana-empirical review. *Journal of Economics and Sustainable Development*, 10(11), 176-188.
- Mwananziche, J. (2023). *The Role of Information and Communication Technology Infrastructure and Access to Economic Growth in Tanzania* (Master's thesis, University of Dodoma (Tanzania)).
- Nasir, Z. M. (2022). Macroeconomic factors shaping foreign direct investment inflows: Evidence from Pakistan. *Journal of Business and Economic Options*, 5(2), 29-35.
- Nayebi, H. (2020). Multiple regression analysis. In *Advanced Statistics for Testing Assumed Causal Relationships: Multiple Regression Analysis Path Analysis Logistic Regression Analysis* (pp. 1-46). Cham: Springer International Publishing.
- Ndhlovu, E., & Majova, B. N. (2023). Women Empowerment in the South African Agribusiness: Opportunities and Constraints in the Gauteng Province. In *Economic Inclusion in Post-Independence Africa: An Inclusive Approach to Economic Development* (pp. 273-293). Cham: Springer Nature Switzerland.
- Ndikumana, L., & Sarr, M. (2019). Capital flight, foreign direct investment and natural resources in Africa. *Resources Policy*, 63, 101427.
- Newman, C., Page, J., Rand, J., Shimeles, A., Söderbom, M., & Tarp, F. (2020). Linked-in by FDI: The role of firm-level relationships for knowledge transfers in Africa and Asia. *The Journal of Development Studies*, 56(3), 451-468.
- Nex, P. A., & Kinnaird, J. A. (2018). Minerals and mining in South Africa. In *The Geography of South Africa: Contemporary Changes and New Directions* (pp. 27-35). Cham: Springer International Publishing.
- 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.
- Nguyen, M. L. T. (2022). Foreign direct investment and economic growth: The role of financial development. *Cogent Business & Management*, 9(1), 2127193.

- Ngwenya, X., & Taylor, I. (2018). Public-Private Partnerships and African Development: The Case of the N4 Toll Road. In *Regionalism and Uneven Development in Southern Africa* (pp. 70-82). Routledge.
- Nhamo, G., Nhemachena, C., & Nhamo, S. (2019). Is 2030 too soon for Africa to achieve the water and sanitation sustainable development goal?. *Science of the Total Environment*, 669, 129-139.
- Nicotra, M., Romano, M., Del Giudice, M., & Schillaci, C. E. (2018). The causal relation between entrepreneurial ecosystem and productive entrepreneurship: A measurement framework. *The Journal of Technology Transfer*, 43(3), 640-673.
- Nkemgha, G. Z., Nchofoung, T. N., & Sundjo, F. (2023). Financial development and human capital thresholds for the infrastructure development-industrialization nexus in Africa. *Cities*, 132, 104108.
- Nketiah-Amponsah, E., & Sarpong, B. (2019). Effect of infrastructure and foreign direct investment on economic growth in Sub-Saharan Africa. *Global Journal of Emerging Market Economies*, 11(3), 183-201.
- Nkhoma, M. T. K. (2021). *Exploring public-private partnerships for enhancing border security through space technology in South Africa* (Doctoral dissertation).
- Nukala, V. B., & Prasada Rao, S. S. (2021). Role of debt-to-equity ratio in project investment valuation, assessing risk and return in capital markets. *Future Business Journal*, 7(1), 13.
- Nunes, A., Trappenberg, T., & Alda, M. (2020). The definition and measurement of heterogeneity. *Translational psychiatry*, 10(1), 299.
- Nyamkure, B. (2022). *Infrastructure, Institutional Quality and Infrastructure Financing Gaps: The Case of Selected African Countries* (Doctoral dissertation, University of the Witwatersrand, Johannesburg (South Africa)).
- Nyangoni, K. K. (2020). *The Impact of Mineral Resources on Foreign Direct Investment in the Southern African Development Community: A Panel Data Analysis* (Master's thesis, University of the Witwatersrand, Johannesburg (South Africa)).
- Oberholzer, M., & Buys, P. (2023). A Foreign Investment Destination Risk Framework: Evaluating the Southern African Development Community Member States. *Acta Universitatis Lodzianis. Folia Oeconomica*, 2(363), 51-74.

- Ofori, I. K., & Asongu, S. (2021). Foreign direct investment, governance and inclusive growth in sub-Saharan Africa. *Governance and Inclusive Growth in Sub-Saharan Africa (June 7, 2021)*.
- Omisore, A. G. (2018). Attaining Sustainable Development Goals in sub-Saharan Africa; The need to address environmental challenges. *Environmental development*, 25, 138-145.
- Onokala, P. C., & Olajide, C. J. (2020). Problems and challenges facing the Nigerian transportation system which affect their contribution to the economic development of the country in the 21st century. *Transportation Research Procedia*, 48, 2945-2962.
- Osei, M. J., & Kim, J. (2020). Foreign direct investment and economic growth: is more financial development better?. *Economic Modelling*, 93, 154-161.
- Otto, L. S. (2021). What is a foreign direct investment? Understanding third country direct investments conceptually and in practise. In *YSEC Yearbook of Socio-Economic Constitutions 2020: A Common European Law on Investment Screening (CELIS)* (pp. 507-587). Cham: Springer International Publishing.
- Pastor, J. M., Peraita, C., Serrano, L., & Soler, Á. (2018). Higher education institutions, economic growth and GDP per capita in European Union countries. *European Planning Studies*, 26(8), 1616-1637.
- Patrick, R. H. (2021). Durbin–wu–hausman specification tests. In *Handbook of financial econometrics, mathematics, statistics, and machine learning* (pp. 1075-1108).
- Pesaran, M. H. (2015). Testing weak cross-sectional dependence in large panels. *Econometric reviews*, 34(6-10), 1089-1117.
- Pesaran, M. H. (2021). General diagnostic tests for cross-sectional dependence in panels. *Empirical economics*, 60(1), 13-50.
- Pheng, L. S., & Hou, L. S. (2019). The economy and the construction industry. In *Construction quality and the economy: A study at the firm level* (pp. 21-54). Singapore: Springer Singapore.
- Pinto, S. P. (2020). Mining sector industry in Southern Africa. *Иновации и инвестиции*, (1), 75-79.
- Polte, W. (2023). *Africa-Continent of contradictions: Opportunities for the path of sustainable and prosperous development?* (No. 23/2). IZNE Working Paper Series.

- Pond, A., & Zafeiridou, C. (2020). The political importance of financial performance. *American Journal of Political Science*, 64(1), 152-168.
- Popova, A. V., Pozhodzhuk, T. B., Belianevych, O. A., Povar, P. O., & Pozhodzhuk, R. V. (2021). Financial risk as a type of business risk. *Studies of applied economics*, 39(6).
- Porter, G., Hampshire, K., Abane, A., Munthali, A., Robson, E., De Lannoy, A., ... & Owusu, S. (2020). Mobile phones, gender, and female empowerment in sub-Saharan Africa: Studies with African youth. *Information Technology for Development*, 26(1), 180-193.
- Pradhan, R., Arvin, M. B., Bahmani, S., & Hall, J. H. (2019). Attaining economic growth through financial development and foreign direct investment. *Journal of Economic Studies*, 46(6), 1201-1223.
- Proag, V. (2020). Introduction to Infrastructure. In *Infrastructure Planning and Management: An Integrated Approach* (pp. 1-32). Cham: Springer International Publishing.
- Qasim, M., & Su, W. (2022). Technology transfer and economic growth through foreign direct investment in transition economies. *Journal of Policy Options*, 5(2), 1-6.
- Qiang, C. Z., & Kusek, P. (2020). Global FDI Flows Face an Unprecedented Decline. *2019/2020*, 3.
- Radaelli, C. M., & Wagemann, C. (2019). What did I leave out? Omitted variables in regression and qualitative comparative analysis. *European Political Science*, 18(2), 275-290.
- Radmehr, R., Ali, E. B., Shayanmehr, S., Saghaian, S., Darbandi, E., Agbozo, E., & Sarkodie, S. A. (2022). Assessing the global drivers of sustained economic development: the role of trade openness, financial development, and FDI. *Sustainability*, 14(21), 14023.
- Rafat, M., & Farahani, M. (2019). The country risks and foreign direct investment (FDI). *Iranian Economic Review*, 23(1), 235-260.
- Ranganathan, R., & Foster, V. (2011). The SADC's infrastructure: A regional perspective. *World Bank Policy Research Working Paper*, (5898).
- Raza, S. A., Shah, N., & Arif, I. (2021). Relationship between FDI and economic growth in the presence of good governance system: Evidence from OECD Countries. *Global Business Review*, 22(6), 1471-1489.
- Rehman, A., Deyuan, Z., Chandio, A. A., & Hussain, I. (2018). An empirical analysis of rural and urban populations' access to electricity: evidence from Pakistan. *Energy, Sustainability and Society*, 8(1), 40.

- Rehman, C. A., Ilyas, M., Alam, H. M., & Akram, M. (2011). The impact of infrastructure on foreign direct investment: The case of Pakistan. *International Journal of Business and Management*, 6(5), 268.
- Rehman, F. U., & Islam, M. M. (2023). Financial infrastructure—total factor productivity (TFP) nexus within the purview of FDI outflow, trade openness, innovation, human capital and institutional quality: Evidence from BRICS economies. *Applied Economics*, 55(7), 783-801.
- Rehman, F. U., & Noman, A. A. (2021). Does infrastructure promote exports and foreign direct investment in selected Southeast Asian economies? An application of global infrastructure index. *Journal of economic studies*, 48(7), 1346-1370.
- Rodrigue, J. P. (2020). *The geography of transport systems*. Routledge.
- Rojec, M., & Knell, M. (2018). Why is there a lack of evidence on knowledge spillovers from foreign direct investment?. *Journal of Economic Surveys*, 32(3), 579-612.
- Ross, A. G. (2019). Governance infrastructure and FDI flows in developing countries. *Transnational Corporations Review*, 11(2), 109-119.
- Ross, A. G. (2019). Governance infrastructure and FDI flows in developing countries. *Transnational Corporations Review*, 11(2), 109-119.
- Saba, C. S., & David, O. O. (2023). Identifying convergence in telecommunication infrastructures and the dynamics of their influencing factors across countries. *Journal of the Knowledge Economy*, 14(2), 1413-1466.
- Sabir, S., Rafique, A., & Abbas, K. (2019). Institutions and FDI: evidence from developed and developing countries. *Financial Innovation*, 5(1), 1-20.
- Saidi, S., & Hammam, S. (2018). Do Transport Infrastructures Promote the Foreign Direct Investments Attractiveness? Empirical Investigation from Four North African Countries. *Romanian Economic Journal*, 20(67).
- Sakr, M. E. S. S. (2018). *Emerging African multinational corporations: trends and determinants*. University of Pretoria (South Africa).
- Salacuse, J. W. (2021). *The law of investment treaties*. Oxford University Press.
- Salahaddin, S. D. (2022). Impact of foreign direct investment on developing nations: an analysis of opportunities and challenges for the construction industry. *Journal of Civil Engineering Frontiers*, 3(02), 74-78.

- Salkind, N. J., & Frey, B. B. (2021). *Statistics for people who (think they) hate statistics: Using Microsoft Excel*. Sage publications.
- Samanga, R. (2019). *The impact of the Zimbabwean Space Agency's programme for the mapping of mineral reserves on foreign direct investment in Zimbabwe* (Master's thesis, University of Pretoria (South Africa)).
- Sanjeev, A., Khan, M. A., & Wadhwa, R. K. (2022). Foreign Direct Investment Strategies: Comparison between Foreign Multinational Firms from Different Countries of Origin Investing in India. *International Management Review*, 18(2), 27-77.
- Santos, E., & Khan, S. (2019). FDI policies and catching-up. *Journal of Applied Economic Sciences*, 13(7 (61)), 1821-1853.
- Sanusi, Y. A. (2023). Achieving the SDG 7, universal access to energy in Africa: Progress, obstacles, and prospects. In *SDGs in Africa and the Middle East region* (pp. 1-33). Cham: Springer International Publishing.
- Sanusi, Y. A. (2023). Achieving the SDG 7, universal access to energy in Africa: Progress, obstacles, and prospects. In *SDGs in Africa and the Middle East region* (pp. 1-33). Cham: Springer International Publishing.
- Sarstedt, M., & Mooi, E. (2018). Regression analysis. In *A concise guide to market research: The process, data, and methods using IBM SPSS Statistics* (pp. 209-256). Berlin, Heidelberg: Springer Berlin Heidelberg.
- Sattar, A., Hassan, A., Hussain, M. N., Sakhi, U., & Elahi, A. R. (2022). Impact of foreign direct investment on socio-economic development in belt and road countries. *Cogent Economics & Finance*, 10(1), 2143772.
- Sauvant, K. P. (2021). Improving the distribution of FDI benefits: The need for policy-oriented research, advice, and advocacy. *Journal of International Business Policy*, 4(2), 244.
- Seltzer, R. G. (2021). The perilous use of proxy variables. *Evaluation & the Health Professions*, 44(4), 428-435.
- Shah, M. H. (2018). Bilateral investment treaties and multinational investors: Evidence from FDI in the MENA States. *Paradigms*, 12(1), 94-102.
- Shah, M. H. (2019). Relationship between stock market indicators and foreign portfolio investment (FPI): evidence from Pakistan. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 10(17), 1-10.

- Shahbaz, M., Balsalobre-Lorente, D., & Sinha, A. (2019). Foreign direct Investment–CO2 emissions nexus in Middle East and North African countries: Importance of biomass energy consumption. *Journal of cleaner production*, 217, 603-614.
- Shan, S., Lin, Z., Li, Y., & Zeng, Y. (2018). Attracting Chinese FDI in Africa: The role of natural resources, market size and institutional quality. *Critical perspectives on international business*, 14(2-3), 139-153.
- Shezi, W. (2020). *Investigating the Potential Role of Nuclear Energy in Promoting Regional Economic Development in SADC*. University of Johannesburg (South Africa).
- Shrestha, N. (2020). Detecting multicollinearity in regression analysis. *American journal of applied mathematics and statistics*, 8(2), 39-42.
- Siciliano, G., & Urban, F. (2017). Equity-based natural resource allocation for infrastructure development: evidence from large hydropower dams in Africa and Asia. *Ecological Economics*, 134, 130-139.
- Signé, L., & Johnson, C. (2021). Africa's mining potential: Trends, opportunities, challenges and strategies. *Policy paper*, 21(10), 2022-01.
- Singh, A. (2022). The Impact of Fiber Broadband on Rural and Underserved Communities. *International Journal of Future Management Research*, 1(1), 38541.
- Singh, N., & Kapuria, C. (2022). The effect of sustainability on foreign direct investment inflows: evidence from developing countries. *Social Responsibility Journal*, 18(4), 681-703.
- Smith, G. (2021). *Where Credit is Due: How Africa's Debt Can be a Benefit, Not a Burden*. Oxford University Press.
- Southern African Development Community. (2020). *SADC facts and figures*. SADC Secretariat. Available from: <https://www.sadc.int>
- Srinivasu, B., & Rao, P. S. (2013). Infrastructure development and economic growth: Prospects and perspective. *Journal of business management and Social sciences research*, 2(1), 81-91.
- Stremlau, N., & Tsalapatani, A. (2022). Social media, mobile phones and migration in Africa: A review of the evidence. *Progress in Development Studies*, 22(1), 56-71.

- Sujit, K. S., Kumar, B. R., & Oberoi, S. S. (2020). Impact of macroeconomic, governance and risk factors on FDI intensity—An empirical analysis. *Journal of Risk and Financial Management*, 13(12), 304.
- Sukneva, S. A., Barashkova, A. S., & Postnikova, K. Y. (2020). Birth rate, number of children and family income: trends and relationships. *Ekonomicheskie i Sotsialnye Peremeny*, 13(2), 201-213.
- Syadali, M., Segaf, S., & Parmujianto, P. (2023). Risk management strategy for the problem of borrowing money for Islamic commercial banks. *Enrichment: Journal of Management*, 13(2), 1227-1236.
- Tanni, S. E., Patino, C. M., & Ferreira, J. C. (2020). Correlation vs. regression in association studies. *Jornal Brasileiro de Pneumologia*, 46, e20200030.
- Teece, D. J. (2018). Business models and dynamic capabilities. *Long range planning*, 51(1), 40-49.
- Temizhan, E., Mirtagioglu, H., & Mendes, M. (2022). Which correlation coefficient should be used for investigating relations between quantitative variables. *Acad. Sci. Res. J. Eng. Technol. Sci*, 85(1), 265-277.
- Tengecha, N. A., Zhang, X., Mwendapole, M. J., & Chusi, T. N. (2022). East Africa Waterway Transport, Coastal Ports Growth, Opportunity and Challenges. *International Journal of Humanities and Social Science Invention (IJHSSI)*, 11(2), 01-11.
- Thacker, S., Adshead, D., Fay, M., Hallegatte, S., Harvey, M., Meller, H., ... & Hall, J. W. (2019). Infrastructure for sustainable development. *Nature Sustainability*, 2(4), 324-331.
- Thrane, C. (2019). *Applied regression analysis: Doing, interpreting and reporting*. Routledge.
- Thusi, X., & Mlambo, V. H. (2023). The effects of Africa's infrastructure crisis and its root causes. *International Journal of Environmental, Sustainability, and Social Science*, 4(4), 1055-1067.
- Torrise, G. (2009). Public infrastructure: definition, classification and measurement issues. *Economics, Management, and Financial Markets*, 4(3), 100-124.
- Trade and Development Bank (2020). Annual Report 2020. Available from: <https://www.tdb.org/annual-report-2020/>.
- TradeMark East Africa (2021). Annual Report 2020/21. Available from: <https://www.trademarkea.com/our-work/annual-reports/>.

- Tröger, V. (2019). Time-series-cross-section analysis. *The SAGE handbook of research methods in political science and international relations*, 616-631.
- Turyakira, P. K. (2018). Ethical practices of small and medium-sized enterprises in developing countries: Literature analysis. *South African Journal of Economic and Management Sciences*, 21(1), 1-7.
- Udelsmann Rodrigues, C., Mususa, P., Büscher, K., & Cuvelier, J. (2021). Boomtown urbanization and rural-urban transformation in mining and conflict regions in Angola, the DRC and Zambia. *Sustainability*, 13(4), 2285.
- Ugwunna, O. T., & Obi, K. O. (2023). Determinants of economic growth in Sub-Saharan Africa. *Journal of Management and Social Sciences*, 8, 25-37.
- Ullah, S., Akhtar, P., & Zaefarian, G. (2018). Dealing with endogeneity bias: The generalized method of moments (GMM) for panel data. *Industrial Marketing Management*, 71, 69-78.
- United Nations Conference on Trade and Development (2021). World Investment Report 2021. Available from: <https://unctad.org/worldinvestmentreport>
- United Nations Conference on Trade and Development. (2015). *World Investment Report 2015: Reforming international investment governance*. United Nations. Available from: <https://unctad.org/publication/world-investment-report-2015>
- United Nations Conference on Trade and Development. (2019). *World investment report 2019: Special economic zones*. United Nations. Available from: <https://unctad.org/publication/world-investment-report-2019>
- United Nations Economic Commission for Africa (2022). Economic Report on Africa 2022. Available from: <https://www.uneca.org/publications/economic-report-africa-2022>.
- Unver, M., & Koyuncu, C. (2018). The role of infrastructure in attraction of FDI: The case of developing economies. *Cataloging-In-Publication Data*, 302.
- Van den Berg, H. (2016). *International economics: A heterodox approach*. Routledge.
- Van Dinh, D. (2020). Impulse response of inflation to economic growth dynamics: VAR model analysis. *The Journal of Asian Finance, Economics and Business*, 7(9), 10-13106.
- Vassolo, R. S., Mac Cawley, A. F., Tortorella, G. L., Fogliatto, F. S., Tlapa, D., & Narayanamurthy, G. (2021). Hospital investment decisions in healthcare 4.0 technologies: scoping review and framework for exploring challenges, trends, and research directions. *Journal of medical Internet research*, 23(8), e27571.

- Velas-Suarin, M. A. M. (2021). The role of inclusive transport in pursuit of sustainable development. In *Industry, innovation and infrastructure* (pp. 1168-1179). Cham: Springer International Publishing.
- Wang, X., Xu, Z., Qin, Y., & Skare, M. (2022). Foreign direct investment and economic growth: a dynamic study of measurement approaches and results. *Economic research-Ekonomska istraživanja*, 35(1), 1011-1034.
- Weisburd, D., Wilson, D. B., Wooditch, A., & Britt, C. (2021). Multiple regression. In *Advanced statistics in criminology and criminal justice* (pp. 15-72). Cham: Springer International Publishing.
- Wentworth, L., & Cloete, D. (2022). *SADC infrastructure futures: Pathways to complementary regional interconnectivity*. South African Institute of International Affairs. World Bank. (2024). *GDP per capita (current US\$) – Sub-Saharan Africa*. World Bank Data. Available from: <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=ZG>
- Wiafe-Amoako, F. (2018). *Africa 2018-2019*. Bloomsbury Publishing USA.
- Widagdo, B., Jihadi, M., Bachitar, Y., Safitri, O. E., & Singh, S. K. (2020). Financial ratio, macro economy, and investment risk on sharia stock return. *The Journal of Asian Finance, Economics and Business*, 7(12), 919-926.
- World Economic Forum (2020). The Future of Foreign Direct Investment in Africa. Available from: <https://www.weforum.org/reports/the-future-of-foreign-direct-investment-in-africa/>
- World Investment Report (2020). *Chapter II: Regional Trends*. Available from: <https://www.tralac.org/documents/news/3845-world-investment-report-2020-ch-ii-regional-trends-africa-unctad/file.html>
- Yahaya, A., & Jalingo, M. U. (2021). Panel unit-root test of purchasing power parity (PPP) in selected African countries. *Bayero Journal of African Entrepreneurship Studies*, 77-102.
- Yana Mbeni, J. (2022). The status quo of research in sustainable FDI: exploring the theoretical agenda and policy inferences in West and Central Africa. *Future Business Journal*, 8(1), 46.
- Yang, X. (2020). Health expenditure, human capital, and economic growth: an empirical study of developing countries. *International journal of health economics and management*, 20(2), 163-176.

- Yero, A. (2023). *A Mixed-Methods Study of Factors Influencing Foreign Direct Investment in Sub-Saharan Africa*. Case Western Reserve University.
- Yimer, A. (2023). The effects of FDI on economic growth in Africa. *The Journal of International Trade & Economic Development*, 32(1), 2-36.
- Zakhidov, G. (2024). Economic indicators: tools for analyzing market trends and predicting future performance. *International Multidisciplinary Journal of Universal Scientific Prospectives*, 2(3), 23-29.
- Zambia Development Agency (2021). Annual Report 2020/21. Available from: <https://www.zda.org.zm/wp-content/uploads/2022/03/ZDA-Annual-Report-2020-21.pdf>.
- Zhang, K. H. (2022). Chinese foreign direct investment in Africa: its motivations, determinants, and impact on the African economies. In *The Palgrave handbook of Africa's economic sectors* (pp. 603-624). Cham: Springer International Publishing.
- Zhang, Y. (2020). *Foreign direct investment patterns in developing regions*. *Journal of International Economics and Finance*, 12(3), 55–72.
- Zhang, Y., & Cheng, L. (2023). The role of transport infrastructure in economic growth: Empirical evidence in the UK. *Transport Policy*, 133, 223-233.
- Zupok, S. (2022). Investment risk assessment. *Globalization, the State and the Individual*, 30(2), 66-72.