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YOUTH UNEMPLOYMENT IN SOUTHERN AFRICA: THE ROLE OF CORRUPTION



By

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(1601817)

A dissertation submitted towards the partial fulfilment of the requirements for a Master of Economic Science degree by coursework and thesis at the University of the Witwatersrand

Supervisor: Dr. Mthokozisi Mlilo

February 2023

DECLARATION

I, Lebo Siboyi declare that the dissertation titled "*Youth Unemployment in Southern Africa: The Role of Corruption"*, is my own work. It is submitted in partial fulfilment of the requirements for the degree, Master of Economic Science at the University of the Witwatersrand. This research paper has not been submitted for any examination or any degree in any university. All the sources used and quoted have been acknowledged by complete references.

Lebo Siboyi

Signature: 

Date: 30 May 2023

ACKNOWLEDGEMENTS

Firstly, this dissertation would not have been possible without God. I thank the almighty Father for giving me the strength and perseverance to complete this research study on "***Youth Unemployment in Southern Africa: The Role of Corruption***".

Secondly, I wish to express my sincere gratitude to my supervisor Dr. Mthokozisi Mlilo for his willingness, support, patience, and kind guidance during this research. In every phase of this project, his supervision shaped this report to be completed perfectly.

Thirdly, I wish to extend my sincere gratitude to my loving family for their constant and undying support. A special thank you to my dad and mom, Mr. and Mrs. Siboyi. To my siblings, Andries, Phindile, and Busi, thank you for giving me reasons not to give up. An additional thank you to a very close friend (MMM) who was always willing to listen to me when I hit a dead end on my research paper.

Lastly, thank you to all the scholars I have referenced in this study. Your dedication and knowledge have contributed enormously to my personal and professional growth.

ABSTRACT

Youth unemployment in Southern African countries remains a key concern and continues to have undesirable consequences as it leads to stagnant economic growth due to an inactive labour market and increasing pressure on the government to issue security grants amongst other issues. Most countries in Southern Africa have been faced with high youth unemployment, and policies that have been implemented thus far to counter this problem have resulted in limited success. This research aims to achieve two objectives: (i) examine the determinants of youth unemployment in Southern Africa between 1990 and 2019 and (ii) the impact of corruption on youth unemployment.

Using a battery of panel data estimations techniques such as OLS, DOLS, and FMOLS simultaneously with the panel ARDL, this study assessed the relationship between corruption and youth unemployment in the 10 Southern African countries from 1990 to 2019. The findings reveal that there is a positive and significant relationship between corruption perception and youth unemployment. That is, as a country becomes less corrupt, youth unemployment increases. The cointegration analysis applied using the Pedroni and Kao tests concludes that there is a presence of a stable, long-run relationship using the combination of the variables from the model.

The main conclusion from the study is that there is an indirect relationship between corruption and youth unemployment through the economic growth channel. This paper argued that corruption can promote efficiency by giving way to save time in lengthy and complex processes and rules by encouraging illegal trade. The expansion of the underground economy when corruption increases also aid in absorbing young people in the informal sector. Given that corruption is so embedded in Southern African countries, this paper recommends that when attempting to combat it, measures should be put in place to ensure that young people in the informal economy or participating and benefiting from the loopholes in the legal institutions get absorbed so that youth unemployment does not increase nor exacerbate.

TABLE OF CONTENTS

DECLARATION i
ACKNOWLEDGEMENTS ii
ABSTRACT iii
LIST OF ABBREVIATIONS vi
FIGURES AND TABLES vii
Chapter 1 1
1. INTRODUCTION 1
1.1. Background 1
1.2. Research Objectives 4
1.3. Research Hypothesis 4
1.4. Contribution 8
1.5. Limitations of the Study 9
1.6. Structure of the Study 9
Chapter 2 10
2. LITERATURE REVIEW 10
2.1. Introduction 10
2.2. Conceptualisation of Corruption 10
2.3. Determinants of Youth Unemployment 11
2.4. Conclusion 15
Chapter 3 16
3. CONCEPTUAL FRAMEWORK 16
3.1. Introduction 16
3.2. Conceptual Framework: Corruption and Youth Unemployment 16
3.3. Conclusion 19
Chapter 4 20
4. METHODOLGY OF THE DETERMINANTS OF YOUTH UNEMMPLOYMENT 20
4.1. Introduction 20
4.2. Data Set 20
4.3. Regression Models 21
4.4. Limitations of the Youth Unemployment Regression Model 23

4.5. Stationarity Tests 23
4.6. Conclusion 24
Chapter 5 25
5. ESTIMATION OF PANEL REGRESSION RESULTS 25
5.1. Introduction 25
5.2. Stationarity Tests 25
5.3. Cointegration Analysis 26
5.4. Correlation Matrix – Independent Variables 26
5.5. Results 27
5.6. Discussion 30
5.7. Conclusion 34
Chapter 6 35
6. CONCLUSION AND POLICY RECOMMENDATIONS 35
6.1. Introduction 35
6.2. Summary and Conclusion 35
6.3. Limitations 35
6.4. Policy Recommendations 36
6.5. Areas of Further Study 36
REFERENCE LIST 38
APPENDIX 45

LIST OF ABBREVIATIONS

ARDL	Autoregressive Distributed Lag
ASEAN	The Association of Southeast Asian Nations
CPI	Corruption Perception Index
DFE	Dynamic Fixed Effect
FMOLS	Fully Modified Ordinary Least Squares
DOLS	Dynamic Ordinary Least Squares
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
MG	Mean Group
PMG	Pooled Mean Group
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares

FIGURES AND TABLES

Figure 1:1: Youth Unemployment (% of total labour force ages 15-24) 3
Figure 1:2: The Relationship Between Investment and Corruption 5
Figure 1:3: Spending on Education and Youth Unemployment 7
Figure 1:4: Southern Africa: The Relationship Between Education and Corruption 8
Figure 3:1: Conceptual Framework 17
Figure 5:1: Informal output ratio and corruption perception index 32
Figure 5:2: M0 money supply 32
Figure 5:3: SA provincial unemployment rate: 2022Q2 33

Table 4:1: Description of Variables 20
Table 5:1: Summary Statistics 25
Table 5:2: Unit Root Test Results 26
Table 5:3: Cointegration Tests 26
Table 5:4: Correlation Matrix – Independent Variables 27
Table 5:5: Regression results – ordinary least squares (OLS) 28
Table 5:6: Regression results – dynamic ordinary least squares (DOLS) 29
Table 5:7: Regression results – fully modified ordinary least squares (FMOLS) 29

Chapter 1

1. INTRODUCTION

1.1. Background

According to the United Nations (2007), youth employment is an important determinant of social development as it equips young people with opportunities that allow them to be independent and also contribute to poverty alleviation. Moreover, youth employment contributes to economic development as it allows for the entry of young people into the productive sectors of the economy. Arguably, any country has an incentive to create an economy that will absorb young people into the labour market. The inclusion of young people in the productive economy leads to lower rates of drug use and crime amongst other factors. However, most countries in Southern Africa have been faced with high youth unemployment; and policies that have been implemented thus far to counter this problem have resulted in limited success.

As of 2019, 80% of the Southern African countries have youth unemployment (ages 15-24) that exceeds the world youth unemployment of 15.29%. South Africa is the country with the highest youth unemployment (57.05%) followed by Angola (53.47%). In the case of South Africa, according to Statistics South Africa (Stats SA) (2021), using the expanded definition of youth unemployment[1], the unemployment rate for the age group 15-24 is 74,7% and the unemployment rate for the age group 25-34 is 51,4% as of the first quarter of 2021. This shows that from 2019, youth unemployment has worsened in South Africa. On the other hand, the youth unemployment of Angola has increased to 56.30% as of the first quarter of 2021. These statistics[2] do not only affect the future potential earnings of the youth, but they also lead to stagnant economic growth due to an inactive labour market and increasing pressure on the government to issue social security grants.

Youth unemployment has undesirable consequences. For instance, according to Cloete (2015), youth unemployment does not only affect the individual unemployed, but it also affects the country economically and socially. It leads to erosion of human capital, lack of production, and it also triggers crime and social instability. Furthermore, an inactive labour market leads to gaps in employment history and the prospects of getting a job diminish. Youth unemployment also affects

[1] The expanded definition of youth unemployment includes young people who have given up on looking for work and are not actively participating in searching for employment. (Nattrass, 2002).

[2] Refer to figure A1 for more information.

young people's career paths and future earnings. There are also limited opportunities for career development and there is a high probability of lower-wage levels (O'Higgins, 1997). High youth unemployment means that there is an increased risk of losing talent and skills as more people are unable to apply their knowledge or even acquire new skills to advance their career paths. The large share of young people not being absorbed by the labour market also means more pressure on the government budget due to the increased economic costs to pay social grants to the unemployed citizens (Leibbrandt et al., 2010).

In addition, Africa is currently the world's youngest continent with a median age of 19.7 years as of 2020 (Kariba, 2020). The young population of Africa currently makes up more than half of the African population. This demographic transition in Africa is important as it raises concerns on whether Africa is equipped enough to create opportunities for young people. An active labour market that can absorb young people is necessary in Southern Africa to avoid the consequences of a high youth unemployment rate.

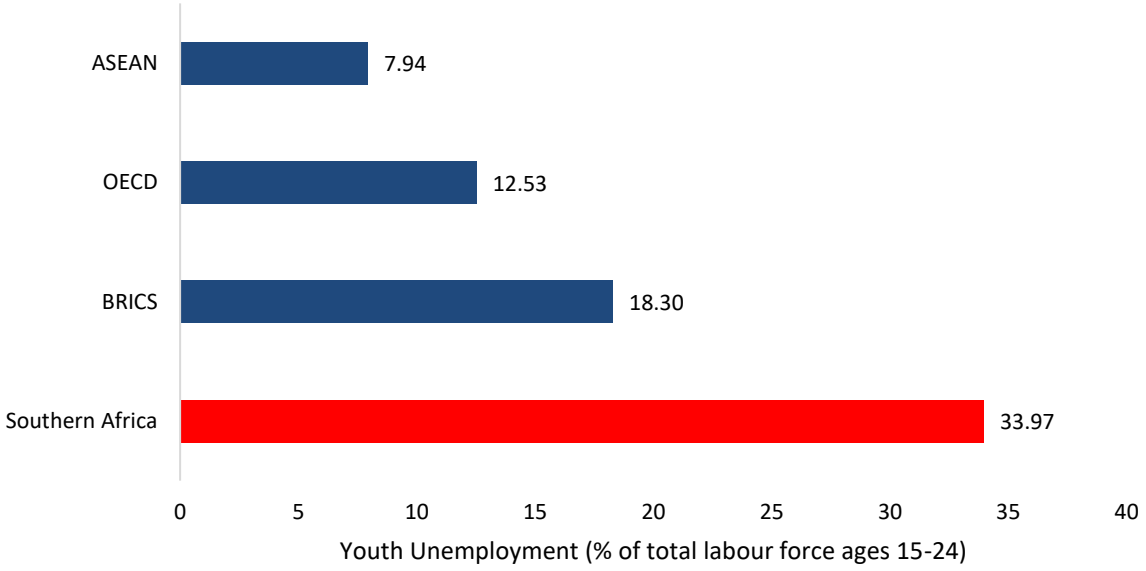
Various studies have been conducted to determine the impact of corruption on youth unemployment (see, for example, Bouzid (2016); Lui (1985); Friedrich (1972); and Almula-Dhanoon and Ali (2021)). However, there has been conflicting conclusions from these studies. Authors such as Bouzid (2016); and Almula-Dhanoon and Ali (2021) argued that corruption increases unemployment amongst young people through the economic growth channel. On the other hand, authors such as Huntington (1968); Friedrich (1972); and Lui (1985) have argued that there is a positive relationship between corruption and economic growth. Given that economic growth is a key determinant of youth unemployment, this means that corruption has an indirect influence on youth unemployment. Huntington (1968) argues that corruption can enhance economic growth as it allows investors and individuals to bribe their way through time-consuming processes and rules. Furthermore, corruption also encourage illegal trade by allowing private sector individuals to exploit failures and weakness of the government.

It can also be argued that the cause of youth unemployment can be attributed to young people lacking the relevant and necessary skills, experience, and education, not because of the impact of corruption on economic growth. Poor training and education can be attributed to lack of proper governance and institutions with poor policy implementation. It shows the lack of quality education provision by the government and the lack of reaching out to marginalised communities

to offer young people education that makes them employable. Therefore, there is a vicious cycle of unemployment as young people who are unemployed do not have experience and are therefore less likely to get a job. This is also referred to as "hysteresis" whereby there more a person unemployed, it becomes difficult to secure employment in the future and the opportunities to lean skills and obtain training diminishes.

Lastly, according to Figure 1.1 below, the Southern African region has the highest youth unemployment as of 2019 when compared to the Organisation for Economic Co-operation and Development (OECD), Brazil, Russia, India, China, South Africa (BRICS), and the Association of Southeast Asian Nations (ASEAN). Southern African countries have a youth unemployment rate of 33.97% while BRICS, OECD, and ASEAN have a youth unemployment rate of 18.3%, 12.53%, and 7.94% respectively. Given this, an understanding of Southern African youth unemployment dynamics is imperative, so that the policies formulated to combat it are effective and efficient.

Figure 1:1: Youth Unemployment (% of total labour force ages 15-24)



Source: Author's own using computation using data from the World Bank, 2021a

1.2. Research Objectives

The research objective of this study is to investigate the long-run determinants of youth unemployment in the context of Southern Africa[3] using panel data from 1990 to 2019. The study provide insights into the following topics to achieve this objective.

- Examine the determinants of youth unemployment in Southern Africa.
- Examine the impact of corruption on youth unemployment in Southern Africa.

1.3. Research Hypothesis

The hypothesis of the study is based on the premise that there is a statistically significant relationship between youth unemployment and corruption in Southern Africa. The null and alternative hypotheses are as follows:

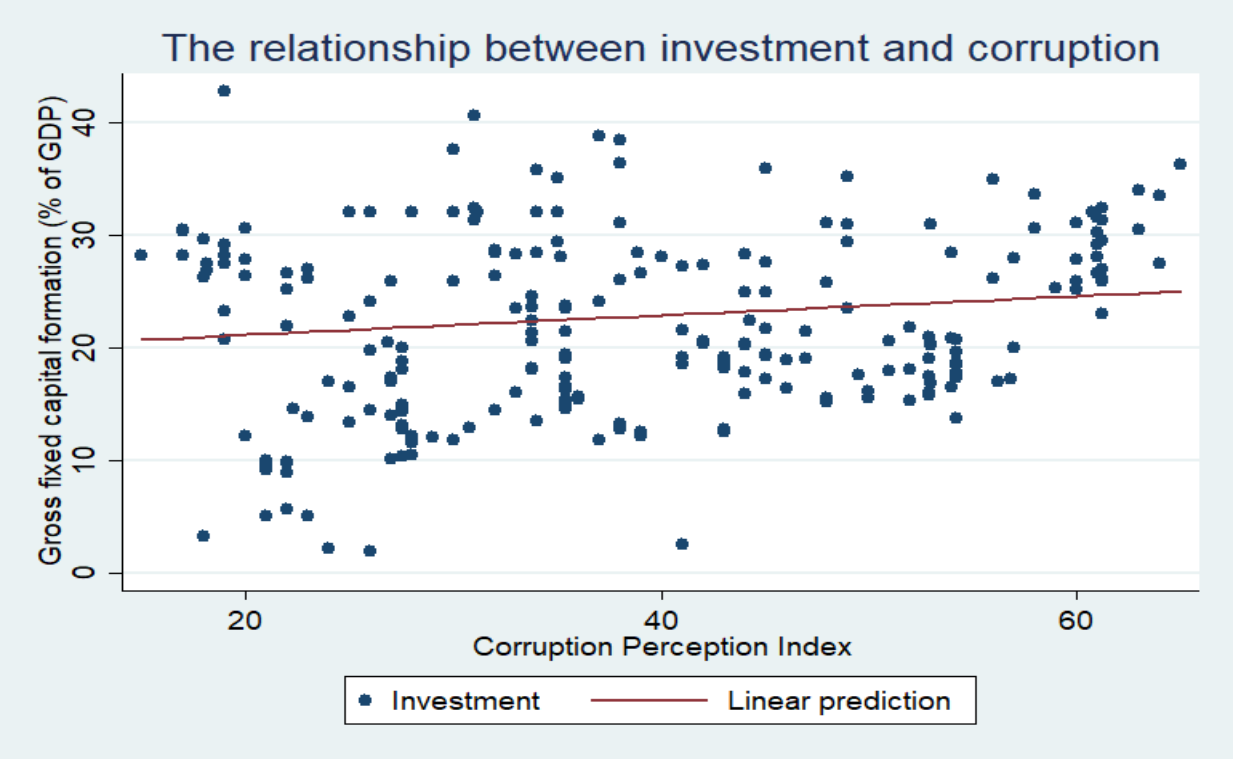
H_0: There is a statistically significant relationship between youth unemployment and corruption.

H_1: There is no statistically significant relationship between youth unemployment and corruption.

This hypothesis is based on the two stylised facts. Firstly, according to Ahmad, Ullah and Arfeen (2012) and Mauro (1995), a country that has a high level of corruption is associated with low investment. This is because corruption reduces the entrepreneurs' incentive to invest. Entrepreneurs are usually aware that corrupt officials may claim a share of the proceeds from their investment when issuing the necessary permits during the initial stages of the business. This then increases the cost of starting a business, leading to a reduced incentive of investing (Mauro & Christensen, 1996).

[3] The Southern African countries are as follows: Angola, Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia, Zimbabwe.

Figure 1:2: The Relationship Between Investment and Corruption



Source: Author's own using computation using data from the World Bank, 2021a

Figure 1.2 above shows the weak but positive relationship between the average corruption perception index (CPI) and investment for Southern African countries from 1990 to 2019. It should be noted that a higher CPI means lower levels of corruption while a lower CPI means higher levels of corruption. The upward slopping fitting line confirms that as corruption increases, investment decreases. Figure A1.1 shows the relationship between investment and CPI for eight Southern African countries as of 2019/2020. Zimbabwe is considered the most corrupt country in Southern Africa, and it also has the lowest gross fixed capital formation as a percentage of gross domestic product (GDP). On the other hand, Botswana is considered the least corrupt country in Southern Africa, and it has the second-largest gross capital formation ratio. Therefore, it can be argued that improving the quality of institutions in Southern Africa is essential to decreasing youth unemployment. This will increase the incentive of investing due to reduced rent-seeking behaviour and will stimulate economic growth, leading to an improvement in youth unemployment through entrepreneurship. Furthermore, funding that is aimed at helping entrepreneurs will be efficiently distributed if corruption is kept under control (Lodge, 1998).

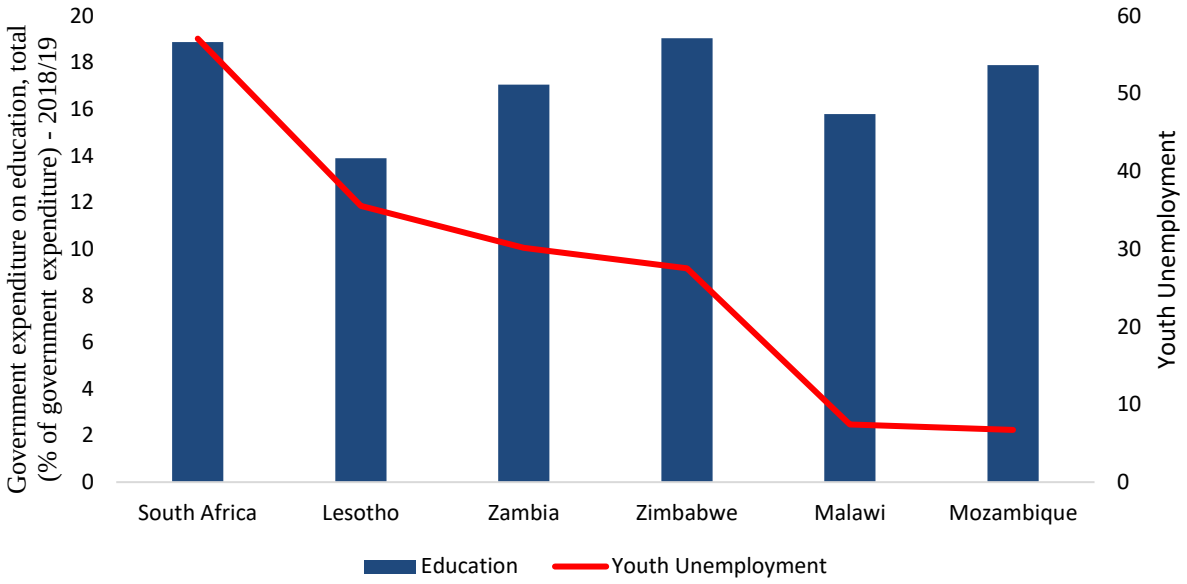
The second stylised fact is that corrupt countries are associated with low expenditure on education and training. This is because of high distortions of public spending towards projects that are not universally beneficial for the electorate including young people but targeted projects where bribery is easy and profitable for corrupt officials. These targeted projects can be viewed as "pork barrel" projects and they usually benefit a few citizens or voters (Mlilo, 2019). As argued by Shleifer and Vishny (1993), corrupt officials may award more public spending towards projects such as large infrastructure projects whereby it is difficult to monitor the exact value. In cases of textbook funds and salaries for teachers, the opportunities of rent-seeking are limited (Hines, 1995). The limited allocation of public spending towards education and training then leads to an education system that is not equipped enough to produce young people that are employable or individuals that are potential entrepreneurs.

According to figure 1.3 below, South Africa is one of the leading countries in Southern Africa when it comes to government expenditure on education as a percentage of government revenue. Given that education is linked to improved prospects of employment, one would anticipate that youth unemployment would be low. However, it has the highest youth unemployment in Southern Africa. Furthermore, there is no significant difference between the government spending on education in South Africa and Mozambique but the outcomes on youth unemployment are significantly different. It shows that even though some countries such as Zimbabwe and South Africa are spending a substantial amount of money on education, the outcomes are poor and there is no formulation of human capital due to structural constraints (Department of Communication and Information System, 2021). The educational system is not producing the demanded skills by the labour market and the education provided is not adequate to produce young people that will be active and productive in the economy. Therefore, in the case of Southern Africa, there is arguably what is referred to as "jobless growth". This happens when an economy is growing but the structural shifts lead to an increase in unemployment. The labour market fails to absorb individuals that are entering the labour market and companies are unable to recover due to structural changes that take place (Anthuvana, 2005).

In the case of South Africa, even though a substantial amount is being spent on education as a percentage of total government expenditure, there is still high youth unemployment that is increasing as political corruption persists. This is contradicting theory as one would expect that as

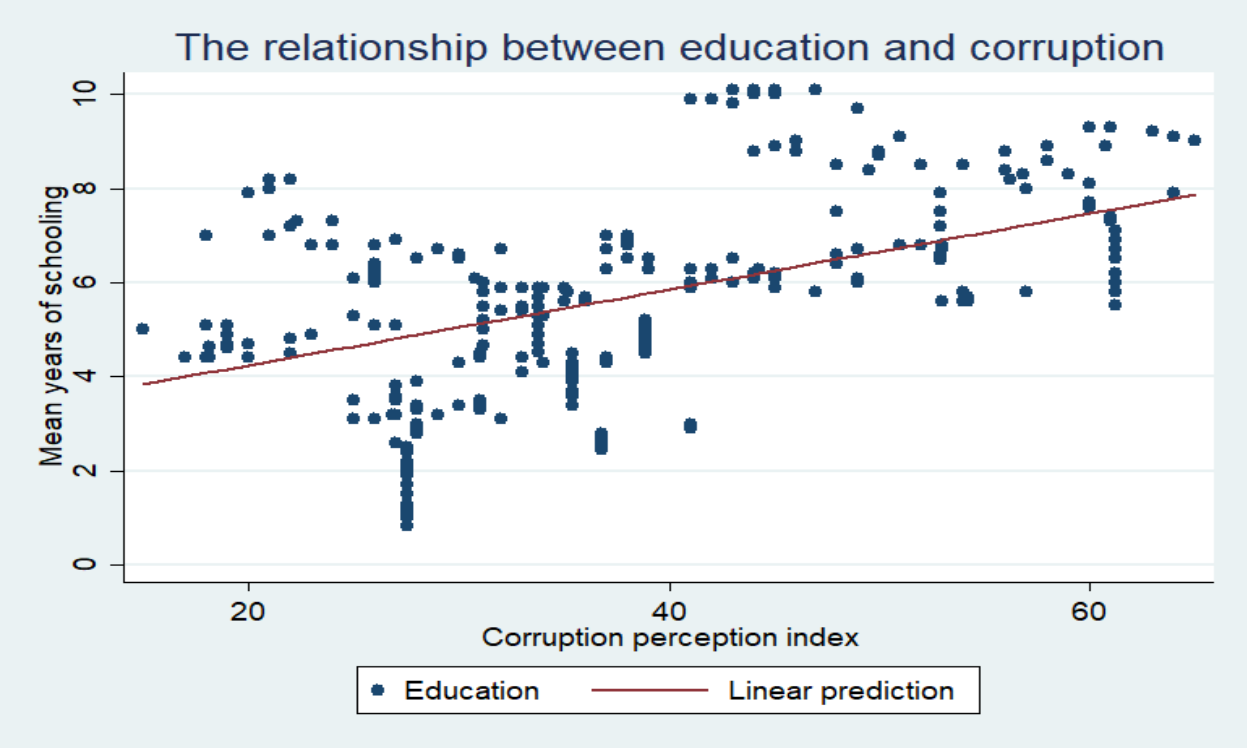
a country spends more on education, there would be increased years of schooling and a reduction in youth unemployment. Figure 1.4 below shows that there is a positive relationship between CPI and means years of schooling in Southern Africa. That is, as corruption decreases, means years of schooling increases. As a country becomes less corrupt, it can focus on sectors of the economy that are detrimental to economic growth and that includes proper education and support to students to enable them to successfully finish school. Therefore, improving the quality of institutions in Southern Africa is important as it allows for efficient expenditure on education and training that will lead to employable young people as they will spend more years in school.

Figure 1:3: Spending on Education and Youth Unemployment



Source: World Bank, 2021a

Figure 1:4: Southern Africa: The Relationship Between Education and Corruption



Source: World Bank, 2021a

1.4. Contribution

According to my knowledge, the studies that have been done thus far focus on the relationship between unemployment and corruption in Southern African Development Community (SADC) countries, or they focus on a particular African country, little or no study has been narrowed down to only youth unemployment and how it is impacted by the quality of institutions, especially corruption, in Southern Africa (See, for example, Kingdon and Knight, 2007; Hodge, 2009; Mogalakwe and Nyamnjoh, 2017; Adjor and Kebalo, 2018; Patel, 2018; Khan and Pillay, 2019; Mosler, Potrafke and Reischmann, 2019; Muzurura, 2019; Onuoha and Moses Oyeyemi, 2019).

This paper will contribute to the literature on youth unemployment by determining the effect of corruption on youth unemployment in Southern Africa. The results of this study will determine if corruption should be considered as one of the key factors contributing to the increasing youth unemployment in Southern Africa. Furthermore, this study will show which factors the government should consider when implementing policies aimed at reducing youth unemployment. This paper will do this by understanding the key determinants of youth unemployment from a Southern African perspective by determining which factors have a significant impact on youth

unemployment and the direction of the impact in the long run. Lastly, by understanding the role and impact of corruption on youth unemployment.

1.5. Limitations of the Study

This paper will use a strict definition of youth unemployment. Therefore, youth unemployment will be defined as a percentage of unemployed youth to the total labour force of unemployed and employed youth. Furthermore, this definition will only include economically active individuals who are looking for work and those who have taken steps to form self-employment (Mabaso, 2013).

This paper will not discuss the following issues:

- The causes of corruption in Southern Africa.
- The short-run determinants of youth unemployment in Southern Africa.
- The past policies that have been implemented to combat youth unemployment in Southern Africa.

1.6. Structure of the Study

The rest of this study is structured as follows: Chapter two provides provide the literature review. Chapter three builds from chapter two and provides a conceptual framework of how corruption affects youth unemployment. Chapter four provides an insight into the econometric models that are used to determine the factors that drive youth unemployment. Chapter five provides an analysis and interpret the panel regression models pertaining to the determinants of youth unemployment in Southern Africa. Lastly, chapter six concludes the research paper on the determinants of youth unemployment from a Southern African perspective and provides policy recommendations.

Chapter 2

2. LITERATURE REVIEW

2.1. Introduction

Southern African countries have similar traits and usually suffer from similar economic and political difficulties. Therefore, understanding the determinants of youth unemployment is crucial to this paper. This chapter provides a working definition of corruption and attempts to provide an understanding on how corruption indirectly affects youth unemployment through various determinants. Furthermore, this chapter provides the theoretical and empirical evidence for each of those determinants.

2.2. Conceptualisation of Corruption

The term corruption has been widely discussed and understood differently by different scholars. Corruption is "the use of bribery to influence the actions of a public official and this also includes obtaining private gains from public office through bribery, extortion, and embezzlement of public funds" (Black, Hashimzade and Myles, 2017:112). According to the Transparency International (2021), corruption is defined as "the abuse of entrusted power for private gain". Khan (1996:12) defines corruption as "behaviour which deviates from the formal rules of conduct governing the actions of someone in position of public authority because of private-regarding motives such as wealth, power, or status". A similar definition was provided by Ahmad, Ullah and Arfeen (2012:280) who defines corruption as a "wealth-seeking behaviour of someone who represents the state and public authority. It includes the misuse of public resources by public officials for private gain". The abuse of power by public officials usually includes private agents who are willing to offer a bribe to avoid public processes. According to Otite (2000), corruption can also be extended to money laundering, falsification of documents and records, illegal payments, deceit, and smuggling.

This paper will define corruption as "the use of bribery to influence the actions of a public official and this also includes obtaining private gains from public office through bribery, extortion, and embezzlement of public funds" (Black, Hashimzade and Myles, 2017:112). This definition of corruption was extended by Rose-Ackerman (1996) who argues that corruption involves turning public goods into private goods by government officials. Given that the state plays a vital role in the distribution of public goods and services, communities that are heavily marginalised and

vulnerable usually suffer more as they are the other ones to be excluded from service delivery when public officials turn public goods into private goods.

There are three types of corruption, namely, grand, political, and bureaucratic corruption. Grand corruption involves top level of the state politicians that serve the narrow interests of business people (Amundsen, 1999). Grand corruption functions as a kind of an illegal trade by those top level of the state politicians who receive personal benefits from those they serve. The transactions usually take place during large projects such as infrastructure where it is not easy to monitor how funds are utilized. Their influence leads to institutional decay and misallocation of public resources.

According to Amundsen (1999:6), political corruption is when "political decision-makers use the political power they are armed with to sustain their power, status, and wealth". Political corruption affects the way in which decisions are made as it is a deviation from formal and written laws and norms. The rules and regulations are systematically abused and ignored to fit the interests of the corrupt politicians. Furthermore, political corruption is one of the basic ways in which politicians that hold power enrich themselves.

Lastly, bureaucratic corruption "provides civil servants with the opportunity to raise their compensation above what it prescribes" (Mbaku, 1996:3). Corrupt bureaucrats use their offices as a business through which they can gain extra income. Private businesses can maintain a monopoly position in the economy through this type of corruption. Bureaucratic corruption leads to inefficiency as it allows ineffective producers to remain in business and provides bureaucrats and politicians with an opportunity to enrich themselves at the expense of the whole society.

2.3. Determinants of Youth Unemployment

As mentioned in chapter 1, one of the key channels through which corruption can negatively affect youth unemployment is the allocation of government spending on education. As argued by Bouzid (2016), countries with corrupt government officials are more invested in directing funds towards departments and projects where they stand a chance to benefit compared to projects related to education and training where monitoring the distribution of funds is easy to monitor. Improving the standards and quality of education is not one the key strategic goals for corrupt governments. This then leads to an educational system that creates frictional unemployment by generating high expectations which lead to dissatisfaction when young workers realise the labour market realities

and they start moving from one job to the other in hope of getting a high paying entry-level job (Sen, 1988). Furthermore, the emphasised institutional training through the education system contributes to structural unemployment because to penetrate the labour market, work experience and specific skills are needed and that cannot be supplemented by increased institutional training that is not aimed at training young people in fields that are demanded by the labour market. Therefore, following the findings of Nickell (1979); Mincer (1991); Mauro, (1995), this paper hypothesise that there is a negative relationship between education and youth unemployment. This paper will use mean years of education as a measure of labour force qualification.

Another important determinant of youth unemployment that is impacted by corruption is domestic investment and foreign direct investment (FDI). Corruption reduces the incentive to invest by both domestic and foreign investors due to corruption tax that increases the cost of doing business. To determine the relationship between FDI and youth unemployment, this paper uses the FDI/GDP ratio, and the hypothesis is that there is a negative relationship between FDI and youth unemployment. An increase in FDI boosts the economy and leads to a decrease in unemployment as firms employ more people (Blanchard & Johnson, 2017). This can be through the spill over effects and the introduction of new technology that improves efficiency and create employment. Furthermore, FDI leads to new production capacity, creation of new jobs, and an increase incompetition (Brincikova & Darmo, 2014). This is confirmed through empirical studies conducted by authors such as Oluchukwu, Chinyere and Francisca (2019), Abor & Harvey (2008), Onimisi (2014), and Shaari et al. (2012). Therefore, an increase in FDI is expected to stimulate economic growth which will in turn decrease unemployment (Blanchard and Johnson, 2017). This is confirmed through studies conducted by authors such as Choe (2003); Tawiri (2010); Bakari (2017).

Bouzid (2016) argues that the utility function of government officials is composed of their income and bribes. Therefore, low income means that to maximize utility, government officials must engage in more bribery activities or illegal activities. The theoretical assumption provided by scholars (See Haan, Dietzenbacher and Le, 2013; An and Kweon, 2017) is that higher government wages can reduce corruption as government officials will be able to maximize their utility without having to resort to corrupt activities as they are earning enough money. Given that an indication of wage deterioration is inflation, this paper argues that there is a positive relationship between

inflation and youth unemployment (Orji et al., 2015). This is because high inflation deteriorates the wages of government officials leading to an increase in corruption that negatively impacts youth unemployment. Furthermore, inflation leads to low economic growth and low investment due to the uncertainty experienced by firms. The decline in economic growth

because of inflation further contributes to youth unemployment.

An indicator of labour market distortions because of corruption is the strength of trade unions. A corrupt government with weak institutions usually has weak trade unions and worker's rights are not fully protected. This then leads to a decrease in youth unemployment because firms can easily employ more individuals and pay them less. According to Bryson (2007), there is an inverse relationship between unemployment and the strength of trade unions. Successful, powerful, and effective trade unions can bargain for wages above equilibrium wages and generate a monopoly market from the labour market that leads to an increase in youth unemployment. This is due to the trade-off between wages and employment (Blanchard & Johnson, 2017). The wage set above the equilibrium wage creates an unemployment gap. To measure the strength of trade unions, this paper will use the worker's rights index. This index is equal to 0 if worker's rights are not protected; a score of 1 if worker's rights are partly protected; and score of 2 if worker's rights are fully protected.

Lastly, corruption impacts youth unemployment through the GDP. A corrupt country discourages both domestic and foreign direct investment as argued previously in the discussion. Furthermore, corruption leads to misallocation of funds and thus inefficiencies in the economy. This then leads to a reduction in economic growth as crucial sector and components of the economy are not being funded enough and that includes education and training. The poor economic growth because of corruption will then lead to an increase in youth unemployment. Authors such as Bayar (2014); Bayrak (2016); Bayrak & Tatli (2018); and Cetin et al., (2015) have used Okun's law to examine the impact of GDP on employment. Okun's law states that the growth of the economy and the rate of employment are positively related. Therefore, an expansion in the economy will absorb labour and reduce unemployment whereas a contraction in the economy will utilize less labour and lead to an increase in unemployment. At equilibrium, the gap version of Okun's law states that the rate of unemployment would be low enough not to generate a high inflationary pressure while

producing as much output. However, Knotek (2007) argues that this theory could be problematic because neither potential output nor full employment is directly observable variables.

According to Gumede (2019), corruption "erodes the credibility and legitimacy of, trust in and support for democratic constitutions, institutions and laws. Policies, however well-intended, will lack credibility and fail to secure citizen, business, and civil society buy-in if there is a perception that government is corrupt". A corrupt country undermines the power that citizens must influence decision making and it also undermines democracy or attempts to build a democratic state. Furthermore, corruption leads to weak institutions, breeds an unstable state, and lead to violence. This then leads to an increase in youth unemployment as a country that lacks stability cannot stimulate economic growth that will create jobs. This paper uses the electoral self-determination index as a proxy for corruption. A score of 0 indicates the lack of free and fair elections that allows citizens to have the right of self-determination; a score of 1 indicates a country will moderate free and fair election; and a score of 2 indicates free and fair elections where citizens have the right to self-determination. Therefore, this paper argues that there is a negative relationship between electoral self-determination and youth unemployment. However, authors such as Ilyas and Khan (2020) argue otherwise.

So far, this chapter has outlined the theoretical determinants of youth unemployment. The rest of the chapter outlines the empirical evidence of the determinants of youth unemployment. A study conducted by Msigwa and Kipesha (2013) on Tanzania found that the determinants of youth unemployment include gender, geographical location, education, skills, and marital status and they are all significant. This was similarly the case in a study conducted by Batu (2016) on Ethiopia. Other studies conducted by authors such as Bayrak and Tatli (2018) concluded that the determinants of youth unemployment using 31 OECD countries included growth, inflation, and savings. A study by Caporale and Gil-Alana (2014) also found growth and inflation to be the main determinants of youth unemployment. A study conducted by Imtiaz *et al.* (2020) concluded that political instability, investment, the backwardness of the agricultural sector, and overpopulation were the determinants of youth unemployment in Pakistan. A study conducted by Patel and Choga (2018) on South Africa concluded that education was the main determinant of youth unemployment.

There are a few studies that have studied the relationship between youth unemployment and corruption. A study conducted by Bouzid (2016) using the 96 countries found that the growth of corruption tends to increase youth unemployment and this leads to unlawful policies whereby young job seekers have to bribe rent-seeking government officials to get a job. This was also the case with a study conducted by Asaju (2014) in Nigeria. A study conducted by Adjor and Kebalo (2018) on the SADC countries concluded that corruption is the largest determinant of youth unemployment followed by the level of education. Therefore, to combat unemployment, the reduction of corruption should be the main priority. Ben Ali and Saha (2016) also concluded that there is a positive and significant relationship between youth unemployment and corruption.

2.4. Conclusion

This chapter has outlined the literature review on the determinants of youth unemployment and has also outlined the theoretical and empirical evidence of how each determinant affects youth unemployment. The variables that the literature review specifically focused on are the impact of corruption on youth unemployment through the following channels: education, inflation, workers' rights, FDI, free and fair elections, domestic investment, and GDP. This paper argues that countries with corrupt government officials are more invested in directing funds towards departments and projects where they stand a chance to benefit compared to projects related to education and training where monitoring the distribution of funds is easy to monitor. Furthermore, corruption reduces the incentive to invest by both domestic and foreign investors due to corruption tax that increases the cost of doing business. On the other hand, inflation deteriorates the wages of government officials leading to an increase in corruption that negatively impacts youth unemployment. Furthermore, inflation leads to low economic growth and low investment due to the uncertainty experienced by firms. The decline in economic growth due to inflation further contributes to youth unemployment.

An indicator of labour market distortions resulting from corruption is the strength of trade unions. A corrupt government with weak institutions usually has weak trade unions and worker's rights are not fully protected. This then leads to a decrease in youth unemployment. Furthermore, corruption impacts youth unemployment through the GDP. A corrupt country discourages both domestic and foreign direct investment and that impacts youth unemployment. A corrupt country undermines the power that citizens need to influence decision making and it also undermines democracy or attempts to build a democratic state. Consequently fuelling youth unemployment as a country that lacks stability cannot stimulate economic growth that will create jobs.

Chapter 3

3. CONCEPTUAL FRAMEWORK

3.1. Introduction

There is no direct link between corruption and youth unemployment. However, there is an indirect nexus between the variables thereof, and that is through the GDP. This chapter outlines the conceptual framework of the channel through which corruption affects youth unemployment using the neoclassical model of economic growth. The channels include various components of the GDP.

3.2. Conceptual Framework: Corruption and Youth Unemployment

Figure 3.1 below shows the conceptual framework of how corruption indirectly affects youth unemployment through the GDP. Using the neoclassical model of economic growth, following on Coupet (2003), the production function on equation 3.1 below shows how corruption affects economic growth:

$$Y_t = k_t^{\alpha} H_t^{\beta} [A_t(\rho) L_t]^{1-\alpha-\beta} \tag{3.1}$$

Where Y_t is the aggregate level of output (real income), K_t is the level of physical capital, H_t is the level of human capital, L_t is the amount of labour employed, A_t is the productivity level, and ρ is the level of corruption in a country. The production function exhibits constant returns to scale and on each input there are diminishing returns. Therefore, $0 < \alpha < 1$, $0 < \beta < 1$, and $\alpha + \beta < 1$.

$$A_t(\rho) = \tilde{A}_t e^{-\gamma_\rho} \tag{3.2}$$

$$\tilde{A}_t = A_0 e^{g_t} \tag{3.3}$$

$$\frac{dA_t}{d\rho} < 0 \tag{3.4}$$

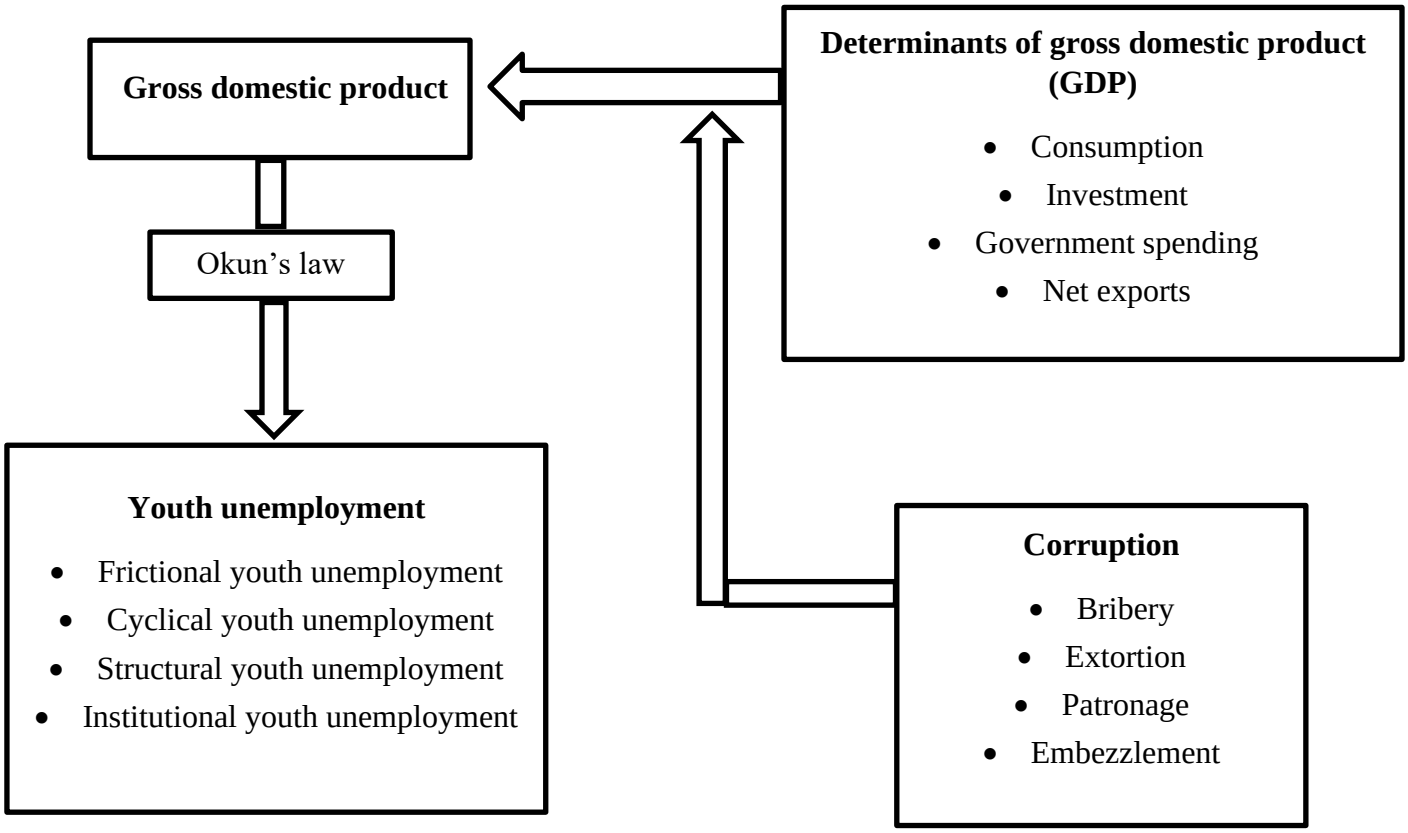
$$\frac{d^2 A_t}{d\rho^2} > 0 \tag{3.5}$$

Equation 3.2 outlines the economy's multifactor productivty where γ and ρ are corruption parameters which capture the impact of corruption on the productivity level. The parameter, γ, illustrates the sensivity of corruption to productvity. On the other hand, equation 3.3 shows that the conventional productivity level growts at a rate of g and it is exogenous. As shown on equation 3.4 and 3.5, any form of corruption such as bribery or embezzlement has a negative impact on productivity, capital accumulation and will thus reduce the average investment per worker and

output (Coupet, 2003). Corruption reduces the incentive of investing as it acts as an inefficient tax on those that want to start businesses and also reduces the private marginal product of capital.

Although the model equations presented by Coupet (2003) states that all corruption is detrimental, Abotsi and Iyavarakul (2015) offers and interesting argument and argues that not all kinds of corruption is harmful and that there is a U-shaped relationship between corruption and investment, especially in developing and underdeveloped nations. Abotsi and Iyavarakul (2015) argue that there is a certain level of corruption referred to as "Tolerable Level of Corruption for Investment" that is attractive to foreign investors and is likely to attract foreign investment. A level of corruption that is below this point is anticipated to discourage investment. This is U-shaped relationship is also confirmed by Cuervo-Cazurra (2008); and Cole, Elliott and Zhang (2009).

Figure 3:1: Conceptual Framework



Source: Author's own

According to Gupta et al. (1998), corruption increases income poverty and income inequality by reducing the effectiveness of social spending and human capital. This then means as corruption increases, more individuals get trapped in poverty and that reduces private household consumpion.

Furthermore, as corruption undermines efforts to improve human capital of citizens, it means that future consumption also declines. The negative impact of corruption on consumption is the indirect link between corruption and economic growth.

A study conducted by Mauro (1995) concluded that there is a negative relationship between corruption and investment. Given that investment is a significant determinant of economic growth, Mauro (1995) also concluded that there is a positive association between investment and economic growth. Therefore, corruption affects economic growth through investment. This is because a government that has weak institutions creates barriers to entrepreneurship, investment, and innovation. Furthermore, public bureaucratic inefficiency also reduces economic growth through the misallocation of funds among sectors of the economy. In this case, corruption affects economic growth through the government spending component.

Tanzi and Davoodi (2000) argue that corruption has more impact on small and medium-sized enterprises (SME) and that is creating an obstacle to economic growth. SME's, unlike large enterprises cannot protect themselves from corrupt bureaucrats and they do not have the political power that will allow them to benefit from rent-seeking corruption. Therefore, corruption reduces the returns on capital more on SME's compared to large enterprises and that reduces the incentive to invest. Furthermore, corrupt countries tend to spend less on projects that are aimed at promoting economic growth and that includes health and education. This is also another channel through which corruption negatively affects economic growth (Tanzi & Davoodi, 2000).

Lastly, a study conducted by Calder (2020) concluded that corruption is one of the most costly trade barriers. Complex trade regulations in country often lead to increased cost of compliance, thus making bribery an attractive and effective solution/alternative. The increased cost of trade then makes it expensive for international firms to engage in trade with a corrupt country leading to a decline in net exports. This is another indirect link of corruption and economic growth. A reduction in net exports as a result of corruption will negatively impact economic growth.

Through the GDP channel we can indirectly link the role of corruption on youth unemployment, see figure 3.1 for a depiction. This is through the Okun's law that states that there is an inverse relationship between production and unemployment. That is, an increase in output, holding all else constant, leads to a reduction in unemployment. Following this logic, we can conclude that changes in corruption indirectly affect youth unemployment through GDP.

3.3. Conclusion

This chapter outlined the indirect relationship between corruption and youth unemployment using the neoclassical model of economic growth presented by Coupet (2003). Acts of corruption such as bribery, extortion, patronage, and embezzlement affect GDP components such as government spending and investments. The negative impacts of corruption on GDP then contribute to the increase in youth unemployment due to an ineffective economy that is failing to stimulate economic growth to absorb young people in the labour market.

Chapter 4

4. METHODOLGY OF THE DETERMINANTS OF YOUTH UNEMMPLOYMENT

4.1. Introduction

The theoretical framework in chapters 2 and 3 provide the foundation that is used to develop the regression methodology in this chapter. The purpose of this chapter is therefore to explain the methods used to collect and analyse the data of Southern African countries. This paper uses an ordinary least square (OLS), dynamic OLS (DOLS), Fully Modified OLS (FMOLS), and panel autoregressive-distributed lag (ARDL) bound testing models to understand the impact of corruption on youth unemployment from a Southern African perspective. Section 4.2 outlines the data set, section 4.3 outlines the panel regression models, section 4.4 outlines the limitations of the study, section 4.5 discusses the stationarity tests, and section 4.6 concludes chapter 4.

4.2. Data Set

This paper uses annual secondary country data of 10 Southern African countries to determine the determinants of youth unemployment (YOUTH) covering the period 1990 to 2019. The dependent variable is youth unemployment while the independent variables are annual gross domestic product (GDP), educational attainment (EDU), inflation rate (INFLA), trade openness (TRDOPN), and corruption (CORR). The summary of the dependent and independent variables along with the sources of data are presented in table 4.1 below.

Table 4:1: Description of Variables

VARIABLE	DESCRIPTION OF VARIABLES	SOURCES
YOUTH	Youth Unemployment rate (%)	World Bank Database
GDP	The growth rate of GDP (%)	World Bank Database
EDU	Educational attainment (years of schooling)	Our World in Data
INFLA	Inflation rate (%)	World Bank Database, and Reserve Bank of Zimbabwe
TRDOPN	Trade openness [(Exports + Imports)/GDP]	World Bank Database
CORR	Corruption Perception Index. A high corruption perception index (100) implies less corruption.	Transparency International

4.3. Regression Models

The objective of this study is to investigate the long run determinants of youth unemployment and as such it calls for use of long run models. This study explores the long run static model, i.e., OLS, DOLS FMOLS, and dynamic long run panel time series model, i.e., panel cointegration models. The baseline empirical model that will be estimated takes the format of equation of 4.1 below. To ensure the robustness and consistency of the results, equations 4.2 and 4.3 which include GDP and inflation will also be estimated.

$$\text{YOUTH} = \alpha_{\text{it}} + \gamma_{1i} CORR_{\text{it}} + \gamma_{2i} EDU_{\text{it}} + \gamma_{3i} TRDOPN_{\text{it}} + \varepsilon_{it} \quad (4.1)$$

$$\text{YOUTH} = \alpha_{\text{it}} + \gamma_{1i} CORR_{\text{it}} + \gamma_{2i} EDU_{\text{it}} + \gamma_{3i} TRDOPN_{\text{it}} + \gamma_{4i} GDPg_{\text{it}} + \varepsilon_{it} \quad (4.2)$$

$$\text{YOUTH} = \alpha_{\text{it}} + \gamma_{1i} CORR_{\text{it}} + \gamma_{2i} EDU_{\text{it}} + \gamma_{3i} TRDOPN_{\text{it}} + \gamma_{4i} GDPg_{\text{it}} + \gamma_{5i} INFLA_{\text{it}} + \varepsilon_{it} \quad (4.3)$$

4.3.1. Ordinary Least Squares

Using the pooled OLS model, this paper will estimate a grand regression by pooling all observations and neglecting the time series and cross-section nature of the data. This paper assumes that the error term is normally distributed. However, the results of the OLS model should be treated with caution given its limitations. Given that this model does not distinguish between the various countries, the element of the individuality of these countries ceases to exist. Therefore, the error term could be correlated with some of the independent variables in the model thus leading to the possibility of biased and inconsistent estimated coefficients (Gujarati & Porter, 2008).

4.3.2. Dynamic Ordinary Least Squares and Fully Modified Ordinary Least Squares

To account for the limitations of the pooled OLS model, this paper introduces the DOLS and FMOLS. According to Kao and Chiang (2001), the DOLS and FMOLS produces t-statistics that approximates the normal density much better than the t-statistics from the OLS. Furthermore, the DOLS method adds lags and leads to solve the problem of endogeneity that could results as a result the relationship between youth unemployment and corruption, i.e. corruption can be facilitated by youth unemployment. Furthermore, endogeneity bias can also occur as a result of additional factors planted in the residual term that may also affect both the corruption and index and youth unemployment. To select the appropriate lead/lag for each regressor, this paper use the AIC/BIC criteria.

The FMOLS, using the nonparametric approach, also solves the problems of endogeneity and serial correlation that can possibly result from the relationship between youth unemployment and corruption. It can also be used to combat the problems related to multicollinearity. It should however be noted that the DOLS method outperforms the FMOLS as it eliminates finite sample bias according to Kao and Chiang (2001). The DOLS provides far better and more precise estimates in smaller samples. DOLS is also "straightforward to compute and [the] relevant test statistics have standard asymptotic distributions which are reasonably close to approximations to the exact sampling distributions in small samples" (Mark and Sul, 2003: 25).

4.3.3.Panel Autoregressive Distributed Lag bound testing approach

The previously mentioned models, that is, the pooled OLS, DOLS, and FMOLS, are designed for static modelling and therefore, there might be a need to establish if the results can be replicated In a dynamic model setup. To do, this paper introduces the panel ARDL approach devised by Pesaran & Smith (1995). This paper uses the panel-designed version (PMG) of an ARDL model. This approach will allow this paper to estimate long-run estimates between the variables if it exists and determine if causality is present. This method is considered more robust and consistent. Furthermore, when estimating the unrestricted error correction model, key information related to the long run is not lost (Pesaran et al., 2001; Pesaran & Smith, 1995). The panel ARDL also outperforms other dynamic panel such as fixed effects and generalized method of moments which produce incompatible estimates of the parameters if the coefficients are not identical across the panel of countries.

The estimated model for the panel ARDL (p,q,..,) takes the form of equation 4.4 below:

$$YOUTH_{it} = \theta_{1j} + \sum\theta_{11ik} YOUTH_{it-k} + \sum\theta_{12ik}\Delta X_{it-k} + u_{1it} \quad (4.4)$$

The X represents the explanatory variables vector. Equation 4.5 below outlines the reparametrized model.

$$\Delta YOUTH_{it} = \theta_{1j} + \lambda_{1t} ECT_{it-1} + \sum\theta_{11ik}\Delta YOUTH_{it-k} + \sum\theta_{12ik}\Delta X_{it-k} + u_{1it} \quad (4.5)$$

The λ_{1t} represents the coefficient of the error correction mechanism.

Before estimating the panel ARDL model, this paper will conduct the stationarity test as outlined in section 4.5 to determine if the variables if the variables are indeed a mixture of only I(0) and

I(1). Furthermore, to present this model as an error correction mechanism, the presence of cointegration is necessary. This paper will use the Pedroni and Kao tests presented by Pedroni (1999, 2004) and Kao (1999) respectively.

4.4. Limitations of the Youth Unemployment Regression Model

Southern African countries have a large proportion of individuals that are in the informal market or participating in the shadow economy (see Kodila-Tedika and Mutascu, 2013; Keneck-Massil and Noah, 2019; Makananisa, Koloane and Schneider, 2020; Ajide, 2021). Therefore, analysing the impact of corruption on youth unemployment through the size of the shadow economy is important. As argued by Bouzid (2016), given that the most payment transactions take place in the shadow economy through cash, an increase in the shadow economy could be as a result of an increase in corruption. However, although the proxy of the size of the shadow economy: the ratio of monetary base and money supply composed of currency, demand deposits and other liquid deposits (M0/M1) which shows the increase in informal economy activity is readily available from each country's central bank, there are limitations to this measure. According to Medina and Schneider (2018), this measure is likely to underestimate the size of the underground economy because not all transactions in the shadow economy take place using money as a medium of exchange. Medina and Schneider (2018:12) further argue that an "increase in currency demand deposits may occur because of a slowdown in demand deposits rather than an increase in currency used in informal activities, [furthermore] it seems arbitrary to assume equal velocity of money in both types of economies; and the assumption of no shadow economy in a base year is arguable". For the reasons mentioned, this paper did not include the measurement of the shadow economy in the baseline model.

There are also other data limitations. Mozambique and Zimbabwe do not have corruption perception index data collected up until early 2000s and all Southern African countries do not have collected CPI data until 1995. Furthermore, there is limited data for worker's rights; the only available data is up until 2014, making it hard to factor in the impact of the strength of trade unions in youth unemployment.

4.5. Stationarity Tests

To avoid spurious regressions, unit root tests is conducted for panel data. To test for stationarity for the panel data, this paper uses the Levin-Lin Chu test by Levin, Lin and Chu (2002), Fisher-

type tests using ADF and PP by Maddala and Wu (1999); and Choi (2001), Im-Pesaran-Shin test by Im, Pesaran and Shin (1997), and Hadri LM test by Hadri (2000).

Levin-Lin Chu test "assumes that each unit in the panel shares the same autoregressive (1) coefficient but allows for individual effects and time effects" (Bornhorts & Baum, 2001). The null hypothesis is that panels contain unit roots while the alternative hypothesis is that the panels are stationary. The Fisher-Type tests can be conducted without having data that is balanced and for any unit root test derived. The Fisher-Type test performs either Phillips-Perron or ADF unit root test on each panel depending on the specified option. Like the Levin-Lin Chu test, the null hypothesis is that panels contain unit roots while the alternative hypothesis is that the panels are stationary.

The advantage of using the Im-Pesaran-Shin test is that it does not restrict individuals and common time effects along with time trends. Under the null hypothesis, it assumes that all the series are non-stationary. Lastly, this paper uses the Hadri LM test under the null hypothesis of stationarity to test for the presence of stationarity in heterogeneous panel.

4.6. Conclusion

This chapter has outlined the OLS, DOLS, FMOLS, and panel ARDL methods that will used to determine the long-run relationship. To ensure reliability and robustness of the results, this paper does not only use a battery of methods, but it also uses multiple models. The section also outlined the data limitations and the regression model limitations. Furthermore, this chapter has outlined the stationarity tests that will be implemented to ensure that model adequacy.

Chapter 5

5. ESTIMATION OF PANEL REGRESSION RESULTS

5.1. Introduction

The previous chapter outlined the panel regression methodology that will be used to determine the determinants of youth unemployment from a Southern African perspective. The purpose of this chapter is to use the methodology presented in chapter four to determine the relationship between youth unemployment and corruption in Southern Africa.

This chapter outlines the stationarity test results, correlation matrix, and panel regression model results which will include the OLS, DOLS, FMOLS, and panel ARDL bound testing. The summary statistics of all the variables is as shown in table 5.1 below.

Table 5:1: Summary Statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
CORR	300	37.17	12.49	15.00	65.00
EDU	284	5.63	1.99	0.83	10.10
GDPg	300	3.76	5.03	-23.98	21.02
INFLA	298	497173.40	8550037.00	-9.62	1.48×10^{08}
TRDOPN	265	90.70	32.37	30.55	175.80
YOUTH	295	27.91	17.75	5.32	60.83

5.2. Stationarity Tests

This section outlines the first stage of data processing which is to test for stationarity. For all the panel unit root tests, the null hypothesis is that the panel contains a unit root while the alternative is that it is stationary. A p-value of less than 0.05 is necessary to conclude that the variable is stationary. The null hypothesis of the Hadri LM test is the inverse. That is, the null hypothesis is that the panels are stationary. Table 5.2 below outlines the results of the panel unit root test for each variable. All variables are stationary at first difference.

Table 5:2: Unit Root Test Results

Variable	ADF – Fisher Chi Square	PP – Fisher Chi-square	Levin, Lin, and Chu t*	Im-Pesaran-Shin	Hadri LM	Stationarity
CORR	217.76***	241.13***	-14.21***	-8.41***	-1.90	I (1)
EDU	96.24***	134.17***	-7.21***	-7.37***		I (1)
GDPg	275.97***	1393.26***	-17.82***	-8.06***	-2.60	I (1)
INFLA	249.11***	783.22***	-72.22***	-2.15***		I (1)
TRDOPN	198.82***	220.88***	-14.55***	-8.40***		I (1)
YOUTH	115.23***	88.06***		-5.42***		I (1)

Note: *, **, and *** denote 10%, 5%, and 1% significance level, respectively.

5.3. Cointegration Analysis

As outlined in table 5.2 above, the dependent and independent variables are integrated of order 1, meaning that it is appropriate for this paper to proceed and use the panel cointegration tests to determine if there is a presence of a stable, long-run relationship. Table 5.3 below shows the panel cointegration test results from the Pedroni and Kao test. The results show that the null hypothesis of no cointegration is rejected, and it concludes that there is cointegration using the combination of the variables from the model. These results are therefore sufficient and give support to the estimation of the results using cointegrating techniques outlined in chapter 4.

Table 5:3: Cointegration Tests

Pedroni test		Kao test	
Panel v-stat	1.99	ADF	-3.06
	[0.02]		[0.00]
Panel rho-stat	-0.78		
	[0.22]		
Panel PP-stat	-2.35		
	[0.01]		
Panel ADF-stat	-3.63		
	[0.00]		

p-values are in squared parentheses.

5.4. Correlation Matrix – Independent Variables

Table 5.4 below shows the correlation matrix of the independent variables. An absolute correlation coefficient of 0.8 or more shows that there is a possibility of multicollinearity between the

independent variables (Brooks, 2019). The highest absolute correlation coefficient observed in this data is 0.53. which is between the *CORR* and *EDU* variables. Given that this value is less than 0.8, it is considered reasonable as it shows a medium correlation.

Table 5:4: Correlation Matrix – Independent Variables

	CORR	**EDU**	**GDP**	**INFLA**	**TRDOPN**
CORR	1.00				
EDU	0.53	1.00			
GDPg	-0.06	-0.16	1.00		
INFLA	-0.08	0.04	-0.10	1.00	
TRDOPN	0.05	-0.22	0.04	-0.01	1.0000

5.5. Results

This section outlines the panel regression results using the pooled OLS, DOLS, FMOLS and panel ARDL bound testing. It should be noted that a high corruption perception index (100) implies that the country is less corrupt while a low corruption perception index (0) implies that the country in question is highly corrupt. For each method used, the baseline model results (i.e., youth = f (corr, edu, trdopn)) will be reported alongside a model that adds GDPg; and GDPg and INFLA respectively for robustness checks.

Table 5.5 outlines the OLS regression results. From the results, there is a consistent positive and significant relationship between the corruption perception index and youth unemployment variables, meaning that as the country becomes less corrupt, youth unemployment increase holding all else constant. We further find a positive and significant relationship between educational attainment and youth unemployment. On trade openness, although the relationship with youth unemployment is significant, the direction of impact is unclear. Lastly, there is a negative and significant relationship between economic growth and youth unemployment, that is, as economic growth rate increases, youth unemployment decreases.

Table 5:5: Regression results – ordinary least squares (OLS)

	(1)	(2)	(3)
CORR	0.71***	0.61***	0.40***
	(0.02)	(0.03)	(0.10)
EDU	0.56***	0.61***	0.71***
	(0.01)	(0.03)	(0.09)
TRDOPN	-0.07***	0.02***	0.26***
	(0.01)	(0.02)	(0.07)
GDPg		-0.05***	-0.19***
		(0.01)	(0.04)
INFLA			-0.15***
			(0.03)
R-squared	0.96	0.87	0.60
N	250	220	215

Note: *, **, and *** denote 10%, 5%, and 1% significance level, respectively. The standard errors are in parentheses.

The DOLS regression results are outlined in table 5.6 below. The DOLS are similar to the OLS results reported in table 5.5 above. All else constant, there is a positive and relationship between the corruption perception index and youth unemployment. There is also a positive and significant relationship between educational attainment and youth unemployment. Lastly, there is a negative and significant relationship between economic growth and youth unemployment while the relationship between trade openness and youth unemployment is unclear.

Table 5.7 outlines the FMOLS results which are also in sync with the OLS and DOLS results reported above, albeit the magnitude of the impact differs as more variables are added to the baseline model as we have seen with the results outlined previously. For all the reported results so far, the impact of corruption perception index on youth unemployment, holding all else constant is between 0.28 and 0.84, while the impact of educational attainment on youth employment is between 0.09 and 0.71.

Table 5:6: Regression results – dynamic ordinary least squares (DOLS)

	(1)	(2)	(3)
CORR	0.84***	0.66***	0.40***
	(0.13)	(0.13)	(0.16)
EDU	0.60***	0.67***	0.71***
	(0.16)	(0.15)	(0.15)
TRDOPN	-0.20***	-0.05	0.26**
	(0.08)	(0.08)	(0.12)
GDPg		-0.09**	-0.19***
		(0.04)	(0.06)
INFLA			-0.15***
			(0.06)
R-squared	0.96	0.52	0.60
N	250	220	215

Note: *, **, and *** denote 10%, 5%, and 1% significance level, respectively. The standard errors are in parentheses.

Table 5:7: Regression results – fully modified ordinary least squares (FMOLS)

	(1)	(2)	(3)
CORR	0.28***	0.52***	0.47***
	(0.07)	(0.00)	(0.16)
EDU	0.09***	0.64***	0.62***
	(0.03)	(0.00)	(0.16)
TRDOPN	-0.09*	0.14***	0.30**
	(0.05)	(0.00)	(0.12)
GDPg		-0.18***	-0.29***
		(0.00)	(0.06)
INFLA			-0.17***
			(0.06)
R-squared	0.96	0.55	0.59
N	250	200	192

Note: *, **, and *** denote 10%, 5%, and 1% significance level, respectively. The standard errors are in parentheses.

5.6. Discussion

From the results presented in table 5.5 – 5.7 using different methods, we find a consistent story, albeit the magnitude of the impact differs as more variables are added to the baseline model. As previously stated in the results section, there is a positive and significant relationship between the corruption perception index and youth unemployment variables. That is, as the country becomes less corrupt, youth unemployment increases. Although these results negate prior expectations, they confirm the theory presented by Huntington (1968) which states that there is a negative relationship between corruption and youth unemployment through the economic growth channel. This can be through investment, a crucial component of GDP confirmed by Friedrich (1972); and Lui (1985). These authors argue that corruption enhances the efficiency of the economy because the private sector is able to exploit the flaws of the government institutions and policies. Corruption in countries with poor institutions is thought to have a 'greasing effect' on economic activity and any efforts to rid corruption will have negative effects on economic activity especially in the short run period. Furthermore, corruption gives way to saving time in lengthy and complex processes and rules by encouraging illegal trade. It can be argued that countries that are corrupt tend to have laws and regulations in place that make it difficult to establish business unless you bypass the laws by paying a bribe to an official. It is through this channel that corruption can be expansionary because instead of going through the rigid process of establishing a business, a company or individual can simply pay a bribe and establish their business quicker, thereby creating jobs which boost GDP and decrease youth unemployment through the Okun's law. It should however be noted that the results found in this paper contradict the prior expectation and results obtained by authors such as such as Bouzid (2016); Adjor and Kebalo (2018); and Almula-Dhanoon and Ali (2021) which support the theory that an increase in corruption lead to an increase in youth unemployment through the economic growth channel.

As argued hitherto, even though these results contradict stylised facts and prior expectations that corruption inflicts damage to economic efficiency and therefore youth unemployment, there is support for this finding as it is argued that there are positive effects of corruption, especially for countries with compromised legal institutions (Houston, 2007). For example, according to Sun, Jayaram and Kassiri (2017), roughly 60% to 87% of Chinese companies that have businesses relations with Africa have reported that they had to pay a bribe in order to obtain a license that will allow them to do business with Africa. This is just one of the examples that prove that corruption

can stimulate economic growth because without the bribe, the business transactions or investment might have not taken place. To bring it closer to this study, we focus on Angola, one of the most corrupt countries with the second highest youth unemployment in Southern Africa. Houston (2007) argues that in Angola, Exxon was forced by the government to provide infrastructure related basic services before any business transaction can take place between the two parties. Although this is not illegal, it fits into the broad definition of corruption and had a positive effect on Angola's economy. This is another example that illustrates how corruption can be expansionary.

The negative relationship between youth unemployment and corruption can also be further explained using the informal economy argument presented by Osterfeld (1992). Following from the argument presented previously that states that an increase in corruption leads to a decrease in youth unemployment through the economic growth channel, this paper further argues that as the rule of law weakens, the size of the informal economy expands and because of corruption, the shadow economy absorbs more of the youth employment. To bring this argument to life, this paper uses South Africa as an example. South Africa was the chosen country to be used as an example due to credible data availability compared to the other countries. Using the dynamic general equilibrium model-based (DGE) estimate of informal output as a percentage of official GDP by Elgin *et al.* (2021), it shows that as the corruption perception index decreased (*more corrupt*) over time, informal output as a percentage of GDP decreased as presented by figure 5.1. According to figure 5.2, M0 money supply as a measure of the shadow economy has increased over time, this means that the decline in the informal output ratio can be explained by GDP increasing at a faster rate compared to the informal output over time as corruption increases in South Africa. This further confirms the results presented above - that an increase in corruption leads to a decrease in youth unemployment as the shadow economy expands and absorbs young people. This argument is also backed by Houston (2007) who argues that nations with weak governance tend to show larger positive effects from corruption and this is because illegal and unethical activities are a good substitute for a compromised law. Houston (2007) further argues that in nations where corruption plays an expansionary role, the fight against corruption can be costly. Relating this argument back to the results from this paper, it means that the fight against corruption can be detrimental as it will shrink the informal economy that contributes significantly to youth employment.

Figure 5:1: Informal output ratio and corruption perception index

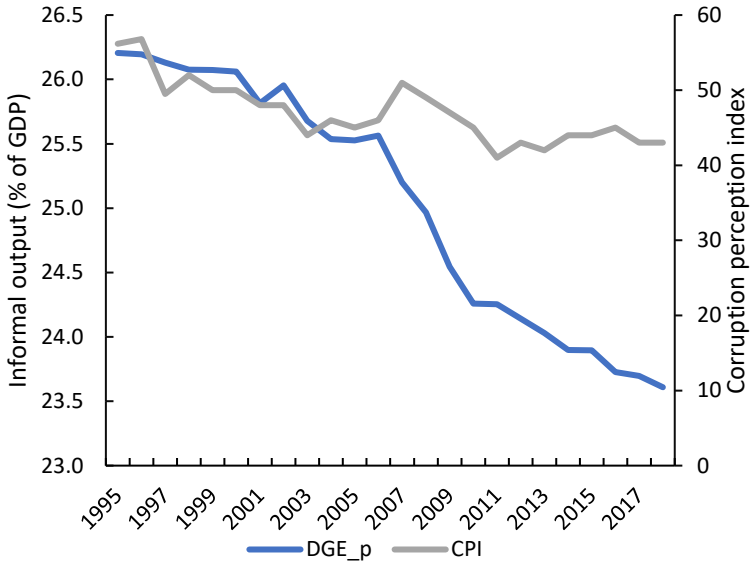
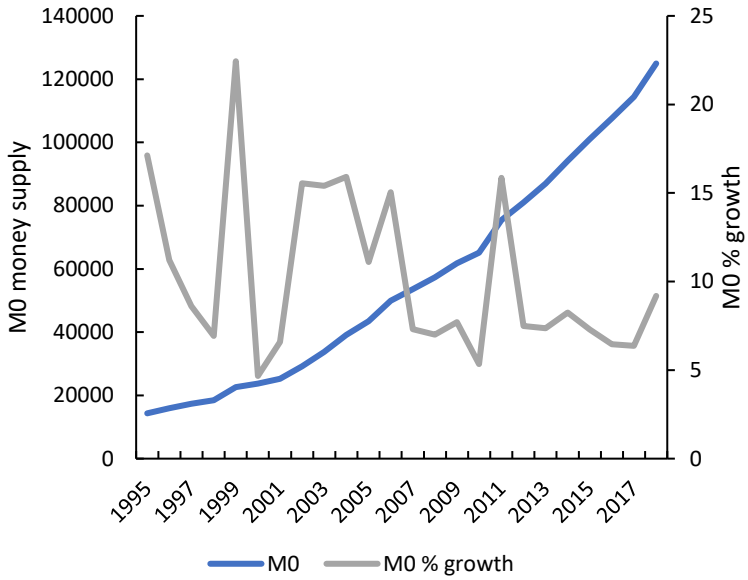


Figure 5:2: M0 money supply



Source: Elgin et al. (2021), SARB (2022), and Transparency International (2021)

The results from Table 5.5 – 5.7 also show that there is a positive relationship between education attainment and youth unemployment. That is, all else constant, an increase in educational attainment leads to an increase in youth unemployment. This contradicts the second stylized fact presented in chapter and the results presented by Farber (2004); Mincer (1991); and Nickell (1979) who argue that higher educational attainment equips one with skills and knowledge that makes them more employable when compared to other young people who are less skilled. This can be due a number of reasons of which some were outlined previously including lack of the relevant and necessary skills and experience demanded by the labour market which creates a vicious cycle of youth unemployment because one cannot get a job without experience and they also can't get experience without a job (Qayyum & Siddiqui, 2007). Another reason could be regional discrimination in provision of job opportunities whereby people who are in locations that are considered business hubs are more likely to be employed compared to individuals that are residing in remote or rural areas. Looking at South Africa for example, wealthy provinces such as Gauteng and Western Cape where most of the work opportunities are at have the lowest unemployment rate compared to the poor provinces such as Eastern Cape and Limpopo as shown in figure 5.3 below.

Figure 5:3: SA provincial unemployment rate: 2022Q2



Source: Stats SA (2022)

The positive relationship between education and youth unemployment also underlines the extent to which corruption can have an impact on the kind of graduates that higher education institutions produce. This includes graduates that graduate with skills that are not in demand or degrees and/or lack the relevant and necessary training, and experience. Young people end up on a vicious cycle of unemployment as the battle between experience and getting a job goes on. Southern African countries, due to a lack of proper governance and institutions, programs related to training and education are usually poorly implemented. Given the high distortions of public spending towards "pork barrel" projects as corrupt official focus on projects that are profitable for them; not in any way beneficial for the young electorate, it then leaves the education system in a position that spends a lot of money on producing large numbers of graduates with little transferrable skills that equip young people to be employable or entrepreneurial. Furthermore, as explained in chapter one, corrupt officials may award more public spending towards projects such as large infrastructure projects whereby it is difficult to monitor the exact value, for example increasing the number of universities or graduates.

Despite a lack of consistency in the trade openness variable, the results from table 5.5 – 5.7 also show that trade openness has a positive impact on youth unemployment. That is, as Southern

African countries trade more with the outside world, youth unemployment increases. This contradicts the trade theory presented by Heckscher-Ohlin on comparative advantage which states that trade openness should lead to a decrease in youth unemployment through technology and skills transfer amongst other factors (Liu et al., 2022). Despite this, authors such as Janiak (2006); Helpman and Itskhoki (2010); and Kim (2011) concluded that eased trade barriers can increase unemployment if the country has a relatively more flexible labour market as "workers are relocated towards the expanding sector where labour market frictions are assumed to be higher". It should however be noted that this relationship is only present in case one and two while in case three it is insignificant.

Another interesting result from the tables is the negative and significant relationship between GDP and youth unemployment found in the OLS, DOLS, and FMOLS regression. This is in line with prior studies conducted by authors such as Bayar (2014); Cetin *et al.* (2015); and Bayrak and Tatli (2018). The argument here can be traced back to Okun's law which states that the growth of the economy and employment are positively related. Therefore, poor economic growth means less investments, government spending, and consumption. All these factors point to a slowing economy that cannot create jobs.

5.7. Conclusion

This chapter has outlined the regression results of the determinants of youth unemployment in Southern African from 1990 to 2019 using pooled OLS, DOLS, FMOLS and panel ARDL estimation methods. The results reveal a consistent story. That is, as a country becomes more corrupt, young unemployment decreases. Furthermore, an increase in educational attainment leads to an increase in youth unemployment. These results confirm that corruption can thrive and lead to efficiency in countries that have weak institutions. Furthermore, the results reveal that a misguided or unplanned spending in education can lead to high educational institutions producing graduates that do not have the necessary and relevant skills.

Chapter 6

6. CONCLUSION AND POLICY RECOMMENDATIONS

6.1. Introduction

This chapter presents a summary and conclusion that results from the analysis of this study. The limitations of the study and policy recommendations are also provided. This chapter concludes by offering some areas that require further research.

6.2. Summary and Conclusion

This study focused on investigating the long-run determinants of youth unemployment in the context of Southern Africa using panel data from 1990 to 2019. The study aimed to provide insights on the impact of the determinants of youth unemployment with a specific focus on corruption.

Using a number of dynamic panel models which include OLS, DOLS, FMOLS and panel ARDL bound testing, this paper concludes that a reduction in corruption in Southern African countries results in an increase in youth unemployment. This paper concluded that this indirect relationship was through the economic growth channel. This paper argues that countries that are corrupt tend to have laws and regulations in place that make it difficult to establish business unless you bypass the laws by paying a bribe to an official. It is through this channel that corruption can be expansionary because instead of going through the rigid process of establishing a business, a company or individual can simply pay a bribe and establish their business quicker, thereby creating jobs which boost GDP and decrease youth unemployment through the Okun's law.

This paper further argued that corruption can promote efficiency through saving time in lengthy and complex processes and rules by encouraging activities that take place in the shadow economy. The expansion of the underground economy when corruption increases also aids in absorbing young people in the informal sector. Furthermore, this paper argues that there are positive effects of corruption, especially for countries with compromised legal institutions.

6.3. Limitations

The lack of data posed a limitation of the period analysed, 1990 to 2019. The availability of data for countries such as Mozambique and Zimbabwe could have enriched the regression results. Furthermore, the proxy of the size of the shadow economy is unavailable for other countries and that then impacts the quality of the results given that it is a key determinant of youth unemployment

in Southern Africa. Lastly, the corruption perception index, one of the main variables in the model was not recorded until 1995. This then leads to further limitations in the model and reduces the robustness of the results.

6.4. Policy Recommendations

Despite the limitations of the results, the findings of this study have a critical implication on policy making for Southern African countries. The long-run results show that a decrease in corruption increases youth unemployment. Given the above results, this study recommends that policy makers make the following changes to decrease youth unemployment in Southern Africa.

Given that this paper concludes that corruption leads to a decrease in youth unemployment all else constant, and given that corruption is so embedded in the Southern African countries, it is important that when attempting to combat it, measures are in place to ensure that young people in the informal economy or participating and benefiting from the loopholes in the legal and bureaucratic institutions are absorbed so that youth unemployment does not increase or exacerbated.

Firstly, this paper recommends that policymakers create an environment that attracts both small and medium sized businesses. That means that there needs to be clear laws in place that allows entrepreneurs to start their business without an added tax that is induced by corruption. Therefore, Southern African governments need to strengthen their institutions in combating corruption and they must also implement heavy punishments for those found guilty of corruption to make the act of engaging in corruption unattractive.

Secondly, this paper recommends that more attention be given to the way the school curriculum is designed and the kind of graduates that are being produced by universities and colleges. This is because the results show that an increase in education increases youth unemployment. Therefore, it is important that policymakers promote areas of study that are mostly in demand in Southern African and where most investments are being directed.

6.5. Areas of Further Study

This study analysed the impact of corruption on youth unemployment in Southern African. This was a macro view on Southern African countries as a collective. It would be interesting to gain a deeper understand of the impact of corruption on each country and analysing the time series model for each specific country.

The period considered in this study is from 1990 to 2019. It would be interesting to further study a longer period of the determinants of youth unemployment in Southern African. Furthermore, given the impact of the COVID-19 pandemic, it would be worthwhile to understand which factors had the most impact on youth unemployment in 2020 and 2021 and whether corruption had an impact of on youth unemployment during the pandemic. Other supply shocks such as the oil crisis of early 2000s could also be quite interesting to take a closer look on and gain an understanding of how they affected youth unemployment.

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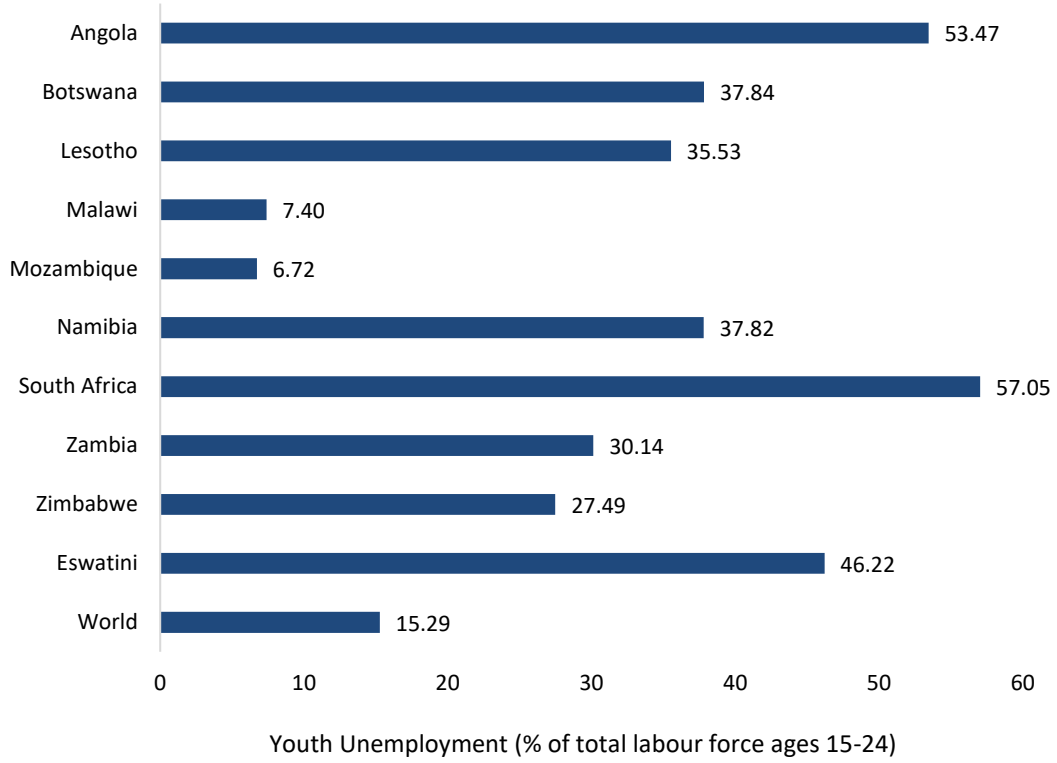
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APPENDIX

Figure A1.1: Southern Africa – Youth Unemployment (% of total labour force ages 15-24)



Source: World Bank (2021a)