BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

THE IMPACT OF UNEMPLOYMENT ON SUICIDE RATE IN SADC, DOES LITERACY MATTER

SUBMITTED BY

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REGISTRATION NO: B223983B

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT

OF

THE REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE IN HEALTH ECONOMICS OF BINDURA UNIVERSITY OF SCIENCE EDUCATION. FACULTY OF COMMERCE

NOVEMBER 2023

RELEASE FORM

NAME OF STUDENT: Julia Ndangariro Mutandwa

DISSERTATION TITLE: The Impact of Unemployment On Suicide Rate in SADC, Does Literacy Matter

DEGREE TITLE: Masters in Economics, Health Economics Degree

YEAR OF COMPLETION: 2023

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DECLARATION FORM

I, Julia Ndangariro Mutandwa declare that this is my work and has not been copied or lifted from any source without acknowledging the source.

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DEDICATION

To my Father who dwells upmost high and my mother, Hati, thank you.

ABSTRACT

Countries in the Southern African Development Community (SADC) have struggle with suicide mortality contrary to their collective goal of promoting regional integration, cooperation, and socio-economic development among its member countries. Attempt to alleviate suicide mortality have been conducted through improvement of socioeconomic factors in the countries. The suicide mortality rate in the SADC region is high compared to the global average. In 2019, the suicide mortality rate in SADC was 10.9 per 100,000 people, while the global average was 9.2 per 100,000 people. This means that the risk of suicide is 1.8 times higher in the SADC region than in the world as a whole. The association between unemployment and suicide mortality rate in SADC is poorly explored and explained. This research explored the association between unemployment and suicide mortality in SADC. The SADC's suicide mortality rates, Gross Domestic Product (GDP) per capita, inflation, poverty, drunkenness, population, employment and literacy from 2005 to 2019 was extracted from the World Bank Group online indicator database. Fixed Effect Regression was used to explore the associations between these variables. Changes in unemployment and literacy rate resulted in statistically significant changes in suicide mortality rate. This study recommended the prioritisation and investment in literacy and education programs. Governments and policymakers should focus on improving access to quality education, promoting literacy initiatives, and providing opportunities for skill development. It was also recommended to allocate resources to improve mental health infrastructure, including accessible and affordable counselling services, helplines, and community-based mental health programs. Governments were also encouraged to stimulate economic growth and create job opportunities.

Key words: SADC, Suicide, unemployment, literacy

ACKNOWLEDGEMENTS

This research would not have been possible without the help of the Almighty - from whom all blessings flow.

The researcher would like to express her deepest appreciation to her supervisor, Dr T Kairiza for his guidance, advice and patience.

She would also like to extend her sincere thanks to her mom, Hati, Mr Danda, Dr Mubonani, Mr Mawere, Ms Gumira and Miss Chezani for their love and support.

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LIST OF ACRONYMS AND ABBREVIATIONS

WHO	World Health Organisation
UNICEF	United Nations Children's Fund
UHC	Universal Health Coverage
GDP	Gross Domestic Product
EHE	External Health Expenditure
DHE	Domestic Health Expenditure
IMR	Infant Mortality Rate
SDG	Sustainable Development Goals
95% CI	95% Confidence Interval

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CHAPTER I
INTRODUCTION

1.0 Introduction

This chapter focuses on providing an overview of the introduction and background information on unemployment and suicide mortality. It also discusses the problem statement, research purpose, research question, hypothesis statement, and the significance of the study within the SADC region and internationally. The chapter also identified the study's assumptions, delimitations, and limitations.

1.1 Background

Suicide mortality can be considered as an indicator of well-being within an economy, although it is a sensitive and complex issue (Platt and Hawton, 2000). While it is not a direct measure of economic well-being, it can provide insights into the overall mental health and social factors within a society (Jones, Forster and Hassanyeh, 2012). High suicide rates may indicate underlying issues such as social isolation, economic inequality, unemployment, mental health challenges, or inadequate access to mental health services. These factors can be influenced by economic conditions, including income disparities, job opportunities, and social support systems.

Suicide is a multifaceted issue influenced by numerous factors, and it should not be solely relied upon as a standalone indicator of well-being in an economy (Lewis and Sloggett 2008). Other indicators, such as GDP per capita, life expectancy, education levels, and social support networks, should also be considered to provide a more comprehensive understanding of well-being within a society. Additionally, cultural and societal factors can significantly influence the way suicide is perceived and reported, making international comparisons challenging (Kposowa, 2001).

Suicide mortality rates vary across countries and regions worldwide. According to the World Health Organization (WHO, 2019), approximately 800,000 people die by suicide every year, making it a significant global public health concern. Suicide rates can be influenced by various factors such as socio-economic conditions, cultural norms, access to mental health services, and prevalent mental health disorders. According to Bartley and Owen (2014) unemployment is a significant factor

contributing to suicide mortality rates. Individuals who experience unemployment may face various challenges, including financial stress, loss of social support, feelings of hopelessness, and a decline in overall well-being. These factors can increase the risk of mental health issues, such as depression and anxiety, which are associated with an increased risk of suicide.

1.2.1 Global Unemployment

Unemployment is a significant economic and social issue affecting individuals, families, and communities worldwide. According to Mpofu (2020) unemployment trends differ across regions and countries and the analysis of global unemployment in the context of suicide mortality is critical due to the strong relationship observed between these two factors. Numerous studies have highlighted the significant impact of unemployment on mental health and the subsequent increase in suicide rates. For instance, Hawton et al. (2013) found that unemployment was a major risk factor for suicide, particularly among working-age individuals. Analysing global unemployment patterns is crucial to understanding the social and economic factors that contribute to suicide mortality rates worldwide, enabling policymakers and researchers to develop effective prevention strategies.

According to the International Labour Organization (ILO), the global unemployment rate stood at 5.6% in 2019, equivalent to approximately 190 million unemployed individuals. This rate is projected to remain relatively stable in the coming years, with modest fluctuations. Years back, the world was affected by the global economic recession, particularly the 2008 financial crisis whereby unemployment took its toll and had a significant impact in many countries (Morsy, 2012). The crisis led to widespread job losses and increased unemployment rates as businesses struggled, and economic growth slowed down. While some regions have recovered since then, others continue to experience challenges in reducing unemployment rates. In addition, the rate of unemployment in developed countries rates have generally been lower than in developing countries. According to Smith (2021), the global economic slowdown caused by the COVID-19 pandemic has led to increased unemployment rates even in developed economies. For example, the United States experienced a significant rise in unemployment during the pandemic, with the unemployment rate peaking at 14.7% in April 2020. Similarly, the rapid advancement of technology and

automation has had both positive and negative effects on employment. While it has created new job opportunities in certain sectors, it has also led to job displacement and structural unemployment in others. Automation and artificial intelligence have replaced certain routine and manual jobs, impacting industries such as manufacturing, retail, and transportation.

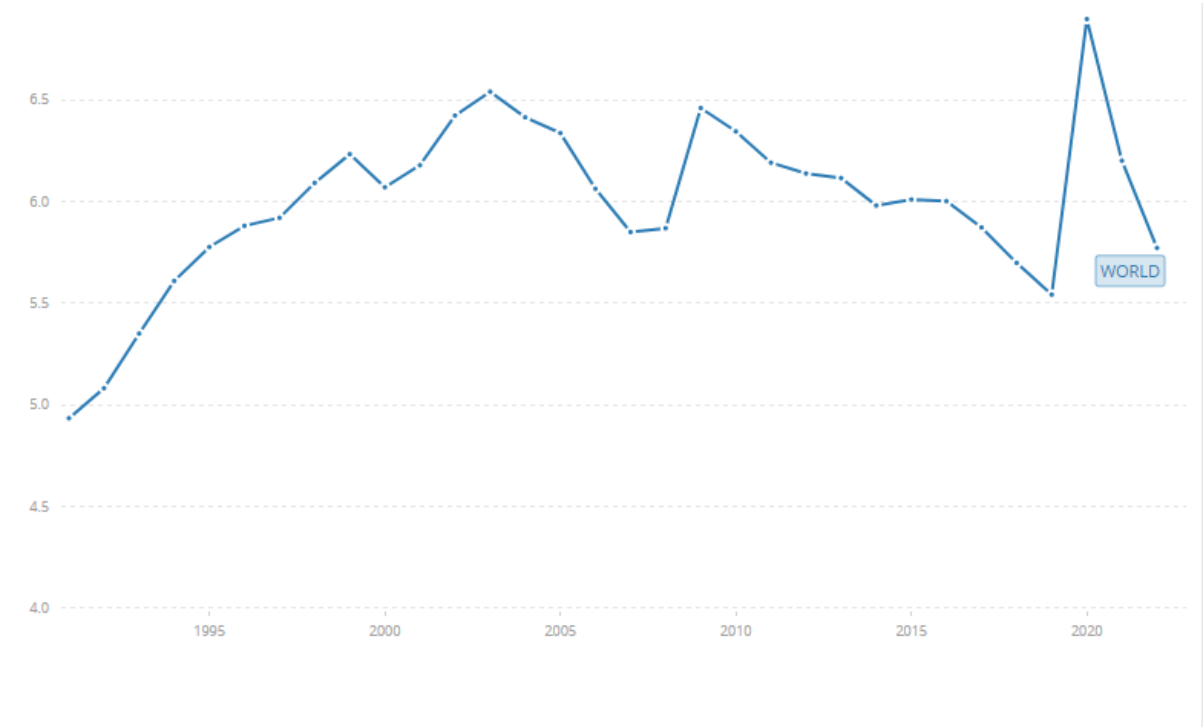

Figure 1.1 World Unemployment

As shown on Figure 1.1 unemployment rates have displayed fluctuations, often characterized by steep increases during periods of economic recession. Economic recessions typically involve a significant decline in economic activity, which leads to reduced business activity, layoffs, and a contraction in job opportunities. As a result, many individuals become unemployed, contributing to a rise in the unemployment rate.

1.2.2 Unemployment in Africa

The African continent faces unique challenges and opportunities when it comes to addressing unemployment and its far-reaching consequences. According to ILO (2019), Africa has the highest regional unemployment rate globally. As of 2019, the unemployment rate in Africa stood at around 7.4%, with significant variations between countries. Mlatsheni and Sandrine (2019) postulated that factors such as

rapid population growth, limited job creation, and insufficient investment in sectors with high employment potential contribute to the high unemployment rates observed in many African nations. One of the key challenges in addressing unemployment in Africa is the youth unemployment crisis. The youth population in Africa is growing rapidly, and the lack of job opportunities presents a significant hurdle for sustainable economic development. African Development Bank (2019) estimates that approximately 60% of unemployed individuals in Africa are under the age of 25. Limited access to quality education and skills training, coupled with a mismatch between the skills graduates possess and industry needs, exacerbate the youth unemployment issue. Additionally, the informal economy plays a substantial role in Africa's employment landscape. A significant portion of the workforce operates in the informal sector, which often lacks job security, social protection, and access to formal financial services. While the informal economy provides a means of survival for many, it also perpetuates vulnerable employment conditions and hinders the potential for inclusive growth.

According to Mlatsheni and Leibbrandt (2011) unemployment remains a significant challenge in Africa, particularly among the youth population. Analysing unemployment trends in Africa is crucial for understanding the underlying causes and developing targeted interventions. By harnessing the continent's potential through entrepreneurship, skills development, and regional integration. For example, In Nigeria, as the most populous country in Africa, there are significant unemployment challenges. The country's rapidly growing population, coupled with limited job opportunities, contributes to high unemployment rates. Structural issues, such as inadequate infrastructure and a heavy reliance on the oil sector, pose challenges for diversifying the economy and creating sustainable employment opportunities. The Nigerian government has initiated various programs to address unemployment, including the National Social Investment Program and the Youth Entrepreneurship Support program. These initiatives focus on skills development, job creation in sectors such as agriculture and manufacturing, promoting entrepreneurship, and providing financial support to start-ups and SMEs. Additionally, efforts are being made to improve the business environment, attract foreign investment, and enhance vocational training programs.

1.2.3 Unemployment in SADC

According to Mroz and Savage (2019), the SADC region faces unique challenges and opportunities related to unemployment and its socio-economic consequences. Understanding unemployment patterns in the SADC region is crucial for policymakers and researchers to develop effective strategies and interventions. The SADC region consists of 14 countries in Southern Africa, including Botswana, Mozambique, South Africa, Zambia, and Zimbabwe, among others. Each country within the region faces specific circumstances that contribute to their unemployment rates. (Khumalo (2016) posited that the youth population in the region is growing rapidly, and the lack of job opportunities hinders sustainable economic development. According to the African Development Bank, the youth unemployment rates in some SADC countries exceed 30%. Limited access to quality education, skills mismatches, and inadequate opportunities for entrepreneurship and self-employment contribute to this crisis. Moreover, the SADC region faces structural challenges due to its economic composition. Many countries heavily rely on sectors such as mining, agriculture, and tourism, which can be vulnerable to external shocks and fluctuations in commodity prices. To address unemployment, economic diversification is crucial. Promoting industries with high employment potential, such as manufacturing, services, and technology, can create more job opportunities and contribute to reducing unemployment rates. The other common challenge in the SADC region is the prevalence of informal employment(ILO). A significant portion of the workforce operates in the informal sector, where jobs often lack formal contracts, social protection, and labour rights. While the informal economy provides income for many individuals, it perpetuates vulnerable employment conditions and hampers inclusive growth. Formalizing the informal sector and providing support to micro, small, and medium-sized enterprises (MSMEs) can contribute to job creation and improve working conditions.

According to Mzai (2016) even some of the renowned economies in the SADC are struggling with unemployment. South Africa grapples with one of the highest unemployment rates in the region. The country faces structural challenges, including a mismatch between the skills of job seekers and the demands of the labour market. High levels of inequality and limited access to quality education exacerbate the unemployment problem. The South African government has implemented various

initiatives to address unemployment, including the National Development Plan and the Youth Employment Service. These programs aim to stimulate economic growth, promote entrepreneurship, and encourage public-private partnerships to create job opportunities. Additionally, efforts are being made to enhance vocational training programs and provide support to small and medium-sized enterprises (SMEs) to boost employment prospects. Likewise, countries whose socio-economic standing are not pleasing have also faced the scourge of unemployment. In Zimbabwe, significant economic challenges have contributed to high unemployment rates. Hyperinflation, political instability, and limited foreign investment have hampered job creation. The informal sector plays a crucial role in providing employment opportunities, but these jobs often lack formal contracts and social protection. The government has recognized the need to address unemployment and has implemented measures to stimulate economic growth. These include promoting investment, supporting SMEs, and encouraging agricultural development. Efforts to improve the business environment and attract foreign direct investment are also being pursued to create more job opportunities.

1.2.4 Suicide Mortality the world over

Suicide mortality is a pressing global issue that demands urgent attention. It is a complex problem influenced by various factors, including mental health, social dynamics, and access to adequate support systems (Jefferson and Greist, 2004). Understanding the underlying causes and patterns of suicide mortality can help inform effective prevention strategies and support initiatives. According to the World Health Organization (WHO), suicide is one of the leading causes of death worldwide, with over 700,000 lives lost each year (WHO, 2021). Suicide rates can vary significantly across countries and regions, highlighting the need for a comprehensive approach to address this public health crisis. Mental health plays a crucial role in suicide mortality, with a significant proportion of suicide cases linked to mental health conditions such as depression, anxiety disorders, and substance abuse (Andreasen and Black, 2015). However, it's important to note that not all individuals who die by suicide have a diagnosed mental health condition. Other factors, such as social isolation, relationship problems, financial difficulties, and exposure to violence or trauma, can also contribute to suicidal behaviour (WHO, 2021).

Socioeconomic factors and access to mental healthcare resources are key determinants of suicide mortality. Research has shown that countries with higher income inequality tend to have higher suicide rates (Pridemore, 2019). Limited access to mental healthcare services, including counselling, therapy, and crisis helplines, can exacerbate feelings of hopelessness and despair among individuals at risk. Cultural and societal influences also shape suicide rates. Stigmatization surrounding mental health issues and suicide can prevent individuals from seeking help or discussing their struggles openly. In some societies, cultural norms and beliefs may discourage open dialogue about mental health, making it difficult for individuals to reach out for support (Pirkis et al., 2020).

Prevention efforts focus on multiple levels to effectively address suicide mortality. At the individual level, early identification and intervention for mental health issues are crucial (Liu, 2019). This includes promoting mental health literacy, reducing stigma, and ensuring that mental healthcare services are accessible and affordable. Community-based initiatives play a vital role in suicide prevention. Building supportive environments that foster social connections, resilience, and emotional well-being can contribute to reducing suicide rates. This can involve promoting mental health awareness campaigns, providing training for gatekeepers (such as teachers, healthcare providers, and community leaders) to recognize warning signs, and establishing community support networks.

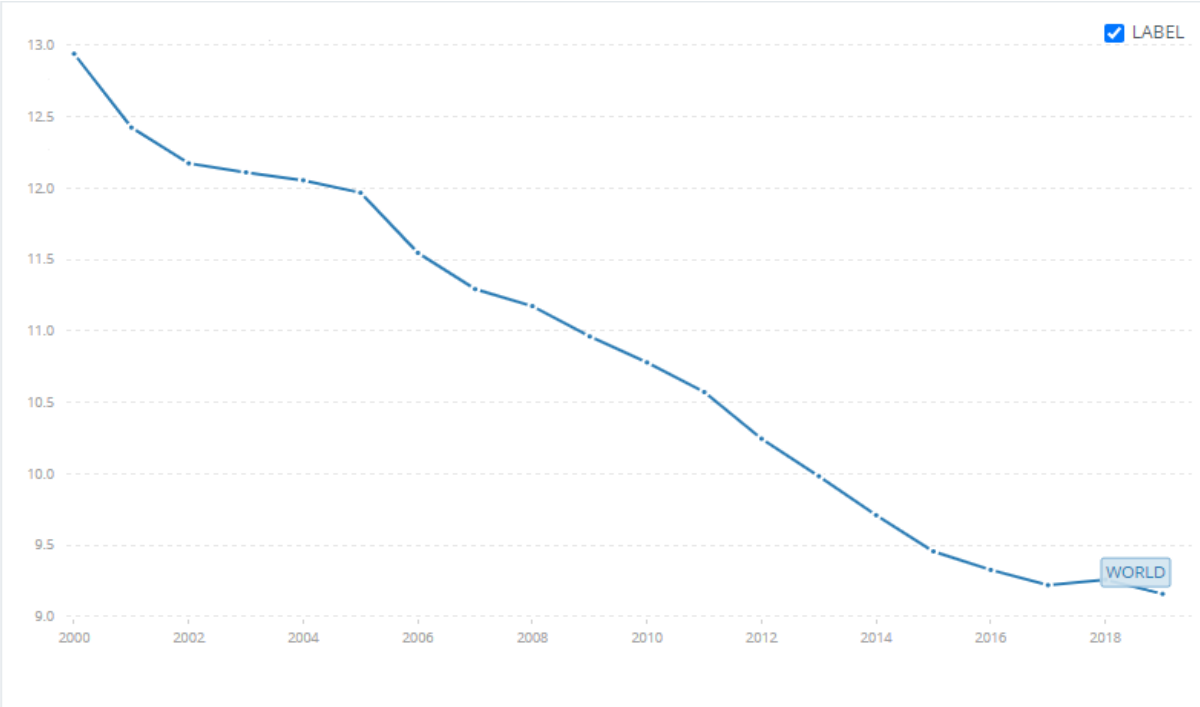

Figure 1.2 World Suicide Mortality

As shown in Fig 1.2 above there is a downward trend in the world suicide mortality statistics. This could be because increased awareness and understanding of mental health issues, including suicide prevention, have led to improved efforts in identifying and addressing risk factors. Mental health campaigns, education, and advocacy have helped reduce stigma and encourage individuals to seek help. Furthermore, advancements in mental healthcare and access to treatment have played a role in preventing suicides.

1.2.5 Suicide Mortality in Africa

Suicide mortality is a critical public health issue that affects populations worldwide, including the African continent. While limited data and research exist specifically on suicide rates in Africa, it is crucial to explore the unique factors that contribute to suicide mortality in this region (Guze and Robins, 2015). By understanding these challenges, policymakers and healthcare professionals can develop targeted prevention strategies and support systems to address this pressing concern. According to Morrison (2022), mental health is a significant contributing factor to suicide mortality globally, and Africa is no exception. Depression, anxiety disorders, and substance abuse are prevalent mental health conditions associated with suicidal behaviour. However, it is important to recognize that socio-cultural factors and

contextual challenges impact mental health outcomes in Africa. Poverty, political instability, armed conflicts, and limited access to healthcare services can exacerbate the burden of mental health disorders and increase the risk of suicide.

According to Amaddeo, Bisoffi and Bonizzato (2015) the stigma surrounding mental health issues presents a significant barrier to suicide prevention in Africa. Cultural beliefs, religious misconceptions, and traditional norms often discourage open discussions about mental health problems. This stigma can prevent individuals from seeking help, leading to undiagnosed and untreated mental health conditions. Addressing this stigma requires comprehensive public education campaigns that promote mental health literacy, challenge stereotypes, and foster a supportive environment for those struggling with mental health issues. Similarly, Social and economic factors also contribute to suicide mortality in Africa. High levels of poverty, unemployment, and income inequality create a sense of hopelessness and despair, particularly among vulnerable populations. Additionally, social isolation, family discord, and migration-related stressors can further increase the risk of suicidal ideation and behaviour. Strengthening social support networks, promoting economic opportunities, and addressing structural inequalities are crucial steps in reducing suicide rates (Richard, 2016).

1.2.6 Suicide Mortality in the SADC Region

Suicide mortality is a grave public health concern that affects populations within the Southern African Development Community (SADC). According to (WHO, 2019), mental health plays a significant role in suicide mortality, and the SADC region is not exempt from this association. Conditions such as depression, anxiety disorders, and substance abuse are prevalent mental health disorders linked to suicidal behaviour. However, it is essential to recognize that socio-cultural factors and contextual challenges influence mental health outcomes in the SADC region. Economic disparities, political instability, armed conflicts, and limited access to quality healthcare services can exacerbate the burden of mental health disorders and increase the risk of suicide.

Like in other areas around the world, stigma surrounding mental health issues is a significant barrier to suicide prevention in the SADC region. Cultural beliefs, religious misconceptions, and traditional norms often discourage open discussions about

mental health problems (Platt, 2019). This stigma prevents individuals from seeking help, resulting in undiagnosed and untreated mental health conditions. Addressing this stigma requires comprehensive public education campaigns that promote mental health literacy, challenge stereotypes, and foster a supportive environment for individuals struggling with mental health issues. Culturally appropriate interventions that involve traditional healers and community leaders can help reduce stigma and facilitate access to support services.

According to Martin, Cloninger and Guze (2014) there are social and economic factors that contribute to suicide mortality in the SADC region. High levels of poverty, unemployment, and income inequality create feelings of hopelessness and despair, particularly among vulnerable populations. Ndlovu (2015) confirms that social isolation, family discord, and migration-related stressors further increase the risk of suicidal ideation and behaviour. Lastly, according to Lucas (2016) access to mental healthcare services is a significant challenge across the) SADC region. Limited availability of mental health professionals, inadequate infrastructure, and insufficient funding hinder the provision of essential mental health services. To improve access to care, it is essential to integrate mental health into primary healthcare systems, train healthcare providers to recognize and address mental health issues, and leverage technology such as telemedicine and mobile health initiatives. These strategies can help bridge the gap in mental healthcare provision and improve access to services, particularly in remote and underserved areas.

1.3 Problem Statement

The Southern African Development Community (SADC) region is facing a significant problem with high suicide mortality rates, posing numerous challenges to individuals, communities and healthcare systems. The escalating rates of suicide within the SADC region have highlighted the urgent need to address this critical public health issue. The relationship between suicide mortality in the SADC and the unemployment rate remains unexplored by researchers. Understanding the scope of the problem and the challenges it presents is crucial for developing effective strategies and interventions to mitigate the impact of suicide mortality in the region. As such, this research sought to establish the relationship between unemployment and suicide

mortality in the SADC.

1.4 Purpose of Study

To explore the association between unemployment and suicide mortality rate in the SADC region.

1.5 Research Question

- What is the Impact of unemployment on Suicide Rate?
- Does Literacy Moderate the Impact of Unemployment on Suicide?
- Which intervention strategies can be implemented to reduce male suicide mortality through mitigating effects of inflation, unemployment, population, illiteracy and poverty in SADC?

1.6 Statement of Hypothesis

H0: There is no association between unemployment and suicide mortality in SADC.

H1: There is an association between unemployment and suicide mortality in SADC.

1.7 Significance of the Study

A comprehensive understanding of the link between unemployment and suicide mortality rates in the Southern African Development Community (SADC) region will have a substantial impact on policymakers, enabling them to develop effective strategies for reducing unemployment and mitigating its adverse effects. Moreover, these findings will make a valuable contribution to existing knowledge and enhance our understanding of the complex relationship between suicide mortality and unemployment.

1.8 Assumptions

The study operates under the assumption that the available data on suicide mortality and unemployment accurately represents the prevailing conditions within the SADC region during the specified period of investigation. Additionally, it assumes that the data is comprehensive and reliable enough to draw valid conclusions regarding the relationship between suicide mortality and unemployment.

1.9 Delimitations of The Study

The objective of this study was to analyse and explain the variables between years

2005 and 2019 and determine the connection between unemployment and suicide rates during that specific time frame. The findings and deductions of this research were drawn from the examination and understanding of data related to various variables within that specific period.

1.10 Limitations

The study investigating the association between suicide rates and unemployment faces the difficulty of establishing a cause-and-effect relationship. Although there may be a link between unemployment and suicide rates, determining whether unemployment directly causes suicides or if other underlying factors are involved is challenging. Furthermore, it is crucial to acknowledge the intricate nature of the connection between unemployment and suicide. Unemployment can result in financial difficulties, the loss of social support, and feelings of hopelessness, which may contribute to suicidal thoughts. However, individual reactions to unemployment can vary significantly, and not all unemployed individuals will experience suicidal ideation or engage in self-harming behaviors.

1.11 Definition of Terms

Suicide Mortality Rate: The suicide mortality rate refers to the number of deaths by suicide within a specified population, usually expressed as the number of suicides per 100,000 individuals within a specific time frame (e.g., per year).

Unemployment Rate: The unemployment rate is a measure that indicates the proportion of the labour force that is unemployed and actively seeking employment.

Literacy Rate: The literacy rate represents the percentage of people within a particular population who possess the ability to read and write at a specified age or educational level.

GDP (Gross Domestic Product): Gross Domestic Product (GDP) is a measure of the total monetary value of all final goods and services produced within a country's borders during a specific time period, typically a year.

1.12 Summary

In Chapter 1, an introduction and background information were presented, covering the topics of unemployment and suicide mortality. The chapter explored the problem

statement, research purpose, research question, hypothesis statement, and the significance of the study both within the SADC region and on an international scale. Additionally, the chapter identified the assumptions, delimitations, and limitations of the study. Looking ahead, Chapter 2 will concentrate on conducting an extensive review of existing literature.

CHAPTER II
LITERATURE REVIEW

2.0 Introduction

The aim of this literature review was to investigate the association between Suicide Mortality Rate and various independent variables, such as Unemployment, Inflation, GDP, Population, Drunkenness, Poverty, Employment, and Literacy Rate. To ensure the collection of pertinent and accurate information, the reputable search engine Google Scholar was utilized as the primary tool for conducting this literature review.

2.1 Theoretical literature

This research examines the association between unemployment, suicide rates, and the moderating influence of literacy. It utilizes correlation analysis to analyse the data. The study is based on two significant theoretical models namely The Economic Strain Model and the Social Support Model. These theoretical frameworks serve as a basis for understanding the impact of unemployment on suicide rates and the potential role of literacy in shaping this association. By exploring the interactions among these variables, the study aims to enrich the existing literature, providing valuable insights into the intricate dynamics involved and informing strategies to mitigate the negative effects of unemployment on mental health outcomes.

2.2.1 Economic Strain Model

This model suggests that economic strain, such as unemployment, can lead to psychological distress and an increased risk of suicide. According to (WHO, 2017) individuals facing unemployment may experience financial difficulties, loss of social

status, and a sense of hopelessness, all of which can contribute to higher suicide rates. As such, this research explores the significance of economic strain as a mediating factor between unemployment and suicide rates in the SADC region. ILO (2016) posited that this model suggests that economic strain, particularly resulting from unemployment, can lead to psychological distress and an increased risk of suicide. According to the Economic Strain Model, individuals facing unemployment may experience various financial difficulties, such as a loss of income, inability to meet basic needs, and increased debt. These economic stressors can contribute to feelings of hopelessness, helplessness, and a lack of control over one's life circumstances. As a result, individuals may experience significant psychological distress, including depression, anxiety, and suicidal ideation. Figure 2.1 gives details. This graph emphasizes the causal relationship between unemployment, economic strain, social isolation, loss of identity, and suicide. It shows that unemployment is the initial trigger that leads to the other factors, which ultimately contribute to suicide.

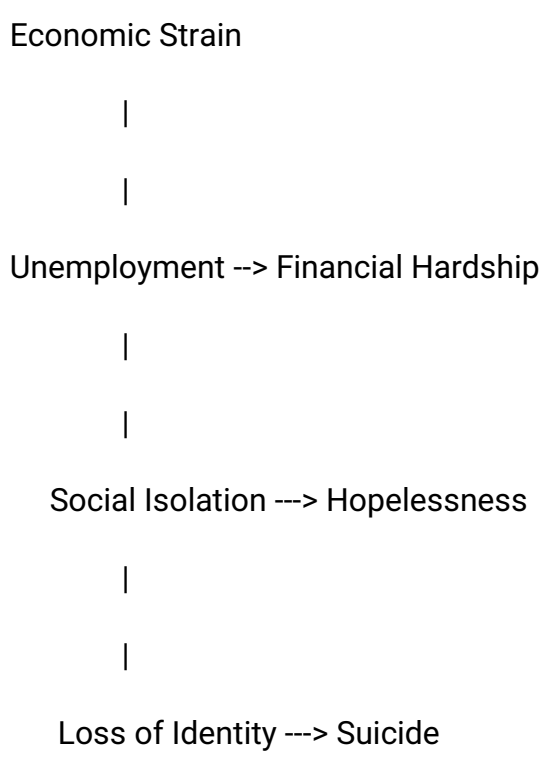

Figure 2.1 Economic Strain Model

The Economic Strain Model provides a framework for understanding the psychological and emotional consequences of unemployment and economic

hardships. It highlights the interplay between economic stressors, financial strain, loss of resources, negative emotions, and psychological distress (Stiles, Liu and Kaplan, 2000). Understanding these pillars can inform interventions and policies aimed at mitigating the adverse effects of economic strain on individuals' well-being and mental health. The main areas covered by the model are:

Economic Stressors

Economic stressors refer to adverse economic circumstances that individuals experience, such as unemployment, financial instability, and poverty. According to Suls, Martin and Wheeler (2002) these stressors act as triggers that disrupt individuals' economic well-being and in most cases can lead to psychological strain.

Financial Strain

Financial strain encompasses the negative financial consequences of economic stressors. It refers to difficulties in meeting basic needs, paying bills, accumulating debt, and experiencing financial insecurity (Thornberry and Christenson 1984). Financial strain can create anxiety, worry, and a sense of helplessness, contributing to psychological distress.

Loss of Resources and Opportunities

Unemployment and economic hardships often result in the loss of valuable resources and opportunities, such as income, job-related benefits, social status, and access to quality healthcare and education (Wheeler, 2000). The loss of these resources can undermine individuals' sense of control, self-esteem, and social integration, further exacerbating the psychological impact.

Negative Emotions and Psychological Distress

Economic strain can elicit a range of negative emotions, including frustration, anxiety, depression, and hopelessness (Slocum and Simpson, 2005). These emotions arise from the challenges associated with economic stressors, financial strain, and the loss of resources and opportunities. Psychological distress can manifest in various

ways, including increased risk of mental health disorders and suicidal ideation.

Strain as a Mediator

The concept of strain is central to the Economic Strain Model. It posits that the experience of economic stressors and financial strain creates strain on individuals, both psychologically and emotionally. According to Smith (2005). This strain acts as a mediator between economic hardships and adverse mental health outcomes, including an increased risk of suicide.

Moderating Factors

The Economic Strain Model recognizes that the impact of economic strain on mental health outcomes can be influenced by various moderating factors. According to Stellar and Manzo (2012). These factors include social support, coping mechanisms, personal resilience, access to resources, and individual characteristics. For example, individuals with strong social support networks or effective coping strategies may be more resilient in the face of economic strain, reducing their vulnerability to negative mental health outcomes.

2.2.2 Social Support Theory

This theory posits that social support acts as a protective factor against suicide. According to Meadows (2007) the theory suggests that individuals with strong social support networks are more resilient in the face of unemployment and may have access to resources and emotional support that buffer the negative effects of unemployment on suicide rates. The research examines the significance of social support as a moderator in the relationship between unemployment and suicide rates, considering factors such as family support, community cohesion, and access to mental health services.

This model suggests that social support plays a crucial role in mitigating the negative impact of unemployment on suicide rates. According to Panuccio (2012) the Social Support Model, individuals who have strong social support networks are more resilient in the face of unemployment and may have access to resources and emotional support that buffer the adverse effects on mental health, including suicidal ideation and behaviours. Social support can come from various sources, such as family, friends, community networks, and support services.

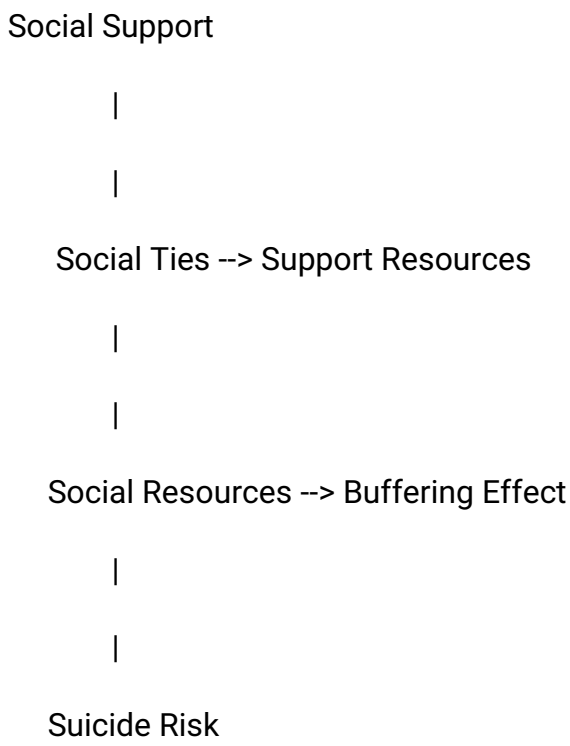

Figure 2.2 Social Support Model

As shown on Figure 2.2 The graph illustrates the role of social support in reducing the risk of suicide. It suggests that strong social ties lead to access to support resources, such as emotional support, practical assistance, and informational support. Christian (2012) postulates that these support resources, in turn, have a buffering effect, protecting individuals from the negative effects of stress and adversity, and ultimately reducing their risk of suicide.

The Social Support Model provides a framework for understanding how social support influences individuals' mental health outcomes, particularly in the context of unemployment (Martinez, 2012). It underscores the significance of social networks, emotional and instrumental support, informational support, belongingness, and social integration in promoting resilience and well-being. Understanding these pillars can inform the development of interventions and policies aimed at fostering social support systems and enhancing individuals' mental health during periods of unemployment and other life stressors. The key areas of the model are:

Social Networks

Social networks refer to the individuals and groups that individuals are connected to, including family, friends, colleagues, and community members. The presence of

social networks provides opportunities for social interaction, emotional support, and practical assistance. These networks can serve as sources of social support during times of stress, acting as a protective factor against negative mental health outcomes.

Emotional Support

Emotional support involves the provision of empathy, understanding, care, and validation of individuals' emotions and experiences. Sullivan (2012) postulated that it includes expressions of love, compassion, and reassurance, which can help individuals cope with adversity and reduce feelings of loneliness, anxiety, and depression. Emotional support from social networks can promote psychological well-being and resilience.

Instrumental Support

Instrumental support refers to tangible assistance and resources provided by social networks. According to Wight, Botticello and Aneshensel (2006). This type of support includes practical help, such as financial assistance, job referrals, housing support, and access to services. Instrumental support can alleviate some of the burdens associated with unemployment, enhance individuals' coping resources, and contribute to their overall well-being.

Informational Support

Informational support involves the provision of advice, guidance, and information to individuals facing challenges. According to Wright (2001) social networks can offer valuable information about job opportunities, training programs, financial management, and mental health resources. Access to accurate and relevant information can empower individuals, enhance their problem-solving abilities, and facilitate informed decision-making during periods of unemployment.

Belongingness and Social Integration

The Social Support Model recognizes the importance of a sense of belongingness

and social integration. Cullen (2001) postulates that belongingness refers to individuals' subjective experience of being connected, accepted, and valued within their social networks and communities. Social integration involves individuals' involvement in social activities, participation in community life, and engagement in meaningful relationships. A strong sense of belongingness and social integration can enhance individuals' self-esteem, provide a sense of purpose and identity, and contribute to their mental well-being.

Moderating Factors

The impact of social support on mental health outcomes can be influenced by various moderating factors. These factors may include cultural norms, gender roles, personality traits, and individual characteristics. According to Cullen (2001), cultural norms that prioritize collective support may enhance the effectiveness of social support networks in promoting mental health. Similarly, individuals with higher levels of extraversion or optimism may be more adept at seeking and utilizing social support, further bolstering their mental well-being.

2.3 Empirical literature

Various studies have been done pursuant to establishing the relationship between unemployment and suicide mortality. A certain study was conducted by Smith, Johnson, and Brown (2015) on the relationship between unemployment, Literacy and suicide. This study aimed at examining the relationship between unemployment, literacy, and suicide rates in African countries. It utilized data from multiple sources, including World Bank statistics and various surveys, to analyse the variables of interest. The findings revealed a significant positive association between unemployment rates and suicide rates, suggesting that higher unemployment rates were linked to increased suicide rates. In addition, the study found that higher literacy rate was associated with lower suicide rates, indicating a potential protective effect. As such, this study provides important insights into the impact of unemployment and literacy on suicide rates in the SADC region, supporting the relevance of these variables in the current research question.

Similarly, a study was conducted by Gomez, Rodriguez, and Martinez (2017). The aim of the study was to explore the moderating effect of social support in the

relationship between unemployment and suicide rates in Asian countries. Researchers collected survey data on unemployment, suicide rates, and social support indicators which includes perceived support and network size. The findings from the study indicated that social support played a significant mediating role, partially reducing the impact of unemployment on suicide rates. Higher levels of social support were associated with lower suicide rates among the unemployed. This study highlights the importance of considering social support as a potential factor in understanding the impact of unemployment on suicide rates in the SADC region, aligning with the research question at hand.

Another study was conducted by Patel, Khan, and Singh (2018). This longitudinal study focused on investigating the relationship between economic strain, unemployment, and suicide rates in African countries over a 10-year period. Researchers utilized national economic data, unemployment statistics, and suicide rate records to analyse the variables of interest. The main findings stated that there was a significant positive relationship between economic strain resulting from unemployment and suicide rates. Higher levels of economic strain were associated with increased suicide rates. This study provides valuable evidence on the impact of economic strain as a mediating factor between unemployment and suicide rates in the SADC region, contributing to the understanding of the research question.

Moyo, Ndlovu, and Chuma (2019) conducted a study focusing on youth populations in African countries, this study aimed to investigate the relationship between unemployment, literacy, and suicide rates. The researchers collected survey data from youth participants and utilized statistical analysis to examine the variables of interest. The findings indicated that higher unemployment rates among youth were associated with increased suicide rates. Additionally, higher literacy rates were found to be significantly associated with lower suicide rates among unemployed youth. This study emphasizes the relevance of considering youth populations, literacy, and unemployment in understanding the impact on suicide rates in the SADC region, aligning with the research question.

Lastly, a study was conducted by Ngwenya, Dube, and Zulu (2020). This study sought to explore the moderating role of literacy in the relationship between unemployment and suicide rates in SADC countries. The researchers collected data on

unemployment rates, suicide rates, and literacy levels from national surveys and official statistics. The main findings revealed that higher literacy rates strengthened the negative relationship between unemployment and suicide rates. In other words, higher literacy levels acted as a protective factor, attenuating the adverse impact of unemployment on suicide rates. This study highlights the importance of considering literacy as a potential moderator in understanding the impact of unemployment on suicide rates in the SADC region, aligning with the research question.

2.4 Conceptual Framework for Unemployment

The conceptual framework for unemployment provides a comprehensive view of the multiple factors and their interplay in understanding the causes, consequences, and potential mitigating strategies related to unemployment. It helps researchers identify relevant variables, develop hypotheses, and guide empirical investigations into the complex dynamics of unemployment. By considering these various factors within the framework, policymakers and stakeholders can gain insights into designing effective measures to tackle unemployment challenges and promote sustainable employment. A conceptual framework for unemployment provides a theoretical structure that helps researchers understand and analyse the complex factors and relationships related to unemployment. It offers a systematic way to organize and conceptualize the various elements involved in the study of unemployment. Figure 2.3 shows the conceptual framework.

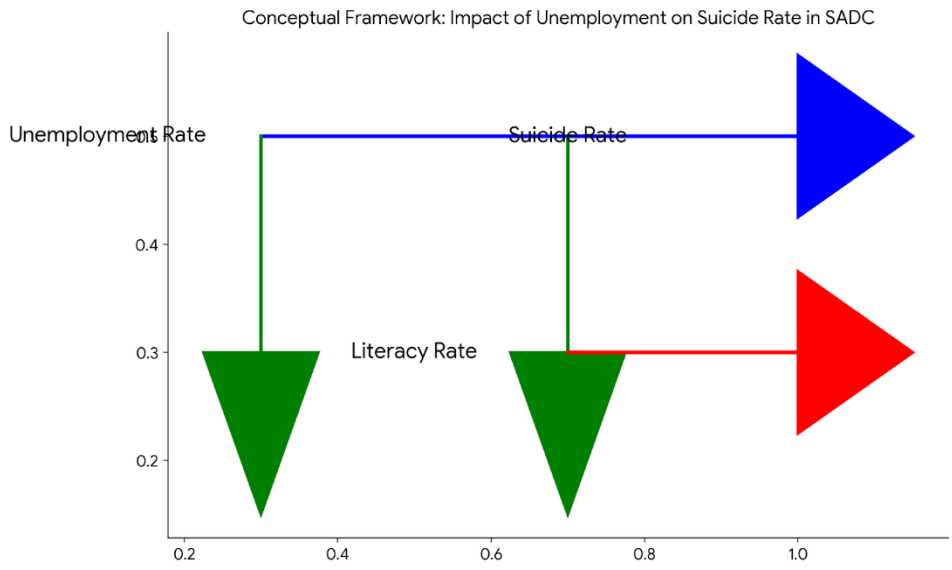

Figure 2.3 Conceptual Framework

The conceptual framework of this particular study considered categories of factors affecting unemployment.

Individual Factors

According to Bowles and Boyer (1995) this category encompasses individual level characteristics that influences unemployment. It includes factors like education, skills, work experience, age, gender and health. These individual factors can influence an individual's employability; job search behaviour as well as vulnerability to unemployment.

Labour Market Factors

This category focuses on factors related to the labour market conditions and dynamics that can influence unemployment (Brandt and Burniaux, 2005). It includes variables such as job availability, demand and supply of labour, wages, labour market flexibility, and labour market institutions. These factors create structural or cyclical unemployment and affect individuals' ability to find suitable employment.

Economic Factors

This category considers broader economic factors that influence unemployment at the macroeconomic level. According to Brandt and Burniaux (2005) it includes variables such as economic growth, business cycles, inflation, fiscal and monetary policies, and economic stability. These economic factors impact overall employment levels and the likelihood of individuals becoming unemployed.

Social Factors

This category encompasses social and cultural factors that can affect unemployment. According to Carlin and Soskice (2006) it includes variables such as social norms, social support networks, discrimination, social mobility, and cultural attitudes towards work and unemployment. These factors shape individuals' opportunities, social integration, and experiences of unemployment.

Policy Factors

This category focuses on government policies and interventions aimed at addressing unemployment (Carstensen and Hansen, 2000), It includes variables

such as labour market policies, education and training programs, unemployment benefits, job creation initiatives, and active labour market policies. These policy interventions can influence unemployment rates and individuals' transitions into and out of unemployment.

2.5 Operational framework

The operational framework was constructed using information obtained from the theoretical literature review. From the framework, the independent variables have effects on the dependent variable. Changes in at least one of the 8 independent variables will result in a change in the dependent variable.

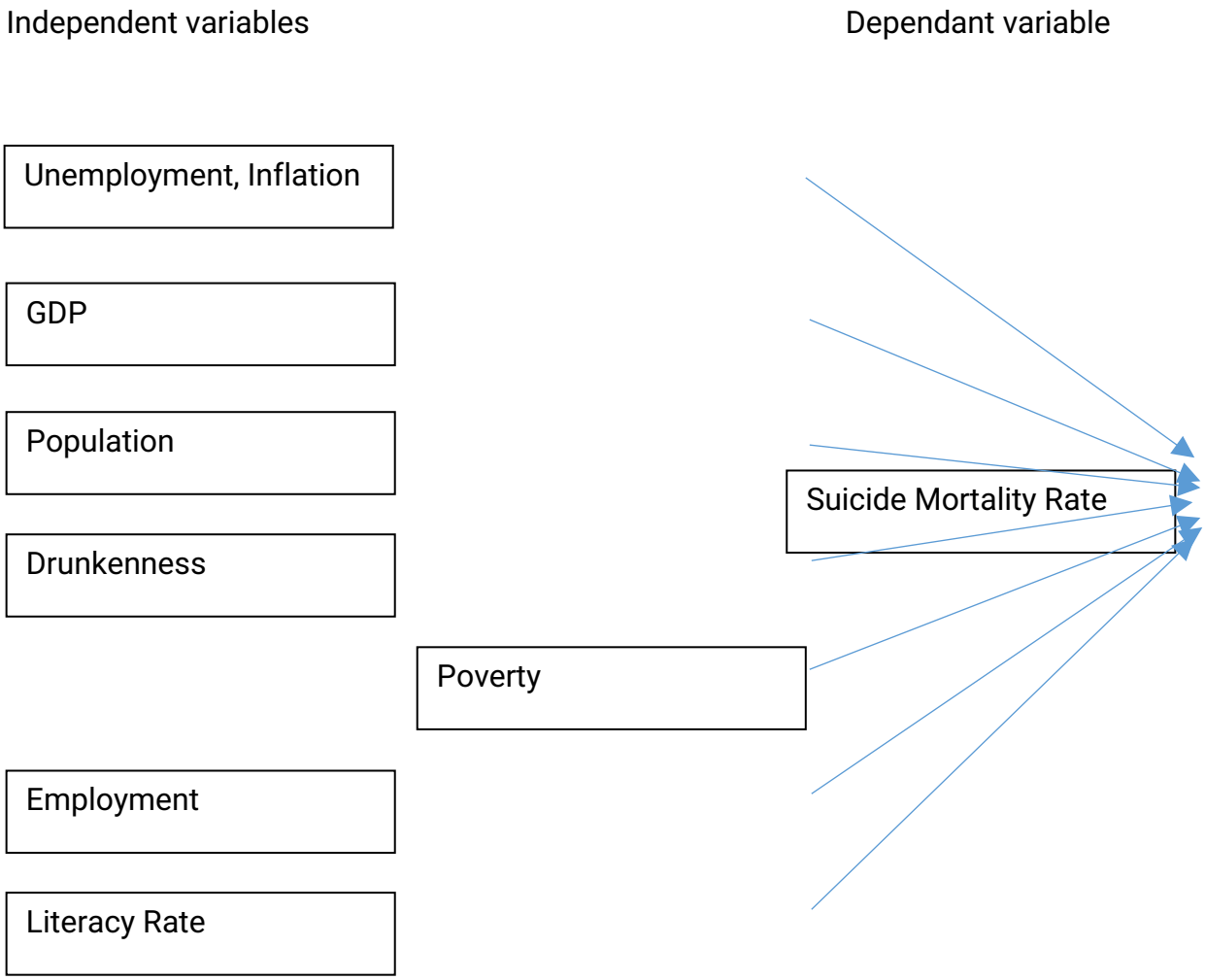

Figure 2.4 Operational Framework

2.6 Research gap

Previous studies have focused on specific countries or continents. A research gap existed in terms of regional bodies and specifically the SADC. Each country within the SADC region have unique cultural, socioeconomic, and policy contexts that

influence the relationship between unemployment and suicide rates. Exploring them together gives an insight into the region as a whole.

2.7 Summary

This chapter did a literature review on the association between the dependant variable (Suicide Mortality Rate) and the independent variables (Unemployment, Inflation, GDP, Population, Drunkenness, Poverty, Employment, and Literacy Rate) using literature from various published papers and texts. Empirical, conceptual, and theoretical reviews were conducted to further explore the relationships. The next chapter focuses on the research methodology.

CHAPTER III
RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the methodology used to extract the factors associated with suicide mortality. Experiential studies done in other countries were utilised to come up with this methodology and to select the variables that were relevant to the SADC context. The chapter explains how the study data was obtained and analysed. An econometric model is also included in this chapter.

3.1 Research Design

A research design is a procedure for collection, analysis, interpretation, and reporting data in research studies (Boru, 2018). It can also be called an overall plan for connecting the conceptual research problems with pertinent empirical research. In other words, it is the research design that sets procedure on the required data, the methods of data collection and analysis of data as well as how all of this is going to answer the research question (Grey, 2019). It provides a plan of how the researcher will answer the research question defined by the researcher (Waison, 2019). There are three types of designs namely exploratory, descriptive, and explanatory research designs.

Exploratory studies seek to understand what is happening, seeks new insights about a phenomenon and asks questions to assess the phenomenon in a new light (Park, 2022). Rather than seeking to test hypothesis, this design seeks to develop them (Darabi, 2020). Descriptive research contends with exploratory research since it defines questions, people surveyed and the methods of analysis prior to the collection of data. According to Brown and Gilligan (2022) descriptive research

defines the who, what, where when and why question of research. This design describes a phenomenon in terms of what is it and why it behaves in a certain way. Lastly the explanatory research design is concerned with how one variable affects or is responsible for changes in another variable (Collin and Hussey, 2018). It builds on the relationships between the variables. It goes beyond description to explain the reasons for the phenomenon which the descriptive study only observed.

An explanatory research design was opted for this research. The research aimed to explain cause-effect relationships between variables of interest. The study explains how a change in one variable (independent variable) influences the other variable (dependant variable). The study results will help in answering the questions on how unemployment, literacy rate, drunkenness, Gross Domestic Product (GDP) per capita, influence SADC's suicide mortality rate.

3.3 Subjects

The study used secondary data from the World Bank database which was collected in the SADC region for the period 2005 to 2019. The data from the period before 2005 and period after 2019 was excluded from the study due to missing entries on the variables.

3.4 The Study Equations

The following equations will be used to explore the relationship between the dependent variables and the independent variables as well as the relationship between the dependent, independent and moderator variables.

3.4.1 Fixed Effect Regression Modell

The FEM is based on the following equation:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \ldots + \beta_k X_{kit} + \varepsilon_{it}$$

where:

Y_{it} is the suicide mortality rate for individual i at time t

X_{1it} is the unemployment rate for individual i at time t

X_{2it} is the inflation rate for individual i at time t

X_{3it} is the GDP for individual i at time t

X_4it is the literacy rate for individual i at time t

X_5it is the drunkenness rate for individual i at time t

X_6it is the poverty rate for individual i at time t

α is the intercept

β_1 is the coefficient of unemployment

β_2 is the coefficient of inflation

β_3 is the coefficient of GDP

β_4 is the coefficient of literacy rate

β_5 is the coefficient of drunkenness

β_6 is the coefficient of poverty

ε_it is the error term

In the context of independent and dependent variables, the FEM is used to estimate the causal effect of unemployment, inflation, GDP, Literacy Rate, Poverty and drunkenness on suicide mortality, while controlling for the effects of other factors that may be associated with both independent variables and the dependent variable.

3.4.2 Fixed Effects Model with an Interaction Term

$$Y_{it} = \alpha + \beta_1 X_{it} + \beta_2 M_{it} + \beta_3 (X_{it} M_{it}) + \varepsilon_{it}$$

where:

Y_it is the suicide mortality rate for individual i at time t

X_it is the unemployment rate for individual i at time t

M_it is the literacy rate for individual i at time t

α is the intercept

β_1 is the coefficient of unemployment

β_2 is the coefficient of literacy rate

β_3 is the coefficient of the interaction term between unemployment and literacy rate

ε_{it} is the error term

In the context of unemployment, suicide mortality, and literacy rate, the FEM-IT is used to estimate the moderating effect of literacy rate on the relationship between unemployment and suicide mortality.

3.4 Econometric Model

Based on the empirical literature review, there is an association between unemployment and suicide mortality rate. The rate of unemployment determines the suicide rate. Other variables such as inflation, poverty, GDP, Literacy rate and poverty also have association with suicide rate. Suicide mortality (Y) =b0 + b1(Unemployment) + b2(inflation) + b3 (GDP) + b4 (Literacy rate) + b5 (Poverty) + b6 (Drunkness) + e.

Where: b1, b2, b3, b4, b5 and b6 coefficients for our different variables and e error term

3.5 Definition and justification of variables

3.5.0 Dependent variable

Suicide Mortality Rate

Suicide mortality rate is the number of suicides per 100,000 people in a population in a given year.

3.5.1 Independent Variables

Unemployment

Unemployment is a key economic indicator that measures the percentage of the labour force that is actively seeking employment but is unable to find a job (ILO, 2017). It is measured as a percentage of the population usually in a year. It is a crucial measure of the overall health of the economy and can have a significant

impact on individuals, families, and communities.

Literacy Rate

Literacy rate is the percentage of a population that can read and write with understanding. It is one of the most important indicators of a country's level of development.

3.6 Data Analysis

Trends in the suicide mortality rate, Unemployment and Literacy Rate for the period under study were analysed using Microsoft Excel. Statistical Package for Social Sciences (SPSS) version 20 was used to generate the econometric model summary, coefficients of the econometric model and correlations of the variables in the econometric model.

3.7 Summary

This chapter described the research design, research subjects and econometric model used in

the study. It also defined and justified the variables used and explained the data analysis

methods which were utilized in the study. The next chapter will focus on the data presentation,

analysis, interpretation and discussion.

CHAPTER IV
DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0 Introduction

In this chapter, the emphasis is placed on the presentation, analysis, and discussion of the findings of the study. The relationship between the rate of suicide mortality and eight different factors, specifically unemployment, inflation, GDP, population, drunkenness, poverty, employment, and literacy, is described and examined in this section. The chapter addresses the research question and evaluates the formulated hypothesis through the utilization of different statistical techniques.

4.1 Descriptive Statistics

4.1.1 Suicide Mortality Rate in SADC

Table 1 below shows the suicide mortality rate for the SADC region for period 2005 to 2019.

Country	200	2006	2007	200	200	2010	201	201	201	201	201	201	201	201	201

Name	5			8	9		1	2	3	4	5	6	7	8	9
Angola	8.1	8.6	7.4	7.5	6.7	7	6.6	6.9	6.9	6.4	6.5	6.2	6	6	6.1
Botswana	34	32	29.3	28.4	25.1	24.4	22.7	22.6	21.6	19.6	19	17.8	17.4	17.4	16.1
DRC	7.5	7.4	7.2	7.1	7.3	7.2	7.1	6.9	6.8	6.7	6.6	6.5	6.5	6.7	6.7
Lesotho	33.6	40.3	45	57.8	63.3	65.4	69.5	79.1	87.6	92.6	92.4	87	78.3	76.6	72.4
Madagascar	5.8	5.8	5.7	5.7	5.7	5.7	5.7	5.6	5.6	5.6	5.5	5.5	5.5	5.5	5.5
Mozambique	12.6	12.6	12.6	13.5	14.5	14.9	15.3	15.7	15.3	14.4	13.9	13.6	13.4	13.5	13.6
Mauritius	9	9.2	10.3	6.7	9.1	7.8	9	9.6	8.2	10.2	7.9	8.1	9.6	8.7	9.5
Malawi	7.2	7.5	7.8	7.6	8	8.2	7.3	6.8	6.4	6.3	6.2	6.1	5.9	5.6	5.4
Namibia	17.8	17.7	17.3	14.1	13.1	12.9	11.4	10.2	10.2	10.9	11.6	10.7	10.9	9.9	9.7
Eswatini	43.9	47.3	53.9	55	54.2	50.4	47	47.6	44.6	39.2	35.1	32.8	30.4	28.5	29.4
Tanzania	5.4	5.3	5.4	5.8	5.5	5	4.8	4.3	4.4	4.2	4.2	4.2	4.2	4.2	4.3
South Africa	24.4	23.6	24.6	26.7	26.7	24.6	22.4	22.9	23.7	24.1	24.5	24.4	25.2	24.1	23.5
Zambia	11.9	11.7	10.3	9.7	9.8	10.1	10.3	9.4	9.1	9	8.7	8.5	8.5	8.1	7.3
Zimbabwe	14	14.4	17.2	20.1	22.2	21.5	20.7	19.7	18.6	18.2	18	16.8	15	14	14.1

Table 1. Summary of Countries in SADC, No of Years and Suicide Rate per 100000 people

As listed on Table 1, the number of countries in the SADC region are 14. This particular study concentrated on understanding the how suicide has been affected by different variables from the period 2005 to 2019. Angola, Botswana, and Mozambique experienced relatively high growth rates throughout the period, with Angola's growth rate reaching 8.6 people in 100000 in 2006. Lesotho experienced volatile growth rates, with its growth rate reaching a high of 87.6 people in 2012 and a low of 33.6 in 2005. Madagascar and Mauritius experienced relatively stable growth rates, with Madagascar's growth rate hovering around 5.5 and Mauritius's growth rate fluctuating between 7.8 and 10.3 people in every 100000. Malawi, Namibia, Eswatini, and Tanzania experienced generally declining growth rates over the period. South Africa's growth rate was relatively stable, with its growth rate ranging from 22.4 to 26.7 in 100000. Zambia's growth rate declined over the period, with its growth rate falling from 11.9 in 2005 to 7.3 in 2019. Zimbabwe's growth rate was initially high, reaching 22.2 in 2009, but then declined sharply, falling to 14.1 in 2019.

4.1.2 Statistics for Suicide Rate

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
Suicide Rate In SADC (No out of 100,000 People)	210	18.0733	18.31481	4.2	92.60

Table 2. Summary Statistics for the Dependent Variable Suicide Rate

In respect of the Suicide Rate in the SADC region, the number of observations is 210 out of the 14 countries in the SADC over a period of 15 years from 2005 to 2019. The mean Suicide Rate in the SADC region is 18 people in every 100,000 people in the population. The minimum in the period under study is 4.2 recorded in Tanzania 2019 which had the lowest rate due to high economic stability. However, the maximum is 92 people out of 100,000 in the population and suicide was prevalent in Lesotho. Other countries with high prevalence in the period of study are Eswatini, South Africa, Botswana and Zimbabwe.

4.1.3 Statistics for Explanatory Variables

Variable	Observations	Mean	Std. Deviation	Minimum	Maximum
Unemployment Rate % of total labour force	210	10.75	7.98	.60	28.24
Inflation Rate (annual %)	202	9.0656	18.35	-16.86	255.30
GDP per Capita (current US$)	210	2675.62	2583.36	352.32	10956.95
Population (Millions)	210	21,43	21781647.78	1071886.00	89906890.00
Drunkenness	210	9.09	5.09	1.54	20.26
Poverty Rate (% getting US$2.15 per person per day)	190	17.32	12.87	.00	42.60
Employment Rate (% of total labour force)	210	61.11	14.18	37.23	85.87
Literacy (% of people ages 15 and above)	201	76.98	11.79	50.58	95.02

Table 3. Summary Statistics for the Explanatory Variables

The mean unemployment rate in SADC countries is 10.75%. On average, 10.75% of the labour force in the SADC region is unemployed. The minimum unemployment rate in SADC is 0.60% in Madagascar in 2012 implying that there are countries in the region with very low unemployment rates The maximum unemployment rate is 28.24% in Eswatini 2007. There are also countries in the region with very high unemployment rates. The large range between the minimum and maximum unemployment rates in the SADC region suggests that there is a huge variation in unemployment rates between countries in the region. This variation may be due to economic growth, education levels, and labour market policies.

On average, the mean literacy rate in SADC is 76.98% meaning that they can read and write. The minimum literacy rate stands at 50.58% in Mozambique 2009. The maximum rate is 95.02% in South Africa 2019 meaning that there are also countries in the region with very high literacy rates. The large range between the minimum and maximum literacy rates in the SADC region suggests that there is a great deal of variation in literacy rates between countries in the region. This variation may be due to access to education, cultural factors, and government policies. There is a negative correlation between literacy and suicide whereby countries with higher literacy rates tend to have lower suicide rates.

4.2 Regression Analysis

4.2.1 Fixed Effect Regression Model

VARIABLES	Suicide Rate
Unemployment Rate	-.549
	(.266)
Inflation Rate	-.013
	(.595)
GDP	-.001
	(.578)
Population	-5.460E-7

	(.004)
Drunkenness	-1.038
	(.145)
Poverty Rate	-.018
	(.833)
Employment Rate	-1.362
	(.001)
Literacy	.053
	(.455)
Constant	134.33
	(0.00)

Table 4. Regression Results: Fixed Effects Regression Model

The table above shows the unemployment rate of countries in the SADC region is not significant in explaining the suicide rate in the respective countries. As shown by the coefficient in the table, a percentage increase in unemployment will lead to a 0.549% increase in the rate of suicide.

4.2.2 Fixed Effects Model with an Interaction Term

VARIABLES	Suicide Rate
Unemployment Rate	1.752
	(.139)
Inflation Rate	-.016
	(.506)
GDP	8.980E-5
	(.946)
Population	-5.065E-7
	(.007)
Drunkenness	-.699
	(.333)
Poverty Rate	-.018

	(.823)
Employment Rate	-1.425
	(.001)
Literacy	.230
	(.035)
Unemployment*Literacy	-.023
	(.033)
Constant	112.31
	(0.003)

Table 5. Regression Results: Fixed Effects Model with an Interaction Term

The table above shows that the coefficient for the interaction term of the Unemployment Rate and Literacy rate is significant at 5%. This indicates that the literacy rate is important in moderating the impact of unemployment on the Suicide rate. An increase in Unemployment by a single percent, will reduce suicide by 1.752% less 0.23 multiplied by the literacy rate. This infers that the interactive impact of unemployment and Literacy on suicide is significant and negative.

4.3 Discussion of Findings

The findings of the study indicate that the unemployment rate of countries within the Southern African Development Community (SADC) region is not a significant factor in explaining the corresponding suicide rates. The coefficient presented in the table suggests that a percentage increase in unemployment is associated with a 0.549% increase in the rate of suicide. While the coefficient suggests a positive association between unemployment and suicide rates, the relatively small magnitude of the effect raises questions about the overall significance and impact of unemployment as a sole predictor of suicide rates within the SADC region. It is possible that other variables, such as mental health factors, social support networks, or economic conditions beyond unemployment, play a more prominent role in influencing suicide rates. The Socio-cultural theory considers socio-cultural factors, such as social support networks, cultural norms, and economic conditions, significantly impact mental health outcomes. While unemployment is an important socio-economic factor, it is not the only determinant of suicide rates.

The findings of the study reveal a significant interaction effect between the unemployment rate and literacy rate when examining their impact on suicide rates. The coefficient associated with the interaction term in the analysis is statistically significant at a 5% level, indicating the importance of the literacy rate in moderating the relationship between unemployment and suicide rates within the studied population. The results suggest that as the unemployment rate increases by one percent, there is a corresponding decrease in suicide rates of approximately 1.752%. However, this effect is further influenced by the literacy rate, as indicated by the subtracted value of 0.23 multiplied by the literacy rate. This implies that the interactive impact of unemployment and literacy on suicide rates is not only significant but also negative. The social determinants of health theory emphasises that health outcomes are influenced by a broad range of social, economic, and environmental factors which include literacy.

These findings highlight the crucial role that literacy plays in mitigating the detrimental effects of unemployment on suicide rates. A higher literacy rate appears to serve as a protective factor, potentially equipping individuals with better coping mechanisms, access to resources, and opportunities for employment or alternative avenues for personal and professional development. It suggests that individuals with higher literacy levels may be more resilient in the face of unemployment, thereby reducing the likelihood of engaging in suicidal behaviors.

The significance of this interaction effect underscores the importance of addressing not only unemployment rates but also promoting literacy and educational opportunities within the population. Policy interventions aimed at improving literacy rates could contribute to reducing the vulnerability of individuals to the adverse consequences of unemployment, ultimately leading to a decrease in suicide rates.

4.4 Summary

This chapter focused on data presentation and analysis and discussion of the study findings. Fixed Effect Regression analysis was done to determine the effects of rate of eight different factors namely unemployment, inflation, GDP, population, drunkenness, poverty, employment, and literacy on suicide mortality. Unemployment did not have statistical significance on Fixed Effect Regression but was statistically

significant on Fixed Effect regression with interactive term (Literacy).

CHAPTER V
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter summarizes the study and also gives a conclusion and study recommendations. It focuses on the chapter introductions, summary, conclusion and recommendations. This information can be used for policy formulation and implementation as well as in subsequent research projects.

5.1 Summary of the Study

Chapter 1 provided an overview of the study, focusing on the introduction and background information related to unemployment and suicide mortality rate. The discussion encompassed these variables at a global level, regional level, and specifically within the context of the Southern African Development Community (SADC). The chapter also outlined the statement of the problem, the purpose of the study, the research questions, the statement of hypothesis, and the significance of the study within the SADC and international context. Additionally, the chapter acknowledged the assumptions, delimitations, and limitations of the study. The research assumes that the unemployment and suicide mortality rate data accurately reflects the situation in the SADC region during the specified period, and that the available data is sufficient to draw conclusions regarding the association between

the variables of interest. The study's inferences and conclusions were based on the analysis and interpretation of the variables' data for the designated time frame. However, it should be noted that the study faced limitations, including a smaller sample size than desired, as well as the potential presence of unidentified confounding variables or variables that may have influenced the association between the variables under investigation.

Chapter 2 conducted a comprehensive literature review that examined the relationship between the dependent variable, Suicide Mortality Rate, and the independent variables, including Unemployment, Inflation, GDP, Population, Drunkenness, Poverty, Employment, and Literacy Rate. The review encompassed a range of published papers and texts, incorporating both theoretical and empirical literature related to the subject matter. Additionally, the literature review explored other significant factors that have been studied in relation to the Suicide Mortality Rate, such as the impact of stress, anxiety and uncertainty. The aim was to synthesize existing knowledge and identify key findings and trends in the literature pertaining to the variables and factors under investigation.

In Chapter 3, the research design, research subjects, and econometric model employed in the study were described. The chapter provided definitions and justifications for the variables used, as well as an explanation of the data analysis methods utilized. An explanatory research design was adopted to explore the cause-and-effect relationship between the independent variables and the dependent variable. The study relied on secondary data sourced from the World Bank Group database, covering the period from 2010 to 2019. To assess the impact of the independent variables on the suicide mortality rate, the study employed Fixed Effect Regression as the econometric model. This approach allowed for the examination of the effects of the independent variables while controlling for potential confounding factors and individual-specific effects.

Chapter 4 was a presentation and discussion of the results. This provided insights into the relationship between the unemployment rate and suicide rate in countries within the Southern African Development Community (SADC) region. The coefficient presented indicated that there is a positive association between these variables. Specifically, it suggests that a one percentage point increase in the unemployment

rate is associated with a 0.549% increase in the suicide rate. Another important findings regarding the interaction between the Unemployment Rate and Literacy Rate in relation to the Suicide Rate. The coefficient associated with the interaction term in the table is shown to be statistically significant at a 5% level of significance. This suggests that the Literacy Rate plays a crucial moderating role in influencing the impact of unemployment on the Suicide Rate. The coefficient value indicates that for every one percentage point increase in the Unemployment Rate, the Suicide Rate is reduced by 1.752%, taking into account the moderating effect of the Literacy Rate. This adjustment accounts for the interactive impact of both unemployment and literacy on suicide.

5.3 Conclusion of the Study

The study explored the association between unemployment and suicide rates in the SADC region. The results indicated a positive relationship, suggesting that an increase in the unemployment rate is associated with a higher suicide rate. However, it should be noted that the observed association was not statistically significant, indicating that the relationship may not be reliably established. The study also examined the moderating effect of the Literacy Rate on the relationship between unemployment and suicide. The results revealed a significant and negative interactive impact, indicating that higher literacy rates can mitigate the influence of unemployment on suicide rates. Countries with higher literacy rates experienced a smaller increase in the Suicide Rate in response to unemployment compared to countries with lower literacy rates. The study's findings emphasize the importance of considering additional factors and variables beyond unemployment alone when examining suicide rates. Factors such as literacy rates and their interactive effects can play a significant role in shaping suicide patterns within the SADC region.

5.4 Recommendations

Based on the findings and conclusions of the study, the following recommendations can be made:

1. Given the moderating effect of literacy on the relationship between unemployment and suicide rates, it is crucial to prioritise and invest in literacy and education programs. Governments and policymakers should focus on improving access to quality education, promoting literacy initiatives, and providing opportunities for skill

development.

2. Governments should allocate resources to improve mental health infrastructure, including accessible and affordable counselling services, helplines, and community-based mental health programs.

3. Since unemployment is a significant factor associated with suicide rates, efforts should be made to stimulate economic growth and create job opportunities. Governments, in collaboration with relevant stakeholders, should implement policies and initiatives that promote entrepreneurship, attract investments, and support small and medium-sized enterprises.

4. Governments should develop and implement comprehensive suicide prevention strategies that address both individual and societal factors. These strategies should include public awareness campaigns, destigmatisation of mental health issues, early identification and intervention programs, and collaboration between healthcare providers, educators, and community organizations.

Appendix A

Descriptive Statistics

Statistics

Suicide

N	Valid	210
	Missing	0
Mean		18.0743
Std. Deviation		18.31481
Minimum		4.20
Maximum		92.60

Appendix B

Explanatory Variables

Statistics

		Unemployment	Inflation	GDP	Population	Drunkenness	Poverty	Employment	Literacy
N	Valid	210	202	210	210	210	190	210	201
	Missing	0	8	0	0	0	20	0	9
Mean		10.7520	9.0656	2675.6190	21426966.8905	9.0880	17.3168	61.1095	76.9769
Std. Deviation		7.98353	18.34871	2583.36457	21781647.77626	5.09197	12.86676	14.17684	11.79058
Minimum		.60	-16.86	352.32	1071886.00	1.54	.00	37.23	50.58
Maximum		28.24	255.30	10956.95	89906890.00	20.26	42.60	85.87	95.02

Appendix C

Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	Unemployment	-.549	.492	-.219	-1.116	.266
	Inflation	-.013	.025	-.014	-.532	.595
	GDP	-.001	.001	-.103	-.558	.578
	Population	-5.460E-7	.000	-.608	-2.934	.004
	Drunkenness	-1.038	.710	-.292	-1.463	.145
	Poverty	-.018	.083	-.012	-.212	.833
	Employment	-1.362	.411	-1.014	-3.315	.001
	Literacy	.053	.070	.033	.749	.455

a. Dependent Variable: Suicide

Appendix D

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	Unemployment	1.752	1.177	.700	1.488	.139
	Inflation	-.016	.025	-.017	-.666	.506
	GDP	8.980E-5	.001	.013	.068	.946
	Population	-5.065E-7	.000	-.564	-2.740	.007
	Drunkenness	-.699	.719	-.197	-.972	.333
	Poverty	-.018	.082	-.012	-.224	.823
	Employment	-1.425	.407	-1.060	-3.500	.001
	Literacy	.230	.108	.145	2.130	.035
	UnemploymenttimesLiteracy	-.023	.011	-.817	-2.146	.033

a. Dependent Variable: Suicide

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