

DECLARATION

I, Samuel Manuel Sibuye, hereby declare that this dissertation submitted to the University of Mpumalanga for the Masters' Degree in Development Studies has not been previously submitted by me for a degree at this or any other university. This dissertation is my own work in design and execution and that all the materials contained therein have been duly acknowledged.

Samuel Manuel Sibuye

Student Name

February 2023

Date

DEDICATION

The study is devotedly dedicated to my beloved mother, Ivy Mildred Sibuye. She has been my source of inspiration and strength. She gave me guidance and encouragement whenever I thought of giving up. She has always been there for me when I needed her most. She continually offers spiritual, emotional, moral, and financial support.

The study is also dedicated to my late father, Mr Jameson Sibuye. I know that if he was still alive, he would be very proud of my achievements.

The study is also dedicated to all my siblings, my girlfriend, friends, and supervisors for their encouragement and motivation to achieve the best in life. I love and appreciate you all.

Last, but not least, I dedicate the study to the Almighty God for His protection, guidance, power of mind, skills, strength, and healthy life.

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ABBREVIATIONS

CBOs – Community Based Organisations
FAO – Food Agricultural Organisation
GRFC - Global Report on Food Crisis
GFSI - Global Food Security Index
HLPE - High Level Panel Experts
IDP - Integrated Development Plan
IFPC – International Food Products Corporation
IFPRI – International Food Policy Research Institute
IMF – International Monetary Fund
IPC - Integrated Food Security Phase Classification
MDGs – Millennium Development Goals
NGOs – Non-Governmental Organisations
PFA – Programme for Food Acquisition
SAG – South African Government
SDGs – Sustainable Development Goals
SAMRC – South African Medical Research Council
Stats SA – Statistics South Africa
TEERS – Temporary Employer Employee Relief Scheme
UN – United Nations
WHO – World Health Organisation
CNBC – Consumer News and Business Channel
BFAP – Bureau for Food and Agricultural Policy
UNICEF – United Nations International Children's Emergency Fund

ABSTRACT

The differentiated impact of the COVID-19 pandemic became more apparent in various ways, such as loss of employment, livelihood generation activities and the increased price of commodities. The socioeconomic effect of the COVID-19 national lockdown threatened the food security of countries where poverty, inequality, and food insecurity are already a challenge. The study, therefore, sought to establish how rural households were affected by the COVID-19 pandemic concerning their food security status. The convergent parallel mixed methods approach was adopted as the most relevant and appropriate approach towards answering the research question of this study. The heads of households (60) and a key informant (1) formed the sample for the study. The data were collected using both in-depth face-to-face interviews and observation. The thematic analysis method was used to analyse qualitative data, whereas the descriptive statistics were used to analyse the quantitative data. Based on the findings, the COVID-19 pandemic created food insecure households in the study area. Over 60 percent of households with meagre incomes have been adversely affected and made vulnerable to food insecurity, specifically low-income households. The pandemic eroded the trade-based entitlements which afforded people to make a living and the production-based entitlement which allowed people to produce for the consumption and to sell their produce for income generation. Own-labour entitlements were also interfered with because people were unable to use their own labour to produce or make a living as a result of the hard lockdown. The effect is still experienced, and some lost their family members who were the main wage earners ('breadwinners') and heads of households. The study recommends for the government and other relevant development stakeholders to develop urgent interventions to mitigate food insecurity crises attributed to pandemics and other factors.

Keywords: COVID-19, food security, household, household food security, and national lockdown.

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CHAPTER 1 INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION AND BACKGROUND

The COVID-19, a disease caused by a virus known as SARS-CoV-2, emerged in 2019 in Wuhan, China, and it was declared as a world pandemic by World Health Organisation (WHO) in 2020. The disease threatened human health and resulted in global health crises that the world had not experienced for years and took millions of lives (WHO, 2020). The pandemic, according to United Nations (UN), was beyond a health crisis and more of a socio-economic crisis, which was exacerbated by the adoption of the global lockdowns.

Newman (2021) maintains that the differentiated impact of COVID-19 is becoming more apparent even in economically strong countries and worse in more fragile and developing countries. Khambule (2022) is of the view that the pandemic amplified existing challenges, such as poverty, inequality, and unemployment, and that the effect will be felt in decades because of the strict lockdown. People lost their livelihood generation activities and the increase in prices of commodities, including food, exacerbated the situation. This study, therefore, sought to establish how the rural households were affected by the COVID-19 pandemic concerning their food security status.

Laborde *et al.* (2020) discussed that the lockdown restrictions involved travel restriction from both internal and external travelling; people were restricted from leaving their homes, and this prevented people practising their economic livelihood activities and threatened their food access level.

The lockdown, as the adopted strategy, aimed to halt the spread of the virus. Owing to this strategy, countries face a global recession which is projected to have long term effects on food systems. Due to lockdowns, countries experienced economic shocks associated with business disruption, supply shortages (as a result of panic purchasing), agricultural disruption and shortages of food (Zurayk, 2020). Many people went jobless (particularly in the informal sector) because of the disruption or closure of businesses and halted income.

The disruption in agricultural practices and food shortages led to an increase in the price of food stuffs across countries. The increase in food prices and loss of income

are of serious concern since many people, particularly in the low-income and less developed states, with high inequality and poverty rates, find it difficult to cope with such changes. United Nations (UN) predicted that the disruption in the food supply might cause global hunger to double, particularly in Africa nations and other poor countries (UN, 2020).

Food is a basic need for human and economic development; it is one of the basic needs for human survival (Nielsen *et al.*, 2010). Food security and eradicating hunger forms part of the Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs), as outlined by the UN. Even prior to the pandemic outbreak, millions of people globally were already experiencing food insecurities which manifested itself in the form of hunger and malnutrition (UN, 2020). Galanakis (2020) posits that more than 800 million people were already recognised as chronically food insecure before the COVID-19 pandemic. COVID-19 is argued to have led to the largest emerging global recession since the Great Depression (Galanakis, 2020).

COVID-19 in the African states emerged during a time where food systems and food security in some countries were already under strain (Moseley and Battersby, 2020). Natural disasters, climate change, conflict and the arrival of pests preceded the virus and were already affecting food security in various contexts. For instance, in East Africa, countries were already experiencing disasters, heavy rain and swarms of locusts which made it difficult to address the outbreak of COVID-19 (Moseley and Battersby, 2020). Moreover, many African countries prior to emergent of the coronavirus were already faced with extreme poverty, hunger, malnutrition, and other food insecurity related issues. The disruptions of food systems because of COVID-19 are more likely to push further millions of people to below the poverty line and make them more vulnerable to food insecurity (Fechit, 2020). The state of food insecurity in some African countries has been exacerbated by the COVID-19 pandemic (Niles *et al.*, 2020).

South Africa, just like China, Italy, and more other countries, was devastated by the COVID-19 pandemic. To halt the spread of the virus, the government implemented a harsh lockdown and travel restrictions in March 2020 (SAG, 2020), ordering South Africans to stay at home. Only essential workers were allowed to work. These were workers in essential services such health, police, fire, transportation, army, and supermarkets. Unfortunately, workers from other sectors, classified as non-essential

workers, including the self-employed and people working within the informal sectors (i.e., street vendors, self-employed local constructors, car guards, salon hairdressers, etc.), were restricted from going to work. As a result, many non-essential workers may have been deeply affected and left with no income since for some “no work means no pay”. As part of the consequences of the national lockdown (which led to business disruptions), many people were retrenched, particularly in the informal sector, and left unemployed (Arndt *et al.*, 2020). According to the *Daily Maverick* (2020), more than three million people lost jobs during the harsh stages (stage 5–3) of the national lockdown.

The employment status and income level in South Africa is understood to be among the contributing factors toward food insecurity. In this regard, if people are unemployed or with a low income, they generally become vulnerable to food insecurity (Devereux *et al.*, 2020). According to Statistic South Africa (Stats SA) (2020), the loss of income due to COVID-19 was more than likely to lead to high levels of food insecurities in the country. Due to COVID-19, the country also experienced a rise in the food prices associated with the socio-economic disruptions caused by the national lockdown (*Daily Maverick*, 2020).

Rising food prices has an influence on access to food. In cases where food prices increase while levels of income remain the same, people are prone to fall into deep poverty and food insecurity (Reddy, 2020). Protests were experienced in some of the areas in South Africa where people were fighting over food parcels which were being distributed. This was a clear indication that some of the households had challenges of inadequate access to food owing to the COVID-19 national lockdown.

Despite the support by the government in terms of the food parcels offered, there was not enough food and many could not access these food parcels due to corruption (Vermeulen *et al.*, 2020). The distribution of food parcels showed attempts by the government to ensure access to food and it served as a form of acknowledgement that many citizens were at risk of food insecurities as a result of the pandemic.

COVID-19 emerged at a time where food inadequacy and hunger at the household level were major challenges in South Africa (Stats SA, 2020). Although South Africa is argued to be food secure at a national level, food security is, however, still of great

concern at a household level (Stats SA, 2017). Many households within the country are food insecure.

About 17 million South Africans relied on social grants for household income and access to food before COVID-19 outbreak (SAMRC, 2020). Households that rely only on social grants in the country are known to be faced with persistent undernutrition (Earl, 2011). Given that the country has many people who are already suffering or at risk from food insecurities at a household level, this may imply that many people amid the national lockdown were more at risk and vulnerable to food insecurity than before.

The country has limited studies conducted on the issue of COVID-19 and food security, particularly among the rural households. Most previous studies in this area were conducted in Gauteng province. Thus, the existing subject knowledge does not really give a clear picture of households' food security status of households in rural settings. There is a knowledge gap in this subject matter and a need to conduct further rural context specific enquiry to close this gap.

Against this backdrop, the study was aimed towards assessing the effect of COVID-19 pandemic on household food security during the national lockdown. The study was conducted in Bushbuckridge Local Municipality, Mpumalanga in South Africa. The municipality consist of 135 settlements, of which more than 70 percent of them are rural areas.

Like most municipalities in rural settlements, the municipality is faced with poverty and high unemployment rates, among other issues. These issues are believed to form part of the contributing factors to food insecurity. Rural communities, like any other poor communities, are vulnerable to food security since people are faced with high levels of poverty and unemployment (De Cock *et al.*, 2013). Given that many people lost their employment, particularly within the informal sector during lockdown, it means many people in the municipality (where poverty and unemployment were already a challenge) were prone to experiencing food insecurity. The size of the municipality, together with the challenges facing Bushbuckridge Local Municipality, makes it a suitable context to conduct this study. It is of paramount importance to indicate that the study was started in 2021 during the national lockdown and data were collected in January 2022.

1.2 STATEMENT OF THE PROBLEM

The rapid spread of the COVID-19 forced the affected countries, such as China, United Kingdom, India, France, Italy, Poland, South Africa, and others, to implement a strict lockdown in a bid to curb the spread of the virus. The lockdowns received criticism across the globe, with some arguing that it was mainly focused on preventing the spread of the virus while neglecting other crucial aspects, such as the economical aspect (Rowthorn and Maciejowski, 2021; Newman, 2021). The authors further argue that the governments did not carefully assess the indirect costs of the national lockdown prior to implementation. They were too concerned about curbing the spread of the virus and failed to find ways to mitigate the potential costs of the lockdown on economic and social aspects. Hence, the economic and social costs far outweighed the health benefits.

In South Africa, the national lockdown upset the lives of South Africans in an immeasurable way. Most household breadwinners could not go to work because only essential workers were permitted to work due to the COVID-19 national lockdown. As a result, non-essential workers, particularly self-employed and workers from the informal sector, could not perform their livelihoods or income generating activities. Most of these workers operate on a “no work, no pay” basis. Most households in the country rely on economic access to food, and very few are dependent solely on subsistence farming. Accordingly, Stats SA (2021) asserts that only 17.3 (3.1 million) percent households were involved in agricultural activities in 2021. Unequivocally the stats for the households who access food from own production is relatively low in the country. The loss of income amid the national lockdown was of great concern and some households may have found it difficult to meet their dietary needs.

The livelihoods of most low-income households in South Africa prior to the COVID-19 outbreak, were already burdened due the adverse effects of climate change and other economic related issues. Therefore, their livelihoods were already compromised as such COVID-19 pandemic may have exacerbated existing vulnerabilities making rural households even more susceptible to food insecurity.

The effect of the COVID-19 on the already compromised livelihoods have not been scientific studied in Bushbuckridge Local Municipality. Moreover, the country has very limited empirical investigation, despite the global understanding of the threats

posed by the COVID-19 pandemic towards households' food security status. The available studies on COVID-19 and household food security conducted amid the national lockdown are mostly from urban areas.

Khambule (2022) argues that most studies focus attention on the macro-economic impact of the pandemic, which is not understood among low-income households who live and work in poverty. South Africa, like other affected countries, was faced with COVID-19 pandemic, from emerged amid food insecurities related issues. Very little is known on how COVID-19 lockdown has affected the food security status of rural households. This, therefore, motivated this research to add more knowledge to the existing field of food security. It was crucial to address this knowledge gap, particularly during a time in the country, when the effect of the pandemic was still uncertain, with projections for more waves of the pandemic. The study was directed at analysing the effect of the COVID-19 pandemic on rural household food security status in Bushbuckridge Local Municipality, Mpumalanga, South Africa.

1.3 RESEARCH QUESTIONS

The study's general research question was to provide answers to the question on how the COVID-19 pandemic has affected the food security status of rural households amid the national lockdown.

The specific research questions of the study were as follows:

1. What are the perceptions of the households about the effect of the COVID-19 pandemic on food security during the national lockdown stages?
2. What challenges are or were posed by the COVID-19 pandemic concerning food security?
3. How did the households mitigate the effect of the pandemic on food security?

1.4 RESEARCH AIM AND OBJECTIVES

The aim of the study was to explore the effect of the COVID-19 pandemic on food security status of rural household. To unpack the aim, the study developed the following specific objectives:

1. To assess the perceptions of the households about the effect of the COVID-19 pandemic on food security during the national lockdown stages.

2. To describe the challenges posed by the COVID-19 pandemic concerning food security.
3. To examine the measures that have been adopted to mitigate the effect of COVID-19 pandemic on rural households' food security status in the study area.

1.5 DEFINITION OF TERMS

This section presents the definitions of COVID-19, national lockdown, food security, food insecurity, household, and household food security.

- **COVID-19** — the World Health Organisation (2019) defines COVID-19 (known as coronavirus) as an infectious disease that is caused by a newly identified coronavirus.
- **National lockdown** — A policy that restricts people from leaving their respective space of living (homes) due to certain risks (which in this case was the coronavirus) to themselves or others if they interact or move freely. The term 'stay-at-home' is usually utilised for lockdowns that affect the whole country rather than specific locations (Taylor, 2020).
- **National lockdown stages** — a criterion used by the South African government to determine the level of restrictions to be adopted amid the national lockdown. The study focused more on stage 5 to 3 which are known to have been the harsh stages of the lockdown. Stage 5 meant that severe measures were required to control the spread of the virus. Stage 4 on the other hand, permitted relative activities to resume with a condition that extreme precautions applied to minimise community transmission and outbreak. Stage 3 involved easing some the restrictions, particularly on work and social related activities, to address a high risk of transmission (South African Government, 2020).
- **Food security** — the study defines the concept as defined by the Food and Agriculture Organisation (FAO), of the UN, in 1996, as a situation within which people have economic and physical access (continuously) to adequate, safe, and healthy food, to meet their nutritional needs and dietary preferences for a healthy and active life. The researcher found this definition suitable for the proposed study and will made use of this definition to measure household food

security level and to determine the household food security status of the participants.

- **Food insecurity** — the study defines food insecurity as a situation in which people have limited or lack economic and physical access to adequate, safe, and healthy food, to meet their nutritional needs and dietary preferences for a healthy and active life (FAO, 2012).
- **Household** — the concept is defined by Cambridge Dictionary as one or more people who share accommodation as their main residence and also share a meal. People can be regarded as a household when they are related (full or half blood, foster, step-parent/child, in-laws, etc.) and households may vary in size (Cambridge-Dictionary, n.d.). The definition was appropriate for this study as it was used in similar studies.
- **Household's breadwinner** — the study defines household's breadwinner as an individual who is a sole or primary income earner within a household. Breadwinners are known to support their families financially and in other aspects and, in so doing, they contribute the large portion of their earnings to cover the household expenses.
- **Household food security** — the study defines household food security as a situation within which a household has economic and physical access to adequate food to meet their nutritional needs at all times, to live a healthy and active life. In the study, households are viewed as food secure, when they have access to their preference dietary needs which is sufficient, safe, and healthy to sustain all the household members for the whole month, to always live a healthy and active life.

1.6 RESEARCH DESIGN AND METHODOLOGY

The study used the exploratory research design to examine the effects of the COVID-19 pandemic on the food security status of rural households in Bushbuckridge Local Municipality. Convergent parallel mixed-methods were adopted, where both the quantitative and qualitative data were gathered simultaneously and merged to understand the research question. The target population included the heads of households that were selected using a convenience sampling method. The key informant was a social worker selected using a purposive sampling method, based on

the need for information-rich cases. In-depth, face-to-face interviews were held with the participants and the document analysis method was also used, which involved a systematic analysis of written documents in order to make certain deductions based on the study parameters. A descriptive statistics analysis was used to analyse quantitative data and a thematic analysis method was used to analyse qualitative data.

1.7 SIGNIFICANCE OF THE STUDY

Owing to the COVID-19 pandemic, South Africa implemented a harsh national lockdown for the first time in the history of pandemics since the 1918 influenza pandemic. At the time when the study was conducted, there were few studies (Nomarwayi *et al.*, 2021; Vermeulen *et al.*, 2020.) conducted on the issue of how the COVID-19 pandemic has affected rural household food security. This left an opportunity for new research to contribute to the existing knowledge.

The study sought to establish how the national lockdown, as a result of COVID-19, affected rural households' food security status in the area of the study. At the municipality under study no studies were available on the issue under examination. This may be the first study conducted within the municipality. This implies that the study has the potential to generate unique knowledge regarding the effects of COVID-19 on rural household food security status from the experiences and perspectives of households in the municipality. The findings and recommendations from the study may assist the policy makers to gain more insight on aspects to consider when formulating food security related policies aimed towards the alleviation of food insecurity issues in rural settings. Hence, the findings will be shared with the municipality and other stakeholders.

1.8 STRUCTURE OF THE DISSERTATION

The study is made up of the following five chapters:

Chapter 1

Chapter 1 presents the introduction and background of the study, statement of the problem, research aim, objectives, and research questions. It reveals the significance of the study, elaborating on the manner in which the study will contribute to the already

existing knowledge. It also outlines the procedures adopted in relation to research design and methodologies and gives a definition of terms.

Chapter 2

Chapter 2 presents scientific and relevant literature on the effect of COVID-19 pandemic on food security. It provides a critical discussion concerning the pandemic and its effect of food security, at various levels (global, continental, national, provincial, and local), with the aim of responding to the research questions. It further discusses Amartya Sen's entitlement theory within the context of the COVID-19 pandemic, with the intention of generating an understanding of how the COVID-19 pandemic has affected household food security.

Chapter 3

Chapter 3 provides an overview of Bushbuckridge Local Municipality as the area under study. It gives a detailed discussion of the research design and methodologies employed in carrying out the study. It further discusses the study's limitations and ethical consideration.

Chapter 4

This chapter presents the initial findings of the study and discusses the collected data.

Chapter 5

Chapter 5 presents a summary and conclusion based on the reality of the practice within the study area considering the existing literature. This chapter addresses the research questions outlined in the first chapter and provides recommendations and suggestions for future research on food security.

1.9 SUMMARY OF THE CHAPTER

Chapter 1 provided a synopsis of the study by highlighting the few previous studies relating to the issue of COVID-19 pandemic and food security. In doing so, the chapter stated briefly how this study will contribute to the literature on food security in South Africa. The chapter reflected on how COVID-19 has impacted the global community in terms of food security. It also highlighted how food insecurity at household level has always been a challenge in the country. Moreover, the chapter reflected on how the

socioeconomic challenges, as posed by the pandemic-related national lockdown, are likely to affect household food security and how it served as the prompting factor for this study.

The literature review is discussed in Chapter 2 that follows.

CHAPTER 2 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

For the first time in the history of pandemics in South Africa, the country saw an implementation of the national lockdown with the intent to mitigate the spread of the coronavirus. The effect of the pandemic and the measures adopted because of COVID-19 remain unknown. Despite global debates over the threats and possible effect of the COVID-19 pandemic on food security, the country still has limited literature on COVID-19 and food security. This chapter, therefore, sought to investigate different perceptions of the pandemic and food security on various levels (global, regional, and national). This was done to generate an understanding of how COVID-19 national lockdown affects food security status.

The chapter also conceptualised both concepts of COVID-19 and food security to create a unified understanding of these concepts. The chapter also covers the strategies adopted by some other countries as well as South Africa in mitigating the effect of COVID-19 national lockdown on food insecurity. Additionally, the chapter also discusses the entitlement theory to explain how food security status gets affected and, therefore, makes an analysis based on the theory of how COVID-19 affects food security. The significance of the entitlement theory in this chapter lies in its four types of entitlements to acquire food, namely own labour, production-based, transfer entitlement, and trade based, which have an influence on food security.

2.2 CONCEPTUALISATION OF THE COVID-19 PANDEMIC AND FOOD SECURITY

The COVID-19 pandemic, also known as the coronavirus, emerged in 2019 and was first identified in China. In January 2020, the World Health Organisation (WHO) declared the Public Health Emergency of International Concern regarding the virus and, in March 2020, it was declared a pandemic (Zoumpourlis *et al.*, 2020). WHO called for preventive measures to curb the coronavirus to protect lives. Accordingly, several measures in response to the virus were put in place in various countries globally.

The national lockdown was the common measure adopted by countries in curbing the spread of the coronavirus. However, the execution of the national lockdown varied from country to country. Pires (2021), developed two categories namely “happy countries” and “unhappy countries” to group countries’ execution of national lockdown in line their similar execution approach. Vietnam, South Korea, Denmark and New Zealand were classified as “happy countries” as they had a prompt public health reaction using nonpharmaceutical measures (strict guidelines on shutting things down, mask wearing, etc.). To stop the virus from spreading, they swiftly put strong testing and contact tracking measures into place, paid individuals to stay at home, and carried out important public health activities.

Countries such as Brazil, Russia and United States, were grouped as “Unhappy countries”, these are the countries that are perceived to have implemented the national lockdown wrong. They responded with different policies among which some were expected while some were not. For instance, these governments provided some stimulus, effectively enabling people to remain at home, however they neglected to construct public health policies. The United States and Brazil were two really salient countries that did a massive socioeconomic stimulus, however, just did not make coherent public health policies for different reasons given the various political systems. The failure to construct public health policies resulted in high rates of mortality.

Continuous debates on COVID-19 and food security from various scholars have emerged since the adoption of the national lockdown, with concerns that the national lockdown-related restrictions are more likely to affect the food security of poor households whose food security status was already of concern. Rusczyk *et al.* (2020) argues that the measures adopted in response to COVID-19 to mitigate the spread of the coronavirus are more likely to impose a negative impact on food availability, access, utilisation, and stability. They argue that this situation will occur because most states have demonstrated to be more focused on health as compared to other aspects, such as socio-economic which has an influence on food availability and accessibility.

Food security is realised when there is sufficient food available to be accessed by people, and when people have reliable economic and physical access to adequate, safe, and healthy food to meet their nutritional needs and dietary preferences for a healthy and active life (IFPRI, 2020). Food security is achieved when all its four pillars (i.e., food availability, access, utilisation, and stability) are met. Meeting all four pillars

amid the COVID-19 pandemic, which is believed to have disrupted global food systems, was challenging. The disruptions in food systems will unequivocally impact the pillars of food security and the food security status of many households. In generating an understanding of the concept of "food security" within the context of the COVID-19 pandemic, the concept is discussed based on its pillars during the COVID-19 pandemic.

2.2.1 Food Availability During

The availability of food alludes to the physical presence of food, whether from markets or own production. Burchi and De Muro (2016) maintained that food availability is about the supply of adequate food, of proper quality, which can be obtained from imports or domestic production. The World Bank (2020) asserted that food was sufficiently available at a global level amid the pandemic, meaning that the availability of food was not an issue, the issue was on accessibility. They, however, maintained that despite the food being available, the COVID-19 pandemic posed a threat to global food security and a number of severe food insecurities scenarios may occur. The concern stemmed from the fact that the dynamics of the countries that produce food were guaranteed within the context of the pandemic. However, global trade needs, which cause disruptions in the domestic economy, may affect these dynamics (Udmale *et al.*, 2020).

Countries with a food structure that is dependent may experience a food insecurity scenario in the context of the pandemic, and this event may get even more intense. The COVID-19-related preventive measures in a national economy affect food availability directly. Within these lines, the cross-border restrictions and a decline in spatial movement affect the availability of food. The restrictions ascending from the COVID-19 pandemic may cause disruptions in the food supply chains of the countries on which their food structure is dependent (Fechit, 2020). Countries like Nigeria and Ghana, which are among the most affected countries by the pandemic in Africa, are vulnerable because they are reliant on importing food (Fitzpatrick *et al.*, 2020).

2.2.2 Food Access

"Food access" is confirmed when households and all members of these households have adequate resources to acquire proper or quality food for a healthy diet. It is influenced by the total amount of resources in a household such as income, capital,

knowledge, and as well as prices (Dodd and Nyabvudzi, 2014). Food access involves the accomplishment of sufficient resources required to acquire suitable food for a balanced healthy diet. This pillar is arguably the most affected pillar of food security now during the COVID-19 pandemic, and many households (particularly in developing countries) may find it difficult to meet their dietary needs as a result (Devereux *et al.*, 2020).

The COVID-19 pandemic-related preventive measures, in particular the national lockdown, left millions of people across the globe jobless and with no income. High Level Panel Experts (HLPE) (2020) maintained that the loss of employment and income (which influences economic access to food) owing to the pandemic threatens access to food since it may affect the ability to purchase food. Income shocks may exacerbate food insecurity for the poorest households, who spend more than 60 percent of their income on food and have limited access to financial markets. Global economic projections have become increasingly bleak as the economic effect of social isolation has become more apparent.

According to the International Monetary Fund's (2020) then most current prediction, the global economy was to contract by 5 percent in 2020, a far deeper global recession than the global financial crisis of 2008–2009. Low-income and middle-income states are being impacted by the economic fallout in the pandemic's original epicentres (China, Europe, and the United States), which is increasing the economic costs of poorer countries' own COVID-19-related limitations (Laborde *et al.*, 2020).

Most nations lack the latest household surveys. Therefore, there are currently no accurate estimates of the effect of global poverty and food insecurity. However, the model-based simulations show that between 90 million and 150 million people could descend into extreme poverty (Angeles-Agdeppa *et al.*, 2020). Nevertheless, such estimation is greatly uncertain given the pandemic's rapid growth, where both estimates imply significant increases in global poverty, ranging between 15 and 24 percent over current estimates. Poverty is projected to worsen in South Asia and Sub-Saharan Africa (Devereux *et al.*, 2020).

The increases in poverty and income declines of this scale may have a significant effect on food security and nutrition. Households in great poverty may not have sufficient money to access adequate food to avoid food insecurity (in a form of hunger

and malnutrition), consequently, low-income and middle-income households may consume poor-quality food. Even though the recession may not last long, the consequences of poor nutrition could last for a long period of time, mainly for vulnerable children whose health tends to be affected by malnutrition owing to food insecurity.

2.2.3 Food Utilisation

Food utilisation refers to the metabolism of food by people. This pillar can only be met in the case where food is adequately available and accessible, while people have the adequate economic and physical resources to access and consume sufficient nutritious food (Elsahoryi *et al.*, 2020). When a variety of food is available and accessible, households can make use of this and generate a nutritious diet which boosts their immune system, and this is a crucial aspect within the context of the current ongoing pandemic (FAO, 2020). The pillar of utilisation during the ongoing pandemic may be a bit difficult to achieve looking at the current effect of the COVID-19 pandemic which may lead to massive dependency on food imports. There are many countries which rely on other countries for food and the dependency on food import is mostly connected with a high intake of low-cost and low-nutritious value foodstuffs (Fechit, 2020).

FAO (2020) asserts that the pandemic has impacted utilisation and nutrition in a critical way. Proper and healthy nutrition is crucial for boosting a person's immune system, which is very essential in fighting the coronavirus. The report further argues that meeting the utilisation pillar amid the pandemic may be very difficult looking at the fact that the COVID-19 pandemic has affected the ability of people to access food, which may negatively affect their ability to access adequate nutritious diet.

2.2.4 Stability

Stability is defined by Berry *et al.* (2015) as the capacity of a family unit to procure, from income, production, sufficient food supplies in a continuous manner, even in a case where a household is experiencing challenges of unforeseen stress, crisis or shocks. Stability on a household level is met when the supply remains persistent throughout the year and in the long run. This incorporates food, economic resources, and income (Elsahoryi *et al.*, 2020). Stability can be affected by factors such as climate change, and price vitality, among others. Therefore, it is vital to have prepared

measures ready and available to ensure households' resilience. Amid COVID-19, ensuring food stability would be a serious challenge given its effect on food production, employment, and food cost (Fitzpatrick *et al.*, 2020). During the pandemic, households found difficult to procure sufficient food supplies in a continuous manner given the fact that some households have experienced a loss of employment and income, salary cuts, and other related challenges owing to the COVID-19 pandemic preventive measures.

2.3 GLOBAL FOOD SECURITY IN THE CONTEXT OF COVID-19

Globally, the COVID-19 pandemic disrupted the global food supply chains and the sources of acquiring food, which as a result, negatively impacted the global state of food security. However, it should be noted that the issue of food insecurity has been a challenge for many countries long before the pandemic (United Nations, 2021). For instance, the FAO and UN (2018) maintained that the world over the past years has experienced a continuously growing number of people living within the challenging conditions of food insecurity. In 2016, the total number of malnourished people globally was projected to be more than 800 million, which saw an increase in 2017 to almost 820 million and the situation was worse in African regions (FAO and United Nations, 2018). In 2019, they estimated an increase of 60 million people who were experiencing acute hunger, of which women and children were the most affected.

The Global Report on Food Crises (2019) reported that more than 100 million people experience intense hunger across 53 nations and were in need of urgent food assistance and the protection of their livelihoods. This shows that food insecurity has indeed been a challenge affecting many countries before the outbreak of the COVID-19 pandemic and now because of the coronavirus, the situation worsened.

Since the economic costs of the pandemic-related preventive measures became more evident, projections of food insecurity across the globe increased immensely. The Global Report on Food Crisis (2021) estimated that in 2020, during the pandemic, more than 150 million people globally were intensely food insecure. It should be noted that the changes in food security status or the rise in food insecurity levels were exacerbated by the adopted measures to mitigate the spread of the virus. The pandemic-related measures, which restricted the mobility of people and containment measures such as the temporary closure of business, led to severe repercussion

within the global agri-food supply, resulting in food shocks. Although food shocks were already existing before the pandemic, COVID-19 made it worse. A FAO (2020) report stated that the countries that were already experiencing major food insecurity-related problems, as a result of food shocks owing to climate change, conflicts, and economic crises, were deeply affected by the pandemic. In these nations, the danger of food supply network disruption is inescapable, subsequently affecting farmers' earnings and the food supply of urban areas (FAO, 2020).

The international travel restrictions affecting population mobility have impacted the supply of food and other goods in respect of various governments' interventions to keep borders open for cargo transportation (Udmale *et al.*, 2020). For instance, airlines have lowered flight regularity because of a decline in traveller demand, which resulted in a reduced capacity of air cargo by 22 percent in March 2020 (Kuriyama, 2020). All food is vulnerable to restrictions, but more especially perishables (i.e., vegetables, fruits, seafood, dairy, meat, etc.).

In the midst of the COVID-19 pandemic, countries witnessed panic buying episodes and, as a result, some countries responded by introducing international export restrictions on certain foodstuffs and other goods with the aim of securing the provision of food. For instance, in response to panic buying and other COVID-19 related challenges, the United States implemented temporary export restrictions on exports of some foodstuffs and medical goods during the early months of the pandemic (CRS, 2021). The United States leads in terms of food exports which are estimated to be worth 72,682,349.79 US dollars (Food and Agricultural Organisation of United States, 2022).

The COVID-19 pandemic, which triggered economic decline, poses a threat to food production and impacted the global food supply. These effects, together with the implementation of exports restriction by the top food exporter countries, posed a serious threat to global food security and directly affected the food security of the countries which depend on importing food from these countries which had restrictions on the exports of certain food (Udmale *et al.*, 2020). Although such protectionist actions were later discouraged by FAO, it may have adversely affected the countries vulnerable to such actions.

There is no doubt that countries may have been affected differently by the COVID-19 pandemic, and to understand the situation of food security in the context of the pandemic, each country should be assessed separately. China, Brazil, Mexico, and Bangladesh were assessed to reveal different views and information on how food security has changed during the pandemic.

2.3.1 China

China is one of the countries that leads in the production and export of grains, poultry, meat, eggs, vegetables, fruits, and fish products globally, and has efficiently tackled the issue of taking care of its own populace, which addresses 21 percent of the world's absolute populace (Zurayk, 2020). This is a country in which COVID-19 emerged, in the city of Wuhan. The preventive and control measures, such as town-wide lockdown, the closure of markets, the control of transportation, and closed control of rural communities and other settlements owing to the pandemic in China, impacted the local food systems (particularly from the agricultural sector) and consequently various businesses were closed during the early stages of the pandemic (Min *et al.*, 2020). Due to the COVID-19 pandemic, the local food systems in China saw disruptions in production and distribution. These two components of the food systems (production and distribution) in this country were affected deeply due to lockdowns which imposed travel restrictions and restrictions on people's mobility. These restrictions impacted the transportation of agricultural inputs and the labour force, which possibly caused interruptions in production (Sarkar *et al.*, 2021).

Additionally, practically all distribution channels related steps of the agricultural produce were affected from local purchasing to wholesaling. This was followed by a decline in agricultural product demand because of the closure of businesses (i.e., restaurants, local food caterers, etc.) which, as result, led to an unsellable huge quantity of seasonal fruits and vegetables. This, as a result, may have impacted farmers negatively since they were at risk of losing profit and being vulnerable to investment-related complications for the following planting season and reducing the amount of production for this season (Zurayk, 2020).

The closure of businesses in China led to an increase in the unemployment rate from 5.2 percent in December 2019 to 6.2 percent in May 2020. The increase in the number of unemployed people is estimated to be more than four million people (CNBC, 2020).

It should be highlighted that the country did not experience a shortage of food since the country has had a good harvest in the previous years. For the past few sequential years, the production of food in China has been quite exceptionally high with a record of more than 650 million tonnes of grain production in 2019 (Min *et al.*, 2020).

Despite disruptions in production and distribution, food prices in China during the pandemic remained stable and the supply of staple food, vegetables, fruits, and meat met the country's needs. Although the country's food security is argued to have remained stable due to the past great harvest which ensured the availability of adequate food and stable food prices (Marchisio, 2020), the COVID-19 pandemic-related restrictions, which led to a consequence loss of jobs and income, may have lowered people's purchasing power to access adequate quality food, leaving them vulnerable.

2.3.2 Brazil

In Brazil, when COVID-19 emerged, an emergency in social, political, and economic aspects was profoundly apparent (De Carvalho *et al.*, 2021), cultivating job losses, poverty, and hunger. Years before, the battle against food weakness in Brazil was hindered by the implementation of severity measures, for example, the National Amendment 95/2016 (Roznai and Kreuz, 2018), which decreased public spending on social policies, notwithstanding security reforms and labour, which caused an infringement of human freedoms that were further disturbed by the pandemic. The pandemic uncovered various weaknesses that existed before the pandemic. Brazil is characterised by regions that lack access to fundamental services, which makes them vulnerable to food insecurity (Filho and Junior, 2020).

Ribeiro-Silva *et al.* (2020) argued that the effect of the COVID-19 associated national lockdown, which led to the closure of businesses, was quickly felt economically and socially in the country. A Brazilian National Household Sample Survey revealed an increase in the unemployment rate in the first quarter of 2020, which led to an increased number of people who were poor and extremely poor. More than 10 million people in Brazil by June 2020 had contract suspension, some had reduced working hours and salary cuts, and more than two million people were unemployed (Brazilian Institute of Geography and Statistics, 2020). The rise in unemployment rates and destitution in the country notwithstanding, the rise in food prices during the pandemic

demonstrated an increased number of people in the group of individuals who are vulnerable to food insecurity (De Carvalho *et al.*, 2021).

It should be noted that toward the start of the pandemic, the Brazilian populace was anxious about a shortage of food but, as amid the pandemic there no indications of a lack of food in Brazil. Therefore, this would that the country may have not suffered from a shortage of food. However, this does not mean that the entire population of the country was food secure in the midst of the pandemic (Gomes *et al.*, 2020). Food security is determined not only by the availability of food but also by the availability of income in the hands of the people and the cost of food in the retail markets. Those factors determine access to food, the kind of food, quantity, and when to buy (Brazilian Institute of Geography and Statistics, 2020). COVID-19 in Brazil was overwhelmingly a challenge on access to food, not availability. Brazilians with unstable incomes may have found it difficult to access adequate food due to limited access owing to job losses, salary cuts, and a dramatic rise in food prices during the pandemic.

2.3.3 Mexico

The COVID-19 pandemic in Mexico emerged at a time when the country was facing a crisis of food security and employment. The country has more than 20 million people who do not regularly have sufficient access to adequate food and about half of the employed population are working within the informal sector. The COVID-19 pandemic, and the associated mandated national lockdown, took away the source of income for millions of people, pushing them to deeper crises of food insecurity (Monroy-Torres *et al.*, 2021).

To confirm the loss of employment due to the pandemic, Statista (2021) revealed that when COVID-19 emerged in Mexico in February 2020, the unemployment rate was about 3.5 percent. However, in June during the same year, the unemployment rate increased rapidly from 3.5 percent to 5.32 percent (Statista, 2021). Gaitán-Rossi *et al.* (2020) argued that the pandemic has led to a concerning decline in food security in various households that were already vulnerable prior to the pandemic and now it is also affecting the households whose situation in terms of food access was worse after the pandemic because of job losses (permanent or temporary) and debt.

The main direct effect of the pandemic in Mexico on food security has been through its influence on employment, livelihoods, and related purchasing power. This implies

that food access, as one of the dimensions of food security, was the most affected in Mexico (like China and Brazil) during the pandemic. Food was available but then the issue was on accessibility due to reductions in the people's ability to access adequate food owing to the loss of employment and income.

2.3.4 Bangladesh

The food systems of Bangladesh have been interrupted by the COVID-19 pandemic directly and indirectly. HLPE (2020) argued that the pandemic would directly affect the food systems of the country through the pandemic-related effect on the supply and demand side, and indirectly from the decline the production capacity and distribution and buying power. This would all have various distinguished effects and which would affect mostly the vulnerable and poor (Chakrobarty *et al.*, 2020).

It should be highlighted that Bangladesh is among the top food exporters and is known for being one of the producers of the largest amount of rice, mango, vegetables and grain in the world. The country, like China and Brazil, is very unlikely to experience food shortages because of its adequate food supply. However, the concern is on the accessibility of food considering loss of employment and income during the pandemic, which plays a crucial role in acquiring adequate food at the household level (Ruszczky *et al.*, 2020).

In Bangladesh, many individuals, particularly in the informal economy, lost their jobs due to the continuous pandemic. The country saw a rise in the level of unemployment and poverty. According to the World Bank (2020), the unemployment rate of Bangladesh in the midst of the COVID-19 pandemic increased from 4.2 percent in 2019 to 5.3 in 2020, and the poverty rate increased from 14.4 percent 2019 to 18.1 percent in 2020. The rise in unemployment and poverty rate poses a threat to food access to the population of the country, particularly those who lost income due to disruptions of livelihoods and loss of employment (World Bank, 2020). Along these lines, the COVID-19 pandemic in Bangladesh threatens the food security of the most vulnerable people due to their inability to access adequate food (Chakrobarty *et al.*, 2020).

2.4 FOOD SECURITY IN THE CONTEXT OF COVID-19 IN AFRICA

The scarcity of food is not a challenge globally; arguably, the globe has adequate food to feed the world's population. However, the concern or challenge lies in supplying food to the needy people in Africa (Filho and Junior, 2020). In African regions, domestic food production for most countries is also a concern. Food insecurity is very common and concerning. Many African countries are in states of critical food insecurity. Despite the crucial endeavours and achievements in the fight against poverty in the past years, numerous nations in Africa have been experiencing economic recessions, and the outcome of poor livelihoods and income has significantly impacted millions of Africans (Elsahoryi *et al.*, 2020).

Millions of people within the African states live below the poverty line and are vulnerable to food insecurity. More than 160 million people are food insecure in the African regions, with over 110 million undernourished people. More than 50 million people are intensely food insecure; over 10 million children are intensely malnourished and more than 55 million underdeveloped (GRFC, 2021).

In Africa, long before the COVID-19 pandemic, the long-lasting food crises have been influenced by various aspects, such as climate change, economic shocks, political instability, conflicts, etc. In 2020, some African countries were hit hard by an outbreak of locusts which affected their food production through a huge crop and livestock loss, leading to less food in the markets due to a decline in harvests. These crises alone were already threatening to worsen the ranks of hungry and vulnerable people in Africa. This evidence reveals that most African countries are extremely poor and very vulnerable to dire consequences should their already affected food security worsen further (Kuriyama, 2020).

The COVID-19 pandemic posed a threat to food security in African countries and may add more food insecurity related challenges to the already existing risks, and vulnerability. African countries have experienced disruptions in the supply chains in the midst of the adopted preventive measures (such as lockdown and travel restrictions) that were aimed to curb the spread of the virus, which struggled to keep the market fully stocked even during the normal circumstances (HLPE, 2020). The disruptions in the supply chains would result in a huge economic effect in sub-Saharan Africa, of which 60 percent of the employment is from the agricultural sector as

compared to the other regions globally. According to the World Bank report (2020), African regions are at risk for intense food insecurity since the production from agriculture is projected to decline by at least 2.6 percent and 7.1 percent during the year 2020. Agriculture is the key contributor in terms of food and income. The disturbances in transportation and livelihoods due to travel restrictions may affect local farmers by making it challenging for them to sell their produce and ensuring that this food is available for the population at large.

Another noteworthy issue as far as COVID-19 pandemic-related preventive measures are concerned is the heavy dependency of African countries on imports of food (Moseley and Battersby, 2020). Filho and Junior (2020) contended that the level of dependency from some African states on other countries for food supply makes them vulnerable to the international export restrictions which were introduced by some countries by the top food exporter countries during the early months of the pandemic. During the pandemic, some African states also experienced currency depreciation which was followed by a low foreign currency reserve, declining export prices, and a decline in income from suspended industries, which affected their food purchasing power (Niles *et al.*, 2020). This is more likely to result in a shortage of food in import-dependent countries and even worsen the situation in countries where food scarcity was already a problem.

During the pandemic, developing countries from Africa were at risk for food shortages due to their high dependency on food imports, while food accessibility is also a concern in these countries given the fact that people lost employment and income during the pandemic (Kuriyama, 2020). Considering this, the effect of the COVID-19 pandemic in African regions, where millions of people are hungry, may be dire as compared to the other regions of the world where, for most countries, only food access was affected.

2.5 SOUTH AFRICAN CONTEXT OF FOOD SECURITY AND COVID-19

According to Global Food Security Index (2021), South Africa is among the countries which are ranked food secure in Africa and it was ranked 48th of 113 countries globally. The country is food secure at the national level and has adequate food available to sustain the population through domestic food production and imports. However, despite food being available, South African households, particularly low-

income households, have long experienced food insecurity even before the COVID-19 pandemic (Arndt *et al.*, 2020).

The issue of food insecurity in the country is of grave concern at a household level, particularly among the poor and vulnerable households. According to Statistics South Africa, about 6.5 million (11 percent of the population) people in South Africa were reported to be food insecure in 2019. De Cock *et al.* (2013) argued that access and affordability in South Africa are the key drivers of food insecurity at the household level, linked with high levels of unemployment and inequality. Food may be available, but if people do not have the means to access adequate food, then the availability of food is as much as useless (FAO, 2020). The COVID-19 pandemic and the national lockdown only worsened the situation.

The first case of COVID-19 in South Africa was identified in March 2020 and a national state of disaster was declared later within the same month by President Ramaphosa. The strictest national lockdown in the world was adopted in South Africa, comprising of restrictions on public movement, school suspension and business closure. The country was warned against these measures, with concerns over the issue of household food security which was already a challenge prior to the adoption of these measures (Nielsen *et al.*, 2020). The projections by Feedforward SA (2020) were that as the pandemic continued, over half of the country's population would be food insecure within a short period of time, unless interventions were made by the government.

The measures adopted to prevent the spread of the virus impacted the flow of goods and food systems in South Africa leading to an economic slowdown. Unemployment in the country after the initiation of the lockdown, which disrupted businesses, particularly in the informal sector, increased to 30 percent (Arndt *et al.*, 2020). The economic decline and disruption in the domestic supply of food during the early months of the pandemic, owing to travel restrictions, impacted the food prices in the country.

According to Stats SA (2021), the country saw an increase in annual meat inflation from 6.7 percent in March 2020 to 7.1 in April 2020. Chicken portions and stewing beef were the products that saw a major increase: chicken (6.3 percent) and stewing beef (12.1 percent). Oils and fats products recorded an inflation rate of 16.7, the highest

since 2017. The price of cooking oil increased by 21.6 percent over the period of 12 months (Stats SA, 2021). This impacted the two dimensions of food security, namely access and utilisation.

After the implementation of the national lockdown, the country was then ranked 69th out of 113 countries globally, in terms of food security. However, it is very important to note that South Africa was ranked 1st in terms of food security, 1st in terms of food quality and safety, 2nd in terms of affordability and 9th in terms of availability at a regional level. It should be highlighted that there have been changes in terms of how the country was ranked in 2019 which was 48th, decreasing to 69th (in 2021). This shows how COVID-19 affected the food security status of the country. Although the country is still among the most food-secure countries in the region, food security at a household level has worsened during the ongoing pandemic (GFSI, 2021).

During a speech on Freedom Day in April 2020, President Ramaphosa acknowledged that food insecurity has worsened in the country and is a serious challenge for millions of vulnerable South Africans: “for millions...this has been a month of misery, of breadwinners not working, of families struggling to survive and children going to be hungry”. In 2020, the country saw a rise in the number of people who suffer from food insecurity. According to the Integrated Food Security Phase Classification (IPC) (2021), between September 2020 and December 2020, 16 percent (9.34 million people) of the South African population experienced rising levels of food insecurity and were in need of urgent assistance to protect the livelihoods and reduce food gaps. This is a 5 percent increase as compared to 11 percent in 2019.

Of the nine province, eight provinces (Gauteng, Mpumalanga, North-West, Northern Cape, Western Cape, Free State, Limpopo and Eastern Cape) were categorised as stressed during phase 2 of the IPC and requiring urgent interventions to protect livelihoods, whereas the ninth province of KwaZulu-Natal was categorised in crises. According to Stats SA (2021), the country’s food poverty in 2019 was at R561, while in 2020 amid the national lockdown, it increased to R585. The food poverty line further increased by 6.6 percent in 2021 from R585 to R624. This is the amount required for each person in South Africa to access the required minimum energy intake daily. This explains the reason for the growing number of people who are food insecure at the household level in the country: people simply cannot afford adequate food given the increase in food prices and loss of income.

The suspension of schools during the early stages of the lockdown affected 9 million learners in the country. These learners could no longer access the meals offered at various schools through the National School Nutrition Programme, therefore exacerbating starvation in local communities (Paslakis *et al.*, 2020). The decline in the ability to access adequate quality food at a local level due to the restrictions-related effect raised tensions. Social protests arose, accompanied by looting in July 2021, wherein food delivery trucks, supermarkets, and shops were attacked and looted. These incidents demonstrate the level of hunger within communities; people are hungry to the point where they are even willing to risk their lives to get food illegally since they do not have enough purchasing power to access adequate food (Pereira and Oliveira, 2020). Although South Africa was hit deeply by food insecurity owing to adopting measures to curb the spread of the virus, it should be highlighted that the issue was never on the availability of food but accessibility due to loss of employment, disruptions in livelihoods and loss of income.

2.5.1 The State of Household Food Security in South Africa During the COVID-19 Pandemic

Since South Africa was hit by the COVID-19 pandemic, concerns over the food security status of households have been raised by various scholars and a call for urgent action to address the situation was made. The report compiled by the IPC indicated that, between September 2020 and March 2021, about 9.34 million people in the country experienced a high level of acute food insecurity. The IPC, therefore, called for urgent measures to address the issue of food gaps in the country and protect livelihoods (IPC, 2021).

The NIDS-CRAM survey by Van der Berg *et al.* (2021) argued that the indicators of food insecurity, such as hunger and limited economic access food, have remained very high and have remained the same since June 2020. The NIDS-CRAM survey first conducted in May 2020 and June 2020 revealed concrete evidence of a drastic rise in household hunger during the start of the period of the COVID-19 pandemic in the country. The survey depicts that about 47 percent of the participants from the first part of the National Income Dynamic Study (NIDS) conveyed that their households ran out of money for food before month end. The second part of the survey indicated an improvement in the measures of food insecurity, as there was a decline on the participants who indicated to have ran of money for food from 47 percent to 38 percent.

However, the issue of both household hunger and running out of money to purchase food remained stubbornly high. Parts 3 to 5, that surveyed between November 2020 and May 2021, revealed a crucial decline in the issue of households running out of money to purchase food; however, there were no changes in terms of hunger levels. For instance, participants from about 2.3 million households during April/May 2021, reported child hunger. Approximately 620 000 of those 2.3 million households stated that a child had gone without food nearly every day or every day the week prior to their April/May 2021 interview. The NIDS-CRAM survey called for urgent support for vulnerable households that were deeply affected by hunger as a result of COVID-19 and the adopted lockdown measures.

2.6 FOOD SECURITY-RELATED CHALLENGES IN SOUTH AFRICA DURING THE COVID-19 PANDEMIC

South Africa has experienced many challenges during the ongoing pandemic due to the preventive measures to curb the disease. However, this section will only discuss the food security-related challenges experienced in the country. The challenges to be discussed include loss of employment and disruptions in livelihoods, rising food prices, food accessibility and affordability.

2.6.1 Loss of Employment and Disruptions on Livelihoods

The national lockdown measures brought restrictions on people's movements and a sudden economic decline caused a severe reduction of economic activities during the process of preventing the spread of the virus, which has had a negative effect on businesses in the informal sector (Nielsen *et al.*, 2020).

The informal sector in South Africa plays a crucial role in generating employment opportunities for millions of South Africans. Paslakis *et al.* (2020) contended that the restrictions have affected the rights of the economy workers in the informal sector since some of them lack savings and other related financial cushion input, and some informal business owners and workers found themselves utilising their business capital for living. They were forced to shut down their businesses for a couple of months which led to unemployment and loss of income (Pereira and Oliveira, 2020).

According to the report by the National Treasury on the budget review (2021), the country saw an increase in the unemployment rate to 30.8 percent during the third

quarter of 2020, which pushed the number of unemployed people from 4.3 million to 6.5 million. The same report indicates that 12 percent of the employed population in 2020 did not receive salaries from their employers during the third quarter of 2020. It should be highlighted that most of the workers in the informal sector during a pandemic are vulnerable since they live on their daily income, and most of them are without social protection. The disruption in income generation activities makes it difficult for these workers to feed their families simply because a lack of income means no food, inadequate food, or poor quality food.

2.6.1.1 The impact of the pandemic on formal Sector vs Informal Sector during COVID-19

The adoption of the national lockdown brought economic shocks which resulted in disruptions in the labour market and massively changing how people conduct their work. As a result of the changes people lost employment in both formal and informal sector. According to Stats SA (2020) as cited by Khambule (2022), about 21.9 (640000) percent jobs were lost in the informal sector in 2020 compared to 10.8 percent (1.2 million) as share of employment. This supports Stats SA (2021) report which posit that the participants of informal sector were deeply affected opposed to those in the formal sector.

Similarly, Rogan and Skinner (2020) discovered that while just 26 percent of those formally employed were affected by the level 5 of the national lockdown laws, over 30 percent of informal workers who were not totally uprooted from their livelihoods were unable to work. The general public was prohibited from leaving their property, which further harmed the prospects for employment for people in the informal economy. As a result, the impact on the informal economy was almost inevitable.

2.6.2 Rising Food Prices

South Africa witnessed an increase of 1.2 percent in food price inflation rate from 3.4 percent in 2019 to 4.6 percent in 2020, with projections of a further increase to 5.4 percent in 2021 (Stats SA, 2021). Those changes in terms of food price inflations occurred after the COVID-19 pandemic hit the country. According to the Bureau for Food and Agricultural Policy (BFAP) (2021), there has been an increase of 5.7 percent in prices of food and non-alcohol beverages in March 2021 from March 2020 in South

Africa. Although prices of food and non-alcohol beverages increased by 5.7 percent in March 2021, within the same period, the cost of certain food (such as sugar-rich food, dairy, meat, fish, and cooking oil) increased by more than that. The BFAP noticed high annual inflation in foodstuffs such as rice (+53 percent), pork chops (+30 percent), eggs (+20 percent), sunflower cooking oil (+18 percent), wheat flour (+18 percent), white bread (+15 percent), brown bread (+11 percent), super maize meal (+12 percent), beef (+11 percent), and white sugar (+9 percent). The food basket of most households consists of almost all those foodstuffs, meaning that with the increase, vulnerable households were at risk of not having adequate food and dietary choices. The food price is crucial as far as accessibility and affordability are concerned; it determines the quality and amount of food that individuals can access with their current income.

2.6.3 Food Accessibility and Affordability

Food accessibility and affordability are crucial concerning food security; these aspects have an influence on food choices. Food affordability plays an important role in determining access to food, which makes it a significant element regarding food access. The affordability of food is reliant on food prices and disposable income that can be utilised on food (Robertson *et al.*, 2020). Income and food costs have an influence on the households' food purchasing power, which as well has an influence on the ability of households to access adequate food. Purchasing power determines the quantity and quality of food that households can access; it influences their food choices (Taylor, 2020). With that said, it means that any changes in disposable income and food costs will unequivocally affect the ability of households or individuals to access sufficient nutritious food to live a healthy and active life.

In the presence of the COVID-19 pandemic, a lot of people, particularly in the informal sector, in South Africa, witnessed a disruption in their livelihoods and income losses thereafter. There was a rise in the cost of food which involved some of the fundamental foodstuffs that form part of the food basket of various households (Robertson *et al.*, 2020). Income and food cost form part of the most crucial factors that determine the affordability of food and therefore the food access level. Since various households lost their incomes owing to loss of employment and disruptions in the other income generation activities (i.e., street vendors, local house constructors, salons, car wash,

etc.), they would find it difficult to access adequate food due to the affordability-related challenges.

2.7 STATE SUPPORT TOWARDS HOUSEHOLD FOOD SECURITY DURING THE COVID-19 PANDEMIC

This section discusses the state support measures that were adopted by various countries from a global level to a national level, during the COVID-19 pandemic, towards mitigating the effect of the pandemic on household food security.

2.7.1 China

Unlike most of the countries that were affected by the pandemic, China was quick to respond to food security threats posed by COVID-19. After they came to realise the threatening disruptions on two dimensions of the country's local food systems, China introduced various measures to boost production and ensure effective distribution. These measures are discussed below in four subheadings which involve methods to keep production running (2.7.1.), methods aimed at balancing supply and demand (2.7.1.2), methods to keep logistics running (2.7.1.3), and measures to protect the country's population from the food security threats (2.7.1.4).

2.7.1.1 Methods to Keep Production Running

In ensuring production and a proper winter harvest, the country assessed the local risk levels to establish a differentiated control method in accordance with the identified local risk levels. The regions were assessed and classified as low risk (green zone), medium risk (yellow zone), and high risk (red zone) (United Nations, 2020). The production activities in the regions that were deemed to be at low risk were permitted to recommence completely, while following necessary protocols, such as frequent temperature checks for all employees, wearing masks at all times, and ensuring proper sanitation in the field of work.

Production in the regions classified as medium risk areas commenced with a step-to-step approach, while following the necessary COVID-19 pandemic protocols, like those of the ones in the green zone, but with additional measures such as monitoring of the farm by the team leader, while ensuring that the workers worked separately at different times. In the regions classified as high-risk areas, production-related activities were not permitted (Galanakis, 2020).

Production was also disrupted by the lack of agricultural input supplies required for production. In addressing this issue and to ensure production, the Chinese government permitted the suppliers of agricultural input to recommence and upsurge workload within the required preventive measures (Chakrobarty *et al.*, 2020). In cases where there was a lack of agricultural input supplies from some places, the government went to the extent of the supplies from firms in other provinces. For instance, Hubei experienced a huge gap in the supply of agricultural inputs owing to the lockdown-related restrictions. Over 600 000 tonnes of fertilisers and more than 2500 tonnes of pesticides were delivered to Hubei by the Chinese government through appropriate channels. Over 14 local vegetable production areas were provided with pesticides (Chakrobarty *et al.*, 2020). Despite the challenges posed by the pandemic, production continued after the implementation of these strategies.

A common aid system was created to complete harvesting for winter in rural areas in response to the shortage of labour owing to the pandemic. The government allowed farmers to make use of the returning migrant personnel from the towns to help harvest the produce, while exercising pandemic-related security measures (Devereux *et al.*, 2020).

2.7.1.2 Methods to Keep Logistics Running

The Chinese government permitted delivery vehicles to operate through the green channel to ensure the effective transportation of agricultural inputs and products. The delivery vehicles were allowed to deliver these supplies, given that they abide by the rules and regulations, such as that they had to carry and provide a permit (issued by the provincial government) at the toll station or the COVID-19 checkpoint (Elsahoryi *et al.*, 2020). The permit enabled the transit to pass the toll stations without being stopped or examined to save time since the process of can be time-consuming. The team at the COVID-19 checkpoint also assisted in terms of vehicle disinfection to ensure safe and fast transportation. The temperature of drivers was also measured when reaching the destination; the protocol included the provision of visit information and disinfecting the vehicle and entrance was therefore allowed after this procedure.

Moreover, the Chinese State Administration of Taxation in January 2020 announced that value-added tax (VAT) would not apply to any earnings from the transportation of significant assurance materials in the midst of the crisis, which comprise agricultural

inputs and products (Devereux *et al.*, 2020). The government also provided financial support to improve on-site preservation facilities and cold storage for farmer cooperatives and family farms to smoothen vigorous logistics service and reinforce the flexibility of the food supply chain (Galanakis, 2020).

Outstandingly, e-commerce enterprises adopted innovative methods in logistics to ensure the efficient and safe delivery of 'the last mile' to consumers. During the crisis, many businesses introduced delivery methods such as the installation of shelves in community centres, establishing local service centres, providing delivery to designated areas, and using technology delivery such as robots, among other practices (IFPRI, 2020). The shared labour model was developed to alleviate the labour shortages in the delivery sector, wherein 'idle' workers from other sectors, such as the hospitality and the retailing industries, worked on delivering services temporarily. Comparable practices were used in cities, such as shared pick-up points and shared stores (Zurayk, 2020). People in Hangzhou, for instance, could purchase meat and fresh vegetables from Freshippo when they fill up their cars at Sinopec's petrol stations through an application while seated in the car, and the package were placed in the car trunk. Additionally, a new model called community group buying was developed to reduce the number of contacts, simplify the delivery of goods and services, and save labour. Members of the communities could make use of an online group chat to place their orders through this model, the orders would be consolidated on a daily basis and directed to shops. The food was then delivered the following day to communities together (Elsahoryi *et al.*, 2020).

The methods (including methods to keep production running and methods to keep logistics running) were adopted and aimed at ensuring that food was available and accessible, even though the availability of food does not necessarily mean that households will automatically have food, meaning that the issue of affordability needs to be addressed as well, since it influences the food access level.

2.7.1.3 Methods to Protect the Country's Population from Food Security Threats

The Chinese government, in response to food insecurity threats owing to the pandemic, introduced a number of social relief methods to assist low-income households. In responding to the COVID-19 crisis, China made use of unemployment protection schemes to guarantee security in terms of income for the employees. The

government made available temporary unemployment support to vulnerable workers, which could be applied for by unemployed workers who did not qualify for unemployment insurance. The country also made available funding for the Affordable Food Programme to assist the poor vulnerable households with staple foods (United Nations, 2020).

2.7.2 Brazil

According to UNICEF (2020), the government of Brazil, after realising the COVID-19 related effect on vulnerable households, introduced various social relief measures to mitigate the possible detrimental effect of the pandemic on the food security of households. These measures involved (2.7.2.1) emergency aid, (2.7.2.2) Programme for Food Acquisition, and (2.7.2.3) National School Nutrition Programme (UNICEF, 2020).

2.7.2.1 Emergency Aid

Emergency aid was authorised by the federal government in April 2020 as the main action to relieve the effect emerging from the suspension and reduction of income generation activities of casual labourers and individuals with low social assurance during the COVID-19 pandemic (Schwartzman *et al.*, 2021). The emergency assistance programme was facilitated by social workers; these are the people who better understand the difficulties of the poor people. The assistance in the form of R\$607.76 (R1 704.79) was initially introduced for three months for two individuals per household. However, for the single women-headed household, the amount was double (Garcia *et al.*, 2020). The emergency assistance amount after congressional intervention was increased to R\$650.04 (R1823.35) for five months. Millions of eligible people by August 2020 received the payment (Filho and Júnior, 2020).

It should be highlighted that even though the emergency aid assisted a lot of people in Brazil, the manner in which the aid was facilitated has been criticised heavily due to registration-related challenges for some people and the delays in processing registrations. Furthermore, accessing the aid presented difficulties for the applicants and Unified Social Assistance System due to a lack of information on the assistance criteria and the physical congestion of the banks and lottery organisations that make the payments (Coletta and Pupo, 2021).

2.7.2.2 Programme for Food Acquisition

The Programme for Food Acquisition (PFA) forms part of the main programmes of Food and Nutrition Security in Brazil. The PFA is aimed towards encouraging family agriculture and ensuring adequate access to food. On account of the COVID-19 pandemic, this programme got a financial plan supplementation of R\$500 million (De Carvalho *et al.*, 2021). The amount was, however, argued to be insufficient, particularly considering the situation brought about by the pandemic (Garcia *et al.*, 2021).

The PFA during the pandemic was directed towards minimising food crises emerging from the COVID-19 pandemic through the donation of fresh food to food distribution centres that offer food parcels to the most vulnerable population. During the early months of the pandemic, access to markets was affected and, as result, small farmers were unable to sell their produce (Rodriguez-Leyva and Pierce, 2021). The PFA programme played a crucial role in assisting these farmers to sell their produce and generate income. They bought the food from these farmers for donation purposes, while assisting them to transport the food to reach the markets in the cities. PFA assisted local farmers generates income, empowered the intake of quality food, advanced power, reinforced short production and consumption circuits, and encouraged territorial advancement. These attributes made the programme transform into the best potential to promoting permanent and consistent access to quality food, in adequate amounts, without any compromise on the access to other important needs, in light of health promotion food practices (Lourenço *et al.*, 2021).

2.7.2.3 National School Nutrition Programme

The National School Nutrition Programme offers sufficient quality food and sustenance training activities for learners in public schools. The Brazilian government, through this programme, allocates and distributes resources to municipalities and public schools to make up a budget for the attainment of foodstuffs during the school year based on the enrolled number of learners (De Carvalho *et al.*, 2021).

The closing of schools in March 2020, as a result of the COVID-19 pandemic, deprived many learners the access to meals provided on a daily basis by the programme contributing to food insecurity for many learners and their families (Lourenço *et al.*, 2021). After careful consideration, the legal framework of the National School Nutrition

Programme was amended and approved for the immediate dissemination of food for the learners during the suspension of classes owing to the pandemic.

The execution of this programme during this period happened through the delivery of food parcels and monthly instalment of financial assistance, and meal arrangements in the schools (Sidaner *et al.*, 2021). In this programme, 30 percent of the food purchasing had to come from family farming. Therefore, it should be highlighted that the purchase of this food allowed the continuity in the supply of the family farming's produce and income generation, even during the pandemic (Schwartzman *et al.*, 2021).

Additionally, financial assistance went from R\$50.00 to R\$170.00 and the recipient received their payments directly from their bank accounts or through gift vouchers to buy foodstuffs from the accredited shops (Sambuichi *et al.*, 2020). All the expenses from financial assistance and gift vouchers were paid for by the government. The National School Nutrition Programme was of great assistance during the difficult times of the pandemic (Lourenço *et al.*, 2021).

However, it should be noted that not all learners benefited from the financial assistance and gift vouchers that were aimed towards ensuring that all learners had access to daily meals during the school suspension period. For instance, in Rio de Janeiro, Maranhão, and Sergipe, no assistance measures were adopted or identified to assist students (Filho and Júnior, 2020). This implies that the students from these areas were vulnerable to food insecurity, as compared to areas where students in great need of assistance received assistance. More than 40 million learners in Brazil who depended on the free meals from the National School Nutrition Programme were unable to access these meals during the early months of the pandemic (United Nations, 2021).

2.7.2.4 Food Distribution

The government of Brazil, in ensuring that food reached the most vulnerable population (i.e., people living on the streets, women and child-headed households, unemployed persons, informal workers, etc.), identified various sponsored food distribution tactics through common community soup kitchens and restaurants, and the distribution of baskets of staple foodstuffs, with a food gift voucher or direct delivery of food (Gurgel Ado *et al.*, 2020). Community kitchens and common restaurants form part of the Food and Nutrition Security Public Equipment Network. This initiative

played a crucial role in growing the supply of healthy quality sufficient food at reasonable costs to the population vulnerable to food insecurity (i.e., low-income).

During the pandemic, all government sectors prioritised the provision of staple food as an act of emergency through the direct distribution of food parcels and food gift vouchers (McLoughlin *et al.*, 2020). A platform for all non-government organisations to assist with food donations and other relevant assistance was created. Various public organisations came into partnership and collected foodstuffs and financial resources from different organisations and the public. The food distribution initiatives ensured that millions of households (particularly low-income households) in Brazil had food during the pandemic through the provision of meals and funds to acquire foodstuffs (Pereira and Oliveira, 2020).

2.7.3 State Support Towards Household Food Insecurity During the Pandemic from African Countries

The African governments of the states that suffered from the hit of the COVID-19 pandemic, just like other affected countries, adopted preventive measures to curb the spread of the virus and work on methods to boost the public health systems. Linked to improving the public health systems, they have also been challenged with the task of offering socio-economic assistance for the worst affected citizens, particularly the workers from the informal sector relying on daily earnings, and the low-income households (Vermeulen *et al.*, 2020).

Most African states, just like South Africa, offered social relief packages in a form of cash transfers and food parcels. In Gambia, cash transfers were provided with stipends for new mothers, whereas Seychelles prioritised those who lost income during the pandemic (Moseley and Battersby, 2020). Nonetheless, cash transfers were not the only method adopted by governments in reaching and assisting residents.

In Niger, Burkina Faso and Chad, vulnerable low-income households received food parcels and the governments also implemented a utility bill 'freeze'. The programme in Mali also comprised the distribution of food parcels to households who were under quarantine (United Nations, 2020). The social relief programme of Ghana included the cancellation of water bills, reduced electricity costs by 50 percent for three months, as well as the distribution of food parcels to ease the food security-related effect of the lockdown.

Despite the great assistance, the social relief programme may have been offered to the citizens of these countries, and these measures in some cases may have been not sufficient given the high levels of poverty and inequality in terms of the income distribution (Saaka *et al.*, 2020). For instance, during the national lockdown, the government of Nigeria, a country with more than 90 million people living in severe poverty, managed to reach and offer cash relief to only 3.6 million low-income families, pushing the private residents to fill the gaps through donations drives and food banks (Rodriguez-Leyva, 2020).

2.7.4 South Africa

The South African government, after the realisation of the possible detrimental effect of the national lockdown on household food security status, introduced hunger and social relief measures to assist the most vulnerable groups (i.e., unemployed people). The social security measures were intended to mitigate the negative effect of the pandemic on household food security status (National Treasury, 2020). The relief measures involved (2.7.5.1) a 'top-up' of the already existing social grants, (2.7.5.2) COVID-19 social relief of distress grant, and (2.7.5.3) the provision of food vouchers and food parcels (SAG, 2020).

2.7.4.1 Top-Up of Already Existing Social Grants

The government allocated R50 billion to top-up social grants, with the aim of providing social relief of distress to low-income households for a period of six months. The social grants that saw a top included childcare support, disability, foster child, old age, war veteran, and care dependency. All the social grants, except for childcare support, were increased by R250 for six months from May 2020 to October 2020. The child support grant received a R300 increase per child in May 2020 only. As of June 2020, increase was no longer R300 per child but R500 per caregiver, not per child. The top-up of social grants lasted until October 2020, and after this period, the recipients received their normal payments which were paid prior to these increases (SA news, 2020).

The additions to the social grants were perceived differently by different people. Some were positive about it while some argued that the amount was not adequate to strengthen the ability of households to access adequate food. For instance, Bridgman *et al.* (2020) contended that the top up in social grants was of assistance to poor households who were without any other source of income, particularly those who lost

employment income due to the pandemic, as it improved their financial situation. They further argued that although the top up assisted poor households to a certain extent, because even after these increase, the poor households relying only on social grants could not escape hunger due to rising food costs and other related reasons.

The online newspaper, the *Daily Maverick* (2020) stated that the initial top up for a child support grant of R300 per child was better than the R500 per caregiver because the R500 was only given to a caregiver, not per child. The report further argued that the R500 per caregiver only benefited those with one or few children but it made no real difference to those with many children. In support of the *Daily Maverick* report, Bassier *et al.* (2021) stated that the top up in social grants, particularly the child support grant, may have not made much difference to caregivers with a lot of children and family members because the country witnessed a rise in food inflation as a result of the pandemic which pushed up the food poverty lines, affecting food purchasing power.

When food inflation rises, it reduces the household's ability to access adequate food and pushes them further into food insecurity crises. This means that even with the grant top up households with a lot of children would still be vulnerable to food insecurity, because the caregiver was not eligible for other financial assistance, such as the COVID-19 social relief of distress grant.

2.7.4.2 COVID-19 Social Relief of Distress Grant

The government introduced the COVID-19 social relief of distress grant, wherein the qualifying recipients received R350 per month for six months until October 2020. To be considered for this relief, applicants had to be unemployed, not receiving any source of income, not receiving a social grant, not receiving unemployment insurance fund, and not receiving a stipend from the National Student Financial Aid Scheme or any other organisations (SAG, 2020). However, this criterion was amended when the COVID-19 social relief of distress grant was reintroduced in July 2021, wherein child caregivers were eligible to apply for the grant, unlike when it was first introduced (SAG, 2021). The introduction of the COVID-19 social relief grant has received a lot of criticism from the public.

Arndt *et al.* (2020) argued that a child in South Africa receives more than R400 and how can an adult with a lot of responsibilities be given R350. He maintained that this

is not acceptable and is an insult since this amount cannot even cover a quarter of a household's necessities. According to the *Daily Maverick* report (2020), the R350 from social relief grants for unemployed citizens is arguably not enough, looking at the food poverty line of 2019 which was R561 per person. The food poverty line alludes to the total amount that a person needs to be in a position to acquire daily intake minimum requirements. Looking at the amount of poverty line of 2019, it is clear that the COVID-19 social relief of distress grant was not adequate and with this grant, a person would not even afford the daily intake minimum requirements.

Despite the challenges and criticisms that this intervention faced, the grant has succeeded ultimately in reaching more than six million people and there is a possibility that this grant may become a permanent feature of the social protection systems in the country.

2.7.4.3 Provision of Food Parcels and Food Vouchers

The Department of Social Development, together with NGOs (non-governmental organisations), CBOs (community based organisations), and the Solidarity Fund, distributed about 250 000 food parcels on a monthly basis across various communities to eligible households for six months from May 2020 to October 2020. The distribution of food parcels was aimed towards mitigating the effect of the lockdown, and it is a positive intervention which may have assisted many low-income households who could not afford adequate food to have food during the pandemic (Vermeulen *et al.*, 2020).

Despite the positive effect of this intervention on mitigating the issue of food insecurity among low-income households during the ongoing national lockdown, the intervention faced criticisms. People from various communities were not happy about the criteria used in the selection of deserving households and they raise concerns and allegations of corruption; they contended that corruption was involved in the distribution of the food parcels. A report from *SABC News* (2020) indicated that complaints were raised by people from various communities and indicated that a lot of households who benefited from this intervention were not beneficiaries of this support and they argued that most of the well-deserving poor households did not benefit from the food parcels. The report further revealed that a number of political leaders were accused of unfairly distributing the food parcels or, even worse, selling the food parcels for themselves. If

the food parcels were indeed sold, then it means the vulnerable households with a lack of or unreliable sources of income who were meant to benefit from this remained vulnerable to food insecurity during the pandemic since they were not able to purchase the free food parcels given that most lost income owing to the pandemic.

2.7.4.4 The COVID-19 Temporary Employee Relief Scheme

In March 2020, The Minister of Employment and Labour, T.W. Nxesi announced that after a series of consultations with the Unemployment Insurance Fund (UIF) executive, and other relevant stakeholders, the department decided to introduce the COVID-19 Temporary Employer-Employee Relief Scheme (TEERS). The scheme sought to assist small businesses that were negatively affected by the COVID-19 pandemic, as well as the employees from these businesses, who may have been affected as well (Arndt *et al.*, 2020). This initiative aimed towards assisting employers who could not pay their workers full payment due to difficulties that occurred owing to the national lockdown. Bassier *et al.* (2021) maintained that this was a good intervention by the government which aimed to assist many affected businesses and to ensure that employees get the same amount in terms of their earnings and that they could still maintain an economic food access level.

However, most of the vulnerable working groups (i.e., adults) are not formally employed. The employees who were most likely to endure hardship owing to the national lockdown were the non-essential workers who were forced (by the rules and regulations of the lockdown) to stay at home; for these people, no work means no pay. The TEERS intervention would not have assisted these informal workers and low-paid workers (i.e., car guards, domestic workers, farm workers, service sector workers, self-employed, etc.).

2.8 THE AMARTYA SEN'S ENTITLEMENT THEORY APPROACHES TO FOOD SECURITY

The entitlement theory approaches food security issues from the point of view which puts emphasis on food access. It argues that there might be barriers concerning access to food and these tend to stand between availability and access to food. Sen's entitlement theory (1984), proposes that a person's entitlement is prone to change because of various reasons, such as variation in food prices, pandemics, disruption in food distribution systems, and other reasons leading to entitlement failure.

Amid the COVID-19 pandemic, food systems of some countries worldwide were disturbed. However, at the global level and national level, for most countries including South Africa, food was adequately available during this period. Despite this, many people were still reported to be experiencing food insecurity in a form of hunger and undernourishment (Arndt *et al.*, 2020). This raises the question of how millions of people can experience food insecurity, while there is sufficient food available. This is in line with the basic question which the theory aims to address, “why do we still have famines while the food supply is still enough?”. Therefore, the entitlement theory in this study was adopted to generate an understanding of the issue of the rising cases of food insecurity amid the pandemic meanwhile food is sufficiently available. This kind of knowledge will assist in creating an understanding of the extent to which COVID-19 has affected the food security of rural households.

Decades back, food insecurity was argued to be a result of a lack of food supply. Malthus, as cited by Kurniawan (2016), maintained that the lack of food supply is the main cause of food insecurity. He argued that the growing population growth influences the high demand for food, while the supply of food is limited. In contrast to Malthus’s views, Amartya, as cited by Robertson *et al.* (2020), stated that the issue of food insecurity is not a result of the failure or lack of food supply. However, he argued that the issue is closely linked to food access rather than food supply. Moreover, the famines that occurred in the past years was as not as a result of unavailability of food, instead was due to the unfeasibility for the low-income people to access it.

Devereux (2001), as cited by Muzerengi *et al.* (2021), contended that the huge contribution of Sen’s entitlement approach is that it moves the theory of food insecurity from the supply side to the people’s ability to access food. This explains the reason why people still experience food insecurity during the period of the ongoing pandemic while food is said to be available. In addressing the issue of food insecurity owing to the issue of food accessibility, Sen endorsed the entitlement approach wherein he divided the two categories of the key concept of entitlement, entitlement and endowment. Entitlement alludes to a group of alternative commodity bundles that an individual is able to command based on his or her full range of rights and opportunities. Endowment alludes to the control over resources and assets inclusive of labour power. Sen discussed that there are four legal ways of acquiring food or types of entitlements, namely the trade-based entitlement, production-based, own labour-based, inheritance

and transfer-based entitlement (Muzerengi *et al.*, 2021). This study, in assessing the effect of the COVID-19 pandemic on household food security, has assessed the state of the four suggested entitlement of the households' breadwinners during the period of the pandemic-related harsh stages of the national lockdown.

2.8.1 Trade-based Entitlement and Own Labour Entitlement During COVID-19

The trade-based entitlement refers to the ability of individuals to trade something for food. Own labour entitlement refers to the ability of individuals to sell their skills (FAO, 2012). The entitlements are related and, hence, were discussed simultaneously. The COVID-19 national lockdown restricted mobility and imposed a temporary ban on certain income-generating economic activities. People, particularly in the informal sector (i.e., street vendors, etc.), were unable to trade due to the restrictions on mobility during the early stage of the national lockdown (Udmale *et al.*, 2020). The restriction on the movement of people, which forced non-essential workers and general people to stay at home, took away people's ability to trade and or purchase something for food. In South Africa, there are people, particularly the poor, who trade or work just to put food on the table. The national lockdown-related restrictions meant no food to such people since without access to the market, it simply meant they could not trade for income and food, and they were, therefore, left even more vulnerable to hunger (Moseley and Battersby, 2020).

Moseley and Battersby (2020) contended that the pandemic may have disrupted own labour entitlement owing to national lockdown-related restrictions; the informal economy workers were the most vulnerable given the restriction on mobility. The people working in the formal sector did not suffer much from the lockdown restrictions since they were still able to perform their work remotely in the comfort of their homes. Meanwhile, most of the workers from the informal sector could not work at all due to limited resources. Those who were affected in terms of employment in the formal sector were provided with unemployment benefits (i.e., UIF) and funds were provided to businesses within this sector to ensure continuous operation of business to prevent more job losses (Laborde *et al.*, 2020).

However, the situation for those in the informal sector (street vendors, car guards, saloons, etc.) was different: they did not receive any unemployment benefits. In South Africa, these people were eligible to apply for the COVID-19 grant which not everyone

benefited from, even though they were eligible to get the grant. Many people, particularly the rural poor, may have found it difficult to obtain trade and own labour entitlements during the period of the ongoing pandemic, which took away their physical and economic sources of acquiring food (Laborde *et al.*, 2020).

2.8.2 Production-Based Entitlement During the COVID-19 Pandemic

Production-based entitlement refers to the people's ability to get food by producing their own food. Rural households, more specifically farmers, during the harsh stages (5-3) of the national lockdown, were at risk of losing access to food from their production. Despite the restrictions on the movements of people, farmers would lose access to food from their production if they got ill from COVID-19 (Udmale *et al.*, 2020). They would also be at risk of losing access to food during stages 5–3 of the lockdown because they were unable to access labour and other inputs such as fertilisers and they could not access the market to trade their produce as a result of the national lockdown and other related restrictions on mobility and trade (Moseley and Battersby, 2020).

2.8.3 Inheritance and Transfer Based Entitlement During the COVID-19 Pandemic

Inheritance and transfer-based entitlement refers to the situation in which people are being given food by others. Significantly, this entitlement takes into account both the varieties of politically based transfer entitlements offered by government organisations through social protection programmes and culturally based forms of transfer, such as family-based food-sharing networks (FAO, 2012). The COVID-19 pandemic-related measures may have also undermined or affected this entitlement in a manner that there are households who, in terms of food, rely on family members who work far from home. The very same people who were assisting their families with remittances experienced a collapse of their income owing to job losses during the pandemic, which made it difficult for them to assist their families back home. Furthermore, in places where a 'strict lockdown' is imposed, such as South Africa, informal support within communities may have been affected since relatives and neighbours were prohibited from visiting one another (Laborde *et al.*, 2020).

2.9 CHAPTER SUMMARY

The chapter has discussed the impact and the possible effect of the ongoing COVID-19 pandemic in-depth. The chapter has revealed that the effect of the pandemic on the food security of most low-income households from various less-developed states was more on food access rather than food availability. Despite the challenges posed to global food security by the pandemic, food is arguably adequately available.

However, in line with Sen's argument of hunger and malnutrition during events of this nature, the main challenge has been the impossibility of poor households to access adequate food, particularly during disastrous events such as COVID-19, which tend to result in socio-economic costs. The pandemic has resulted in economic instabilities which has seen millions of people losing their employment and income, as well as the rise of food prices. These are some of the factors that have an influence on household's food security dynamics (i.e., availability, access, stability, and utilisation).

Based on the existing literature, a disruption in any of the mentioned dynamics of food security is mostly likely to have dire consequences for low-income households who, in most cases, are the victims of food insecurity. The chapter contends that poor households from African states, that were already suffering from food insecurity prior to the pandemic, were more likely to remain in the same situation, or even worse, during the pandemic and they may experience related long-lasting food insecurity.

CHAPTER 3 RESEARCH DESIGN AND METHODOLOGY

3.1 CHAPTER INTRODUCTION

The overall purpose of this study was to explore the effect of the COVID-19 pandemic on households' food security in the communities of Bushbuckridge Local Municipality. To accomplish the purpose of the study, three research questions were addressed. The nature of the research questions addressed in this study had an influence on the selection of appropriate methodologies for carrying out this study.

This chapter, therefore, presents a detailed discussion of the processes undertaken in the study to successfully achieve the research aim and objectives. It reveals information on the methods that were applied in the study and as well as the justifications for adopting such methods in carrying out the study.

The chapter also presents and describes different stages undertaken within this study involving drawing up a sample of the participants, data collection procedure, the process of data analysis, and data quality measure applied in the study to ensure quality and trustworthiness. The chapter concludes by presenting the limitations of the study.

3.2 STUDY AREA

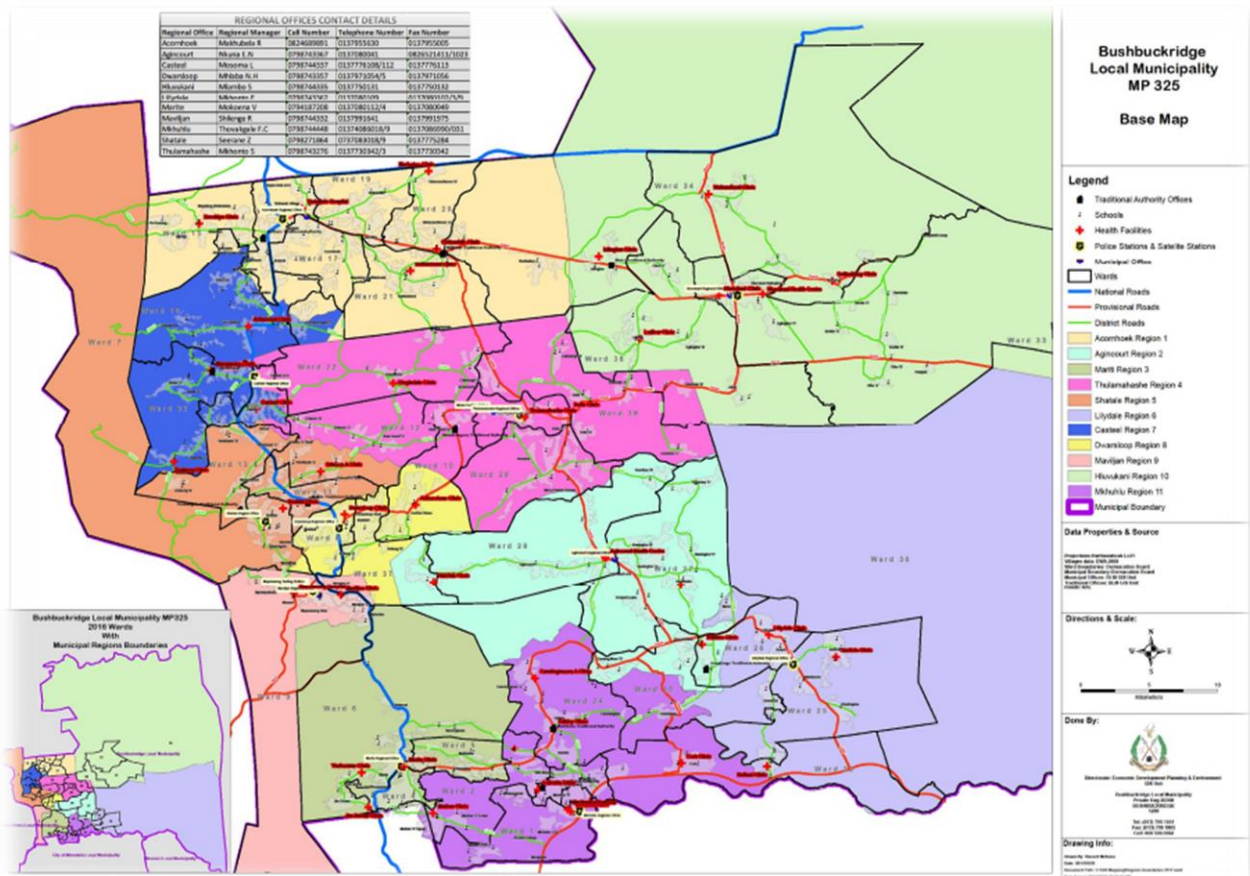
A study area is the place or area in which the researcher intends to carry out his/her study, where all the categories of the study fall into. Therefore, this section presents the description of the study area and socio-economic status of the area.

3.2.1 Description of the Study Area

The study was conducted in Bushbuckridge Local Municipality. This municipality is the third level administrative division in Ehlanzeni District (Mpumalanga) in South Africa. Bushbuckridge Local Municipality is the largest local municipality in Mpumalanga (both inland and in population). It provides a link to centres in the Lowveld such as Ladenburg, Hoedspruit, Graskop, and other centres (Bushbuckridge Local Municipality IDP, 2018/22).

Bushbuckridge Local Municipality is made up of 135 settlements which are divided into 17 main places. The 135 settlements are also divided into 37 wards. The municipality in terms of population has more than 548 760 people, with estimated

households of 136 782. More than 50 percent of the households in the municipality are women-headed, which is projected to higher by 20 percent to the rate of Ehlanzeni District (43.7 percent). About 2 085 households from the total number of the households in the municipality are said to be child headed households. Below is the map of the municipality.



Source: Bushbuckridge Local Municipality- Draft Integrated Development Plan: IDP 2017-2022

3.2.2 Socio-Economic Status of the Study Area

Bushbuckridge Local Municipality is known for agriculture; much of its economy depend on agricultural activities and tourism. The commercial farming in the municipality comprises of cotton, tobacco, vegetation, and sub-tropical fruits, which is practiced throughout the municipality. In terms of employment, about 20 percent of the municipality’s population is employed, while 22 percent are unemployment, 43 percent not economically active, and 15 percent are classified as discouraged job seekers.

The community survey (2016) estimates R14 600 as the household annual average income in the municipality. According to the municipality Integrated Development Plan

(IDP) (2020/2021), a total of 272 000 people depend on government grants (old age, child support, disability, foster care, care dependency, and grant in aid). The municipality has a high percentage of people who depend on child support grants. This implies that many young people depend on grants for a living, which is not sustainable.

About 91 percent of the households in the municipality have access to electricity through in-house prepaid meters, while 9 percent of households do not have access to electricity. Electricity is vital for all households and may have an influence on the kinds of food that are being purchased by households. In a scenario where a household does not have access to electricity, it may be forced to buy food that does not require a refrigerator, therefore leading to the purchase of poor quality food. Regarding access to water, 73 percent of the households have access to water through piped water in their yards while 27 percent have access through public taps.

Bushbuckridge Local Municipality is faced with challenges like high poverty rate (63.5 percent in 2017), unemployment (46.4 percent in 2017), and other challenges (Bushbuckridge local municipality IDP, 2021/22). The leading sources of employment for most people in the area is community services at 34.4 percent and trade with 25.3 percent. The municipality IDP 2018/22 and 2020/21 stipulates that high poverty and unemployment are the core challenges within the municipality, especially in rural communities (Bushbuckridge Local Municipality IDP, 2018/22). Poverty and unemployment form part of the contributing factors to food insecurity within rural households (De Hoyos and Medvedev, 2009). Moreover, This implies that rural households from Bushbuckridge Local Municipality were more vulnerable to food insecurities during the period of COVID-19 than ever before. Mkhawani *et al.* (2015) maintained that the South African people living in rural areas who are unemployed and who live in poverty are generally vulnerable to food insecurities.

The researcher found Bushbuckridge Local Municipality suitable to carry out the study which was aimed toward accessing the effect of the COVID-19 pandemic on rural household food security. The study was conducted in two villages, namely Casteel and Newforest A, under Bushbuckridge Local Municipality. These villages, just like all other villages within the municipality, are faced with high levels of poverty rates and unemployment (Bushbuckridge Local Municipality IDP, 2018/22). This, therefore, implies that the households from these rural communities were also at risk of food

insecurities, particularly now during the period of COVID-19, which left many people unemployed.

The researcher chose to conduct the study in these communities because they were easily accessible, and it was less costly to carry out the study. Given the limited budget and time for the study, these communities were found conducive for the study.

3.3 RESEARCH DESIGN

Research design discloses how the researcher intend to answer the research questions and how the discussion will be presented (Asenahabi, 2019). Given the nature of the study, the researcher adopted two research designs for this study namely exploratory research design and descriptive research design.

3.3.1 Exploratory Research Design

The study sought to explore and analyse the effect of the COVID-19 pandemic on rural household food security status. At the time when the study was conducted, there was little or no lack of information concerning the issue of COVID-19 pandemic on household food security in South Africa. This called for a research design that would enable the researcher to generate more insights regarding the phenomenon under study to have a good understanding of the subject. Along these lines, the study employed an exploratory research design. The primary use of this design was to enhance the researcher's knowledge on the subject under study (Selltiz *et al.*, 2016).

Orina *et al.* (2015) explained that this exploratory design is suitable for a study where very little is known or there is no available information and can help a researcher to generate a deeper insight of a phenomenon in question. Exploratory research design enables a researcher to create a well justified picture of a phenomenon that is being studied and generate more ideas on how to best carry out the study (Antony *et al.*, 2021).

This research design in the study enabled the researcher to generate a well-informed background of the topic under study from the little information that was available and have a holistic picture of how to then carry out the study in manner that will ensure a successful end of the study. Through this design, the researcher was able to identify and make use of the approach which was applicable and suitable to successfully

accomplish the purpose of the study and make better conclusions of the research findings.

3.3.2 Descriptive Research Design

Doyle *et al.* (2019) asserted that a descriptive research design is mostly used primarily to describe characteristics of a phenomenon or population being studied. Siedlecki (2020) maintained that descriptive research design is employed in quantitative studies with the intention of providing a general overview which enables the researcher to identify the variables that worth examining quantitatively. In constructing a well-informed understanding of the effect of the COVID-19 pandemic on rural household food security, it was necessary to describe and analyse the relationship between demographic details (general information) and socio-economic information given their influence on household food security.

The study found descriptive search design suitable due to one of its strengths which enables the researcher to integrate data collection methods of both quantitative and qualitative (Doyle *et al.*, 2019). Along these lines, the study's data collection method was integrated. In this regard, the interview guide had two sections; the first section sought to collect quantitative data and second section sought to collect qualitative data.

3.4 RESEARCH APPROACH

According to Richards and Morse (2007), in cases where the research problem is broad and one approach or method proves to be insufficient in terms of addressing the phenomenon being studied, various approaches or methods may be adopted. In this study, assessing and establishing the effect of COVID-19 pandemic on households' food security required a dynamic approach that would help generate more in-depth outcome. As follows, the study adopted a mixed-method research approach in a form a convergent parallel method.

Using the convergent parallel method, the researcher was able to concurrently collect both qualitative and quantitative data. As argued by Kemper *et al.* (2003), this method prioritises both approaches (qualitative and quantitative); keeps the analysis independent; and during the analysis stage, it allowed the researcher to integrate findings. This served as confirmation to Denscombe's (2008) argument, that a mixed

method research approach allows researchers to integrate the elements of both quantitative approach and qualitative approach (i.e., data collection, analysis, and inference methods, using qualitative and quantitative viewpoints) to broaden and deepen understanding of the research problem.

The convergent parallel mixed methods approach is perceived as a class of study wherein scholars integrate the research methods, techniques, language, or concepts from qualitative and quantitative approaches within one study (Denscombe, 2008; Johnson *et al.*, 2016). The researcher in the study, while applying the mixed-method approach, noted that the approach, as per Creswell and Clark (2007), is beyond just gathering both quantitative and qualitative information. Instead, this approach means that the results are related and integrated at some point during the process of the research.

Creswell and Clark (2007) further contended that the logic behind the integration is that both qualitative and quantitative methods, when used separately, are not adequate in themselves to sufficiently capture all the details and trends of a phenomenon. However, when employed in integration, data from both methods can give a more comprehensive analysis.

The aim of employing mixed-methods approach in the study was to make use of the advantages from both approaches with the intention that the weaknesses of one approach would be alleviated by the strengths of the other approach. This method served as crucial approach which allowed the researcher to sufficiently capture all the details and trends of the phenomenon under study. Although the study employed both qualitative and quantitative methods, the qualitative approach was applied primarily in the study.

3.5 RESEARCH PARADIGM

Johnson *et al.* (2016) defined a research paradigm as a research model that is used for conducting a study that has been checked by the research community over some time and which has been in practice for many years. According to Masuku (2018), to accomplish the research aim and objectives, a study should be founded on some fundamental rational assumptions regarding what establishes precision and legitimacy of the study findings and which research methods are applicable for the generation of

knowledge. Given the nature of the study (mixed-methods), two paradigms namely interpretivist paradigm and positivist paradigm were employed.

The interpretivist paradigm is argued to be the most suitable for a qualitative study, since a qualitative study sought to explore and understand the behaviour of humans or explore why a particular something occurred the way it did (Thanh and Tran, 2015). When formulating the research methodology for the study, the researcher adopted an interpretivist paradigm as a guideline to ensure that the study was carried out in a manner that is appropriate and valid. The interpretivist paradigm maintains that the behaviour of humans is too broad in a sense that it is determined by situations (individuals responds differently from situations) and environmental factors (Goldkuhl, 2012).

This paradigm in the study was adopted to reveal and interpret the participant's views, experiences, meanings, regarding the COVID-19 pandemic related challenges in their area, which were more likely to impact their household's food security. During interviews, the respondents were asked to describe the food security related challenges based on their own understanding, with the intentions of confirming their understanding of COVID-19 pandemic, the challenges posed and how the pandemic affects food security within their households.

Thanh and Tran (2015) asserted that interpretivist paradigm allows a researcher to make use of interviews as tool for data collection, to gather different stories from different people and therefore interpret these stories to assign meanings. The researcher found interpretivist paradigm as the most applicable and suitable paradigm in carrying out the study because it enabled him to collect relevant data directly from the participants through the interviews. The interpretivist paradigm also made it easier for the researcher to interpret all the gathered data regarding the COVID-19 pandemic related challenges faced by households during the period of the ongoing pandemic and effect of the pandemic on household food security status thereafter. Furthermore, the paradigm supported the study to be more focused on the research aim and objectives to address the research problem and prevented the study from heading towards overgeneralisation (Kivunja and Kuyin, 2017).

The positivist paradigm is grounded in the understanding that human behaviour can be generated over observation and reason. Park *et al.* (2020) asserted that this

paradigm is dependent on the hypothetic logical method to validate a priori hypotheses that are mostly presented quantitatively, where functional relationships can be derived between casual and explanatory factors and outcomes. They maintained that the primary aim of positivist paradigm lies on generating casual relationships or explanatory association that eventually lead to forecast and control of the phenomena in question. The paradigm in the study enabled the researcher to formulate and employ the observation tool, and also assisted in terms of generating relationships from the collected data to generate a firm understanding of how the COVID-19 pandemic affected food security of the households under study.

3.6 RESEARCH METHODOLOGY

This methodology section covers a detailed discussion of the target population, sampling methods and procedure, data required, data collection instruments, and data analysis.

3.6.1 Target Population

Target population refers to a population from a huge population within which the researcher is interested (Maxwell, 1996). The target population for the study was the households' breadwinners and a social worker from Bushbuckridge Local Municipality. The households' breadwinners who participated in the study included both men and women to ensure that both genders were given an equal opportunity to participate in the study. Both old and youth households' breadwinners participated in the study.

Table 3.1: Target population

Target Population	Role
1. Household breadwinners	The breadwinners are the people who generate income to support their families. In this study, they had to provide information on their experiences regarding the COVID-19 pandemic and related national lockdown, the challenges it may have posed to their families in terms of access to food, how it may have affected their food security and the measures adopted in ensuring that their households had food during the harsh stages of the related national lockdown and throughout the period of lockdown.
2. Key informant (a social worker)	These are people who the researcher believed were involved in delivery of and facilitation of social relief in a form of food assistance to vulnerable households during the national lockdown. The key informants were included in the study to share information on the

	adopted measures to mitigate the effect of the COVID-19 pandemic on food security of households as well as procedure and facilitation of the support delivered.
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3.6.2 Sampling Methods and Procedure

This section presents a discussion on the sample that was selected from two communities (Casteel and Newforest A) within Bushbuckridge Local Municipality. It also provides and elucidate the sampling methods adopted in selecting the participants.

3.6.2.1 Sample Size

Kadam and Bhalerao (2010) defined a sample size as the number of individuals commonly known as “representative respondents” selected from a study’s targeted population. Sharma (2017) asserted that the sample size determined by the accuracy needed, the size and heterogeneity of the population, as well as the amount of resources available for the study. Additionally, sampling is defined by McLeod (2014) as the process of selecting a group of people based on certain characteristics from a large population under study and learn things that applies to a lot of people (hundreds or millions) who were not assessed.

The sample size of the study was 61 participants in a form of 60 households’ breadwinners and 1 social worker.

3.6.2.2 Sampling Methods

Sampling methods are categorised in terms of probability and non-probability from which different methods are selected to draw a sample for a study and it determines how the sample is selected. A non-probability sampling was employed wherein two sampling methods namely convenience sampling and purposive sampling were adopted.

A convenience sampling technique permits a researcher to draw a sample from the participants who are conveniently available and or easily accessible (Etikan *et al.* 2016). Purposive sampling, also known as subjective sampling, is a method which permits the researcher to be judgemental in drawing a sample of a specific group or groups required to provide specific information for a study.

The study adopted a convenience sampling method to draw sample of two communities (Casteel and Newforest A, under Bushbuckridge Local Municipality). The same sampling method (convenience) was employed to sample 30 households from each community. A total of 60 households sampled from the municipality were interviewed to provide the information which was required to achieve the aim and objectives of the study. From all the households, only breadwinners were interviewed.

This method enabled the researcher to sample two communities and 60 households (30 households for each community) in the municipality under study, which were easily accessible to save time as well as working within the resources that were available at that time. The initial plan was to interview 30 females and 30 males with the aim of ensuring gender balance. However, from the interviewed 60 households' breadwinners 37 participants were females and 23 were males.

Furthermore, a purposive sampling method was used to draw a sample of key informants, the people who played a role in ensuring that households were food secure during the harsh stages of and throughout the COVID-19 related national lockdown. A social worker was sample as a key informant for the study given that social workers were involved in the facilitation of the process of delivering relief interventions or support to households from the study area.

3.6.2.3 Sampling Criteria

Sharma (2017) asserted that sampling criteria alludes to the crucial characteristics of participant within which according to the research an individual or group of people should meet to be eligible to participate in a study. The households that participated in the study had to meet the following sampling criteria; households with the breadwinner who is above 21 years of age and the breadwinner had to have dependents to qualify as a breadwinner in the study. Due to ethical issues, the study could not include child-headed households, although they were vulnerable to the effect of the pandemic like the other households.

3.6.3 Data Required

The study required a textual information on discussions about COVID-19 pandemic and the related adopted measures intended to mitigate the effect of the pandemic, the challenges, and effect of these measures on rural household food security. The study also needed information on debates about food security, the indicators of household

food security and the implications of food insecurity to households. Additionally, it required empirical data on how the COVID-19 pandemic affects household food security status. The information required was gathered from the tools of both primary data and secondary data.

In the study, primary data collection tool (interviews) was applied to collect raw data on the perceptions of household breadwinners from Bushbuckridge Local Municipality concerning measures taken to mitigate the spread of the coronavirus, challenges experienced concerning access to food and effect of the national lockdown on household food security status. In the study, tools utilised in gathering secondary data such as books, journal articles, the internet, etc. were adopted to review literature on COVID-19 pandemic and food security.

3.6.4 Data Collection Instruments and Procedure

Data collection is the procedure of collecting and assessing data on directed variables within an established system, which, therefore, allows the researcher to answer applicable questions and assess results (Kumar, 2019). Data collection methods enable a researcher to gather relevant information from relevant sources to address the research questions and achieve the purpose of the study. In terms of data collection tools, the study adopted two instruments, namely interviews and observation.

3.6.4.1 Interviews

Harrell and Bradley (2009) discussed that interviews are the most suitable tool for collecting data for a qualitative study due to its nature which permits the researcher to gather rich in-depth information for a study. However, it is not limited to the collection of qualitative data; it can be used to collect quantitative data as well, if used appropriately. When collecting quantitative data, interviews must be more structured, meaning that a standard set of questions will be asked in this regard.

The nature of the study (mixed-method research) influenced the formulation of the interview guide, and the guide was formulated in a manner that allows the researcher to collect both qualitative and quantitative data at the same time. The interview guide had two sections, section one sought to collect quantitative demographic information data whereas section two was directed towards collecting qualitative data (Appendix A).

The study conducted in-depth face-to-face interviews which focused on the perceptions of the households about the effect of the COVID-19 pandemic on food security during the harsh stages of the national lockdown, the food security related challenges posed by the ongoing pandemic, and the strategies adopted by households in mitigating the effect of COVID-19 pandemic. The interviews were also employed to gather information from the key informants concerning the state support to households that were deemed vulnerable to food insecurity during the early stages of the national lockdown, the criteria that was used to sample deserving households, and the encountered challenges while assisting these households with relief packages.

The study adopted interviews as a method of data collection due to one of its strengths which enables a researcher to ask questions and get responses within the same context due to its nature of standardising the order in which questions are asked from the participants (Lavrakas, 2008). The interviews were directed to 60 households' breadwinners from Bushbuckridge Local Municipality as well as the one key informant (Social Worker). Prior to interviews, the researcher explained to each participant the aim and objectives of the study and the manner in which the interview would be carried out. The participants were given an opportunity to choose a place of their choice for interviews to take place.

The households' breadwinners chose to be interviewed within the comfort of their homes meanwhile the social worker preferred to be interviewed at her office. Giving each participant a choice to choose a convenient space for the interview was done with the aim of ensuring that all the participants during interviews felt comfortable and not intimidated, given that the interviews took place within their preferred setting. The interview instrument was translated to the language that is spoken in the study area to ensure that the phrasing of the question remains the same throughout the data collection process for trustworthiness and credibility of the data collected (Appendix B).

During the interviews, a standardised format was used to ask questions which were directed towards acquiring quantitative data (section one). However, the questions for qualitative data were open-ended and were posed in a manner that enabled the participants to freely answer the questions and provide more information. The adoption of interviews method allowed the researcher to seek for clarity where necessary and probe for in-depth understanding. During the interviews, the researcher serves solely

as a facilitator who only motivated the participants to respond. To achieve this, he showed non-judgmental attitude to the participants and assumed a neutral stance. He also ensured a friendly atmosphere during interviews, which motivated the participants to seek clarity or request the questions to be repeated where they did not understand.

Given the nature of interviews, a digital recording device was essential for capturing every detail of all the information that was provided and to ensure that no information was left out. A tape recorder was employed where permission was granted by the participants. However, a notebook to jot down notes was used in a case where some participants were not comfortable with the usage of a tape recorder as means of capturing the information provided. The interview sessions took about one hour thirty minutes to two hours.

After each interview, the respondents were given an opportunity to give their feedback regarding the process of the interviews. This was done with the intentions of checking whether the respondents were harmed by the study in any possible way, and the response were that they enjoyed the entire interviews. Furthermore, they were happy to have been given an opportunity to talk about food security related challenges that were posed by COVID-19 pandemic as well as pandemic related effect on food security status of their households.

3.6.4.2 Structured observation

Structured observation or observation is defined by Kumar (2019) as a method utilised in collecting data for a study by observing an event and behaviours as they occur in their natural environment. It enables the researcher to assess people within their natural setting, and it ensures that their behaviour is not influenced by the presence of the researcher in any possible way. Observation in this study was done in a covert manner, meaning that the participants were not informed that they were being observed. The covert kind of observation was done due to its nature of ensuring that the participants behave naturally throughout the process of data collection, since they were unaware that they are being observed.

In the study, a structured observation checklist was employed to gather information on the condition of infrastructure development such as roads, houses, electricity, and water. The researcher also observed whether the households had any sort of sources of food such as family gardens (for crop production) and livestock, as well as food

storage. The information from the structured observation checklist was gathered to assist in establishing the effect of the COVID-19 pandemic on rural household food security status. McLoughlin *et al.* (2020) asserted that the elements of infrastructure development have an influence on food insecurity in rural areas where infrastructure is not in good condition.

3.7 DATA ANALYSIS

The study employed two data analysis methods for the purpose of this study, namely thematic analysis and descriptive statistics. A thematic analysis method in the study was employed to analyse and interpret qualitative data whereas descriptive statistics were used for quantitative data.

3.7.1 Thematic Analysis

Clarke and Braun (2013), as cited by Kiger and Varpio (2020), defined thematic analysis as the widely used method for data analysis of a qualitative study which involves probing through a set of data to classify, analyse, and report repetitive patterns. They maintained that the method can be used beyond simply describing findings, it also entails analysis within a process of picking codes and developing themes.

Kiger *et al.* (2020) discussed that thematic analysis can be perceived as foundational for other methods of qualitative research and as an analytic method can stand alone. Tuckett (2005) maintained that the principles of this method (particularly on how to code, identify and refine themes, and present data) are pertinent to a number of other methods for qualitative study, such as discourse analysis and grounded theory. Clarke and Braun (2013) asserted that the usage of thematic analysis is not limited to a certain paradigm positioning, it can be adopted in interpretivist, post-positivist and other more. They maintained that for the orientation of interpretivist paradigm, thematic analysis can be used to accentuate the cultural and social contexts that affects a person experiences, allowing expansion of knowledge that is developed over interactions amid the participants of a study and the researcher, uncovering the socially constructed meanings. Along these lines, thematic analysis was found applicable for this study.

The researcher in the study made a preliminary data analysis with the intent to restructure the questions, which was necessary to draw focus on the unit of analysis or main themes of the study. After the process of data collection, the data recorded by a tape recorder were transcribed. The researcher went through the transcribed data to get acquainted with the provided information, sought for mistakes from the data or for possible ambiguities. Codes were then identified through the search for the incredible elements from the data, succeeded by the documentation of everything that looked thought-provoking while keeping the documented trace of each step, as well as keeping record of the key codes found from the data.

After identifying codes, the researcher generated themes; he firstly sought for themes from the transcribed data, recorded the themes, sought for applicable information for each theme, and lastly, kept record of every single phase. He therefore went on to finalise the generated themes and their names and search for information from the data that could be assessed under each theme.

After finalising the themes, the researcher revised each theme for credibility, checked whether or not there was no missing data, which he may have perhaps missed when sorting the information for each theme, and also verified and ensured that each theme had a specific identity (Kiger and Varpio, 2020). This was very useful for the study as it assisted in comparing the gathered data, search for variation on the information, and attain further information and themes. Data were analysed and discussed through the generated themes. The researcher eventually utilised the combination of the information to establish the effect of the COVID-19 pandemic on rural households' food security status.

3.7.2 Descriptive Statistics Analysis

The study required figures on the general demographic details of the participants (which included the size of the household) and their socio-economic status (educational level, employment status, source of income, total household income, etc.). For the purpose of presenting, analysing, and interpreting this type of data, the study employed a descriptive analysis (also called descriptive analytics or descriptive statistics), which according to Fisher and Marshall (2009), is a process within which a set of data is described or summarised by using statistical techniques.

Descriptive analysis, as one of the major types of data analysis, allows for the generation of useful insights from previously un-interpreted data. Microsoft Excel spreadsheet were employed to capture data, and SPSS version 21 was used to analyse it. Tables, graphs and figures were developed and used to represent the frequencies of the categories. The demographic information of the participants was arranged into themes.

3.8 DATA QUALITY MEASURES

In ensuring that the study was reliable, trustworthy, and valid, the researcher employed criteria for measuring research quality as suggested by Lincoln and Guba (1985), which involves credibility, dependability, and confirmability transferability. Leech *et al.* (2009); Elo *et al.* (2014), and Shufutinsky (2020), in support of this criteria, argued that the criteria is very effective in evaluating the trustworthiness of a qualitative study.

Elo *et al.* (2014) maintained that in establishing credibility in a study, researchers must make sure that those participating in a study are identified and described accurately. In ensuring that the study is credible, the researcher has accurately identified and described the targeted population (on the section of the target population) who were the participants of the study.

Webber (1990) argued that in order for the researchers to improve the credibility of a qualitative content analysis, they need to be transparent in terms of the strategies adopted to collect data. To improve the credibility of this study, the researcher has provided all strategies or methods adopted carrying out the study.

According to Shufutinsky (2020), credibility in both qualitative and quantitative study can be achieved through triangulation. Triangulation involves application of different methods of data collection, data sources or theories to generate a full understanding of the matter under study. The researcher applied triangulation in this study where various data collection methods were used in ensuring that the data collected is credible. The study also triangulated the findings concluded upon through literature sources.

Additionally, the researcher in this study went to an extent of translating the data collection instrument to ensure that the participants were interviewed in the language that was best understood (Annexure B).

Bradley (1993) argued that dependability alludes to the rationality of internal processes and the manner in which the researcher accounts for the altering conditions in a phenomenon. He further argued that confirmability alludes to a state within which the features of the data, as presented by the researcher, can be confirmed by other people who review or read the outcomes of the study.

According to Korstjens and Moser (2018), dependability and confirmability in a study can be achieved or established by allowing the external audits to evaluate the accuracy and check whether or not the results and interpretation and conclusion is in line or supported by data. In establishing the dependability and confirmability of the study, the researcher permitted the supervisor to audit the study and evaluate the accuracy. The researcher provided adequate information to allow the supervisor to interpret the context and meaning of the data presented, to check whether the results, interpretation, and conclusion are inline or supported by data as posited by the researcher.

Webber (1993) maintained that transferability alludes to the state within which the research findings can be applied in another context. Lincoln and Guba (1985) argued that transferability can be established by providing adequate evidence that the findings of the study are applicable to other situations, populations, times, and context. He, however, maintains that the researcher may not prove that the findings of his/her study will be applicable. He concludes by stating that the researcher is only responsible for providing information that is applicable. In this study, the researcher provided information that is rich and can be applied to other context, populations, times, and situations.

3.9 ETHICAL CONSIDERATION

Given the significance of ethics in carrying out research and the difficulties around conducting a study, institutions of higher learning put everything in line to protect the pride and safety of the participants of a study (Sleem *et al.*, 2016). The University of Mpumalanga has a Research Ethics Committee that plays a crucial role in ensuring that the research ethics requirements are adhered to when a study is conducted. The study was therefore approved by the Research Ethics Committee from the School of Development Studies and the University Research Ethics Committee, thereafter (Appendix H).

The study required the participation of the households' breadwinners from Bushbuckridge Local Municipality and to comply with the research ethics in carrying out a study, several ethical considerations were adhered to. The researcher sought permission from the municipality under study to conduct the study and it was granted (Appendix I).

Prior to participating in the study, participants were given a consent form (see Appendix E) which required their signature as a sign of showing that they agree to participate in the study. The researcher explained the primary aim and objectives of the study to each participant before the interview. Participation in the study was voluntarily (Israel and Hay, 2006). The participants were given an opportunity to decide whether to participate in the study or not. The participants had a right to withdraw at any point of the interview without any consequences. This was done with the intentions of showing respect towards the participants' rights.

The study exercised the principle of confidentiality and anonymity (Israel and Hay, 2006; Oliver, 2010). The study required some sensitive information from the participants, and in complying with the confidentiality and anonymity principles, participants were given an assurance that their information would only be used for the purpose of this study. The researcher kept the promise, and the information provided was only used for the purpose of this study and even now that the study is complete, the information will never be revealed to anyone. Exercising the principle of confidentiality and anonymity assisted in ensuring that the participants do not get harmed physically or emotionally from participating in the study (Oliver, 2010).

Qualitative research in most instances require tape recording of interviews in order to capture all the information provided. However, this can never be done without the permission from the participants which allows a researcher to digitally record the conversation. Along these lines, prior to each interview, permission to use a tape recorder during the interviews was requested from the participants. A digital tape recorder was employed where permission was granted and to participants who were not comfortable with the conversations being recorded, the research only took notes.

Furthermore, the study required various information from both primary and secondary sources of data collection. All the information from various scholars that was used throughout the study was cited or correctly referenced. In this regard, the researcher

has acknowledged the scholars for the all the information applied in the study to avoid plagiarism, and this was done to ensure that the study is of integrity and honesty.

3.11 SUMMARY OF THE CHAPTER

Chapter 3 presented a detailed discussion regarding all the processes undertaken in the study to successfully achieve the research aim and objectives. It revealed information in relation to methods that were applied in the study and the justifications on why the researcher chose to adopt such methods in carrying out the study.

The methods adopted in carrying out the study succeeded in ensuring the successful accomplishment of the study's aim and objectives which were directed towards generating significant results to address the research problem. The adopted methods also assisted in addressing the identified problem of COVID-19 pandemic which threatens household food security.

Chapter 3 has demonstrated that the respondents' rights were recognised and respected; they were never treated like objects but like human beings. All the research ethical issues were recognised and attended. Data was gathered through interviews and structured observation checklist, wherein questions were answered by households' breadwinners as well as the key informants. Thematic analysis and descriptive statistics analysis was carefully employed to analyse and interpret data to establish the effect of the COVID-19 pandemic on rural household food security status. The study's results and discussion are presented on the next chapter (Chapter four).

CHAPTER 4 DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

This chapter presents detailed information gathered from the participants within Bushbuckridge Local Municipality in relation to the effect of the COVID-19 pandemic on household food security. The study analysed the effect of the COVID-19 pandemic on rural households' food security as the main theme. Understanding the effect of the ongoing pandemic and its related preventive measures (i.e., the national lockdown) on the food security of the households is a pre-requisite for articulating new strategies towards alleviation of households' food insecurity which may have been worsened by the pandemic.

Both quantitative and qualitative data were collected. The chapter presents and analyses the collected data. The discussion begins with the presentation and analysis of quantitative data followed by qualitative data. A theme-based discussion is presented as follows, based on the research questions and objectives.

4.2 QUANTITATIVE DATA

Presented in this section is demographic information to gain a more complete and in-depth understanding of the effect of COVID-19 on rural household food security. The researcher analysed variables such as the employment status, level of income and adequacy, and other variables, such as the educational level and gender, as these have a direct link on access to the means for access to food.

4.2.1 Demographic Information

The demographic data presented comprises of gender, educational attainment, household size, employment status and income. The variables were viewed as imperative in studies on the effect of the COVID-19 pandemic and the influence it had and still has on households' access to food. The variables considered determine, to a certain extent, the amount and adequacy of food that could be accumulated by a household and the availability and access to food within a household. Table 4.1 indicates the gender distribution, educational level, and size of the family.

Table 4.1: General information on households' breadwinners

Variable	N=60	Percent
Gender		
Male	23	38
Female	37	62
Total	60	100
Total number of households members		
0-5	6	10
6-10	14	23
11-15	24	40
>16	16	26
Total	60	100
Educational attainment		
No schooling to Grade 4	0	0
Grade 5-7	1	2
Grade 8-10	5	8
Grade 11-12	33	55
Tertiary education	21	35
Total	60	100

Source: interview questionnaire data, 2021

Of the 60 participants that were selected for this study, Table 4.1 indicates a higher percentage of female participants in the study (62 percent) as opposed to male participants (38 percent). This probably demonstrates the prevalence of a higher percentage of women-headed households in the study area.

The dominance of female-headed households is confirmed by the municipality's IDP, which reveals that most households in the area are women-headed (Bushbuckridge Local Municipality IDP, 2020/21). This is surprising given that households are known to be usually led by males. For instance, Stats SA (2021) asserted that, in 2021, South Africa had an estimation of 18 million households wherein only 42 percent were women headed. Similarly, Silvestri *et al.* (2015) discussed that male-headed households tend to constitute a high percentage in the country, especially in rural settings, as compared to women-headed households.

Asiyonbolo (2005) linked male dominance concerning households' leadership to the issue of masculinity. Men are classified as physically strong as opposed to women who are traditionally known to be primarily responsible for bearing and taking care of the children. The dominance of women-headed households in the study area may perhaps be as a result of fact that men tend to leave their rural homestead and migrate or commute to urban areas in search for employment opportunities.

The reasons presented relate to discrimination and deprivation that women tend to be faced with because they are not viewed or known to be the primary breadwinner, while women care for children, as well as performing household chores. In situations where pandemics strike, women-headed households tend to be the hardest hit. Chitiga *et al.* (2022) posited that men and women were impacted differently by the pandemic and lockdown measures that were adopted, leading to an unemployment rate of 31,3 percent for women, as opposed to 27,2 percent for men.

A higher percentage of participation of women as the main sources of income in the study provided similarities in the literature about inequalities and poor access to employment opportunities. Chitiga *et al.* (2022) maintained that most women are deprived of opportunities for self-development (i.e., acquiring post-matric qualification) as opposed to men, simply because they are expected to be at home to perform the domestic chores. Chitiga *et al.* (2022) further argued that women, even before the pandemic, faced higher unemployment compared to men and gender inequalities are predominant in labour force participation. It is for these reasons that the gender distribution was conceived as an important variable to analyse.

In terms of household size, it transpired that the majority (66 percent) of the households participating in the study had more than 10 household members. Considering five household members as the ideal, this evidence suggests that rural households in the study area have extremely large family size as the percentage increases to 89 percent. Therefore, this finding implies that the area of study is characterised by large family size structures, and this has a bearing on access to food, particularly when large families have a higher percentage of unemployed members.

The dependency ration is extremely high. Arguably, household size has an influence on the food security status of households. The higher the number of household members, the lesser the chances to be food secure as more money may be required

to meet both food and other households' daily needs (Sekudu and Kweka, 2012). The study of Saaka *et al.* (2020) noted that households with fewer (less than six members) members were food secure, as opposed to households with a lot of members (above 10 members) who were found to have very limited resources to bear the pressure of the total household size on consumption. This implies that households with small family size tend to be less vulnerable to food insecurity as opposed to those with large family size dominated by unemployed members relying mostly on one wage earner.

It is crucial to indicate that the mentioned households that were found to be food secure had a source of adequate income. This means that although a household may be small, without a source of adequate income, they are prone to experiencing food insecurity.

The educational level of the participants was viewed as crucial in this study, based on the belief held that education increases the prospects of finding employment and guarantees participation in the labour market. This is confirmed by Reddy (2020), that people with basic education are most likely to suffer job loss and income shocks during events that have a disastrous impact on economic shocks and are most likely to suffer from poverty and food insecurities. The economic returns for the highly educated tend to be higher and this is also gender related, in that, the rate of economic return for men is arguably higher than that of women (Yahong and Khan, 2021), which may be attributed to the educational attainment of men, that gender differences exist.

Concerning the education level of the participants, Table 4.1 shows a higher percentage of participants (breadwinners) who were without tertiary education (65 percent) as opposed to those with tertiary education (35 percent). The majority of the participants with less educational attainment level were women as they predominated in the study as the main wage earners. This may be the reason for men earning more than women, as concurrent to Yahong and Khan (2021) argument.

As per the findings, most women were without formally recognised skills to seek proper and high-paying employment opportunities. This can be attributed to their level of education wherein most only attained basic education. A post-matric qualification is generally considered as a requirement for one to get a decent and high paying job, and this is essential for main breadwinners, so that they can be in a position to access adequate quality food for a family, including meeting other basic needs. The lack of

post-matric education tends to have implications on employment status, source of income, total income and access to food.

Yahong and Khan (2021) extended the discussion on access to employment and the returns of education by stating that healthy and educated individuals are more likely to find high paying job opportunities than their less educated counterparts. This, as already indicated, would mean that the women in the area of study have less chances of attaining a decent paying job given their educational level. Education has an indirect influence on food security.

Linked to most women being less educated in the study area, history proves that in the past, society as well as cultural systems deprived women an opportunity to get post-matric education. Although this may have changed in the present society, the families of most women who fell victim to these systems may be still suffering (up to date) from food insecurity owing to a lack of post-matric education.

Subsequently, most studies have revealed that women-headed households, in terms of food security-related issues, are the most affected groups as opposed to male-headed households which have long been favoured by the society's cultural systems, such as the family culture, religion, etc. Similar to this, women-headed households in the area of study were prone to food insecurity amid the period of the pandemic.

4.2.2 The Socio-Economic Status of the Participants

The socio-economics, concerning employment, the participants are shown in the following figure.

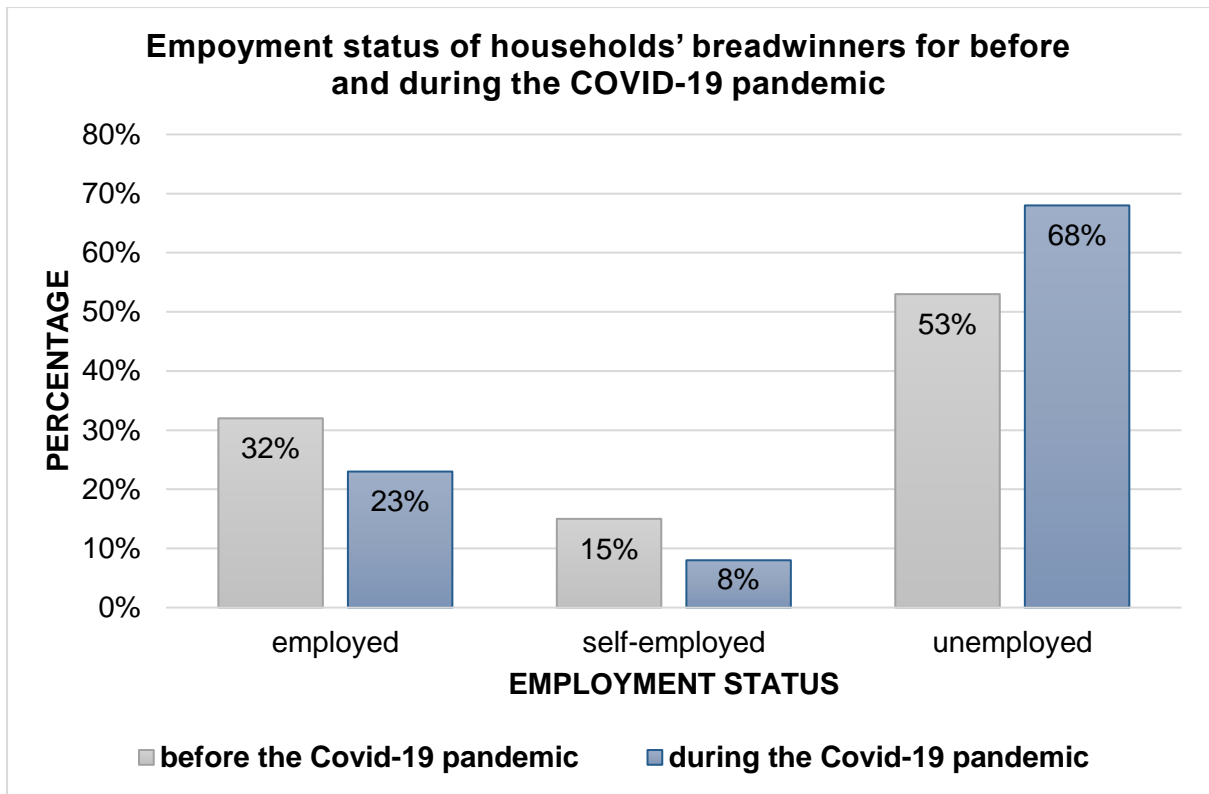


Figure 4.1: Employment status of households' breadwinners

Source: interview questionnaire data, 2021

Figure 4.1 indicates the status of employment of the household breadwinners before the COVID-19 pandemic and during the pandemic. The changes in the status of employment are noted in all categories, namely the employed, self-employed and the unemployed. To be precise, a 9 percent decline in the percentage of the employed is noted with a 15 percent increase among the unemployed. About 15 percent more main breadwinners became unemployed leading to an increase in the total number of unemployed participants from 53 percent before the pandemic to 68 percent during the pandemic.

The reality presented above supports the argument on the rise of unemployment in the country amid the pandemic. Unemployment in South Africa before the COVID-19 pandemic was 29.1 percent. The country saw an increase of 6.2 percent in unemployment rate during the pandemic from 29.1 to 35.3 percent (Stats SA, 2022). This is evident from the study findings as presented in

The figure depicts a 7 percent decline in those classified as self-employed. The data presented in this figure indicate that the pandemic brought about negative changes in

the employment status among households in the study area, which has implications concerning the food security status of households in the study area.

Employment is one of the factors that influence household food security. In particular, the employment status of the household breadwinner is most likely to determine the household's access level to food and the availability. Studies concur (Pereira and Oliveira, 2020; Reddy, 2020) that there is a correlation between educational level and employment status; they maintained that, in most cases, the people with post-matric education tend to have decent paying jobs as compared to those without such qualifications, who are in most instances employed in less paying jobs or even worse unemployed relying on a social grant.

Similarly, this study found a high number of main breadwinners without post-matric qualification (65 percent), as well as a high percentage of unemployed participants both before the COVID-19 pandemic (53 percent) and during the pandemic (68 percent), as shown in Table 4.1. The increment of unemployment in the area of study may be attributed to educational level of most participants, 65 percent as indicated in Table 4.1 had educational attainment below a tertiary education level.

Similarly, Stats SA (2020) demonstrated the correlation between education and employment status. Based on the findings from the 2019 Quarterly Labour Force Survey (QLFS), only about 2.1 percent of graduate unemployment was recorded for the year 2019 (Stats SA 2020). In general, that percentage reflects unemployment across all ages, not merely recent graduates, who are much less likely to be unemployed compared to those with only grade 12 or less. Reddy (2020) discussed that those without post-matric qualification during unforeseen events (e.g., wars, pandemics, political instability, etc.), which in most cases causes economic instability resulting in job loss, are more likely to become unemployed and vulnerable to food insecurity. This is evident in this study where a decrease in the percentage of the employed and self-employed is noted (Figure 4.1). This can also be linked to the educational level of the participants which in this case affected mostly women. Therefore, this confirms the correlation between education and employment as per Pereira and Oliveira (2020) and Reddy (2020).

The loss of employment during the pandemic becomes one of the barriers presented in the entitlement theory which tends to prevent or limit people’s ability to access adequate food.

4.2.3 Source of income

Figure 4.2 illustrates the households’ source of income for before pandemic and amid the pandemic.

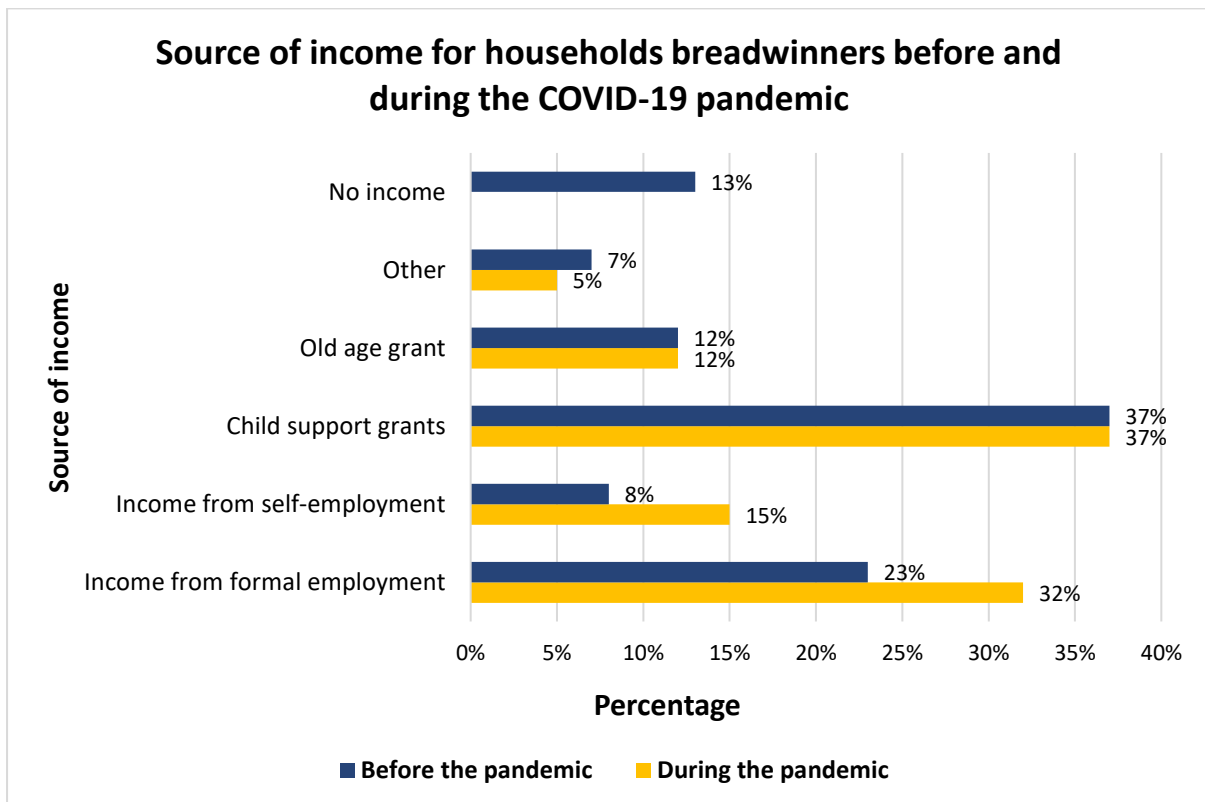


Figure 4.2: Source of income for household breadwinners before and during the COVID-19 pandemic

Source: interview questionnaire data, 2021

The discussion on the sources of income has aimed to highlight changes in household income because of the pandemic. The data presented show sources of income before and after the pandemic. Hence, Figure 4.2 indicates changes noted in the source of income. Social security grants during the COVID-19 pandemic remained stable despite the challenges posed by the pandemic. However, a drop in income for salaried household breadwinners is noted. The figure depicts a 7 percent decline in the source of income generated through self-employment. The percentage of households without income rose during the COVID-19 pandemic and this again has implications concerning access to food.

Rural households are generally known for a higher dependence on social security grants probably due to lack of job opportunities in the rural areas, which are described as areas with higher poverty and unemployment rates. This can also be linked to educational attainment. As already highlighted, lack of tertiary education may mean lack of formally recognised skills to participate in the labour market. Therefore, leaving most people with no choice but to depend on social security grants or income from self-employment. To get a social grant, a formal educational qualification is not a requirement, as it is to gain formal employment. Although it may not be difficult to attain social security grants, grants (particularly child support grants) are arguably not enough to sustain a household, let alone an individual.

Despite the fact that the amount of grants is shown as stable throughout (Figure 4.2), Ruszczyk *et al.* (2020) argued that the beneficiaries of social grants in most cases are the most vulnerable groups to food insecurity. While Saaka *et al.* (2020) confirmed that large households seem to be the most vulnerable to intense food insecurities, given that in most cases the breadwinners for such families are likely to be unemployed and relying on social grants (Saaka *et al.*, 2020).

The findings of this study indicate that about 49 percent of the participants in the study area relied on social security grants and Table 4.1 shows that the area of study is characterised by large family size structures. This could imply the vulnerability or exposure of households to food insecurity given the challenges posed by the pandemic related national lockdown. Despite changes that were effected by government concerning the social security grants provided, the households in the study area remained the most vulnerable group in terms of food insecurity. This challenge is attributed to insufficiency of the social grant and the rise in unemployment and food prices.

Nevertheless, social security plays an essential part towards meeting the needs of people, but it is difficult to confirm the adequacy of the grant in terms of household access to sufficient and nutritious food to sustain them for an entire month, given the little amount that is paid to the recipients. The child support grant (R480), in particular, is insufficient to meet the food needs of the child.

Fechit (2020) stated that households that rely on this source of income are known to spend 60 percent or more on food and, for this reason, in most instances, they are

unable to access other essential household necessities, such as health care, education, proper shelter and sanitation. Furthermore, the study conducted by Fechit (2020) revealed that over 50 percent of the food insecure households were without the basic necessities mentioned.

Contrary to low-income households, studies on food security or nutrition prove that households with breadwinners who get a high or reasonable salary are less likely to experience intense food insecurity (Angeles-Agdeppa *et al.*, 2020). The decline in the income for salaried and self-employed household breadwinners, as evident in this study, is of serious concern given the influence of income on households' access to food. Moreover, the figure reveals an emerging 13 percent of the participants with no income.

For these participants, the figure does not indicate the situation before the pandemic, but only for the period during the pandemic. This suggest that they may have lost their livelihoods generation activities amid the COVID-19 related national lockdown. Similarly, the households of the breadwinners who had no income were prone to experience food insecurity-related problems. The situation may become dire if they do not get assistance to support their families.

The entitlement theory recommends that governments should intervene where households seem to have lost access to their entitlement to food to avoid famines. A loss of income for some households' breadwinners has been identified by several studies as one of the common challenges posed by the pandemic to households (Clapp and Mosely, 2020; Vermeulen *et al.*, 2020). However, a decrease in income for salaried household breadwinners is evident in the results. The figure depicts a 7 percent decline in the source of income generated through self-employment. The percentage of households without income increased during the COVID-19 pandemic and this again has implications concerning access to food.

4.2.3.1 Total Household Income

Household income forms part of the factors that have an influence on household food security status. Figure 4.3 indicates changes in the total income of the household breadwinners. The area of study is characterised by a wide income gap between the low-income households and high-income households. Income inequality in a country

is witnessed in a case where the citizens do not get the same income share that is generated by the economy.

In support of the argument concerning income inequality in the area of study, Figure 4.3 indicates 90 percent difference in terms of total household income between those with an income of R500 or below and those with an income of R5 500 and above. Holleman and Conti (2020) believed that income inequality in most developing countries remained high for the past two decades and it seems to have increased despite the relatively high economic growth rates. Arguably, this issue may be connected to the problem of inequality in the country and poses a threat towards achieving policies that are aimed toward food insecurity reduction such as Goal Two (zero hunger) of the Sustainable Development Goals (World Bank Group, 2018).

Income inequality in this study may impact the food security of the low-income households, as compared to the upper middle income and higher income households during the period of COVID-19 pandemic-related national lockdown. The study acknowledges that the correlation between income inequality and food insecurity is broad and vague. However, the argument stems from the dimension related to economic affordability of food price and, with that said, low-income households may find it challenging to attain adequate nutrition opposed to high income households.

The issue of income inequality in the study area may be attributed to the high level of participants having attained qualifications below tertiary education. As already highlighted, those with tertiary education stand higher chances of attaining a high paying job opposed to those with only grade 12. This is evident from the study wherein only 18 percent of the participants had a total income of more than R5 500 compared to 52 percent participants with R1 000 and less.

As evident in Figure 4.3, most participants earn below R3 500. This is a group that is classified as indigent and, therefore, it is a cause for concern. Most of the breadwinners who participated in the study earn a salary or wages that classify them as households living below the food poverty line. Food poverty line refers to the amount that a person needs to at least meet the minimum daily energy intake as required (Stats SA, 2021), which in this case was R624. A decline in the meagre wages earned by breadwinners is noted during the COVID-19 pandemic.

There was a 13 percent increase in the total income of those who made an income of R500 a month and most of them were self-employed. There was a 100 percent drop in households' income within the total income range of R4 500 to R 5 000, probably because of those who lost their jobs as a result of the pandemic. This posed a threat to the food security status of these households.

According to Arndt *et al.* (2020), income is regarded as one of the key factors influencing food insecurity and hunger in households, given that the rates of hunger drop sharply with increasing incomes. This may be true to a certain extent since the increase in income does not always imply a decline in hunger rates. There are other factors (such as food prices) that should be taken into consideration before a conclusion of this nature may be drawn. For instance, having mentioned the issue of food prices, in an event where income increases altogether with food prices, then there may be no much changes in terms of food access. However, in an instance where income rises and food prices remain the same, then it may boost the purchasing power, possibly allowing households to get more foodstuffs.

Considering the decline in income for some households, as per the findings, this may mean dire food insecurity consequences. This may be far worse for the 20 percent of the households which were found to be with a total income of R500 or less, given that most of them have a large family size, as shown in Table 4.1, and they may find it difficult to access adequate food to meet the food needs of each member of their households.

Several studies on food security suggest that low-income households, in most cases, are found to be food insecure during unforeseen events, similar to the COVID-19 pandemic, which tend to disrupt the economy (Clapp and Mosely, 2020; Vermeulen *et al.*, 2020). Figure 4.3 indicates the total household income of the households' breadwinners for the period before the pandemic and during the pandemic.

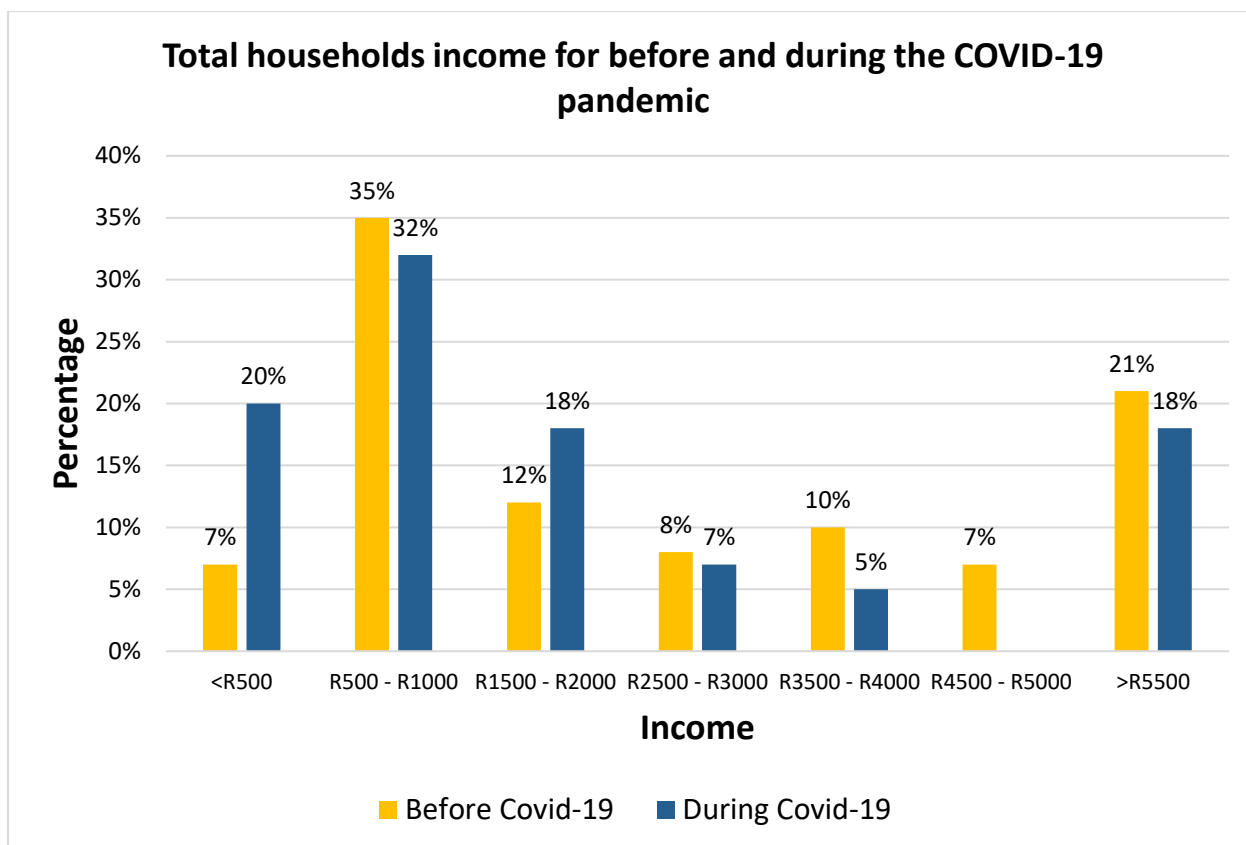


Figure 4.3: Total household income for households' breadwinners before and during the COVID-19 pandemic

Source: interview questionnaire data, 2021

4.3 QUALITATIVE DATA

This section presents the qualitative data collected through interviews concerning the views of household breadwinners on the COVID-19 pandemic and household food security. The discussion covers the challenges experienced by the participants in terms of access to food during the harsh stages of the COVID-19 pandemic owing to the national lockdown and other adopted preventive measures to curb the spread of the virus. It was important to seek knowledge on food security-related challenges posed by the pandemic to understand and establish the effect of the pandemic on households' food security. This section further presents and discusses the strategies adopted by both households and the state in mitigating the effect of the COVID-19 pandemic on rural households' food security.

4.3.1 Perceptions of Households About COVID-19 Related National Lockdown and Its Effect on Their Food Security

The COVID-19 pandemic-related national lockdown received mixed perceptions from the public from the moment it was adopted. South Africa, according to Kavanagh and Singh (2020), has been acknowledged for its instant and efficient response to curb the spread of the virus. Despite the good intentions of the government to mitigate the spread of the virus and protect its citizens from being exposed to the virus through the national lockdown, most households were exposed to food insecurity and other challenges. Udmale *et al.* (2020) and Simon and Khambule (2021) maintained that the national lockdown was perhaps the only method to halt the spread of coronavirus but with devastating economic, social, and nutritional consequences, in particular on the food chain. When requested to provide views on the COVID-19 pandemic and related national lockdown, most participants (over 60 percent) expressed that the measures were too strict and focused mainly on mitigating the spread of the virus but neglected other aspects, such as the livelihood generation and other socioeconomic aspects.

The participants expressed that the response of the government was supposed to be consultative, and the national lockdown should have been adopted as an optional measure or at least allow all people to continue with their livelihood generation activities, whilst ensuring that they abided by the rules and regulations of the lockdown (such as the wearing of a mask, spacing, frequent washing of hands, etc.). This opinion is evident in participant 8's words:

"It would have been better if some of the rules related to the national lockdown were made optional such as the stay-at-home rule which placed our livelihoods on hold for a couple of months...and which some of us sell to put food on the table...so you probably know what it means...if you don't sell, then it means no food for you".

The participants argued that the stay-at-home rule of the national lockdown was not necessary, and they felt it would have been better if it was made optional to at least allow them to continue with their livelihoods amid the pandemic; this way they would not have suffered as much loss.

In support of this view, Rowthorn and Maciejowski (2021) discussed that the governments did not carefully assess the costs of the national lockdown prior to

implementation. They were too concerned about curbing the spread of the virus and failed to develop strategies to mitigate the potential costs of the lockdown on economic and social aspects and, hence, the economic and social costs far outweigh the health benefits.

Contrary to the unemployed and low-income participants, twelve household's breadwinners who attained tertiary qualifications and employed with good earnings perceived the national lockdown differently. They articulated that the national lockdown was necessary, and they were happy that the government took action towards mitigating the spread of the virus soon after the first case.

Participant 22 mentioned that:

“The national lockdown was necessary to mitigate the spread of the coronavirus and save lives...however the state should have thought of other measures to safeguard jobs of the beneficiaries of both formal and informal sectors”.

Some of the participants acknowledged the government's effort to curb the spread of the coronavirus. Nevertheless, they felt that the state failed to sufficiently do justice in terms of properly assessing the socioeconomic risks associated with the adoption of the national lockdown prior to implementation in order to come up with control measures that would ensure safety for the public from all aspects (i.e., health and socioeconomic aspects). Along these lines, it is clear that they felt as if the “saving lives strategy” adopted by the state was not enough.

Their argument is valid looking at the fact that despite the dangers posed by the pandemic, they still had to provide for or feed their families and the adoption of the strict national lockdown, which favoured essential workers, it may have been difficult for them to provide for their families (Van der Berg *et al.*, 2020). Additionally, the stay-at-home rule may have exerted more pressure on the consumption of low-income households. Households in which members would get some meals from elsewhere, were more likely to run out of food supplies quickly during this period given that everyone was mandated to stay home during the harsh stages of the lockdown, meaning that they had to get all the meals from home; for instance, this was unlike before the lockdown where school learners would get lunch at school from the National School Feeding Programme (Udmale *et al.*, 2020).

The socioeconomic characteristics of participants in the study influenced their perceptions towards the matter under study. The argument stems from the fact that most of the participants who provided only negative views were without post-matric education (see Table 4.1), relying mostly on social grants (see Figure 4.2), with some of those who were employed before the pandemic lost employment during the pandemic. The manner in which they viewed the COVID-19-related lockdown is well justified given that they were badly affected by the lockdown, and they were less likely to identify positive aspects of this measure. Contrary to these participants, those with post-matric education and high or reasonable income were able to recognise the positive aspects and the limitations of the national lockdown.

Laguna *et al.* (2020) perceived the national lockdown as a threat to food security, particularly household food security given that some households' breadwinners suffered a job and income loss owing to this measure. This study revealed realities similar to this wherein over 65 percent viewed the national lockdown as the enemy of progress and a "*xinghunghumani*" (monster) which disrupted their livelihoods, leaving them with limited access to food.

In her exact words, participant 58 said:

"...before this coronavirus and the lockdown we were having challenges in terms of getting enough food but still we could find ways to get food and survive...now this "xinghunghumani" (monster), wrecked our livelihoods which were our only means to get food, it really worsened the situation...now all the little things we achieved before the pandemic went down the drain".

This confirms Fizman *et al.* (2020) argument and other studies (United Nations, 2020; Fechit, 2020) on the issue of COVID-19 and food security which maintained that the pandemic posed a "threat" to household food security.

The households' views on how COVID-19 impacted their access level to food varied and were noted to have been influenced by their employment status and the level of income during the pandemic's related national lockdown.

4.3.2 Challenges Experienced by Households Concerning Food Access During the Ongoing National Lockdown as a Result of the COVID-19 Pandemic

When addressing the question of food security-related challenges posed to households by the COVID-19 pandemic-related preventive measures, the researcher

noted various challenges during the interviews. The participants outlined five pertinent challenges which they said they experienced as a result of the pandemic's related ongoing national lockdown, which includes loss of employment and income (4.3.2.1), rising food prices (4.3.2.2), an income or food loss from the private transfer (4.3.2.3), and unreliable water supply (4.3.2.4).

4.3.2.1 Loss of Employment and Income

Figure 4.1 in this chapter shows that about 15 percent of the households' breadwinners lost employment as a result of the pandemic. In confirmation of these statistics, about 16 percent of the participants, who were classified as employed and or self-employed before the pandemic (Figure 4.1), indicated that they became unemployed during the pandemic. The loss of employment alone threatened their food security status since employment serves as one of the factors that influence household food security status.

Participant 2 explained:

"I lost my job as a result of the coronavirus...this job was the only thing I had to put food on the table for my kids...eish it was not enough but it was something, it really made a difference".

Approximately 6 percent of the 15 percent of those who suffered a job loss or business indicated that, before the pandemic, they relied on producing and selling vegetables. Thus, the implementation of the national lockdown affected their business, and they could not sell their vegetables since they had to abide by the rules and regulations of the lockdown; their produce went rotten and, consequently, they lost income. They further reported struggling to find funds to revive their businesses.

Participant 34 said:

"Before the coronavirus, I used to produce and sell veggies (vegetables) to street vendors, but since this thing began, I could no longer sell to anyone and mind you I already had veggies that were gonna be ready in a week or two...spinach, cabbage, tomatoes, chillies, and green pepper. All these veggies got rotten since I could not sell to anyone my customers (street vendors) were restricted from doing business...I lost a lot of money."

The reality suggests that the COVID-19 pandemic-related national lockdown took away the livelihoods of some participants in the study area and that, for some, this was their only source of income — as a result, they were left with no income. The issue of disruption over livelihoods and loss of income is noted by Khambule (2020), who argued that low-income household breadwinners (who in most instances are informal workers) endured severe consequences of the COVID-19 related national lockdown which left most of them without income.

Owing to the income loss, most of the poor households in the study relied solely on social security grants, which they complained that even without additional income is not enough (in particular the child support grant). The absence of income would mean limited food and without assistance from the government or relatives then these households were prone to intense food insecurity.

Income is understood to be one of the factors that influence households' access to food, particularly for households (Chakrobarty *et al.*, 2020). To attain sufficient nutrition, households are required to have physical access or economic access (Devereux *et al.*, 2020). In this study, a lot of households relied mostly on economic access which is determined by income level, among other factors (Altman and Ngandu, 2020).

As a result of the loss of employment and disruption over their business, the participants saw a drastic change in their total household income levels, while some lost their income completely. This is confirmed in Figure 4.3, which shows an increase of 13 percent in the category of breadwinners with an income of below R500, from 7 percent before the COVID-19 pandemic to 20 percent.

In South Africa currently, a total income that is below R500 is not sufficient to feed or enable a person to access sufficient food supplies to last for the whole month. The food poverty line has increased from R585 in 2020 (from R561 in 2019) to R624 in 2021 (Stats SA, 2021). At the current moment, some households rely only on R350 from the COVID-19 pandemic grant, which is far less compared to the required amount for one person to afford the required minimum daily energy intake.

Wight *et al.* (2014) explained that households with a total income below the food poverty line are vulnerable and more likely to suffer from malnutrition and other related food insecurity consequences. This is supported by their findings that 24 percent of

the households with total income below the food poverty line experienced food insecurity and their children were the most affected. The findings of this study, therefore, suggest that the households with a total income below the food poverty line during the pandemic were vulnerable to food insecurity-related issues given the fact that their total income was below R624 (the amount which was required for one person to access minimum nutritious foodstuff). Low-income households spend almost 50 percent of their earnings on non-staple food such as animal source products, vegetables, and fruits (Arndt *et al.*, 2020). Due to a decline or loss of income, these households may be forced to cut back or stop purchasing these non-staple foods.

The loss of employment and income as one of the challenges posed by the pandemic threatens food access for the households in which the breadwinners became victims of unemployment. This suggests that these households were prone to limited food access during the harsh stages of the pandemic. Unemployment and loss of income were noted to be one of the common issues posed by the pandemic to households. For instance, Kansime *et al.* (2021) found that about 20 percent of the participants in their study who were employed before the pandemic lost their jobs amid the pandemic.

All the participants who lost income stipulated that since the hit of the pandemic and the adoption of the national lockdown they could no longer afford the foodstuffs that they used to buy for their households, as well as meet other necessities as a result of the loss of income and rising food prices owing to the pandemic.

Participant 30 asserted that “ *losing my job is the worst thing that I would not wish for anyone...yoh!!.. this is a big problem...now I can't afford to buy the amount of food I could get before COVID-19...my heart bleeds for my children since now they will die of hunger*”.

Similarly, Participant 45 said:

“*My child to tell you the truth...lockdown affected me in such a way that I could no longer get all the foodstuffs I used to buy for my family since it took away my job and I don't have money to buy all things that we need and I can't do anything else now because the little I get we use it to buy food of which is not even enough to sustain us as it runs out before the end of the month and I have to make other plans to get food*”.

The households with unemployed breadwinners who were relying only on social grants for their living were the most affected. As a result of the job and income loss which

consequently affected their purchasing power, these households were unable to access the foodstuffs that they could purchase before the pandemic. Meanwhile, the households wherein the breadwinners were never affected in terms of employment status still managed to get all the foodstuffs that they usually buy.

In confirmation, participant 15 stated that *"...it is difficult for us now that we only depend on child grants and the issue of losing income because of COVID-19 makes our situation worse...the only thing I can get for my kids is food which is not even enough...I don't even afford electricity...if my one of kids gets sick I don't know what I am going to"*

Similar sentiments were noted from participant 60 who indicated that:

"I think COVID-19 may have impacted the low-income households, especially those with unemployed breadwinners...they may have suffered reduced access to food now during the pandemic but as for my family the access is still the same despite the challenges posed by the pandemic. The only issue is that we had to add more money to the budget for food from our savings".

As per the quote, it is clear that households were impacted differently by the pandemic and the low-income households, as already argued, were more vulnerable to food insecurity than they were before the pandemic as compared to the households with high salaried breadwinners.

4.3.2.2 Rising Food Prices

Over 80 percent of the participants showed concern over the increase in food prices, with some arguing that this could have severe effects on low-income households. The findings revealed an increase in the price of staple food from both local shops and shopping centres. The participants saw an increase in the price of various foodstuffs, including cooking oil, maize meal, rice, meat, eggs, full cream milk, potatoes, canned fish, and meat.

Participant 4 said:

"One of the challenges I have noticed is the increase in food prices, yoh! n'wana mina (my child) food is very expensive these days and even worse now during the pandemic...all the shops now are the same whether the local ones or those

at the town. The price of cooking oil increased drastically, also the price of maize meal increased, rice, nyama (meat), potatoes and other more like eggs, milk (full cream), tin fish and beans”.

Meanwhile, participant 9 on the issue rising food prices asserted that:

“My child swatika (it’s difficult)...it’s like the shops wants us to die of hunger...I am saying this because we run away from the local shops to town thinking that maybe the prices for food are better there but it just the same...actually even worse since you need transport fare to get to town.”

In confirmation of the rise of food prices as indicated by the participants, a report by NAMC (2021) argued that South Africa has witnessed an increase in food prices which has exceeded the upper annual inflation band of 6 percent of the South African Reserve Bank. The affected food products, as noted in the report, involved 2kg of rice (58 percent), 500g dried beans (41 percent), 1.5 dozen of eggs (33 percent), 1kg polony (28 percent), white bread (16 percent), brown bread (14 percent), beef mince per kg (15 percent), 5kg maize meal (14 percent), 750ml sunflower cooking oil (12 percent), cheddar cheese (9 percent), 400g peanut butter (9 percent), 2kg chicken mixed portions (8 percent) with 1litre long life full cream milk and 2.5kg white sugar both at 6 percent.

The price increase of these products may have dire consequences on low-income households given that most of them spent a large portion of their income on staple food, which forms part of the food products that were noted to have increased in terms of price. As already indicated, some households have experienced income loss owing to the pandemic. Given the issue of food prices, these households were unable to cope, and this may have pushed them more into poverty and starvation. This proves that food prices influence the quantity and quality of food that a household can access and acquire. Thus, the rise in food price affects the households’ ability to access sufficient food (United Nations, 2020). In most instances, the increase in food price leads to detrimental effect on the food security of poor households given that in most cases when food price increases their income (particularly social grants) remains the same, consequently making it hard for them to access other non-food needs such as school fees, prepaid electricity, and medication (Stats SA, 2012).

Mkhawani *et al.* (2016) argued that the decline in purchasing power as a result of an increase in food prices can significantly affect the health of low-income families by making it harder for them to acquire a basic food basket. According to Van der Berg *et al.* (2021), the increase in prices of staple food worsens the food insecurity condition as households now face more difficulties in procuring food items from their earnings. Similar findings were yielded from the study of Udmale *et al.* (2021), wherein they noted that the price increase left low-income households with limited food access and food insecure as opposed to those with upper middle and high income. The findings suggest that the nutrition status of low-income households was vulnerable and more likely to affect their health as a result of a possible decline in nutritious daily energy intake owing to the rise in food costs.

4.3.2.3 An Income or Food Loss from Relatives and Friends

The findings have revealed a loss of income and food from relatives and friends, with approximately 45 percent of households having confirmed to have benefited from this source before the pandemic. These households have reported that before the pandemic they used to get money and food from their relatives as well as friends. However, during the harsh stages of the national lockdown, the assistance came to an end since their sources were also affected by the pandemic and had their own problems they were facing.

This, in line with the private transfer entitlement, is of serious concern, because this is one of the sources of food, as per the entitlement theory, within which households may acquire food or any assistance to get food. Private transfer entitlement plays a crucial role in alleviating poverty and food insecurities for poor households where social grants are the only source of income (Devereux *et al.*, 2020). In most cases, this assists households to be in a position to access other household necessities, other than food, given that they already received some food and now it is only a matter of adding more food to what they have received.

The findings suggest that these households had to spend a huge amount of the money received from social grants on food and those with no income had to find other methods of acquiring food.

4.3.2.4 Unreliable Water Supply

Water supply during the national lockdown for most households in the study area was a common challenge; the participants went for days, and sometimes weeks, without water from their taps.

The UN (2020) acknowledges access to clean drinking, reliable, and affordable water as a human right. This principle maintains that safe water and sanitation services are crucial to people's life. However, they also acknowledge that access to water is a common problem. They contend that more than 2 billion people worldwide do not have access to clean, reliable available water within their households and approximately 4.5 billion are without safely managed sanitation (United Nations 2020). This is very concerning when looking at the time frame for achieving the Sustainable Development Goals (SDGs), particularly Goal 6, which seeks to address the issue of water and sanitation to ensure that all people have access to reliable, affordable, and safe drinking water across the globe.

There are only eight years away from 2030 (which is the year in which the SDGs are set to be achieved) and billions of people are still lacking access to clean water and sanitation. Such issues make it questionable whether or not this goal will be achieved by 2030 given the huge number of people who are still in need of clean water and proper sanitation services (Guppy *et al.*, 2019).

Due to the issue of lack of water in the area, the participants were forced to break the "stay at home" rule of the national lockdown and go to the rivers to get water. Water from this kind of source is not safe for drinking and this, therefore, implies that the participants were drinking and preparing food with unsafe water from the rivers, putting them at risk of acquiring diseases from using unsafe water (Guppy *et al.*, 2019).

Additionally, all persons in the country as part of the national lockdown rules were mandated to frequently wash their hands to protect themselves from getting infected by the virus (Van der Berg *et al.*, 2021). The findings, therefore, suggest that these households were more at risk of getting the virus since they could not frequently wash their hands due to an unreliable supply of water, as well as other diseases associated with consumption of water that was not safe.

Based on this study's findings, it is worth noting that the COVID-19 pandemic has exposed the service delivery crises in the country, particularly in terms of water and

sanitation. Similarly, Chamberlain and Potter (2022) maintained that the pandemic has highlighted the lack of adequate water and sanitation in South African informal settlements and rural areas. In their study, they noted that households had water taps and yet water was still a concern; despite having water taps people still had to get water from nearby rivers.

Generally, the assumption may be that most communities if not all who have water taps in their yards or in designated areas within the communities have access to safe and reliable supply of water. However, based on the findings it is evident that this is not always the case; people may have water taps but be without water. The findings suggest that having water taps does not guarantee access to clean and reliable supply of water. Subsequently, this implies that more needs to be done concerning the issue of unreliable supply of water or accessibility of water in rural settings, as well other vulnerable settings. Addressing the issue of water supply will help avoid a situation where people are forced to get water from unsafe sources.

4.3.3 Household Food Insecurity Mitigation Strategies by Households

The study has revealed various methods which were adopted by households in an attempt to ensure that their families had something to eat for the entire month. The study revealed that 30 percent of the low-income participants consulted illegal money lenders (“loan shark”) for financial assistance in the form of loans in an attempt to mitigate food insecurity within their households owing to COVID-19 related national lockdown.

Participant 19 said:

"I borrowed money from the well-known loan shark here to have money to boost my family's budget for food since we could run out of food before month-end...sometimes I borrowed from friends and relatives to pay the loan shark some money and take some and buy food...sometimes they would borrow me food instead of money, they have problems as well they cannot always borrow you money...yoh life now is so difficult because I am in serious debts, I can't afford other crucial necessities for my family".

Similar findings were noted from the study of Saaka *et al.* (2017), where they found that 20 percent of food-insecure low-income households in rural areas of Northern Ghana consulted loan sharks for financial assistance to access food.

This study's findings suggest that the low-income breadwinners were not coping from the effect of the pandemic, and they were food insecure and, hence, they incurred debt to have money to access sufficient food to feed their families. It is also suggested that their total income (R0–R500 and R500–R1 000) was not sufficient to enable them to afford adequate food for their households.

In accordance with these findings, Kisi *et al.* (2019) articulated that low-income households, when they are faced with food insecurity, tend to take extreme measures in an attempt to maintain an income, such as incurring debts, selling assets, and getting involved in unlawful activities. Borrowing funds from “loan sharks” can have dire consequences since some may fail to pay back the money and the lenders are known for taking assets from their clients who are unable to settle their debts (Vermeulen *et al.*, 2020).

The findings also revealed that some households took food on credit from the local shops since their food supplies got exhausted before month-end. This method was adopted by approximately 10 percent of the breadwinners who reported that, to get adequate food to sustain them for a month, they had to take food on credit and pay the following month. Taking food on credit comes with extra costs (interest).

This study also noted a change in household purchasing behaviour as one of the mitigation methods. About 75 percent of the households reported that during the national lockdown they had to revise the list of foodstuffs they usually purchase on a monthly basis, and, after careful consideration, they had to leave off some foodstuffs since their monthly budget could no longer allow them to buy food as they used to before the pandemic.

The FAO (2009) has stated that when income declines or the cost of food increases, low-income households tend to cut expenses on nutritious foodstuffs, such as dairy products vegetables and fruits as well as protein and basic health care. Clapp and Mosely (2020), in confirmation of this practice, maintained that low-income households in desperate cases tend to resort to poor-quality, less nutritious food, choosing it mainly for its affordability and energy value and hunger satisfaction.

In accordance with this, the majority of the poor participants in this study did not buy some of the foodstuffs that they used to buy before the pandemic, such as fruits, polony, cheese, peanut butter, coffee creamer, snacks, rice, mayonnaise, tomato

sauce, yoghurts, and cornflakes. Additionally, they also changed the food brands of the foodstuffs they usually buy for their families into cheaper store brands. Store generic brands are known to be less expensive but arguably not of proper quality.

Participant 53 mentioned that:

"Since the rise in food prices, I could no longer afford the same quality of food products I used to buy before the pandemic, so we were forced to change these foods to cheaper ones, the store brands since these ones are a bit cheaper than the ones we use to buy. This was still not enough, we could still not have sufficient food so we decided to cut off some foodstuffs which we felt were not really necessary during these hard times for example we could no longer buy fruits, polony, cheese, peanut butter, coffee creamer, snacks, rice, mayonnaise, tomato sauce, yoghurts, and cornflakes".

The practice of changing the brands of food products to cheaper, generic brands and cutting out some of the healthy food products seems to be a common practice by low-income households when faced with food insecurity; this has been noted in various studies on household food security (FAO, 2009; Mkhawani *et al.*, 2016; Clapp and Mosely, 2020). Generally, food brands are associated with quality and, usually, those regarded as a bit expensive are known to be of quality as opposed to cheaper brands. The change of food brands by households to cheaper, generic brands may impact their health.

Contrary to the low-income households, 25 percent of the breadwinners who did not suffer from employment and income shocks during the national lockdown, reported that their purchasing behaviour was not affected, despite the challenges posed by the pandemic — they only had to increase their monthly budget for food to ensure that they could still access the same quantity and quality of foodstuffs that they purchased for their families. Their only concern was that they had to reduce the amount that they usually put away for savings on a monthly basis.

These findings serve as confirmation to arguments which contend that the low-income households with unemployed or self-employed relying mostly on social grants or other means to survive are more vulnerable to food insecurity-related issues as compared to the households with employed breadwinners with good earnings (Wight *et al.*, 2014).

Furthermore, the study has noted the manifestation of production base entitlement (one of the legal sources of food as noted from the entitlement theory) in the methods adopted by households in battling food insecurity. Production based entitlement suggests that households can acquire food through their own production. In accordance, about 15 percent of the participants made use of the small gardens within their yards to plant vegetables for consumption and selling. Although they could not sell during the harsh stages of the lockdown, which led to the closure of business and loss of produce thereof, the vegetables were of great assistance for these households especially those that could only purchase food products other than vegetables.

Participant 44 stated:

"As you can see that little garden over there (pointing) was of great assistance as well, those vegies assisted my family during the harsh stages of the lockdown, at least we did not buy veggies we only bought other stuff...but we could not sell during the harsh stages, and we suffered a loss of income and some of the produce got rotten. At least the time where they allowed us to resume business and sell our veggies, we made a little income".

After they were permitted to resume business, these households started selling and the little income generated from selling their produce made a difference and strengthened their access to food and other commodities.

According to Clapp and Mosely (2020), money and commercialisation play a significant role in preventing micronutrient deficiencies since it has a positive influence on small farm-holder earnings (income), nourishment and food security. The results suggest that rural low-income household should consider making use of small gardens in the home yards to produce food and this may save them from falling victim to intense food security.

4.3.4 State Support or Food Insecurity Mitigation Strategies by the State

The South African government, together with many other organisations, after having realised the threat posed by the pandemic to households' food security, rallied to provide food parcels to vulnerable households during the harsh stages period of the national lockdown. The aim was to ensure that the vulnerable households had access to safe and nutritive food during the stressful period of the lockdown. The Department

of Social Development is the institution that dealt with the application and distribution process of food parcels.

As a key informant, a social worker from the area of study was interviewed to get more insights regarding food parcels as one of the methods adopted by the state to mitigate the effect of the pandemic on household food security. Regarding food parcels, the social worker said:

"The Department of Social Development due to the rising concerns over food crisis for households that were deeply affected by the pandemic had to intervene and provide assistance where possible... our department offered a social relief of distress programme which was intended towards assisting households that were deeply affected by the COVID-19 pandemic".

This serves as confirmation that indeed the state took part in assisting households who were vulnerable to food insecurity during the harsh stages of the pandemic. The food parcel packages comprised the foodstuffs as indicated in Table 4.2.

Table 4.2: Foodstuffs that were included in the food parcels

Foodstuffs that were given to deserving households		
1	Food	Quantity
2	Maize meal	12.5kg
3	Rice	5kg
4	Cooking oil	1.5litre
5	Baked beans	4 cans
6	Dried beans	2kg
7	Instant soup	5 packets
8	Sugar	5kg
9	Lucky Star canned fish	6 tins
10	Potatoes	10kg
11	Samp	5kg
12	Soya mice soup	6 packets

Source: Survey data, 2021

Despite having confirmed the availability of food parcels to assist vulnerable households, many deserving households did not benefit from this initiative which was meant to assist and ensure they did not starve during the harsh stages period of the national lockdown. This is supported by the fact that only 15 percent of the households' breadwinners confirmed to have received the food parcels for two months during the harsh stages of the national lockdown.

The frequency of provision (which in this regard was for two months) is alarming looking at the socioeconomics disruptions owed to the pandemic, which affected households' legal sources of acquiring food, also known as entitlements. The harsh stages of the national lockdown lasted for five months and although the other stages were not severe compared to stage 5-3, households were still battling the effect of the lockdown, meaning that they needed firm assistance.

As per the findings, the level of vulnerability among low-income household was alarming and many of these households without proper assistance fell victim to severe hunger. Given their vulnerability, it would have made sense for the provision to have lasted longer to buy them time to revive their livelihoods. Van der Berg (2020), discussing the vulnerability of low-income households, argued that the support to these households was of urgent priority and the provision should have been continuous given the dire effects of enduring starvation.

Again, the fact that only a small number (15 percent) of household received food parcels is of concern considering the results of this study were that more than 50 percent of the participants were not food secure during the pandemic-related national lockdown. It also revealed that about 20 percent of the participants during the pandemic relied on a total income of less than R500. This amount is not enough to feed one person, let alone a whole household. Therefore, this questions the criteria used to select deserving households.

In terms of the criteria, the social worker indicated that:

"...initially, only the households with breadwinners that lost employment were meant to get the food parcels. However, after having realised the number of households that were affected, we then changed the criteria to accommodate everyone who could not afford adequate food to feed their families".

The initial criteria which gave priority to those who lost employment during the pandemic were not sufficient given that those who were unemployed prior to the pandemic were also vulnerable to food insecurity, just like those who lost their jobs in midst of the pandemic. The unemployment rate prior to the COVID-19 pandemic was 29.1 percent in the third quarter of 2019 (Stats SA, 2019). This means that many households were prone to experience food insecurity amid the pandemic and since they had no other source of income, there were no other ways to procure food.

Those who met the criteria had to apply for assistance by calling the department call centre. The municipality, as per the social worker, was responsible for sharing information with households on how to apply for food assistance. They were also given the task of mobilising the household breadwinners who were approved to get food parcels in one place based on where they were located during the dates on which food parcels were distributed in their areas. Surprisingly, most of the households when asked about the criteria adopted in the selection of deserving households and the application process, indicated that they did not know how households were selected. Participant 37 explained:

"I really don't understand how the households who receive food parcels were selected, I mean most of these households don't deserve these food parcels and when you check those who deserved to get the food parcels didn't get anything yet they're in great need".

Participant 7 concerning the application process said:

"We were actually surprised when we heard that there are people who were receiving food parcels...personally I don't even know how it works, where to apply and who qualifies for these food parcels".

This suggests that the municipality may have failed to perform their task properly given that only a small percentage of the participants had applied for and received food parcels. The social worker mentioned that poor communication between the municipality and the communities may be one of the reasons for the small number of applications received; many households did not call the call centre to apply for food assistance.

Some of the participants may have failed to apply through the call centre due to the issue of money, which required a cell phone and money to lodge a call and some of the poor households may have been without cell phones or airtime making it impossible to apply. The call centre method may have excluded or discouraged the poor households who may have heard about the application for food assistance.

Although the department resorted to other methods, such as allowing households to send applications through ward councillors to enable them to apply, it failed as well due to the challenges that emerged. For instance, some of the participants who applied through the ward councillors provided incorrect contact details, some did not

have cell phones and they provided their ward councillors' contact details. This made it impossible for the social workers to reach these applicants for interviews.

As a result of this and the ward councillors were then excluded from identifying deserving households. Although the social worker could not give detailed information on the removal of ward councillors from helping with identifying vulnerable households as well as assisting with the distribution of food parcels, there is literature that links the removal of councillors from this initiative because of corruption allegations.

For instance, Van der Berg (2020) asserted that some of the ward councillors made use of the food relief initiative for campaigning purposes, and others diverted food parcels for their personal gain. Likewise, Mudau (2020) stated that the manner that they distributed the food parcels was unfair because, in some instances, the provisions were dispersed to those who were politically affiliated. The municipal councillors allegedly manipulated the initiative of food relief and chose to give the food parcels to members of their political parties and their relatives.

This implies that in certain areas, the needy households may have been disregarded due to lack of money to purchase the food parcels which were meant to be distributed to them at no cost, while some may have been ignored owing to the issue of political affiliations.

Contrary to the criteria used in selection of deserving households in the study area, literature reveals that the criteria for identifying vulnerable households in other areas comprised of child-headed households, single parents without means of income, households where breadwinners lost employment or income amid the national lockdown, households where no one was employed, and the elderly living without assistance (Mudau, 2020). These criteria were inclusive compared to the one adopted in the area of study, which deprived a lot of deserving households an opportunity to receive assistance where they needed it the most.

The intent of food initiative relief by the state was to fulfil the right to adequate nutrition as per the Constitution's mandate for all citizens amid the national lockdown. The issues that emerged concerning applications for and distribution of food parcels impeded the participants right to access adequate food during lockdown.

When asked about the issue of adequacy of the food parcels, the majority of those who received the packages indicated that it was not adequate given that they all

received the same quantity of foodstuffs despite the differences in terms of household composition. This is not surprising considering the fact that most households, as indicated on Table 4.1, are big in terms of household size and the size of foodstuffs received (i.e., 12.5kg of maize meal, 5kg of rice, etc.). The provision was obviously not sufficient to sustain these types of households, especially for the rest of the month.

The social worker in line with the participant's response, acknowledged the possibility that the food parcels may not have been sufficient for some families.

The social worker said:

"They all received the same quantity of foodstuffs despite the differences in terms of the household composition, so yah the food may have been sufficient for those with small household structure as compared to those with large households in terms size".

In line with the study's argument about the food parcels provided being inadequate to cater for large households, Niles *et al.* (2020) asserted that the food parcels were average because the provision was intended only to supplement the nutritional intake of a family of no more than four people.

Vermeulen *et al.* (2020) argued that the food parcels were sufficient to cater only for households of four members, but not for the whole month but only for two weeks. They further argued that the package provided did not offer much dietary diversity and they felt like the package should have at least included eggs, dairy, vegetables, and fruits.

The findings suggested that although the state may have provided food parcels to vulnerable households, many deserving households in the area of study were still prone to suffer food insecurity given that they could not access the assistance that was being provided.

This may have been the same situation even for those who received the food parcels, given that the parcels did not contain sufficient nutrition to cater for a household of a large size. Although the food relief initiative by the state could not meet its overall aim due to poor implementation and facilitation, some of the participants felt the importance to acknowledge the government and NGOs' efforts towards mitigating the dire food insecurities on vulnerable households owing to the pandemic.

4.3.5 Establishing the Effect of the COVID-19 Related National Lockdown on Households' Food Security Based on Quantitative and Qualitative Data of the Study

This section sought to establish the effect of the pandemic related national lockdown on food security. The section has three parts: the first part discusses how the qualitative results are related to qualitative concerning the participants' perceptions; the second part discusses the correlation between education and employment; the third part of the section establishes the effect of the COVID-19 pandemic national lockdown on rural household food security with reference to both quantitative and qualitative data of the study.

4.3.5.1 Education, Total Household's Income and Perceptions

The findings of the study have revealed a linkage between education, household's total income and the views of the participants. It is evident that most of the participants who viewed the COVID-19 national lockdown negatively attained matric or below (Table 4.1), as opposed to the small group which identified both negative and positive effects of the COVID-19 nation lockdown. Most of the participants had a total household income of R1 000 and below (Figure 4.3), whereas only few had a total income of R5 500 and above. Education strengthens analytical abilities in that it enables one to assess a situation from various aspects irrespective of the effect it has (where negative or positive). Total household's income determines food access level, especially for households that rely mostly on economic access to food (Arndt *et al.*, 2020).

Within this context, households with less education level and low income were less likely to acknowledge the positive aspects of the national lockdown given that they were hit hard by the pandemic and therefore in no position to positively review the issue.

Education and Employment

As already indicated, the findings revealed that most of the participants did not attain tertiary education (Table 4.1). Alternatively, Figure 4.1 revealed that 68 percent of the participants were unemployed. Moreover, those who indicated to have lost employment amid the hardest stages of the pandemic had attained only matric or less. The findings, therefore, suggest a correlation between employment and education.

These findings concur with the findings of previous studies. For instance, Yahong and Khan (2021) discovered that education often strengthens the prospects of finding employment and guarantees participation in the labour market. The loss of employment with reference to entitlement theory would mean limited access to food given that the affected households, in most cases, were found to be relying mostly on economic access to food which requires adequate source of income.

4.3.5.2 The Effect of the COVID-19 Pandemic Related National Lockdown on Household Food Security

Food security is realised when there is sufficient food available to be accessed by people and when people have reliable economic and physical access to adequate, safe, and healthy food, to meet their nutritional needs and dietary preferences for a healthy and active life (IFPRI, 2020). Households are regarded to be food secure when they have access to the dietary needs of their preference, that are sufficient, safe, and healthy to sustain all the household members for the whole month and to live a healthy and active life at all times (FAO, 2012). Based on this definition, it means that a household is food insecure when they do *not* have sufficient access to the dietary needs of their preference that are adequate, safe, and healthy to sustain them for a month, to live a healthy and active life at all times. Household food security is determined through access and availability of food, meaning that if a household has limited access to food, it will definitely have limited food available for consumption. Food access for households is influenced by the socioeconomic status of their breadwinners, as well as food prices.

Paslakis *et al.* (2020) argued that the employment status of a breadwinner, the household's total income and food costs influence a household's access to food, food choices, quantity, and quality. Along these lines, this study indicated that some of the participants amid the harsh stages COVID-19 lockdown (5-3) lost employment, adding to the majority who were already unemployed before the pandemic as indicated in Figure 4.1.

Some participants indicated that the lockdown disrupted their livelihoods leading to income losses. This concern is also evident in point 4.3 which revealed the changes in total household income amid the pandemic. The majority of the participants relied on child support grants (Figure 4.2), with a total income of R 1 000 and below (Figure

4.3). Moreover, 20 percent of the participants relied on a total income that was below R500. This is of grave concern in that the social grants and a total household's income of below R500 is not sufficient to grant household access to adequate food for their preference dietary needs, which is safe and healthy to sustain them for a whole month (Selepe *et al.*, 2015).

The situation becomes worse when a household is classified as a large household in terms of size. This is evident that the participants relying on grants with large family size lamented that the amount received from grants (child support grant) was not adequate to afford them all their household's needs, let alone food of their preference. The findings are in line with Paslakis *et al.* (2020) argument. In their study, they suggested that low-income households who lost income due to job loss and disruption of livelihoods and who relied on social grants amid the pandemic were prone to experience limited access to food. Furthermore, loss of employment and the disruption of livelihoods suggest that the pandemic disrupted both own labour entitlement and trade entitlement. In this manner, households could not acquire food through both mentioned above entitlements amid the national lockdown.

Linked to loss of employment and income, households also witnessed a rise in food prices, affecting their purchasing power and leaving them with limited economic access and, therefore, vulnerable to food insecurity. Angeles-Agdeppa *et al.* (2022) contended that rising food costs limit food access of low-income households in various ways causing households to compromise their food variety, quantity, and quality.

This was evident in this study, where over 60 percent of the participants indicated to have experienced limited access owing to the issue of food price amid the pandemic related national lockdown. As a result, the majority (65 percent) of the participants saw a depletion of food supplies before month-end. This confirms the influence that food prices have on households' access to food, as per the argument of Angeles-Agdeppa *et al.* (2022).

Fecht (2020) stated that food insecurity integrates a series of conditions, comprising of forthright hunger and causing anxiety that food will get depleted. This is evident in this study because some of the low-income households bought food on credit (20 percent), some visited loan sharks for financial assistance (30 percent), some borrowed food from friends, neighbours and relatives, and they also went to the extent

of food bartering. This serves as a sign that low-income households were worried that food supplies would run out, while some may have witnessed hunger. Similar findings on households' food insecurity mitigations were noted in the study of Javier *et al.*, 2020 in the Philippines, and in the study of Mkhawani *et al.* (2016) in Limpopo, South Africa. According to Selepe *et al.* (2015), low-income households, when faced with financial problems, resort to poor quality food, mainly consuming it for energy purposes, and not necessarily for the required body nutritional demand. Similarly, the findings revealed that about 70 percent of the participants changed their purchasing behaviour by cutting out some of the nutritious foodstuffs that they could buy before the pandemic and resorting to a generic store brands. Fechit (2020) explained that the act of resorting to cheaper store generic food brands by the low-income households may consequently result in the intake of poor-quality diet, therefore affecting their health. Cheaper, generic, store brands are arguably associated with poor quality; hence, foodstuffs of such brands are a bit cheaper as compared to the other brands which may be more expensive (Vermeulen *et al.*, 2020). However, the argument on "poor quality" depends on an individual since some would argue that the issue of branding and marketing, may be among the factors lowering the price and has nothing to do with the quality.

Mary *et al.* (2016) articulated that a household's food insecurity is caused by the high costs of food unreasonably falling on low-income households who, in most cases, are least affording, pushing them to consume less food. In accordance, this study revealed that low-income households went to the extent of skipping meals — some skipped breakfast and some lunch, and most of the households could only have two meals a day. They also reduced the meal portion in an attempt to save food.

According to Selepe *et al.* (2015), the unreliable supply of food, challenges with the quality and quantity of food, lack of money to purchase food, the anxiety that food will get depleted before month-end, reduced meal portions and skipping meals are all signs of being food insecure. Some previous studies (Laraia, 2013; Hanson and Connor, 2014) conducted on the connection between eating patterns and food security have shown the relationship between food insecurity, inadequate intake of nutritious food groups and low-quality nutrition. Mary *et al.* (2016) contended that food insecurity refers to inadequate access to food, which results in insufficient availability of safe and

nutritious food, or a narrow ability to secure acceptable nutrition in a manner that is socially acceptable.

Concurring with the results of previous studies (Selepe *et al.* 2015; Laraia, 2013; Hanson and Connor, 2014), the findings of this study suggest that most (over 60 percent) low-income households were food insecure owing to the COVID-19 national lockdown and its related challenges.

4.4 CHAPTER SUMMARY

The study was conducted in Bushbuckridge Local Municipality wherein a total of 60 household breadwinners from two different communities participated in ensuring the successful completion of the study. A social worker was also interviewed as a key informant and provided information on the state support or mitigation strategies adopted in an attempt to mitigate food insecurity for low-income households during the harsh stages of the national lockdown.

The findings revealed that the COVID-19 national lockdown has affected the food security status of many low-income households, mostly being women-headed households. Despite the food parcels that were provided by the government in an attempt to prevent poor households from being food insecure during the national lockdown, the study revealed that more than 65 percent of households were food insecure due to the challenges that were posed by the pandemic. These challenges included job and income loss, and rising food prices which deteriorated the purchasing power, leaving low-income households with limited access to food.

About 65 percent of the participants witnessed a depletion of food before month-end. Households adopted extreme mitigation strategies to secure enough food to at least last for a month. This included borrowing funds and food, buying food on credit, food bartering, and changes in purchasing behaviour and changes in eating patterns.

Food insecurity in the study area during the pandemic was of great concern. It is important to highlight that the issue of food insecurity in the area of study amid the pandemic was not due to a lack of food but the accessibility of food. As a result of the pandemic, households experienced minimal economic access to attaining sufficient food.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The study sought out to establish the effect of the COVID-19 pandemic on rural households' food security. This chapter presents the conclusion and recommendations based on the findings of the study. The first section covers the summary of the findings, and this is followed by the conclusion as per objectives of the study. The last section presents the recommendations and areas for further studies.

5.2 SUMMARY

The study was conducted in Bushbuckridge Local Municipality, at Casteel and Newforest A, in Mpumalanga Province, wherein a total of 60 household breadwinners and one key informant (social worker) were interviewed. The aim of the study was to explore the effects of the COVID-19 pandemic on rural households' food security. The objectives derived from the aim of the study were to assess the perceptions of the heads of households about the effect of the pandemic on their food security status during the hard national lockdown; to analyse food security related challenges posed to households by the pandemic; and to examine the effect of the strategies adopted by both government and households to mitigate the effects of the pandemic.

The study employed the convergent parallel research design to obtain the quantitative and the qualitative data which were merged to gain in-depth insights concerning the effect of the COVID-19 pandemic on food security status of the households under study. Face-to-face interviews were used to collect the needed data from the participants. A structured observation checklist, as part of the methods for data collection, was used, wherein the researcher sourced data on availability sources of food and conditions of household storage facilities and access to services, such as water and infrastructure development, and all other aspects, that had a bearing on the direct and indirect effect of the pandemic and household food security.

Precisely through the observation checklist, the researcher also observed whether or not the households had sources of food such as family gardens (for crop production) and livestock, as well as food storage. The information from the structured observation

checklist played a crucial role in establishing the effects of the COVID-19 pandemic on household food security status in the study area.

Furthermore, the study employed a thematic analysis method and descriptive statistics analysis. Thematic analysis was used to analyse qualitative data, whereas descriptive statistics analysis method assisted in terms quantitative data analysis.

5.3 SUMMARY OF THE FINDINGS

The summary of the findings is presented in a sequential manner based on the sequence of the research questions, from the research question one to the last question.

5.3.1 Research Question One: What Are the Perceptions of the Households About the Effect of the COVID-19 Pandemic on Food Security During the National Lockdown Stages?

The study found that the COVID-19 pandemic rendered most low-income participants vulnerable to income shocks and food insecurity. The national lockdown was too strict so that it failed to recognise the plight of the people particularly in terms of access to food. The focus prohibited interactions which were a source of livelihood generation for the majority of the participants. The actions taken by the government were mainly to curb the spread of the virus, while neglecting other aspects such as the livelihood generation and other socioeconomic aspects.

The participants expressed that the response of the government was mainly instructive and not consultative. They felt that the national lockdown was to be adopted as an optional measure or at least allow them to continue with their livelihood generation activities but ensuring that they abide by the rules and regulations of the lockdown (such as the wearing of masks, spacing, frequent washing of hands, etc.). Against this framework, the low-income households viewed and described the national lockdown as a “*xinghunghuman*” (monster) which disrupted their livelihoods leaving them with limited access to food.

Contrary to low-income households, the researcher found that the perceptions of households, where the major wage earner or breadwinner had a stable income and permanent employment were different and their experiences of the COVID-19 lockdown were not similar in terms of household food security. The national lockdown did not make such households vulnerable to food insecurity. It was found that the

households did not suffer any employment and income shocks because their livelihood activities were not affected because they had better earnings and stable employment opportunities. They articulated that the national lockdown was necessary, and they were happy that the government took action towards mitigating the spread of the virus soon after the first case.

The households' views in terms of the effect of the pandemic on their food security varied and were noted to have been influenced by their employment status and the level of income during the pandemic national lockdown. The households with unemployed breadwinners relying only on social grants for living were the most affected. As a result of job and income loss, which consequently affected their purchasing power, these households were unable to access the foodstuffs that they could purchase before the pandemic. Meanwhile, the households wherein the breadwinners were never affected in terms of employment status, still managed and had all the required resources that made it possible for them to maintain their food security status.

5.3.2 Research Question Two: What Challenges Are or Were Posed by the COVID-19 Strict Lockdown Concerning Access to Food?

The results revealed five pertinent challenges that the participants were faced with related ongoing national lockdown and that have continued to such an extent that the participants found themselves destitute and needing assistance. Some of the leading and obvious challenges identified included loss of employment and income and rising food prices, some could no longer receive relief packages or assistance from the private transfer, and unreliable water supply.

About a third of the household breadwinners lost employment and income as a result of the pandemic and the lockdown. The results indicated that the loss of employment and disruption over their business resulted in drastic changes in their total household income level, while some lost income completely. As a result, this increased reliance on the social security grants to attain food.

The majority of the participants raised concerns over rising food prices, particularly for staple food. In terms of food security of low-income households, it is evident that inadequate or the absence of income posed threats to households that were spending over 60 percent of their income on food.

It also transpired that some of the participants who relied on assistance from relatives and other relations were unable to get this assistance, particularly during and after the harsh stages of the national lockdown. This explains the extent of the hardships to all — those who had previously assisted and the recipients of that assistance, since the assistance came to an end because all were affected by the pandemic and had their own problems with which to deal.

The most needed basic service, water security, also proved to be a challenge. Over 80 percent of the participants articulated that water supply during the national lockdown in the area was a common challenge; they went for days and sometimes weeks without water in their taps.

5.3.3 Research Question Three: How Did the Households Mitigate the Effect of the Pandemic on Food Security?

The findings indicate that various coping strategies were adopted in the midst of the pandemic to mitigate access to food and some of these strategies are still being used because of the continuing effect of the pandemic. It was found that state support was key to the livelihoods of a number of participants, while others became prey to 'loan sharks' for financial assistance or other forms of credit facilities available to ensure that there is food on the table.

Other participants were forced to cut out some foodstuffs that they could buy before the pandemic, but during the pandemic, their budget could not allow them to get all these foodstuffs. The results also indicated that the absence of or inadequate access to food reminded some participants to revive their food production skills. Hence they utilised the space available to practice subsistence farming or to start small household gardens to plant for consumption and others generated income out of their produce. Subsistence farming became popular and is currently being practiced by some of the households in the area to survive the food crises owing to the pandemic.

Contrary to low-income households, about 25 percent employed participants with good earnings reported to have only reduced their monthly savings to top up the budget for food to ensure that they could still get all the foodstuffs they usually purchase for their households.

Additionally, at least 15 percent of the participants reported that they received food parcels distributed by social workers in the area to help them fight food insecurity in the midst of the pandemic.

5.4 CONCLUSION

Households are food secure when issues of adequacy, quality and healthy, or nutritious food, including constant access to food is achieved at all times. Food security suggests adequate access to nutritious food which meets dietary needs of all household members for the whole month, which allows them to live a healthy and active life at all times.

Based on the findings of study and the description of food secure households provided, it is concluded that the COVID-19 pandemic and related preventive measures that were implemented by the government, particularly the national lockdown, have created food insecure households in the study area. Most households with meagre income have been adversely affected and made vulnerable to food insecurity, specifically low-income households.

The pandemic eroded the trade-based entitlements which afford people to make a living and the production-based entitlement which allow people to produce for consumption and to sell their produce for income generation. Own-labour entitlements were also interfered with because people were unable to use their own labour to produce or make a living as a result of the hard lockdown. The effect is still experienced, and some lost their family members who were breadwinners and heads of households.

The challenges posed by the pandemic, mainly in the form of loss of employment, income, disruption of or loss of livelihood generation activities, and rising food prices, had a direct effect on the poor households' ability to secure adequate food, let alone meet their food preference and nutritional needs of all the household's members. Owing to the pandemic, low-income households have witnessed a limited access to food and, as a result, they could no longer afford to purchase some of the nutritious foodstuffs that they could buy before the pandemic; they had to change their purchasing behaviour.

Food access is crucial in terms of meeting food security at a household level; if households have limited access, it simply means inadequate availability of food and inadequate food within a household is more likely to result into food insecurity in the form of malnutrition and hunger.

With reference to the entitlement theory, the COVID-19 pandemic suggests that rural households during the harsh stages (5-3) of the national lockdown rendered the participants among low-income households at risk of losing access to food due to loss of livelihood generation activities and their entitlement to food production. Despite the restrictions on the movements of people, income losses and inadequate access to food was caused by illnesses from the spread of the COVID-19. They would also be at risk of losing access to food during stages 5-3 of lockdown because they were unable to access labour and other inputs such as fertilisers, and they could not access the market to trade their produce as a result of the national lockdown and other related restrictions on mobility and trade.

Because of the pandemic, as per the entitlements, households whose breadwinners were classified as informal workers were prone to experience food insecurity amid the harsh stages. In accordance with trade base entitlement, some of the informal workers amid the harsh stages of the pandemic could not trade their skills for income generation which resulted in job losses. Meanwhile, the self-employed with reference to own labour entitlement, could not perform their income generation activities leading to income loss.

Given the high dependency of these households on economic access to food and loss of income, it is clear that they could not attain adequate food. The informal workers, in line with the theory, which stipulates that food insecurity is as a result of limited access to food, were vulnerable to hunger and or malnutrition. The argument stems from the fact that these households, amid the harsh stages of the national lockdown, could not source food from the entitlements as the household legal sources of food.

The government, in an attempt to safeguard jobs during the pandemic, adopted policies that were arguably in favour of the businesses and employees of the formal sector. This is very concerning given that the informal sector is arguably a large source of employment for millions of South Africans.

The state in future events of pandemics should find and implement policies that will accommodate businesses and workers from both formal and informal sector to prevent job losses.

5.5 RECOMMENDATIONS

The study presents recommendations based on the core issues noted to have impacted food security status of households in the study as follows:

- Loss of employment and disruptions over livelihoods leading to income loss amid harsh stages (5-3) of the national lockdown were noted to be among the issues which may have impacted food access of most households in the study area. This was as a result of the pandemic, as well as the government failure to prioritise the informal workers, like they did with formal workers. Therefore, the study recommends that the government, with reference to situations of this nature (pandemics) in future, should critically assess whatever situation to find a better solution, which will not only prioritise the health aspect or essential workers, as they did with the national lockdown. They should find strategies which address all aspects beyond health, including socioeconomic aspects, which will see both formal and informal workers continuing with their income generating activities.
- As per the findings, it is evident that food prices affected food access of low-income households who mostly depended on social grants. The study suggests that these households must be offered skills development training and or food gardening programmes, which will enable them to garden food some may even start small businesses and generate income. Producing food will see households buying only food that they cannot produce, while any income generated from small businesses will enable them to access other non-food household needs. This will help to avoid situations where households go to the extent of cutting of some nutritional foodstuffs, as well as reducing the number of meals.
- Although food parcels were offered to assist the most affected households, households in the area of study could not reach this provision owing to corruption allegations. The study recommends that the government should find better and more effective ways to reach the targeted groups and distribute the provision as per the offered support to avoid such issues where the intended beneficiaries did not receive the support. One of the solution may be a provision of food vouchers directly to target groups.
- Water security, which is the most needed basic service, proved to be a challenge. The study recommends that the municipality under study should do whatever necessary to address the issue of water supply in the affected areas. This will

prevent a situation where people get ill from drinking contaminated/unsafe water from the rivers.

- The COVID-19 pandemic and the lockdowns managed the spread of the virus but caused hunger and exacerbated poverty among low-income households. The effects have not received the attention required in terms of research and, hence, it is proposed that:
 - More studies be conducted on the impact of the COVID-19 pandemic to livelihood generation as this will provide recommendations that will assist in policy formulation in relation to food security.
 - Studies on the effectiveness of the social relief packages on mitigating food insecurity during the COVID-19 pandemic are needed.

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APPENDICES

Appendix A: Interview Guide

An Interview Guide for households' breadwinners

Research Proposal Title: The Effect of COVID-19 Pandemic towards Rural Household Food Security status in Bushbuckridge Local Municipality.

The interview guide is divided into two parts, the first part being demographic information and second part consist of the interview questions. This interview guide is informed by the three research questions of the study. Each research question of the study has three sub-questions.

Part 1: Demographic information

GENERAL INFORMATION	
Gender	
Male	
Female	
Total number of households members	
0-5	
6-10	
11-15	
>16	
SOCIO-ECONOMIC STATUS	
Educational Attainment	
Grade R-4	
Grade 5-7	
Grade 8-10	
Grade 11-12	
Tertiary	
Employment Status	
Employed	
Unemployed	
Were you employed before COVID-19?	Yes No
If yes, are you still employed? Did you lose your job because of the pandemic?	
Self-employed	
If self-employed how is or did the COVID-19 affects you?	
Household Source of Income	
Salary	
Income from self-employment	
Child support grant	
Old age grant	
Other social grants	
Total household income	
<R500	
R500-R1000	
R1500-R2000	
R2500-R3000	
R3500-4000	
R4500-5000	
>R5500	

Part: 2 Interview questions

A. Interview questions on research question 1: What are the perceptions of the households about the effect of the COVID-19 pandemic concerning food security during the national lockdown?

- 1.1 What can you say about the national lockdown and how did it affect your household?
- 1.2 Have you experienced any changes in terms of access to food for your household during the harsh stages (3-5) of the lockdown? If yes, please tell me more about these changes.
- 1.3 Do you think you have adequate access to food now than before COVID-19? If no, please tell me more.

B. Interview questions on research question 2: What challenges are or were posed by the COVID-19 pandemic concerning food security?

- 2.1 Have you experienced any challenges as a result of the harsh stages of the lockdown?
- 2.2 What challenges regarding access to food did your household experience during the harsh stages of the lockdown?
- 2.2 Have you experienced any challenges in terms of the eating pattern for your household during the lockdown? If yes, how so?

C. Interview questions on research question 3: How did the households mitigate the effect of the pandemic on food security?

- 3.1 Did your household receive any support to mitigate the detrimental effect of COVID-19 on access to food? If yes, please tell me more about the kind of support that you have received?
- 3.2 What can you say regarding the manner in which the support packages were distributed to households in your area?
- 3.3 How effective was the support received in mitigating the negative effect of the lockdown on your household's access to food?

Appendix B: Interview guide for the key informants

Research Proposal Title: The Effect of COVID-19 Pandemic towards Rural Household Food Security status in Bushbuckridge Local Municipality.

1. What support did you offer to households during level 3-5 of the national lockdown to mitigate the effect of COVID-19 on access to food?
2. How were the support packages distributed to households?
3. What was provided to the people? Was it standard provision or the providers were given the opportunity to decide on what to provide? In your opinion do you think the food provided was adequate? Can you tell me why you think it was adequate or not?
4. Do you think the foodstuffs given to households were able to last them for a month?
5. What criteria was used to select deserving households to get relief packages?
6. How were the households informed about the distribution of food?
7. How was the distribution of the support packages monitored?
8. Did you perhaps encounter any challenge assisting the households with relief interventions?
9. After the national lockdown, what measures were put in place to assist, monitor or evaluate the effectiveness of the relief programme?
10. Is the institution still supporting the people? How? And what is being done to assist those that are still experiencing problems as a result of the pandemic?
11. Any other information you would like to share with me?

Appendix C: Observation Checklist

Households' observation checklist

Research Proposal Title: The Effect of COVID-19 Pandemic towards Rural Household Food Security Status in Bushbuckridge Local Municipality.

Items to be observed	Condition or Quality		
House or shelter	Poor	Good	Excellent
Refrigerator	Not available	Available but not working	Available and working
Other Storage and food preparation facility	Poor	Good	Excellent
Livestock	Not available		Available
Food from own production (crops or veggies)	Not available		Available
Water sources	Not available		Available
Electricity	Not available		Available
Wood	Not available		Available

Appendix D: Consent Form

A Consent Form for Participation in the Study

The Effect of COVID-19 Pandemic towards Rural Household Food Security Status in Bushbuckridge Local Municipality

I agree to participate in a research project conducted by Samuel Manuel Sibuye, who is doing his Master's degree in Development Studies at the University of Mpumalanga.

This participation form serves as permission that I am giving to the researcher regarding my full participation in this research.

The participation form also acknowledges the following aspects:

1. I have adequate information about the research topic, and I understand the study.
2. I understand that my participation is based on voluntary participation. Therefore, the role that I will play in the study has been clearly outlined to me and I understand the role.
3. I am fully aware that since my participation is voluntary and there is no force used on me to participate in the study. I can withdraw at any stage of the researcher when I no longer feel comfortable sharing any information.
4. I understand that during the data collection process, the researcher will take written notes and use a tape recorder to record our conversation for the purpose of the study. I give the researcher full permission to take written notes and I am aware that I can choose to not be recorded by the researcher.
5. I am aware that my anonymity, privacy, and confidentiality will be respected in this study. Therefore, the researcher will only share information that I have fully agreed upon for the need of the study.

For any inquiries or clarity feel free to contact the researcher and supervisors on the below contact details:

Samuel Sibuye (researcher) : 079 1161 421

Prof P.T. Sabela (supervisor) : (013) 002 0250

Dr Z. Mseleku (co-supervisor) : (013) 002 0479

.....

Participants signature

.....
Date

.....

Researcher signature

.....
Date

Appendix E: Municipal Permission to Conduct a Study

R533 Graskop Road.
Opp Mapulaneng DLTC
Bushbuckridge
Co-ordinates: 31°3'59.796"E 24°50'24"
Tel: 013 004 0291/92/95



Private bag x 9308
Bushbuckridge
1280
Email: info@bushbuckridge.gov.za
Website: www.bushbuckridge.gov.za

Enquiries: Mnisi M.M
Ref No: 4/4/2
Email: MnisiM@bushbuckridge.gov.za

01 December 2021

Mr S Sibuye
Private Bag X 11283
Mbombela
1200
Tel: 079 116 1421
Email: Samuelmanuel261@gmail.com

Dear Madam

RE: PERMISSION TO CONDUCT RESEARCH STUDY

The above is in respect of your request under the topic: **'The Effect of the COVID-19 Pandemic on Rural Household Food Security Status in Bushbuckridge Local Municipality.'**

As a result, the municipality has no objection to the effect of your request. You are also advised that your interaction with the municipality shall be subjected to the policies as approved by the Council.

The municipality wishes you best of luck in your endeavor and the Skills Development Facilitator Ms Mnisi M.M is the contact person 060 504 7520.

Kind regards

C.A Nkuna
MUNICIPAL MANAGER

Appendix F: Ethics Certificate



RESEARCH ETHICS CLEARANCE LETTER

Ref: UMP/Sibuye/MDev/2021

Date: 8 November 2021

Name of Researcher: Samuel Sibuye

Student number: 201754347

Supervisor: Dr T Sabela

School / Department: School of Development Studies

Faculty: Faculty of Economics, Development and Business Sciences

RE: APPROVAL FOR ETHICAL CLEARANCE FOR THE STUDY:

The Effect of the Covid-19 Pandemic on Rural Household Food Security Status in Bushbuckridge Local Municipality.

Reference is made to the above heading.

I am pleased to inform you that the Chairperson has on behalf of the University of Mpumalanga's Research Ethics Committee, **approved ethical clearance** of the above mentioned study.

Please note:

Any alteration/s to the approved research protocol i.e. Questionnaire/Interviews Schedule, Informed Consent form, Title of the project, Location of the study, Research Approach and methods must be reviewed and approved through the amendment/ modification prior to its implementation.





Prof Estelle Boshoff

Chairperson: University of Mpumalanga's Research Ethics Committee.

Date: 8 November 2021

APPENDIX G: Editing Certificate



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8 March 2023

CERTIFICATE

Samuel Sibuye

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Dear Samuel

Thank you for using Impela Editing Services to edit your Master's dissertation entitled "*The Effect of the Covid-19 Pandemic on Rural Household Food Security Status in Bushbuckridge Local Municipality*".

I have proofread for errors of grammar, punctuation, spelling, syntax and typing mistakes. I have formatted your work and checked the references (this means checking the formatting). I believe your work to be error free.

PLEASE NOTE: Impela Editing accepts no fault if an author makes changes to a document after a certificate has been issued.

I wish you the very best in your submission.

Kind regards



Helen Bond (Bachelor of Arts, HDE)