THE IMPACT OF COVID-19 ON FOOD SECURITY AMONG HOUSEHOLDS OF COLLINS CHABANE MUNICIPALITY IN LIMPOPO PROVINCE

by

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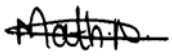
DECLARATION

I, Mathavha Aluwani (14001671), hereby declare that the dissertation titled: *"**The impact of COVID-19 on food security among households of Collins Chabane municipality in Limpopo Province**"*, hereby submitted for the degree, Master of Public Health (MPH) at the University of Venda has not been submitted before by me at this or any other University, that it is my own work in design and in execution. All the sources that I have quoted and cited have been indicated, acknowledged and referenced.

Signature:  Date: 2023/03/05

DEDICATION

This study is dedicated to my marvellous mother, Mrs Phophi Maria Mushavhela Mathavha, my deceased father, Mr Samuel Chaveni Mathavha, my late Uncle, Mr William Mathavha, and my late Aunt, Ms Mashudu Josephinah Mushavhela, for being the pillars of my strength throughout my life. To my precious sisters, Khathutshelo and Avhasei, and my only brother, Ambani Mathavha, who have been supporting and encouraging me.

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ACRONYMS AND ABBREVIATIONS

COVID-19	Coronavirus disease of 2019
DoH	Department of Health
SASSA	South African Social Security Agency
SPSS	Statistical Package for the Social Science
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2

ABSTRACT

The COVID-19 pandemic has resulted in millions of confirmed cases and numerous deaths worldwide. The food sector has also experienced increased demand due to panic-buying and hoarding of food products. This study aimed to assess the impact of the COVID-19 disease on food security among rural households in Collins Chabane Local Municipality, Limpopo province, South Africa. A cross-sectional descriptive research design was employed quantitatively. The sample size of 354 was calculated using Slovin's formula from a target population of 3,111 households. Household selection was done through systematic sampling. Data collection was conducted using a questionnaire as the research tool. The validity of the instrument was established through face validity and content validity.

Reliability was ensured through test-retest, where the questionnaire was pre-tested with 35 participants from Mabidi village, who were not included in the actual data collection. Descriptive data analysis was employed in this study. The collected data was analysed using the Statistical Package for Social Sciences (SPSS) version 25. Ethical considerations were followed throughout the study.

The results of this study revealed that the COVID-19 pandemic had a severe impact on the food procurement and supply of the respondents. Most respondents indicated that they could no longer afford to purchase food as they did before the COVID-19 outbreak. Uncertainty levels were high regarding their ability to provide food for their families. This uncertainty was exacerbated by the fact that many respondents had lost their jobs due to COVID-19. Those without a source of income were particularly affected in terms of food security. Interestingly, it was not only financial constraints but also long queues and fluctuating food prices that influenced the respondents' buying power and food procurement.

Keywords: *COVID-19, food security, households; perceived impact, food availability, food accessibility, food affordability.*

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CHAPTER 1: INTRODUCTION TO THE STUDY

1.1 INTRODUCTION AND BACKGROUND OF THE STUDY

The COVID-19 pandemic has posed numerous threats to society, commerce, and politics. In the social realm, Laborde, Martin, Swinnen, and Vos (2020) conducted a study that highlighted the need to contain the virus while addressing the already existing food security crisis among the impoverished populations worldwide. The threat of food shortages due to COVID-19 can be examined in both the short-term and long-term perspectives (Mueller, McConnell, Burow, Pofahl, Merdjanoff & Farrell, 2021). Short-term food shortages were a consequence of panic buying and limited food access (Mueller et al., 2021), leading to long queues at grocery stores that required monitoring to enforce social distancing measures. Salary cuts were also observed globally. On the other hand, long-term food shortages were associated with disruptions in the agricultural and food markets due to labour shortages caused by restrictions on movement and job losses in companies affected by COVID-19 (Laborde et al., 2020).

A study conducted by O'Hara and Toussaint (2021) in the United States of America (USA) revealed that COVID-19 further exacerbated existing disparities in food access patterns. The study emphasised that job losses, worsened food security constraints, and inadequacies in conservative food access solutions were intensified by the COVID-19 epidemic. In Canada, Deaton and Deaton (2020) investigated the challenges and disruptions faced by the agricultural sector and food security due to COVID-19. They emphasised the significance of data on food sustainability, accessibility, and supply to predict and strategise measures for future food security, beyond short-term solutions like bulk food purchasing and income disruptions caused by COVID-19.

The study by Mukiibi (2020) emphasised that in Africa and most developing countries, the focus shifted from the devastating effects of COVID-19, such as death, to the threats it posed to daily food supply. The intensity of food insecurity prompted many developing countries, including South Africa, to implement emergency food relief packages. Mukiibi (2020) noted that in Africa, most countries heavily rely on food imports, amounting to an

estimated US $65 billion, which were disrupted by COVID-19 due to the closure of international borders and other import and export restrictions.

The COVID-19 pandemic also disrupted revenue sources for many people, particularly the working class (Laborde et al., 2020). In South Africa, a survey by Mabuza (2020) published in the Sunday Times on May 25, 2020, indicated that over 3 million people lost their jobs in the first month of the COVID-19 lockdown. This further intensified the threat of food shortages, especially among the poor who often rely on self-initiatives like vending or small-scale farming in rural areas of South Africa. Powell (2020) observed that COVID-19 negatively affected food supply chains and purchasing patterns, as people began stockpiling food parcels to ensure the well-being of their families, leading to increased global demand for food supplies.

Arndt, Davies, Gabriel, Harris, Makrelov, Robinson, Levy, Simbanegavi, van Seventer, and Anderson (2020) highlighted the need for policymakers to balance the positive health effects of strict distancing measures imposed due to COVID-19 against their impact on low-income and food-insecure households. The severity of food insecurity in South Africa prompted the government to introduce a R500 billion societal aid and economic assistance package to alleviate the effects of the pandemic on households, including additional amounts for child support grant beneficiaries and a special COVID-19 Social Aid of Distress Grant for unemployed individuals.

Therefore, the impact of COVID-19 went beyond health aspects and affected the socio-economic well-being of people through food insecurity. This research aims to investigate the effect of COVID-19 on food security among households in Collins Chabane Municipality, Limpopo Province, South Africa.

1.2 PROBLEM STATEMENT

Despite the social relief measures implemented by the South African government to alleviate the effects of the COVID-19 pandemic on households, the researcher, as a nutritionist and assistant teacher at a secondary school, observed the socio-economic

hardships faced by some learners due to their parents' unemployment and retrenchments caused by COVID-19. Learners reported insufficient food at home because of their parents' job losses. The researcher aimed to investigate the impact of COVID-19 on food shortages. Across Africa, import and export restrictions disrupted the food supply chain, leading to high demand and inadequate food supply and availability (Aday & Aday, 2020). In South Africa, food insecurity arose from significant job losses and panic-buying, posing a threat to the stability of the food supply chain (Hall, Prayag, Fieger & Dyason, 2020). This situation could have even larger implications in rural settings where socio-economic conditions were already unfavourable. Thus, this research aimed to assess the impact of COVID-19 on food security among households in Collins Chabane Municipality, Limpopo Province, South Africa.

1.3 RATIONALE OF THE STUDY

Globally, numerous studies have been conducted to assess the effects of COVID-19 on the food security crisis, which is part of the broader economic and social crisis (Smith et al., 2021; Laborde et al., 2020). However, there remains a scarcity of studies specifically conducted in South Africa that examine the impacts of COVID-19 on the food security crisis (Hall et al., 2020). Furthermore, to the best of the researcher's knowledge, no studies have been conducted in Collins Chabane Local Municipality, Limpopo Province, South Africa, focusing on the impact of COVID-19 on food security. This research gap prompted the researcher to undertake a study to shed light on the nature and extent of the impact of COVID-19 on food insecurity among households in Collins Chabane Municipality.

1.4 SIGNIFICANCE OF THE STUDY

The outcomes of this study have the potential to directly benefit the Department of Social Development in supporting households requiring assistance in accessing social welfare, healthcare, and education. Moreover, the study results could contribute to the existing body of knowledge concerning the ramifications of COVID-19 on food security among rural households. Consequently, policy makers may find value in these results, as they

offer insights into the impact of COVID-19 on food security among rural households. This knowledge can aid the Department of Health and Education in devising effective strategies for ensuring food security and aiding those affected by the pandemic. Additionally, future researchers within this field can derive benefits from this study, as it will serve as a foundation for further investigations and offer recommendations for future research endeavours.

1.5 PURPOSE OF THE STUDY

The purpose of the study was to assess the impact of COVID-19 epidemic on food security among the households of Collins Chabane municipality in Limpopo Province, South Africa.

1.6 OBJECTIVES OF THE STUDY

The objectives for this study were:

- To determine the pillars of the food security in the households of Collins Chabane Municipality in Limpopo, South Africa
- To describe the impact of COVID-19 on the accessibility of food among households of Collins Chabane Municipality in Limpopo, South Africa.
- To describe the perceived impact of COVID-19 on the affordability of food among households of Collins Chabane Municipality in Limpopo, South Africa.
- To establish the associations between food security variables and sociodemographic factors.

1.7 DEFINITION OF CONCEPTS

The following key concepts are defined and described for the purpose of this study.

Food Security: Food security denotes to the availability, accessibility, and affordability of sufficient amount of correct quality of food that is supplied through domestic production (Mofokeng, 2019). In the context of this study, food security is while all individuals, always,

have substantial access to sufficient, safe, and nourishing food that meets their nutritional needs and food preferences for a functional and healthy life.

COVID-19: COVID-19 is a contagious infection triggered because of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that cause a variety of respiratory, gastrointestinal, and neurological diseases in humans and other animals (World Health Organisation, 2020). This study assessed how COVID-19 have impacted the food security among the households of Collins Chabane Municipality.

Impact: Impact refers to the influence a subject has on an object (Edmondson, 2014). To this study, impact are conditions such as the physical, social, and psychological effects that were created because of food security crisis caused by the COVID-19 pandemic.

Household: Household means a group of people who live together at least four nights a week, eat together and share resources, or a single person who lives alone (Mishi, Sikhunyana, Ngonyama & Sibanda, 2020). For this study, household refer to the group of people or a single person living in a home stand which the researcher will approach for the purpose of collecting data from one adult.

Food availability: refers to the presence and accessibility of an adequate quantity and variety of food within a given population or geographic area (Peters, 2012). It is a crucial component of food security, as it encompasses the physical availability of food products, including both locally produced and imported goods (FAO, 2013). The concept of food availability takes into account factors such as agricultural production, distribution systems, food storage facilities, transportation infrastructure, and market dynamics (FAO, 2013).

Food accessibility: refers to the ability of individuals and communities to obtain and acquire food in a reliable, affordable, and timely manner (Dowler, 2001). It encompasses the various economic, physical, and social factors that influence an individual's or a population's ability to access food resources (Dowler, 2001; FAO, 2013). Economic factors play a significant role in food accessibility, including factors such as income levels, food prices, and purchasing power (Dowler, 2001; FAO, 2013). Low-income households

or individuals may face challenges in accessing an adequate quantity and quality of food due to financial constraints (FAO, 2013).

Food affordability refers to the extent to which individuals or households can afford to purchase an adequate and nutritious diet within their available financial resources (Smith et al., 2010). It is a critical aspect of food security, as the inability to afford food can lead to inadequate food intake, malnutrition, and food insecurity (Smith et al., 2010; FAO, 2015). The affordability of food is influenced by various factors, including income levels, food prices, and household expenditure patterns (Smith et al., 2010).

1.8 CHAPTER OUTLINE

This study is divided into six chapters as follows:

Chapter 1 introduces the study, gives the statement of the problem, purpose, significance, aim, objectives, and definition of key terms.

Chapter 2 is focused on literature review, which highlights and indicates that COVID-19 had an impact on food security differently from context to context. The impact of COVID-19 on food security are also influenced by the socio-economic factors such as the state of the economy and social variables that are linked to the livelihood of the people concerned.

Chapter 3 outlines research approaches that were used in data collection, presentation, and analysis.

Chapter 4 is the interpretation of the study results.

Chapter 5 discusses the results of the study.

Chapter 6 presents the realised conclusions and recommendations of the study.

1.9 Summary

This chapter defined the research problem. It laid down the foundation for this study, which is to assess the perceived impact of COVID-19 epidemic on food security among the households of Collins Chabane municipality in Limpopo Province, South Africa. The chapter also outlines the study's aims, objectives and research questions to be explored. Overall, the chapter has clearly identified the gaps, which this study seeks to fill. The next chapter presents the reviewed literature for the study.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

According to Mouton (2001:87) literature review is a “scholarship review” since the works that are being examined are those of other scholars. The primary aim of a literature review is to contribute towards a clearer understanding of the nature and meaning of the problem that has been identified (Fouché and Delport, 2005:123). Literature review is important because it enables the researcher to ascertain the extent to which previous researchers might have already addressed the main research question. In this chapter, literature pertaining to the problem of the study is reviewed.

2.2. THE IMPACT OF PANDEMIC RESTRICTIONS ON THE FOOD SUPPLY CHAIN

The Covid-19 pandemic and the associated restrictions implemented by governments worldwide have had a profound impact on the food supply chain. These disruptions have resulted in challenges in various stages of the supply chain, including production, processing, distribution, and retail (Velandia et al., 2021).

One of the primary effects of the pandemic restrictions on the food supply chain has been disruptions in agricultural production. Measures such as lockdowns, travel restrictions, and labor shortages have hindered farmers’ ability to plant, harvest, and transport their crops (Velandia et al., 2021; Lima et al., 2021). This has led to reduced agricultural output, crop losses, and increased production costs due to delays and disruptions in the availability of labor, inputs, and machinery (Lima et al., 2021).

Furthermore, the closure of restaurants, hotels, and other food service establishments because of the pandemic has significantly impacted the demand for certain types of food products (Verma et al., 2020). The sudden shift in demand from foodservice to retail channels has caused imbalances in the supply chain, with surpluses in certain sectors, such as perishable produce, while creating shortages in others (Velandia et al., 2021; Verma et al., 2020).

Transportation and logistics have also been severely affected by the pandemic restrictions. Border closures, reduced air freight capacity, and strict sanitary measures have disrupted the movement of food products across regions and countries (Lima et al., 2021). These disruptions have led to delays, increased transportation costs, and logistical bottlenecks, impacting the timely delivery of food supplies to consumers (Verma et al., 2020).

Additionally, the pandemic has posed challenges in terms of maintaining a safe working environment for food processing and packaging facilities. Outbreaks among workers, the need for social distancing, and increased hygiene protocols have reduced processing capacities and slowed down operations (Velandia et al., 2021).

To mitigate the impact of these disruptions, governments, international organisations, and stakeholders have implemented various measures. These include providing financial support to farmers, implementing safety protocols in food production facilities, and adapting distribution channels to meet changing consumer demands (Lima et al., 2021; Verma et al., 2020).

The COVID-19 pandemic has resulted in a significant loss of human life on a global scale, posing an unprecedented challenge to public health, food systems, and the world of work (ILO, 2020). The economic and social disruptions caused by the pandemic are placing tens of millions of people at risk of extreme poverty, while the number of undernourished individuals, currently estimated at nearly 690 million, could rise by up to 132 million by the year's end (FAO et al., 2020).

The pandemic has had a profound impact on the entire food system, exposing its vulnerability (FAO et al., 2020). Border closures, trade restrictions, and lockdown measures have hindered farmers' access to markets for purchasing inputs and selling their produce, as well as impeded agricultural workers from harvesting crops (ILO, 2020; FAO et al., 2020). This disruption has led to the breakdown of domestic and international

food supply chains and reduced access to nutritious and diverse diets (FAO et al., 2020). Additionally, the pandemic has decimated jobs and endangered the livelihoods of millions of individuals. The loss of employment and income has placed the food security and nutrition of numerous men and women at risk, with the most marginalized populations, including small-scale farmers and indigenous peoples, being particularly affected (ILO, 2020).

Agricultural workers, including both waged and self-employed individuals, face numerous challenges and vulnerabilities, such as working poverty, malnutrition, inadequate health conditions, and a lack of labor protections (ILO, 2020). Their low and irregular incomes, combined with a lack of social support, compel many of them to continue working in unsafe conditions, thereby exposing themselves and their families to further risks (ILO, 2020). Migrant agricultural workers are especially vulnerable due to risks associated with transportation, working conditions, and limited access to government support measures (ILO, 2020). Ensuring the safety, health, and well-being of all agri-food workers, from primary producers to those involved in processing, transport, retail, and street vending, while providing fair incomes and protection, is crucial for safeguarding lives, public health, livelihoods, and food security (ILO, 2020).

Addressing the convergence of food security, public health, employment, and labor issues during the COVID-19 crisis requires adherence to workplace safety and health practices, as well as ensuring access to decent work and the protection of labor rights across all industries (ILO, 2020). Immediate and purposeful action is necessary to save lives and livelihoods, including the extension of social protection through universal health coverage and income support for the most affected individuals (ILO, 2020). This support should include those in the informal economy and those in poorly protected and low-paid positions, such as youth, older workers, and migrants (ILO, 2020). Special attention must be given to the circumstances faced by women, who are disproportionately represented in low-paid jobs and care roles (ILO, 2020). Various forms of assistance, including cash transfers, child allowances, healthy school meals, shelter, food relief initiatives, employment retention and recovery support, and financial relief for businesses (including

micro, small, and medium-sized enterprises), are essential (ILO, 2020). In the design and implementation of such measures, it is crucial for governments to collaborate closely with employers and workers (ILO, 2020).

The COVID-19 pandemic has had devastating consequences for various aspects of society, including social, commercial, and civil domains. Within the social sphere, a study by Laborde, Martin, Swinnen, and Vos (2020) highlighted the need to contain the virus and address the pre-existing food security crisis that affected a significant portion of the global poor population. The threat of food shortages resulting from COVID-19 has been analysed in both the short-term and long-term perspectives (Mueller et al., 2021).

In the short term, food shortages have been exacerbated by panic buying and limited access to food (Mueller et al., 2021). This has led to long queues outside grocery stores globally, necessitating authorities to monitor social distancing measures and ensure adherence to COVID-19 protocols. Additionally, salary cuts have been a common outcome of the pandemic, further exacerbating the challenges of food accessibility (Mueller et al., 2021).

The long-term food shortages are primarily attributed to disruptions in agricultural and food markets caused by labor shortages resulting from movement restrictions and job losses in companies affected by COVID-19 (Laborde et al., 2020). These factors have hindered the smooth functioning of the agricultural sector, leading to decreased production and distribution of food resources.

2.3 COVID-19 AND THE THREAT TO GLOBAL FOOD SECURITY

Various studies have highlighted the socio-commercial threats posed by the COVID-19 pandemic, in addition to its impact on public health. For instance, the study conducted by Zuber and Brüssow (2020) emphasises the significant challenges faced by the food industry due to the persistence of the SARS-CoV-2 pandemic. The measures implemented to prevent the transmission of the virus have disrupted the working conditions of food industry workers, leading to disruptions in the food supply chain. While

the immediate implications on food security may not be evident, the social disruptions caused by the pandemic could have future implications for food security (Zuber & Brüssow, 2020).

Hobbs (2020) conducted an initial assessment of the consequences of the COVID-19 epidemic on the resilience of the food supply chain. The study examined the impacts of demand-side shocks on food supply chains, including panic buying behaviors where certain essential items were perceived as crucial. Hobbs (2020) also observed that the pandemic resulted in an immediate shift in consumption patterns, with families opting for more conservative home-cooked meals over the previously common dining-out practices. The food service sectors not only suffered from government regulations and restrictions implemented to curb the spread of COVID-19 but also from individuals refraining from eating out or ordering takeaways to save money for an uncertain future

The disruptions in the food supply chains, caused by factors such as labor shortages, transportation network issues, and border closures, have significantly impacted the distribution, export, and import of food. Hobbs (2020) argues that these disruptions within and between nations have the potential for long-lasting implications on food supply chains. The study also highlights the potential growth of the online grocery delivery sector and the importance of consumers prioritising local food supply chains. However, it is important to consider the digital divide and economic disparities, as highlighted by Klepek and Bauerová (2020), as not everyone has access to technology or the skills to purchase groceries online, particularly in rural areas.

Regarding food safety, Mardones, Rich, Boden, Moreno-Switt, Caipo, Zimin-Veselkoff, Alateeqi, and Baltenweck (2020) note that international organisations and scientific evidence on respiratory viruses, including COVID-19, do not indicate food packaging as a transmission risk. However, precautionary measures implemented by governments to prevent the spread of COVID-19 have had pervasive effects, extending beyond food supply chains. The pandemic's impact on food security encompasses various aspects, including changes in agricultural livelihoods, food accessibility, health and welfare, human

nutrition, public policies, and food safety (Mardones et al., 2020). These effects are particularly acute for poor and vulnerable communities in developing countries.

To address these challenges, Mardones et al. (2020) suggest considering the United Nations' Sustainable Development Goals and adopting a Planetary Health approach to achieve a sustainable food supply chain and ensure food safety.

A study conducted by Deaton and Deaton (2020) in Canada examined food security issues during the COVID-19 pandemic from two perspectives. The study highlighted the income shock caused by the pandemic, which has significantly impacted household food insecurity and is expected to persist alongside ongoing income struggles. Concerns were also raised about the Canadian government's ability to sustain the food system during the pandemic (Deaton & Deaton, 2020). Perceptions among the population indicated a likelihood of increased food prices, which are linked to food demand and security. The study acknowledged the uncertainty surrounding the immediate and long-term implications of the pandemic on food security, given the complex nature of the problem and the global increase in infections and deaths caused by COVID-19 (Deaton & Deaton, 2020). To address food security challenges, the study proposed facilitating capital flows, international trade, and transport industry operations at full capacity (Deaton & Deaton, 2020).

In the United States, O'Hara and Toussaint (2021) conducted a study that revealed pre-existing socio-economic inequalities in food access, which were further exacerbated by the implications of COVID-19. The District of Columbia, for example, experienced amplified food insecurity due to the pandemic. The study emphasised the need for advanced agricultural innovations to ensure sustainable food access. The conventional solutions for food access were rendered inadequate by the COVID-19 pandemic, highlighting the disadvantages faced by marginalised populations and the impact of structural racism. The study revealed the challenges faced by marginalised communities in purchasing groceries online using smart devices, such as smartphones (O'Hara & Toussaint, 2021). During times of crisis, the study suggested shifting from a market-

centered approach to a community-centered approach that dismantles socio-political barriers and empowers communities, broadening the food justice discourse beyond access (O'Hara & Toussaint, 2021).

The study conducted by Udmale, Pal, Szabo, Pramanik, and Large (2020) highlighted the role of major global players in the food balance and the impact of COVID-19 on the economic stability of both developed and developing nations. The pandemic has posed challenges to the sustainability of economic development in many developing countries, resulting in changes to food supply chains and increased vulnerability to food insecurity. The study projected that the COVID-19 pandemic is likely to cause temporary food insecurity in vulnerable countries, particularly in the developing and underdeveloped world. The challenges to food security brought about by the pandemic are expected to persist due to the combined effects of economic decline, increased poverty, unemployment, and limited food supply and access (Udmale et al., 2020).

Swinnen and McDermott (2020) noted that the COVID-19 pandemic has had significant implications for global food security. Policy responses, such as movement restrictions and economic limitations, have led to a severe recession and disruptions in food value chains, disproportionately impacting poor populations. The consequences of COVID-19 vary across countries depending on their economic development and the resource-intensity of their food systems (Reardon, Bellemare & Zilberman, 2020). The study also highlighted the impact of the pandemic on women and children who are migrants. Given the contemporary society characterised by human migration influenced by socio-economic and political reasons, countries implemented measures to assist their citizens in maintaining living standards, such as providing food relief packages in South Africa. However, these relief strategies and benefits were often not accessible to immigrants who may lack the necessary documents to qualify. The study emphasized the need to balance movement control measures with initiatives that promote food security, nutrition, and livelihoods, particularly among vulnerable groups (Swinnen & McDermott, 2020). Successful measures to curb the spread of COVID-19 must consider the well-being and

nutritional status of the population by building resilient food supply chains for the future (Reardon, Bellemare & Zilberman, 2020).

However, the challenge posed by COVID-19 on food securities have not been universal to all different parts of the world. Some countries remained resilient in the food chain supply. The study by Hirvonen, de Brauw and Abate (2021) in Addis Ababa observed that the national aggregate food value chains have been resilient to the shock associated with the COVID-19 pandemic. This is contrary to what the international humanitarian organisations have indicated that there is a substantial concern about the potential increases of food insecurity that could be directly resulting from the COVID-19 pandemic. Through comparative analysis of food security and food consumption among the households in Addis Ababa, Hirvonen, de Brauw and Abate (2021) discovered that despite the severe job loss and, in some instances, reduced incomes, the food consumption and the dietary diversity remained unchanged because of the projected magnitude of the COVID-19 pandemic. Thus, the shocks associated with the pandemic did not impact on the negatively on the food security, accessibility, and affordability among the households in Addis Ababa.

2.3 THE IMPLICATIONS OF COVID-19 AND FOOD ACCESSIBILITY AMONG HOUSEHOLDS

The study by O'Hara and Toussaint (2021) in the United States of America (USA) observed that COVID-19 had exacerbated existing disparities in food access patterns. The study highlighted that in certain districts, such as Columbia, food insecurities had been prevalent and were intensified by the disruption of food supply chains caused by the COVID-19 pandemic. The study further revealed that the pandemic had led to significant job losses, exacerbating food security challenges and rendering traditional food access solutions inadequate for all.

In Canada, the study by Deaton and Deaton (2020) observed how COVID-19 had challenged and disrupted food security and the agricultural sector. The study examined

food security from two perspectives: the income shock that increased the prevalence of household food security, and heightened concerns about the capacity of the Canadian food system to ensure food accessibility for all. Deaton and Deaton (2020) emphasised the importance of data on elements such as food sustainability, accessibility, and supply to predict and strategise for future food security beyond short-term disruptions caused by COVID-19, including bulk food purchasing and income disruptions.

The study by Mukiibi (2020) highlighted that in Africa and many developing countries, the COVID-19 pandemic shifted the focus from its devastating health effects, such as death, to the threats it posed to daily food supply. COVID-19 worsened the existing threat to food security caused by unfavourable agricultural conditions, such as global warming and climate changes. The study also indicated that the intensity of food insecurities prompted many developing countries, including South Africa, to implement emergency food relief packages. In Africa, most countries heavily rely on food imports, estimated at US $65 billion, which were also disrupted by COVID-19 due to international border closures and trade restrictions.

Furthermore, many countries, including South Africa, imposed restrictions on exports and imports, disrupting trade flows for staple foods in other countries. As a result, COVID-19 affected all pillars of food security, always including the accessibility of food. These disruptions of accessibility, along with restrictions on movement and shifts in consumer demands, directly and severely impacted food security (Laborde, Martin, Swinnen, and Vos, 2020).

Similarly, a study by O'Hara and Toussaint (2021) in the United States of America (USA) observed that COVID-19 had intensified the already existing disparities in food access patterns. The study pointed that in some districts in USA such as Columbia, food insecurities had been prevalent and had been intensified by the unusual food supply chains caused by the COVID-19 pandemic. The study further reveals that the COVID-19 pandemic has caused many job losses to the local people, exacerbated the food security

constraints and rendering the conservative food access solutions inadequate to deliver effective for all.

In Canada, a study conducted by Deaton and Deaton (2020) examined the impact of COVID-19 on food security and the agricultural sector. The study focused on two perspectives: the income shock that increased the prevalence of household food insecurity and the concerns about the Canadian food system's ability to ensure food availability for all. The researchers highlighted the importance of data on food sustainability, accessibility, and supply to predict future food security measures beyond short-term solutions such as bulk food purchasing, and income disruptions caused by the pandemic.

In Africa and many developing countries, the study by Mukiibi (2020) revealed that the COVID-19 pandemic shifted attention from the direct effects of the virus to the threats it posed to daily food supply. The pandemic exacerbated existing food security challenges, including unfavourable agricultural conditions caused by global warming and climate change. As a result, many developing countries, including South Africa, implemented emergency food relief packages in response to the intensified food insecurities. The study also noted that Africa heavily relies on food imports, with an estimated $65 billion spent on such imports, which were disrupted by COVID-19 due to international border closures and import/export restrictions.

Moreover, most countries including South Africa, imposed restrictions on export and import that also disrupted the trade flows for staple food for other countries, resulting in the COVID-19 affecting all the four pillars of the food security (a) availability (the adequate supply of food); (b) access (the availability of the food to meet the needs and demands of the people); (c) utilisation (the intake of enough nutrients by all); and (d) stability (the accessibility of food at all times) (Laborde, Martin, Swinnen and Vos, 2020). Therefore, COVID-19 affected the food security severely and directly through the disruptions of availability of the food, shifting the consumer demands towards certain food types, disruptions in the agricultural sector and the food price instability crisis, the suggestions

of critical responses to policymakers in avoiding global health crisis when pandemics such as the COVID-19 strikes.

2.4 THE IMPLICATIONS OF COVID-19 ON FOOD AFFORDABILITY AMONG HOUSEHOLDS

The COVID-19 pandemic has had far-reaching consequences on various aspects of people's lives, including their ability to access and afford food. As governments worldwide implemented lockdowns and restrictions to contain the spread of the virus, many households experienced financial hardships, leading to a significant impact on their food affordability. This section of the study examines the implications of COVID-19 on food affordability among households, drawing upon existing research and data.

As a consequence of the impact wrought by the COVID-19 pandemic, the South African government implemented a comprehensive social relief and economic support package amounting to R500 billion, aimed at mitigating the adverse effects experienced by households (Singh, 2020). Several social assistance measures were introduced to provide support to individuals and families severely affected by COVID-19 (Singh, 2020). Specifically, beneficiaries of the child support grant were provided with an additional payment for a period of five months. Moreover, all other grant recipients received extra monthly amounts for six months, and a special COVID-19 Social Relief of Distress Grant, lasting six months, was established (Noyoo, 2021).

One of the implemented measures was the Social Relief of Distress grant, which was specifically designated for unemployed individuals who did not receive any other social grants from the government or payments from entities such as the Unemployment Insurance Fund, South African Revenue Service, and the National Student Financial Aid Scheme. Termed the Social Relief Distress grant, refusal of this grant would result in undue hardship. The assistance was provided in various forms, including food parcels, cash, or voucher sums, over the course of the ensuing six months (Noyoo, 2021). Additionally, the Unemployment Insurance Fund (UIF) was available to provide temporary

relief to workers facing unemployment or the inability to work due to circumstances such as maternity, adoption leave, or illness (Singh, 2020).

This research aims to examine the impact of COVID-19 on food security among households in the Collins Chabane Municipality in Limpopo Province, South Africa. The pandemic has significantly disrupted income sources, particularly for the working class. Notably, a survey conducted by Mabuza (2020) in South Africa revealed that within the first month of the COVID-19 lockdown, over 3 million people had lost their jobs. This unemployment surge has heightened the risk of food shortages, particularly among vulnerable populations, such as the impoverished, who often rely on self-initiatives like vending or small-scale agriculture for their livelihoods in rural areas of South Africa (Mabuza, 2020). Furthermore, Powell (2020) observed that COVID-19 has negatively impacted food supply chains and consumer purchasing patterns. Panic buying and stockpiling have led to increased global demand for food supplies, placing strain on suppliers (Powell, 2020).

In South Africa, a study conducted by Arndt, Davies, Gabriel, Harris, Makrelov, Robinson, Levy, Simbanegavi, van Seventer, and Anderson (2020) emphasised the importance for policymakers to balance the positive health effects of stringent distancing measures imposed during the COVID-19 pandemic with the potential negative impact on low-income and food-insecure households. The study found a significant link between the abrupt income shock caused by the pandemic and food insecurity among households in South Africa (Arndt et al., 2020).

In Nigeria, Inegbedion (2020) examined the implications of COVID-19 lockdown restrictions on food security. Using a cross-sectional survey research design, the study revealed that the lockdown measures significantly constrained agricultural activities, transportation systems, and coordination, thereby affecting food security. The study emphasized that the continued imposition of lockdown restrictions to control the spread of COVID-19 poses a long-term threat to food security, particularly for vulnerable populations. Therefore, the study recommended that the government and other relevant

stakeholders' approach COVID-19 prevention measures cautiously to avoid potential devastating consequences on food security (Inegbedion, 2020).

2.5 THE DECLINE OF AGRICULTURE AND IMPLICATIONS ON FOOD INSECURITY UNDER COVID-19

The COVID-19 pandemic has had significant implications for the agricultural sector, leading to a decline in agricultural activities and subsequent repercussions on food insecurity. This section of the literature review examines the impact of COVID-19 on agriculture and its implications for food insecurity, drawing upon existing research and data.

Numerous studies have investigated the correlation between the decline of agriculture caused by COVID-19 and its implications for food security, particularly in developing countries. For instance, Workie, Mackolil, Nyika, and Ramadas (2020) examined how the COVID-19 pandemic impacted both health and livelihoods. They emphasized the fundamental importance of food security for sustainable development and highlighted the agricultural sector as the backbone of the economy in many developing nations, providing livelihoods for various groups within communities (Workie et al., 2020). The disruption of agriculture directly affects food security in these countries, with potential short-term and long-term consequences (Workie et al., 2020). Therefore, it is crucial to implement effective mitigating measures to sustain people's livelihoods and ensure food security.

In Southeast Asia, Gregorioa and Ancog (2020) investigated the effects of the COVID-19 pandemic on the agricultural sector. They noted that disruptions in agriculture have critical implications for food systems, supply and demand shocks, and both short- and long-term economic performance and food security. The study revealed a 3.11% reduction in agricultural production, equivalent to a volume reduction of 17.03 million tons (Gregorioa & Ancog, 2020). The pandemic not only impacted food supply chains and sustainability but also resulted in widespread job losses. Millions of people lost their jobs due to the outbreak and subsequent lockdown restrictions implemented to curb the spread of

COVID-19 (Gregorioa & Ancog, 2020). In South Africa, for example, the initial stages of the COVID-19 lockdown led to the loss of 600,000 formal sector jobs (South African Statistics, 2020). The crisis in agricultural activities is estimated to cause a 1.4% decrease in the Gross Domestic Product (GDP) of the Southeast Asia region, amounting to approximately USD $3.76 billion (Gregorioa & Ancog, 2020). Thus, a stable agricultural system is closely linked to economic development and essential for the sustainable livelihoods of people.

Overall, these studies demonstrate the significant impact of the COVID-19 pandemic on agriculture and its implications for food security. It is imperative to develop strategies and policies that support agricultural resilience and ensure the availability of food for all populations.

According to Barichello (2020), the COVID-19 pandemic has resulted in a severe global recession, with a projected decrease in real trade of 12% to 20%. The Canadian economy is no exception to this forecasted decline (Barichello, 2020). The reduction in trade will also impact agricultural imports and exports, thereby affecting food security and people's livelihoods. The closure of international borders has disrupted the flow of food exports and imports, posing challenges for the agricultural sector. In Canada, exporters of livestock, pulses, and horticulture have been particularly affected, leading to a decline in trade prospects and revenues (Barichello, 2020). The disruption in food trade and supply chains presents a significant threat to food security, compounded by declining employment rates, reduced incomes, and restrictive policy responses that tighten export and import restrictions.

In India, the study by Kumar, Singh, Pandey, Singh, Srivastava, Kumar, Dubey, Sah, Nandan, Singh, and Agrawal (2021) examined the consequences of the complete lockdown imposed by the government in response to the COVID-19 pandemic on farmers and the supply of agricultural produce. The study highlighted that some countries, such as India, heavily rely on agriculture for their economic sustainability. Therefore, the industrialization and modernization of agricultural systems are crucial for development

(Kumar et al., 2021). The unexpected consequences of the lockdown measures have had serious implications for food security, as disruptions in the agricultural supply chain and decreased productivity have affected the availability of food.

These studies emphasize the adverse effects of the COVID-19 pandemic on agriculture, trade, and food security in different regions. The disruptions in trade, supply chains, and agricultural productivity have raised concerns about food availability, livelihoods, and the overall economic development of countries. Effective measures and policies are necessary to mitigate the impact and ensure the resilience of agricultural systems to secure food for populations in these challenging times.

The study by Beckman and Countryman (2021) observed that the COVID-19 pandemic resulted in critical consequences on tourism, agriculture, and food security among other challenges. The food away from home expenditures had drastically decreased not only as a result from COVID-19 restrictions but also from the decreased economy and decreased purchasing power by many. The disruption of the agricultural activities directly affected the agricultural product trade and the supply chain. The results of the study also indicated that the computable general equilibrium model does not fully estimate the GDP compared to the actual changes through the inclusion of data on the demands, supply, and the fiscal responses to COVID-19 (Beckman and Countryman, 2021).

The trends in the literature on the disruption of agricultural activities because of COVID-19 are linked to preliminary analysis of the impact it had on agricultural import and export and the short- and long-term effects on the food supply chain system and sustainability. For instance, the study by Cao, Li, Wang, and Zhu (2020) observed that China's agricultural exports have been negatively impacted which had resulted in the food import demand. The results revealed the negative change in the China's food markets, a scenario which portends long-term negative effects on the sustainability of food. This disruption of food security due to COVID-19 and the restrictions posed was also deepened by the panic purchasing of food in quantities by most people (Cao, Li, Wang & Zhu, 2020). The study linked the importance of agricultural trade to the economic growth

of China and indicated that the sustainability of agricultural imports and exports is key in ensuring stable and sustainable food security (Cao, Li, Wang & Zhu, 2020). Therefore, there is a need for the implementation of policies that are effective in counteracting the spread of pandemics such as the COVID-19 and reflective of the wellbeing and livelihood of the people.

In most developing countries, agriculture is key for the welfare and livelihood of the people. For example, the study by Debnath and Bardhan (2018) indicated that agriculture is important to ensure capacity building through self-sufficient, wealth generation and livelihood sustainability among people mostly residing in the geographical area of the villages. Ma, Liu, Niu and Chen (2018) observed that agricultural activities had changed the livelihoods of the people living in the villages through ensuring an effective food security and the constant supply chain of agricultural products to other urban dwellers. However, the COVID-19 pandemic resulted in the restrictions of these activities that forms the basis of the livelihood and welfare of these people residing in the rural locales. Elleby, Domínguez, Adenauer and Genovese (2020) observed that the implementation of the lockdown measures resulted in the decline of the agricultural economy. This loss of income and the disruption of the local supply chain has resulted in the increase of food insecurity (Elleby, 2020).

2.6 SUMMARY

This chapter reviewed scholarly debates and relevant literature on food availability, affordability and accessibility, and their impacts thereof. Thus, the existing literature suggests that the impact of COVID-19 on food security varies across different contexts. It is evident that the implications for food security are influenced by various socio-economic factors, including the state of the economy and social variables that directly affect people's livelihoods. The forthcoming chapter will outline the research methodology that will be employed in this study to effectively achieve the research objectives. The next chapter will proceed to discuss the philosophical foundations, namely, the research paradigm, the design and the methodology,
employed to carry out the study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

The previous chapter presented a critique of literature relating to the research problem of the study. This chapter focuses on the research methodology, namely, research design and approach, population, research sample, sampling technique, research instrument, reliability and validity, procedure for data collection, ethical considerations, and data analysis.

3.2 RESEARCH APPROACH

Quantitative research approach was used in this study. Quantitative research approach comprises the collection of data in form of numbers, values, figures and enabling the statistical presentation and analysis of the data collected (Baškarada & Koronios, 2018). Thus, the quantitative research approach allowed this study to assess the impact of COVID-19 on food security (availability, accessibility, and affordability) among households of Collins Chabane Municipality in Limpopo Province.

3.3 RESEARCH DESIGN

This study utilized a cross-sectional descriptive research design, as suggested by Du Plooy-Cilliers, Davis, and Bezuidenhout (2014). The research employed a quantitative approach, which involved the enumeration, measurement, and statistical analysis of data. The choice of a quantitative approach was based on its ability to provide a high degree of reliability, and the results of the study can be generalised to a larger population.

A cross-sectional design was employed to gain an overall understanding of the impact of COVID-19 on food security in Mabidi Village, located in the Collins Chabane Municipal area of Limpopo Province. The study aimed to provide a comprehensive description of the impact of COVID-19 on food security among households in Mabidi Village.

3.3 STUDY SETTING

This research was conducted at Mabidi Village, which is in Vhembe District, Collins Chabane Local Municipality in the far North of Limpopo Province, South Africa. The Municipality shares boundaries with Thulamela in the North-East, the Mopani District in the South, and Makhado in the West. Collins Chabane is one of the four Municipalities in the Vhembe District, making up 20% of the geographical area. It was established by the amalgamation of portions of the Thulamela and Makhado Local Municipalities in August 2016. The main economic sectors are Agriculture, Community Services, Finance, Trade and Transport (Karasi, 2018). Collins Chabane Local Municipal Area comprise of both rural, semi-rural and urban households, with the patterns of lifestyle varied depending on family income levels, source of income and employment status (Chauke and Mathebula, 2019). Mabidi Village was selected to be part of this study out of 120 Villages from the Collins Chabane Municipal population of 347 974 (Collins Chabane Local Municipality (LIM345), 2021). Mabidi village was selected because of its mixed demography and patterns of lifestyle that is mixed, with different income levels, sources of income and other community members depending on agriculture for survival. Thus, the results from this Village might be interesting and reflected how COVID-19 had affected distinct categories of people within societies in terms of food security.

3. 4 STUDY POPULATION

A population is the maximum number of elements having similar attributes and comprises of people, groups, human objects, and occasions that meet the criteria that the researcher is interested in studying (Polit & Beck, 2017). The target population of this study was all adults residing in Mabidi village. The study focused on the households at Mabidi village. The total number of households in Mabidi village was 3111 according to the Royal Traditional Council. Households in Mabidi village were distributed in blocks as shown in Table 3.1.

Table 3.1. Household distribution frame

Name of block in the village	Total number of households per block
Block A	409
Block B	650
Block C	500
Block D	800
Block E	221
Block F	156
Block G	375
Total	3111

Source: Local Tradition Authority Register

3.5 SAMPLING TECHNIQUE AND SAMPLE SIZE

Alvi (2016) defines sampling as a process of extracting a sample from a population. The probability sampling method, systematic sampling was in this study. Systematic sampling involves the selection of elements from an ordered sampling frame. To use the systematic sampling method, each element in the population needs to be numbered on the sampling frame list (Du Plooy-Cilliers, et al., 2014). The sample of this study was drawn from the 3111 households at Mabidi village, in Vhembe District, Collins Chabane Municipal area, Limpopo Province, South Africa.

3.5.1 Inclusion criteria

The following were the criteria for inclusion in this study:

- Permanent residents of Mabidi village
- Male and female household aged 18-60 were included in the study. The researcher concentrated on this age group because it represents all the age groups that are, the youth, middle age and the old.

3.5.3 Sample Size

The sample size was calculated using the Slovin's formula (Tejada & Punzalan, 2012) below:

$$n = \frac{N}{1+Ne^2}$$

n = sample size of adjusted population

e = margin of error

N = population size which is 3111

e=accepted level of error set at 0.05

$$n = \frac{N}{1+Ne^2}$$

$$n = \frac{3111}{1+ 3111(0.05^2)}$$

$$n = \frac{3111}{1+ 3111(0.0025)}$$

$$n = \frac{3111}{1+ 7.7775}$$

$$n = \frac{3111}{8.7775}$$

n = 354.42

n = 354

Therefore, in this study, 354 households were selected out of 3111 households in Mabidi Village and 1 adult participant per household, was selected to participate in this study as shown in table 2.

3.5.4 Sampling procedure

The sample size of 354 participants out of the 3111 Mabidi Village households was reached using Systematic Sampling Method. The sampling interval (K- Value) was

calculated by dividing the population by the sample size: 3111/354 = 9. Therefore, the sampling interval was 9. To determine on which number on the list of households to start, the researcher assigned a number to every household of the sample per block on separate pieces of paper and randomly select the first number which determined the first household to start from. Thereafter, the researcher visited every 9th household. The procedure was repeated in each block. In cases of the households wherein the researcher did not find anyone or find a child headed family led by a person below 18 age the researcher passed and went to the next household and continue to use the 9th interval. The researcher counted the same number as the sample interval down the list to get the next element on the sample until the sample size of 354 households was reached.

Table 3.5.4.1. Sampling frame and proportional sample

Name of block in the village	**Total number of households per block**	**Proportional sample size of households per block**
Block A	409	$\frac{409}{3111} \times \frac{354}{1} = 46.5 = 47$
Block B	650	$\frac{650}{3111} \times \frac{354}{1} = 73.9 = 74$
Block C	500	$\frac{500}{3111} \times \frac{354}{1} = 56.8 = 57$
Block D	800	$\frac{800}{3111} \times \frac{354}{1} = 91$
Block E	221	$\frac{221}{3111} \times \frac{354}{1} = 25$
Block F	156	$\frac{156}{3111} \times \frac{354}{1} = 17.7 = 18$

Block G	375	$\frac{375}{3111} \times \frac{354}{1} = 42.6 = 43$
Total	3111	354

3.6 DATA COLLECTION INSTRUMENT

A questionnaire was employed as the data collection instrument in this research to collect the data regarding the impacts of COVID-19 on food security among the households in Mabidi Village, Collins Chabane Village. The questions in this survey questionnaire were carefully crafted, guided by the literature and objectives of the study, to ensure that the objectives of the study were attained. Since the research was focused on the impact of COVID-19 on food security, the themes around food security, such as availability; accessibility and affordability, were selected by the researcher to guide the crafting of questions contained in the questionnaire. These themes were selected because they are directly aligned with the objectives of the study. The instrument was developed in English and later translated to Tshivenda by a language expert in-order to accommodate those who could read and understand English. The questionnaire was translated back to English by a language expert to make sure that there was excellence in translation and precise comprehension.

The questionnaire was divided into the following sections:

Section A: Socio-demographic Information
Section B: Impact of COVID-19 on the availability of food.
Section C: Impact of COVID-19 on the accessibility of food.
Section D: Impact of COVID-19 on the affordability of food.

3.7 VALIDITY AND RELIABILITY

Validity and reliability are important to ensure that the research data collection instruments were able to collect the data as intended (Mohajan, 2017).

3.7.1 Validity

Validity refers to the point to which a concept, depth and conclusions are well initiated also relate to the actual realm precisely (Brink, 2016)

3.7.1.1 Face validity

According to Brink (2016) face validity refers to whether the instrument measures what it is supposed to measure, based on an intuitive judgment made by experts in the field. The questionnaire was presented to the supervisors, the academic staff from the University of Venda Public Health Department and the panel of Higher Degree Committee (HDC) of the Faculty of Health Sciences looked at the questionnaire to ensure its rightness and gave assistance where there were inadequacies. The researcher then modified the questionnaire in accordance with the comments.

3.7.1.2 Content validity

Content validity is an assessment of how well the instrument represents all the components of the variable to be measured (Brink, 2016). To test for content validity, the questionnaire was constructed after an extensive literature review. Content validity wwas employed in this study to ensure that the measurement tool that was used represented and reflect the reality of the phenomenon that was measured. To produce valid results, the researcher ensured that the questions in the questionnaire were checked by the Nutritionist to assess and ensure that the questions cover all important aspects of the research objectives.

3.7.2 Reliability

Du Plooy-Cilliers, Davis, and Bezuidenhout (2014) define reliability as the degree to which the research instruments employed in a study consistently yield similar results when replicated using the same instruments and population at a different time. In other words, reliability ensures that the research results are dependable and consistent, thereby enhancing the credibility and trustworthiness of the study. In this study, reliability was measured using test-retest, which measures the consistency of results when the same

questionnaire is repeated with the same test on the same sample at a different point in time (Brink, 2016). To measure test-retest reliability, the researcher collected data from 35 households, which is 10% of the sample size, the same questionnaire was repeated on the same group of people after 5 days. Then the correlation coefficient between the two sets of results was calculated. Many factors can influence results at different points in time such as, respondents might experience different moods, or external conditions might affect their ability to respond accurately.

The test-retest reliability can be employed to assess the extent to which a method remains consistent over time, unaffected by factors that may introduce variability. A higher test-retest reliability is indicated by a smaller difference between two sets of results. In the evaluation of reliability coefficients, Cronbach's alpha is commonly utilized as a measure of the correlation coefficient. The values for reliability coefficients range from 0 to 1.0, where a correlation coefficient close to 0 indicates low reliability, and a correlation coefficient close to 1.0 indicates perfect reliability. It is important to note that since all tests contain some degree of error, reliability coefficients never reach a value of 1.0. In general, if the reliability of a standardized test exceeds .80, it is considered to have very good reliability. Conversely, if the reliability coefficient is below .50, the test would not be regarded as very reliable (Brink, 2016). Testing of reliability helped the researcher in correcting the instrument to make sure that there is consistency of the results.

3.8 PRE-TEST

Pre-test refers to the assessment of the clarity of the instrument used to collect the data (Du Plooy-Cilliers, Davis & Bezuidenhout, 2014). Thus, pre-test was employed in this study to assess the clarity and the suitability of the questionnaire to be used for participants in this study. Through pre-testing the instrument, the researcher will assess the needed time to complete the questionnaire and the possible obstacles that could be encountered (Du Plooy-Cilliers, et al., 2014). The pre-testing of the survey questionnaire in this study allowed the researcher to gauge the responses of the participants in relation to their understanding of the questions. In this study, 35 participants were specifically selected from 35 households from Mabidi village, and the results was not included in this

study. Pre-test was done to check if the participants understand the questions contained in the questionnaire and make corrections where there were misunderstandings.

3.9 DATA COLLECTION PROCEDURE

Data was collected by the researcher through the survey questionnaire. The data collection was done during the day by the researcher. The researcher approached one household at a time following the systematic sampling method and one adult participant was answering the questionnaire separately to the best of their understanding and knowledge. It took 20 to 25 minutes for each participant to answer the questionnaire. The completed questionnaires were immediately collected by the researcher and those who were occupied during the researcher's visit, were given the questionnaire to be completed during their free time and the researcher then collected the questionnaire the following day of the visit to Village. In instances whereby the researcher encountered households with participants who could not read and write, the researcher read the questionnaire to the participants aloud and filled in their answers as they were without any alterations.

3.10 PLAN FOR DATA MANAGEMENT AND ANALYSIS

Data analysis refers the way towards bringing order, structure, and sense out of the mass of assembled data (Miles, Huberman & Saldaña, 2018). In this study, the researcher inspected the data collected through the questionnaires to establish if the data collected was complete and all the questions have been attempted. This is also referred to as data cleaning before the actual data analysis to minimise the potential errors from the data collected (Miles, et al., 2018). Following the descriptive data analysis strategy, the data contained in a questionnaire was loaded into the Statistical Package for Social Sciences (SPSS) software version 26.0 to be analysed. After all the questionnaires have been loaded to the SPSS, the researcher carefully cross-examined the data to eliminate errors that might have occurred during data capturing to ensure the data was meaningful when presented and analysed. Descriptively, the data was presented in form of frequency graphs, pie charts and tables when presented and analysed. The Chi-square test was

used to determine the relationship between COVID-19 and the impact it had on food accessibility, food purchasing patterns and demography.

3.11 ETHICAL CONSIDERATIONS

Ethical considerations in research entails professional codes of conduct and morals that set a standard for the researcher's attitudes and behaviour during the research process (Du Plooy-Cilliers, et al., 2014). The following research ethical principles were followed in this study.

3.11.1 Ethical Clearance and Permission to Conduct the Study

The research proposal was presented to the Faculty of Health Sciences Higher Degrees Committee and University of Venda Higher Degrees Committee for quality control. The researcher obtained the ethical clearance from the University of Venda Research Ethics committee. The permission to collect data in Mabidi Village was granyed from traditional leader and traditional authorities of Mabidi verbally.

3.11.2 Informed Consent

Prior to the collection of the data by the researcher, the participants were informed of the purpose of the study through the informed consent (See Annexure 1). The researcher obtained consent from the participants prior them participating in the study. The participants were informed through the Information letter that was written in their language for clarity purposes. The Information letter indicated that it was within their rights to either participate or not participate in this study. The respondents who agreed to participate in this study were asked to sign the consent form indicating that they voluntarily agree to participate in this study. The researcher ensured that the respondents were conscious of the kind of information required, why the information was required, what was the purpose of the study, how they were anticipated to contribute to the study and how it would openly or ultimately affect them.

3.11.3 Anonymity

Anonymity refers to assurance that the participants' identity stays anonymous by giving them code names or numbers which are kept in a protected place (Grove, Gray & Burns, 2015). In this study anonymity was ensured using codes instead of names and data was not associated with the names of the respondents.

3.11.4 Voluntary participation

Participants in this study were informed about their rights before data collection so that they can decide, independently, if they want to be participants in this research or not. Therefore, the researcher, before engaging the respondents in the research study ensured that they know that participation would be done at their own free will and that they have the right to withdraw at any time should they feel uncomfortable or endangered in the research procedure. The respondents were not forced in any way to participate in this study.

3.11.5 Confidentiality

A research project ascertain confidentiality when the researcher can identify a given person's responses but promises not to do so publicly (Du Plooy-Cilliers, et al., 2014). In this study, the respondents' information was kept in a locked cupboard in the office of the supervisor to ensure privacy. Confidentiality was also achieved through ensuring that the respondents were not requested to write their personal details on the questionnaire and that there was no specific question to ask the respondents to provide their particulars or any other identifying information.

3.11.6 Protection of participants from any harm

According to Du Plooy-Cilliers, Davis and Bezuidenhout (2014), researchers should not harm their participants in any way in the process of collecting data or presenting the results. The questions in the questionnaire were carefully crafted with the help of the supervisor to minimise the possibility of sensitive questions to the participants. The researcher also ensured that the respondents in this study abided by the COVID-19

regulations of maintaining the safe distance (1.5m apart) during data collection. The researcher sanitised the participants prior participating in the study. The researcher kindly requested all the participants to wear their masks prior and during participation in this study.

3.12 SUMMARY

Chapter 3 served as an exposition of the research methods employed in this study. The chapter provided a detailed overview of the techniques used to address the research objectives. Key methods discussed included the research design and approach, sampling procedures, plans for data collection, instrumentation, ethical considerations, and data analysis. Following the implementation of these methods, data was collected, leading to the subsequent chapter (Chapter 4), which presents the results of the study.

CHAPTER 4: PRESENTATION OF RESULTS

4.1. INTRODUCTION

The preceding chapter provided an in-depth discussion of the research paradigm, design, and methodology employed in this study. It also outlined the rationale behind the decisions made and the procedures utilized for data collection and analysis. In this chapter, the focus shifts to presenting the results obtained. The presentation of the results is guided by the objectives outlined in Chapter 1. The chapter commences by presenting the demographic information, which is crucial for understanding the characteristics of the study participants and its relevance to the overall study. To facilitate a clear representation of the analysed data, this chapter utilises tables, bar graphs, and pie charts. These visual aids effectively convey the results and enhance the clarity of the information presented.

4.2. DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

The results of this study indicated that 52.7% (n=193) of the respondents who participated in this study were male compared to 47% (n=172). The difference in the number of the respondents based on gender was not of much significance towards the understanding of the objectives set for this study. The gender distribution is presented in the table 4.1.

Table 4.1 Showing the data on gender distribution.

Gender	Percentage (%)
Female	47%
Male	53%

The results of this revealed that the respondents aged 31 – 40 years were the highest respondents at 35%(n=127). This was followed by the ones aged 18 – 30 years at 31%

(n=115) as shown in figure 4.1 below. The lowest age category in this study were those aged 51 – 60 at 14% (n=51). This shows that most of the respondents in this study were below the age of 40 as shown in

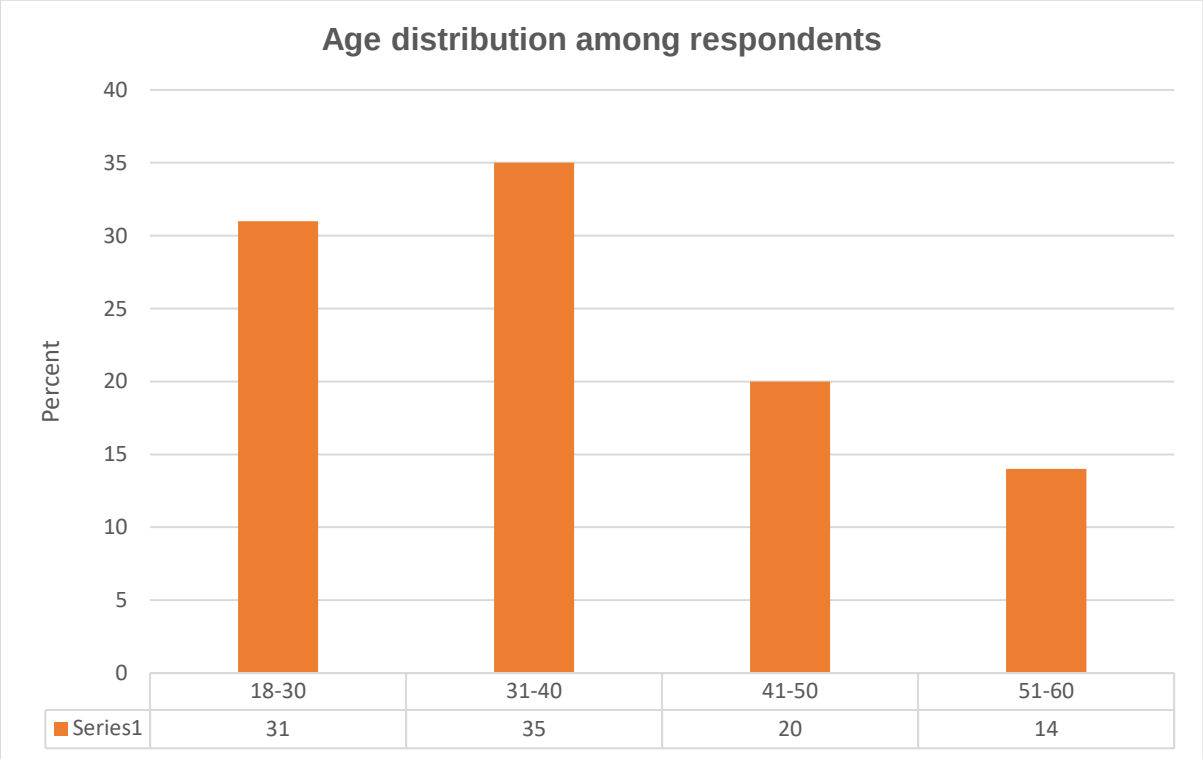

Figure 4.1 Showing the distribution of age among respondents.

The results of this study also indicated that most of the respondents in this study 38%(n=140) indicated that they were not yet married. This was followed by 25% (n=90) of the respondents which are married. Those who indicated that they are divorced are 8.2% (n=30). The least to be recorded were those who indicated that they are windowed at 11% (n=40) as shown in figure 4.2. Perhaps the highest number of the respondents indicating that they were not yet married is better explained by the fact that most of the respondents (18.0%(n=66) were 40 years of age and below.

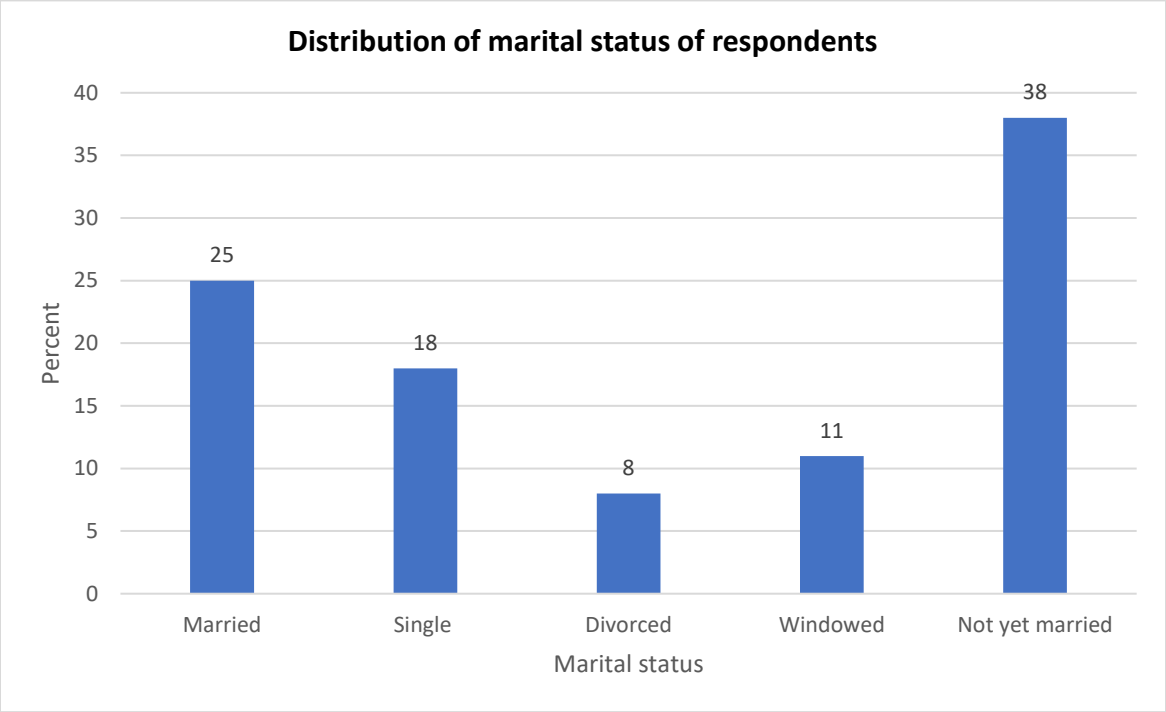

Figure 4.2 Showing the distribution of marital status among respondents.

The table 4.2 shows the distribution of home language among the respondents in this study. Most of the participants in this study were the Venda speaking people at 55% (n=202) compared to the Tsonga speaking people at 36% (n=131). The least recorded were the Sepedi speaking people at 7% (n=26). This is better explained by geographical location and the historical setting of the context. Historically, the Venda speaking people are the most dominant cultural group that resides in the setting of this study, followed by the Tsonga speaking people and the Sepedi people are very few to be noticed. The 2% (n=7) that indicated 'others' could be explained by the fact that there are foreign nationals that are also staying in the area.

Table 4.2 Showing the distribution of home language among respondents.

Home language	Percentage (%)
Venda	55
Tsonga	36
Sepedi	7
Others	2

The demographic results in this study also revealed that most of the respondents 42% (n=152) indicated that they have a primary level education compared to 19% (n=70) of those that indicated that they have at least a tertiary education. Only 5% (n=20) of the respondents' dents indicated that they do not have any form of educational background. The second from the highest was 34% (n=112) of the respondents who indicated that they have a secondary education as shown in figure 4.3.

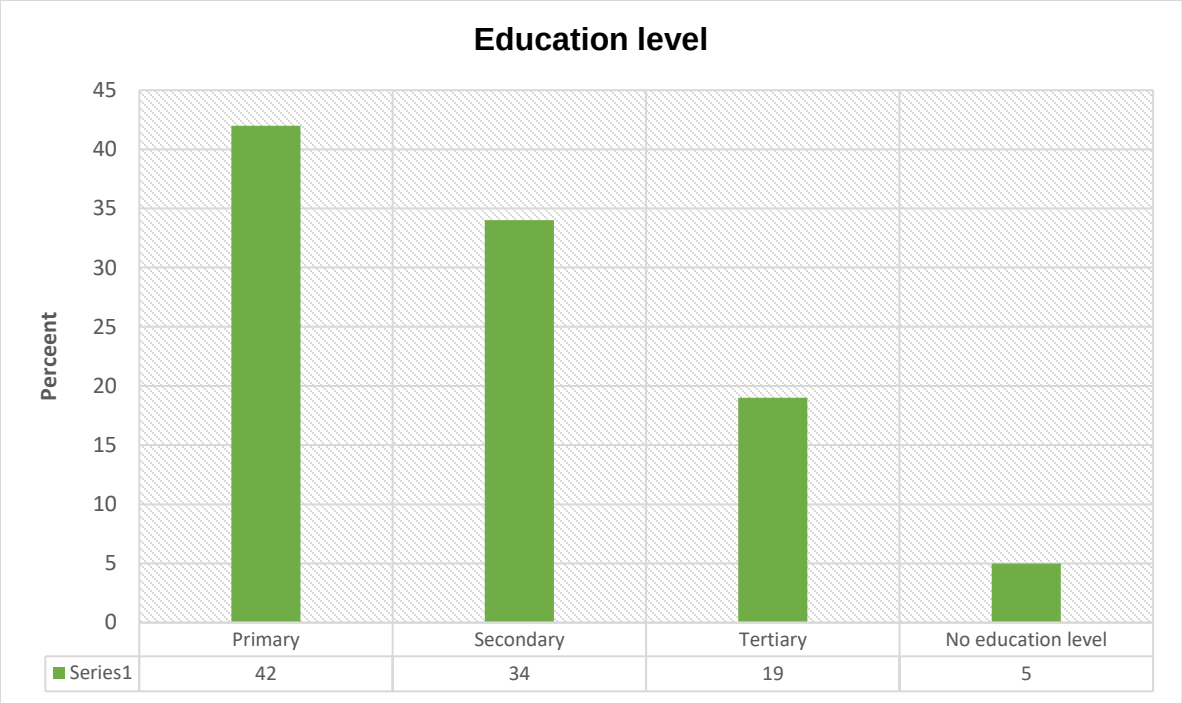

Figure 4.3 Showing the distribution of education level among respondents.

The results of this study that there is an increasing ramp of numbers of the family members from 1 to 5 and then it starts again to decrease as the number increases. See figure 4.4 below. The highest number of the family members recorded in this study was 5 people in a household at 15%. The highest number of people in a household recorded was at 3% which indicated that there are 16 people in a household as shown in figure 4.4.

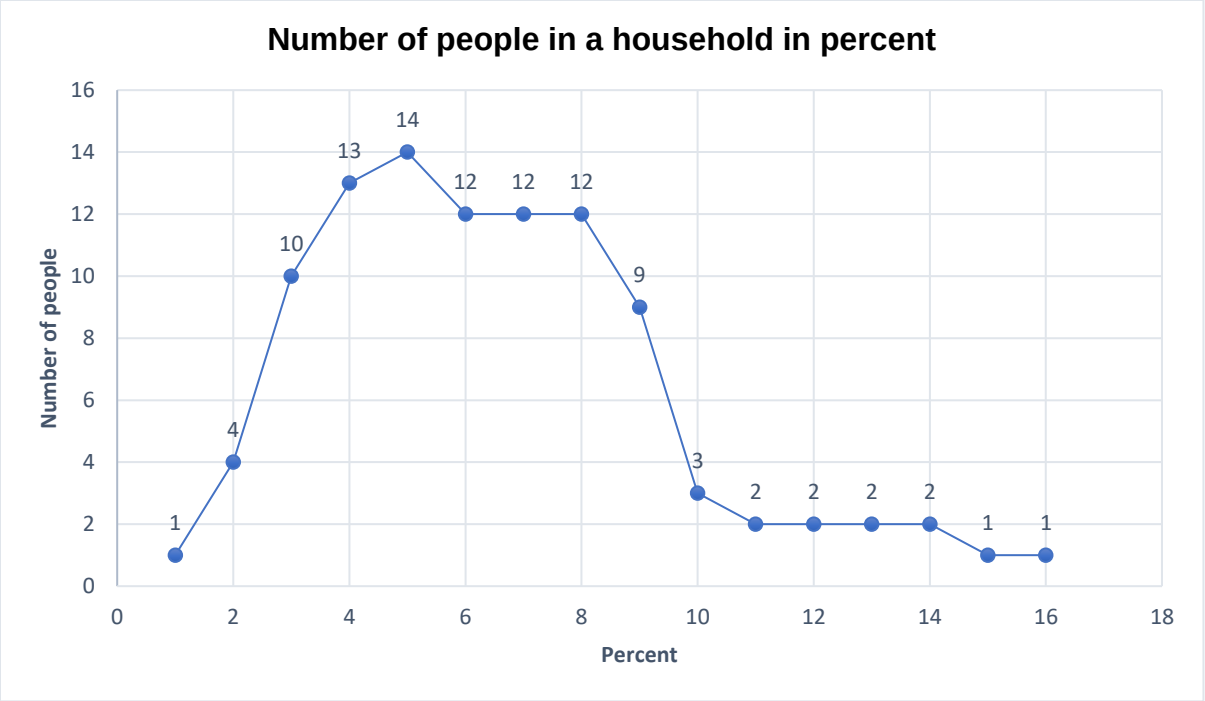

Figure 4.4 Showing the distribution of the number of people in household in percentages.

The results of this study also revealed that most of the respondents in this study indicated that they are breadwinners for their families. Only 1% (n=4) of the respondents indicated that it is there siblings that are taking care of the family compared to 61% (n=222) of the respondents indicated that it is themselves providing for their families. The second highest of the respondents indicated that they are being taken care by their mothers compared to 28%% (n=102) that reported that is their fathers that are taking care of the family as shown in figure 4.5.

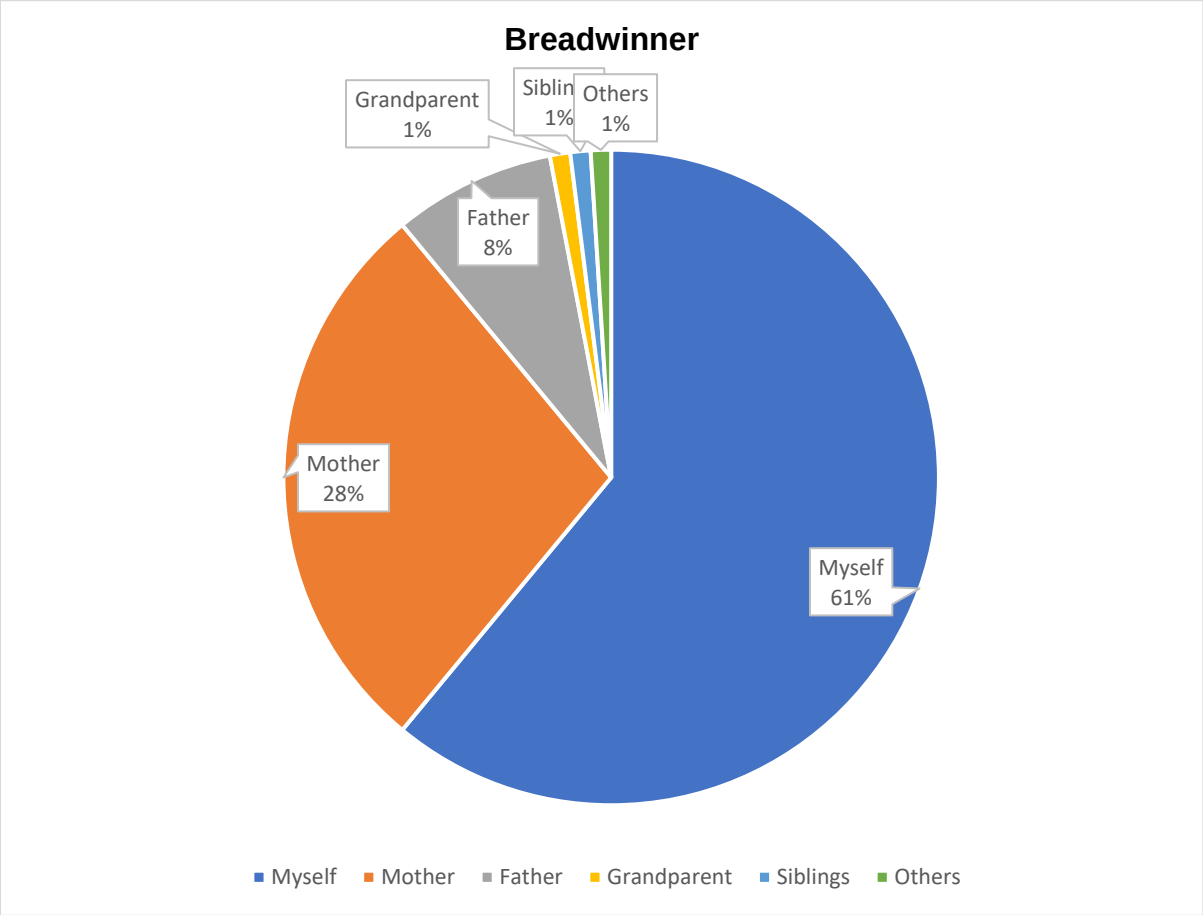

Figure 4.5 Showing the distribution of breadwinners within households.

Interesting to note is that most of the respondents in this study indicated that most of the respondents (73%) (n=254) indicated that the breadwinners in these families are not employed. Only 27% (n=92) of the respondents indicated that the breadwinners for these families are employed as shown in figure 4.6.

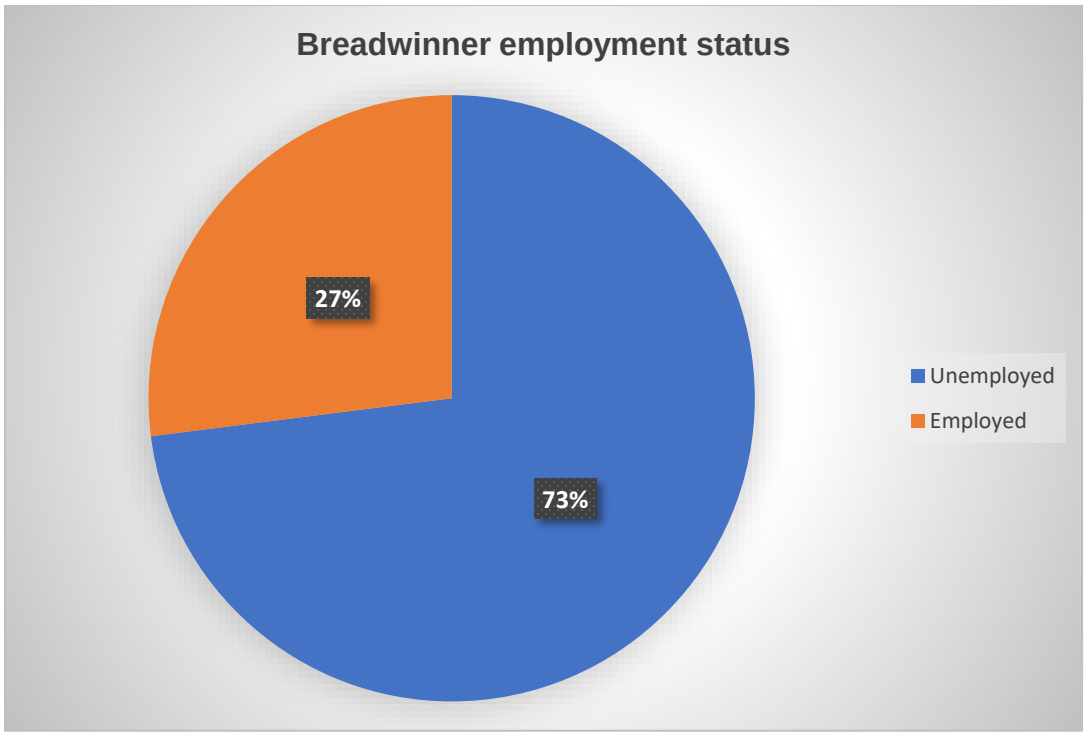

Figure 4.6 Showing the distribution of employment status of breadwinners.

4.3 EFFECTS OF COVID-19 ON FOOD SUPPLY AMONG RESPONDENTS

In this study, respondents were asked to indicate the effects of COVID-19 on the food supply as shown on table 4.3 below. Out of the responses the results indicated that Covid-19 had a negative effect on food supply. For example, 76% (n=266) of the respondents indicated that Covid-19 affected their food supply experiences compared to only 18% (n=64) of the respondents that indicated that the food supply was not affected. Out of the 354 respondents, 6% (n=20) of the respondents showed that they are not sure if Covid-19 affected the food supply or not.

This study was set to investigate the food supply and procurement capacity among households during Covid-19.

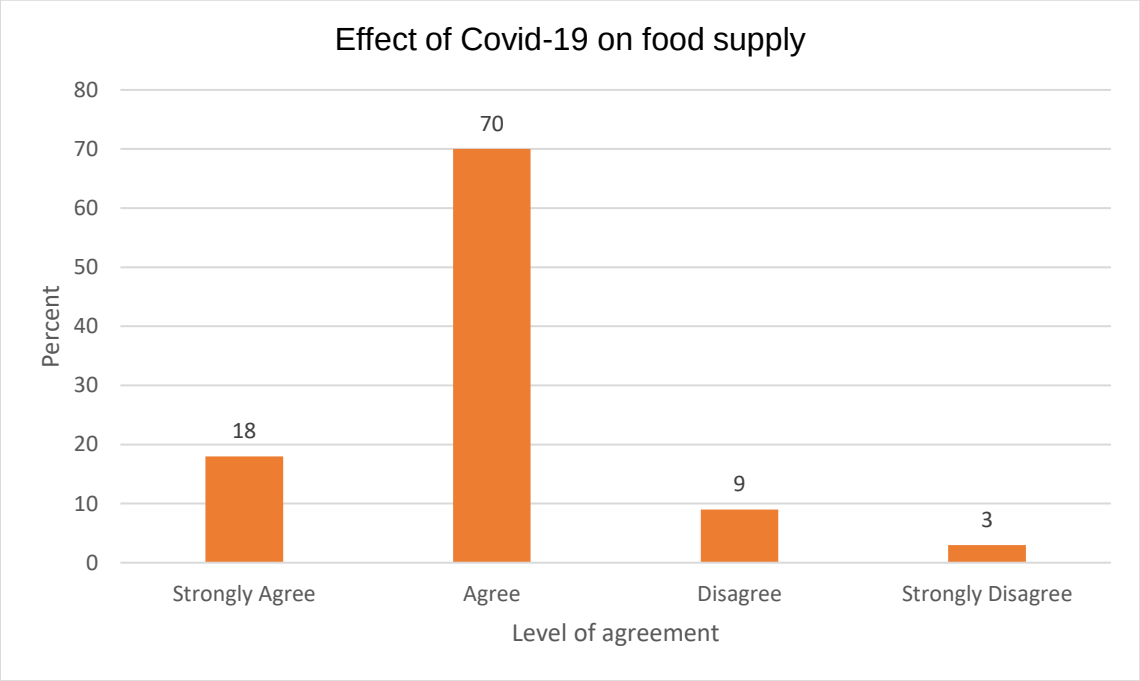

Figure 4.7 Showing the effect of Covid-19 on food supply and consumption.

The study was set to investigate whether the respondents changed their eating habits and the food that they were eating before Covid-19 changed. The results indicated that the majority 66,9%(n=245) of the respondents indicated that they agree that the food type changed, while 19 % (n=strongly agree. Only 2% of the respondents indicated that they did not experience any change in the manner they used to eat the food prior Covid-19 as shown in figure 4.8.

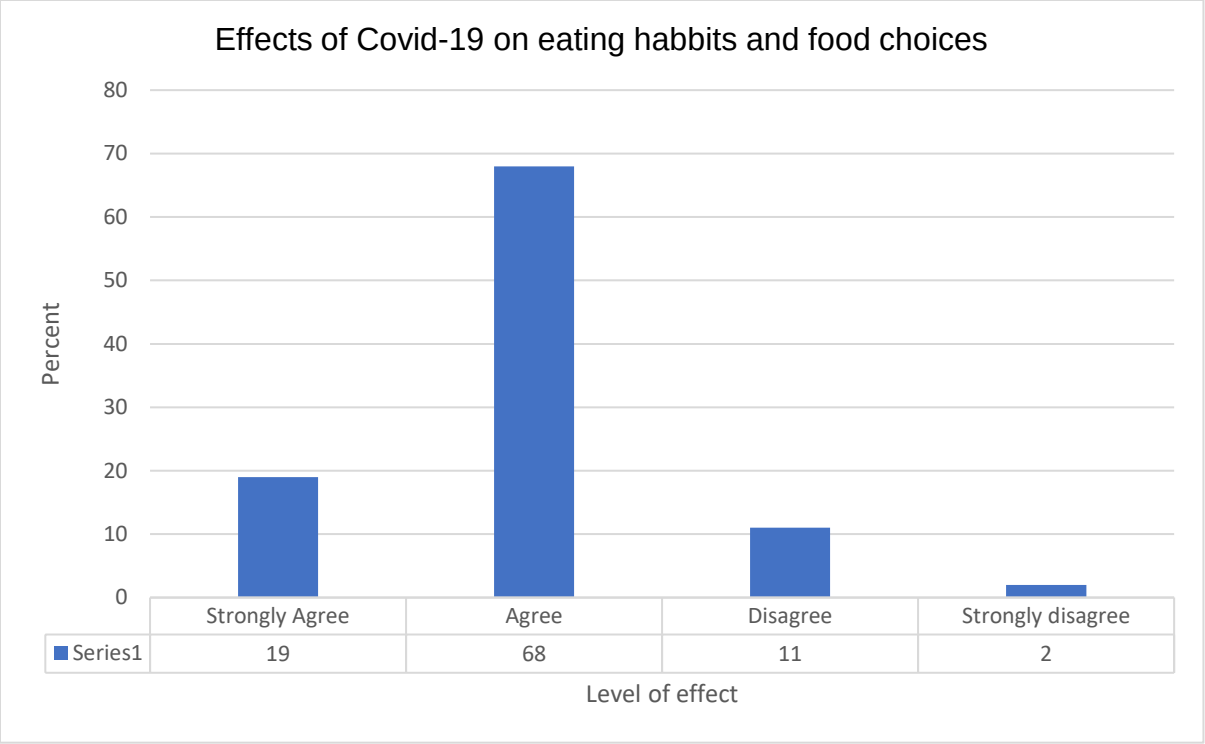

Figure 4.8 Showing the effect of Covid-19 on eating habits and food choices among respondents.

The results of this study were also set to investigate whether the respondents are now finding it difficult to purchase food than they used to before Covid-19. The results indicated that 67% (n=245) of the respondents agree that it is now hard for them to buy food as they used to prior Covid-19 because they are no longer employed. Only 3% (n=10) of the respondents showed that they strongly disagree to the notion that purchasing food was hard under the initial stages of Covid-19 pandemic as shown in figure 4.9

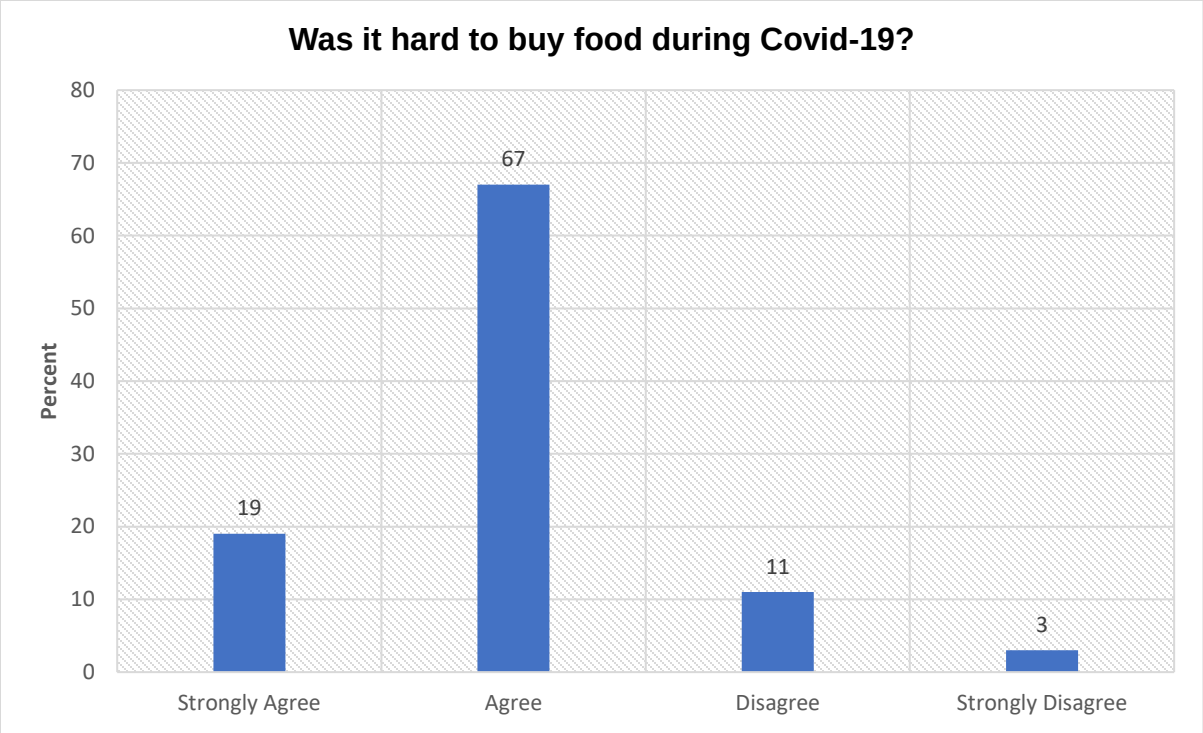

Figure 4.9 Showing the results regarding the challenges of buying food during Covid-19.

4.4 EFFECTS OF COVID-19 ON AVAILABILITY OF FOOD SUPPLY

This study was set to investigate the impact of Covid-19 on the availability of food during to households during Covid-19. Out of the responds, the results indicated that most of the respondents 73% (n=269) indicated that the food supply, procurement and purchasing patterns have been drastically affected because of Covid-19 pandemic. Only 27%(n=85) of the respondents showed that they were still working, and/ or the breadwinner was still able to work despite Covid-19 and they were still able to provide food for their families as shown in table 4.4.

Table 4.3 Showing the respondents' agreement if they can work or do business during Covid-19

I am no longer able to work	**Percent (%)**	**Frequencies**
Yes	73	263
No	27	98
I am no longer able to do business		
Yes	59	213
No	41	148
There is now shortage of food and water		
Yes	62	222
No	38	139

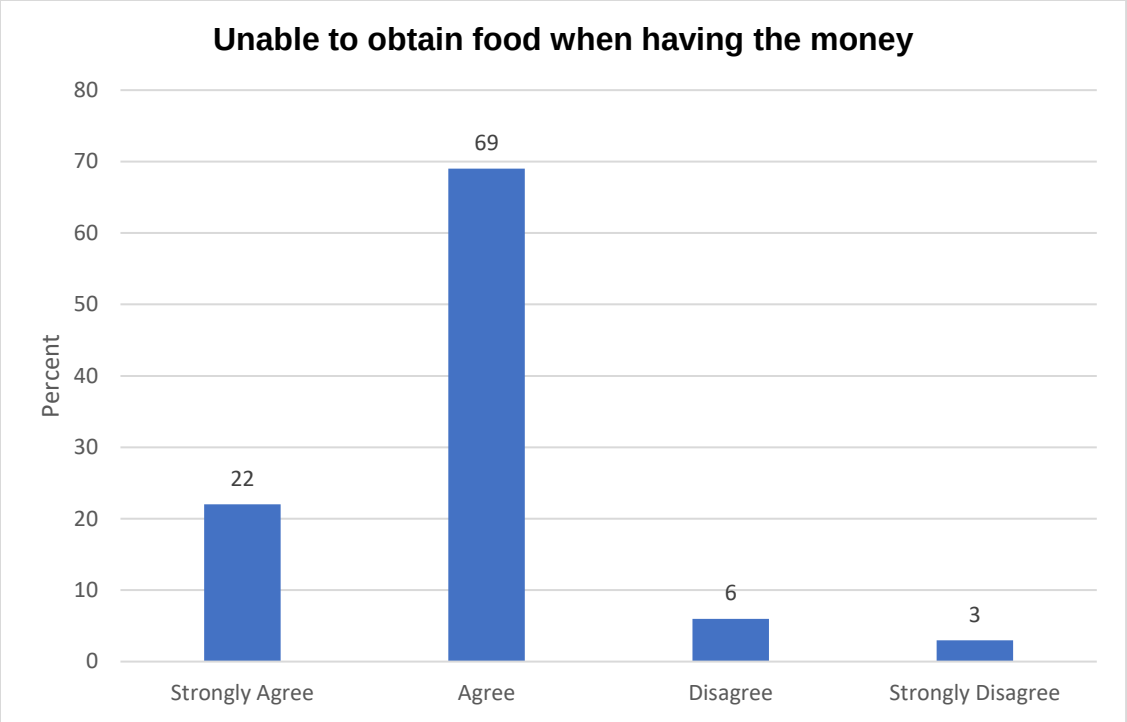

Figure 4.10 Showing results on whether the respondents were able to obtain the food or not, while having the money.

The results show that most of the respondents in this study 69%agree that they were unable to go out and get food. While only 3% of the respondents indicated that they strongly disagree that there was a time they could not be able to obtain food when they had the money to do so as shown in figure 4.10

4.5 EFFECTS OF COVID-19 ON FOOD PRICES AND AFFORDABILITY PATTERNS

The challenges with acquiring food during the initial stages of Covid-19 was not only because of having money, but it was also because of the high demand of food that ended-up making other people to not purchase or obtain the food, either because of the long ques or the high prices of food as shown in figure 4.11 below. Most of the respondents 69% (n=252) of the respondents indicated that they could not be able to obtain food because the food prices were high above the reach of most of the respondents in this

study. Only 3% (n=9) the respondents revealed that they strongly disagree that the food prices were higher.

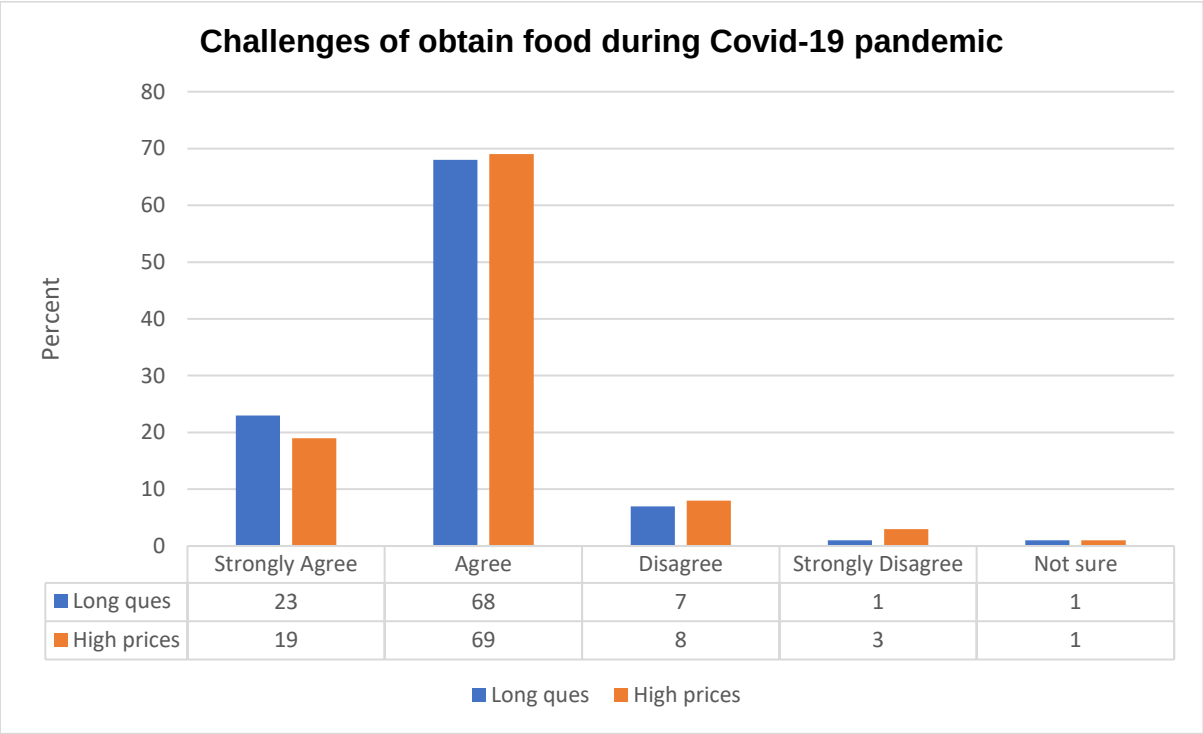

Figure 4.11 showing challenges obtained during Covid-19 pandemic.

This study revealed that 85% (n=299) of the respondents were worried that the food would run out before they could have money to purchase other food while only 15% (n=55) indicated that they were not worried.

Similarly, 82% (n=296) of the respondents in this study also revealed that they were worried that they might not have food the following day. In general, most of the respondents 78% (n=285) indicated that they were worried if they could be able to sustain their food requirements for the whole month.

The results of this study also revealed that most of the respondents indicated that the way of eating and food preference was reduced to zero. The money to buy the preferred food and style of living was also affected by Covid-19. For example, 79% (n=285) of the respondents indicated that they lacked the money to buy the preferred ingredients to

supplement the dietary options for the families used to enjoy before Covid-19 as shown in table 4.7 below. Mostly, 81% (n=295) of the respondents indicated that they were no longer eating full diet because they were no longer affording the food they used to eat as shown in table 4.7.

Table 4.4 Showing the challenges of Covid-19 on food preference and dietary options.

Item	**Frequencies For Yes**	**Yes**	**No**	**Frequencies for No**
Lacked some ingredients to prepare my food because of money	n=282	78%	21%	n=72
Not able to buy food I used to afford prior Covid-19	n=286	83%	17%	n=68
No longer eating full dietary food as prior Covid-19	n=284	81%	19%	n=70
Hungry sometimes for not affording regular meals	n=282	79%	22%	n=73
Significantly decreased food portions as the prices increases	n=286	83%	17%	n=68
I am not able to afford the food for my children	n=286	83%	17%	n=68

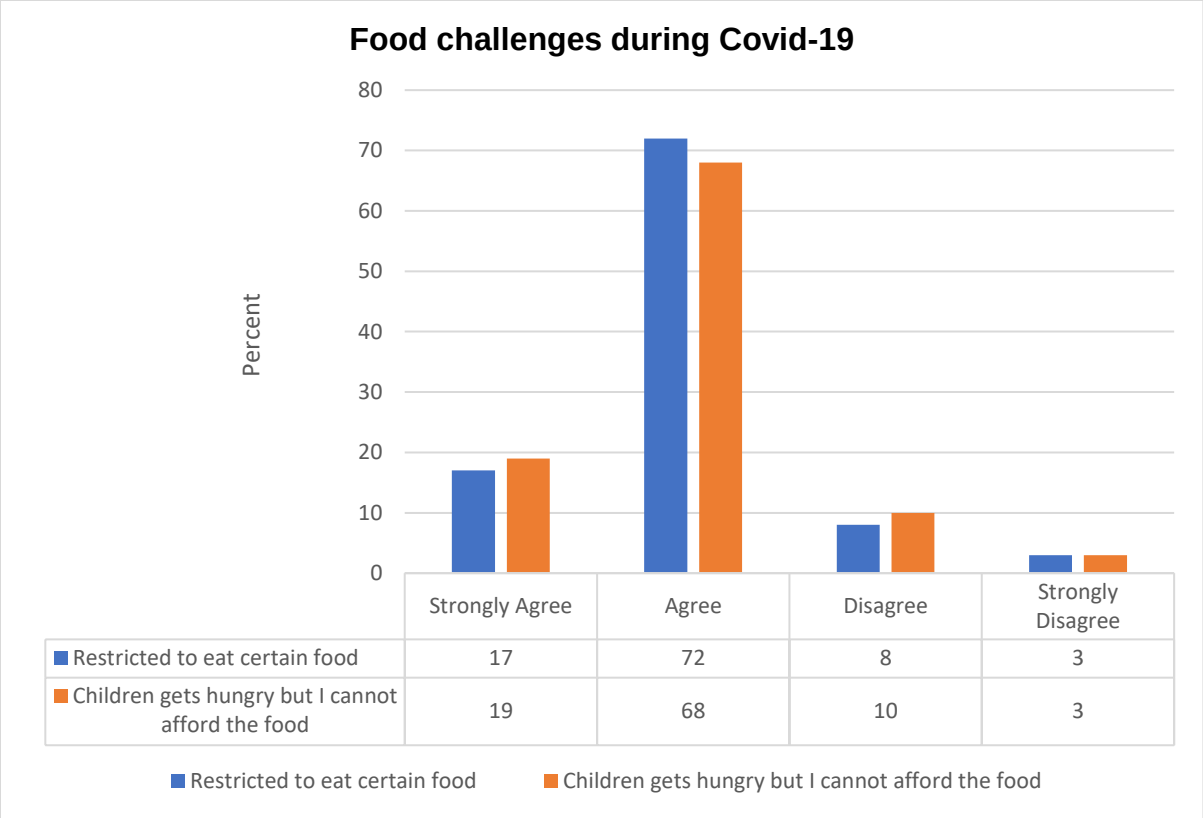

Figure 4.12 Showing the patterns of challenges faced by families during Covid-19

Table 4.5 Showing the Pearson Chi-Square descriptive of the relationship between education level, gender, age, and the impact of Covid-19 on food.

		Gender	Age	Educational Level
Did Covid-19 make food availability difficult in your household?	Chi-square	3.429	18.510	24.611
	Df	2	6	6
	Sig.	.180	.005*	.000a,*
Do you have enough food for the whole family?	Chi-square	.425	27.478	34.284
	Df	2	6	6
	Sig.	.809	.000a,*	.000a,*,c
Since the beginning of Covid-19 we have decreased our food consumption in our household?	Chi-square	5.972	24.707	51.739
	Df	3	9	9
	Sig.	.113	.003a,*	.000a,*,c
We eat the same type of food because we can't access other types of food	Chi-square	7.254	22.750	39.493
	Df	3	9	9
	Sig.	.064a	.007a,*	.000a,*,c

Apart from the above-mentioned, table 4.10 shows the Pearson Chi-square test for the items related to effect of COVID-19 on food supply cross-tabulated against Age, Gender, and educational level. A significance level of 0.05 was used in this study to determine if there is any significant relationship between the items in the questionnaire and the demographic factors.

Table 4.6 Showing the relationship between the demographic information and the level of impact due to Covid-19.

		Gender	Age	Educational level
I am no longer able to go to work	Chi-square	7.151	17.192	25.065
	Df	1	3	3
	Sig.	.007*	.001*	.000*
I am no longer able to do business.	Chi-square	1.122	21.025	18.242
	Df	1	3	3
	Sig.	.289	.000*	.000*
There is now shortage of food and water	Chi-square	10.783	15.605	14.656
	Df	1	3	3
	Sig.	.001*	.001*	.002*
Salary or income has decreased.	Chi-square	3.391	11.748	5.537
	Df	1	3	3
	Sig.	.066	.008*	.136
The number of employed individuals in the household has decreased	Chi-square	3.260	10.947	26.610
	Df	1	3	3
	Sig.	.071	.012*	.000*
We are no longer able to visit relatives	Chi-square	5.022	15.030	6.985
	Df	1	3	3
	Sig.	.025*	.002*	.072
We are no longer able to conduct family meetings	Chi-square	3.081	11.061	15.357
	Df	1	3	3
	Sig.	.079	.011*	.002*
	Chi-square	2.036	13.407	8.839
	Df	1	3	3

We are no longer able to visit amusement or entertainment centres	Sig.	.154	.004*	.032*

The results of this study revealed that give the Pearson Chi-square test for the irrelated to effect of COVID-19 on food supply cross-tabulated against Age, Gender, and educational level. The study could not find any statistically significant associations between the demographic factors and any of the items in this section of the questionnaire as shown in table 4.9.

Table 4.7 Showing the impact of Covid-19 based on gender, age, and educational level

		Gender	Age	Educational level
We are no longer able to visit amusement or entertainment centres	Chi-square	7.692	23.534	29.621
	Df	3	9	9
	Sig.	.053	.005[a,*]	.001[a,*,c]
during Lockdown level 1 it was difficult to obtain food	Chi-square	5.314	21.579	25.209
	Df	3	9	9
	Sig.	.150	.010[a,*]	.003[a,*,c]
During Level 1 lockdown I had to stand in long ques to buy food and even then I couldn't get food	Chi-square	2.563	33.021	25.283
	Df	3	9	9
	Sig.	.464[a]	.000[a,*,c]	.003[a,*,c]
During level 1 lockdown I had to buy food at a	Chi-square	7.474	28.667	28.698
	Df	4	12	12

much higher price than normal.	Sig.	.113[a]	.004[a,*,c]	.004[a,*,c]

The results of this study revealed that the Pearson Chi-square test for the items related to effect of COVID-19 on food supply cross-tabulated against Age, Gender, and Educational level. A significance level of 0.05 was used in this study to determine if there is any significant relationship between the items in the questionnaire and the demographic factors. Therefore, according to the results of this study there is a very strong significant statistical association between 'participants being anxious that food will run out before they have money to purchase more food' and Age (0.033). The results further showed the association between 'the participants being anxious where their next meal will come from' and Age (0.043).

Table 4.8 Showing the effects of Covid-19 based on age, gender, and educational level

		Gender	Age	Educational level
Do you orry that food will run out before you have money to buy more food?	Chi-square	3.367	8.755	4.884
	Df	1	3	3
	Sig.	.066	.033*	.180
Do you worry that you will not have food to eat the following day?	Chi-square	1.369	8.137	10.246
	Df	1	3	3
	Sig.	.242	.043*	.017*
I didn't have sufficient food for the month and I worried how will I obtain more food	Chi-square	.837	6.671	8.417
	Df	1	3	3
	Sig.	.360	.083	.038*
I lacked some of the ingredients I use to prepare my food and I didn't have money to buy them.	Chi-square	3.205	11.604	8.902
	Df	1	3	3
	Sig.	.073	.009*	.031*
I am no longer able to afford some of the food I enjoy	Chi-square	1.636	10.983	6.261
	Df	1	3	3
	Sig.	.201	.012*	.100

The results of this study also elucidated that through the Pearson Chi-square test for the items related to effect of COVID-19 on food supply cross-tabulated against Age, Gender and Educational level as shown in table 4.9. A significant level of 0.05 was used in this study to determine if there is any significant relationship between the items in the

questionnaire and the demographic factors. There was a very strong significant statistical association between ‘participants no longer eat what they desire because they can’t afford it’ and Age (0.002). There was also statistical association found between ‘participants going hungry because the price of food is increasing’ and educational level (0.025). According to table F there was a statistically significant association between ‘participants feeling they cannot support their children with enough food’ and Age (0.010) and educational level (0.003). The study also found that there was an association between ‘participants believing that their children can no longer eat the portions they used to eat’ to educational level (0.001). The rest of the chi-square results are either unreliable or show not statistically significant as shown in table 4.9.

Table 4.9 Showing the effects of Covid-19 based on age, gender, and education level.

		Gender	Age	Educational Level
I am no longer eating my full diet because I can no longer afford the food, I used to eat	Chi-square	.516	14.656	2.505
	Df	1	3	3
	Sig.	.473	.002*	.474
I am often hungry because I can no longer afford the price of my regular food due to the Covid-19 outbreak.	Chi-square	.068	3.045	9.371
	Df	1	3	3
	Sig.	.795	.385	.025*
I had to significantly decrease food portions since the outbreak of Covid-19 due to food price increases.	Chi-square	2.009	4.562	4.025
	Df	1	3	3
	Sig.	.156	.207	.259
. I am no longer able to provide sufficient food to my children because of Covid-19	Chi-square	1.578	11.432	13.844
	Df	1	3	3
	Sig.	.209	.010*	.003*
I am no longer able to afford a full balanced meal.	Chi-square	1.584	3.550	7.667
	Df	1	3	3
	Sig.	.208	.314	.053
My children are no longer eating a full satisfying	Chi-square	.393	5.357	15.426
	Df	1	3	3

meal because I can no longer afford all the food they need.	Sig.	.531	.147	.001*

4.6 SUMMARY

The results of this study revealed that a significant number of respondents experienced severe challenges in procuring and obtaining an adequate food supply due to the impact of the Covid-19 pandemic. Many respondents reported a significant decrease in their ability to afford food compared to the period before the outbreak of Covid-19. There was a prevailing sense of uncertainty among the respondents regarding their ability to provide sufficient food for their families, with high levels of concern about their future food security. These concerns were exacerbated by the widespread job losses reported by the respondents as a direct result of the Covid-19 pandemic. Individuals without any source of income were particularly vulnerable to food insecurity due to the economic impact of the pandemic.

Interestingly, it was found that the ability to purchase food was not solely influenced by financial constraints. Factors such as long queues and fluctuating food prices also played a significant role in hindering individuals' purchasing power and food procurement. The intricate relationship between these various factors will be thoroughly discussed in the subsequent chapter (Chapter 5) to provide a comprehensive understanding of the implications and nuances revealed by the study's results.

CHAPTER 5: DISCUSSION, SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

Chapter 5 encompasses the comprehensive discussion, summary, and recommendations derived from the results of this study. The analysis and interpretation of the research results, as they relate to the research questions, are elucidated in this chapter. It provides an assessment of the extent to which this research has successfully addressed the objectives set for the study. Furthermore, the chapter facilitates a comparative analysis between the results of this study and the existing literature, highlighting both similarities and differences. By integrating the results with relevant scholarly works, this chapter substantiates the contribution of this study to the existing body of knowledge. Ultimately, based on the synthesis of the results and literature review, this chapter concludes with pertinent recommendations for future research and practical applications. The study was aimed at achieving the following objectives, as set out in Chapter 1:

- To determine the pillars of the food security in the households of Collins Chabane Municipality in Limpopo, South Africa
- To describe the impact of COVID-19 on the accessibility of food among households of Collins Chabane Municipality in Limpopo, South Africa.
- To describe the impact of COVID-19 on the affordability of food among households of Collins Chabane Municipality in Limpopo, South Africa.
- To establish the associations between food security variables and sociodemographic factors.

5.2 DISCUSSION OF THE RESULTS

5.2.1 Demographic characteristics

The results of this study shed light on the demographic characteristics of the respondents, which play a crucial role in informing the study's objectives. Descriptive analyses were conducted to provide a comprehensive understanding of the respondents' demographic profiles, including variables such as age, gender, employment status, and education level. These demographic characteristics were then examined in relation to the research questions to identify any variations, potential causes of such conditions, and the level of impact they may have.

Moreover, the results of this study were discussed in relation to the existing literature, aiming to establish both similarities and differences between the current research and previous studies. By drawing upon relevant literature, this discussion not only highlights the alignment between the results and established knowledge but also expands upon existing knowledge in certain areas.

Overall, the discussion section provides a detailed examination and interpretation of the research results, considering the demographic characteristics of the respondents and their implications. It also offers a comprehensive analysis of the results in relation to the existing literature, contributing to the broader understanding of the topic under investigation.

5.2.2 The pillars of the food security in the households of Collins Chabane Municipality in Limpopo

The pillars of food security in the households of Collins Chabane Municipality in Limpopo, South Africa were determined based on key dimensions that contribute to food security. These pillars include:

Availability: This pillar refers to the physical availability of food within the municipality. It encompasses aspects such as agricultural production, food supply chains, and access to markets where food can be obtained. Factors such as agricultural practices, land availability, and infrastructure for storage and transportation play a crucial role in ensuring food availability.

Accessibility: Accessibility pertains to the ability of households to obtain food economically and physically. It includes factors such as affordability, proximity to food sources, transportation infrastructure, and distribution systems. Ensuring that food is accessible to all households, especially those in vulnerable situations, is essential for food security.

Utilisation: This pillar focuses on the utilisation of food to meet dietary and nutritional needs. It involves factors such as food safety, dietary diversity, nutritional knowledge, and access to clean water and cooking facilities. Adequate utilisation of food ensures that households can obtain the necessary nutrients for healthy living.

Stability: Stability refers to the ability of households to maintain access to food consistently over time, without significant fluctuations or disruptions. It involves factors such as income stability, resilience to shocks and crises (such as the COVID-19 pandemic), social safety nets, and emergency preparedness. Ensuring stability is vital for protecting households from food insecurity during challenging times.

By addressing these pillars of food security, policymakers and stakeholders can work towards creating an enabling environment that supports the availability, accessibility, utilisation, and stability of food in the households of Collins Chabane Municipality in Limpopo, South Africa.

5.2.2 The impact of COVID-19 on the availability of food among households

The results of this study underscored the significant impact of job loss during the COVID-19 pandemic, particularly among breadwinners in households. The majority of participants reported that parents played a crucial role as family providers, while only a few mentioned that older siblings who were employed were supporting their families. This aligns with Wilson, Lee, Fitzgerald, Oosterhoff, Sevi, and Shook's (2020) results that employment instability resulting from COVID-19 led to job insecurities within families.

Furthermore, the study revealed that non-professional and informally employed breadwinners were the most affected. This is consistent with Shammi, Bodrud-Doza, Islam, and Rahman's (2020) research, which emphasised the need to protect vulnerable ultra-poor groups to prevent rapid socioeconomic crises and mental stress during the COVID-19 pandemic. However, participants who were formally employed in sectors such as civil service (e.g., police officers, nurses, doctors, teachers) were able to continue supporting their families despite the disruptions caused by the pandemic.

The results also highlighted that participants experienced a decrease in income, leading to challenges in affording food as they did prior to the pandemic. Additionally, a decrease in the number of working individuals within households further exacerbated the struggle to maintain sufficient food availability. Moreover, a significant portion of participants (69%) reported purchasing food at higher prices than usual during the initial stage of the lockdown. Hodder's (2020) study similarly indicated that the informal employment sector suffered during the COVID-19 era, whereas the formal sector thrived through remote work enabled by technology.

These results shed light on the multifaceted effects of job loss and decreased income on households' ability to afford and secure an adequate food supply. They align with previous research and emphasise the need for targeted support to vulnerable groups, particularly those employed in non-professional and informal sectors, to mitigate the impact of the pandemic on food security.

The results of this study highlight the challenges faced by rural populations in providing food for their families during the COVID-19 pandemic. The disruption of daily activities and employment had a significant impact on their ability to sustain their livelihoods as they did prior to the outbreak. These results align with other studies that have shown a connection between the inability to sustain livelihoods and the experience of psychological challenges such as depression and anxiety (Aguiar-Quintana, Nguyen, Araujo-Cabrera & Sanabria-Díaz, 2021). This suggests that food insecurity is not an isolated issue but is intertwined with a complex web of socio-psychological challenges experienced by many individuals.

COVID-19 has magnified food insecurity among the general population. However, despite the high number of participants indicating that they were affected by COVID-19, there were a few who reported being able to afford the food they desired despite the challenges. This difference can be attributed, in part, to the fact that some participants in this study were formally employed and experienced less significant impacts on their food security compared to the majority who were informally employed and lost their jobs immediately in response to the pandemic and associated restrictions. However, this also underscores the profound socio-economic inequalities that exist within the broader South African context. The study by Blundell, Costa Dias, Joyce, and Xu (2020) on COVID-19 revealed the underlying socio-economic inequalities at the international, national, and local community levels. It highlighted the disparities in access and affordability, where some individuals can afford certain resources while others cannot. Survival strategies are often determined by socio-economic status, with only rare cases of individuals who can afford but still struggle to access the services they need (Blundell, et al., 2020).

These results underscore the urgent need to address the socio-economic disparities that contribute to food insecurity during the COVID-19 pandemic and beyond. Efforts should focus on providing support to vulnerable populations and addressing the underlying structural inequalities to ensure equitable access to food and improve overall well-being.

5.2.3 The impact of COVID-19 on the accessibility of food

The results of this study indicate that the outbreak of COVID-19 had a significant impact on the food security of families. Most participants, about 73%, reported that COVID-19 disrupted their food supply chain and contributed to food insecurity. However, there were also participants who were unsure if COVID-19 had affected their food security. This could be attributed to the fact that not all participants in the study were family breadwinners and may not have been directly involved in food procurement and provisioning.

The link between food insecurity and COVID-19 is not a new phenomenon. Previous studies, such as the one conducted by Aguiar-Quintana, Nguyen, Araujo-Cabrera, and Sanabria-Díaz (2021), have highlighted the connection between COVID-19, food insecurity, job insecurities, anxiety, and depression. Fang, Thomsen, and Nayga (2021) also found a similar association between the COVID-19 pandemic, food insecurity, and mental health issues among populations worldwide. In the South African context, a longitudinal study by Nwosu, Kollamparambil, and Oyenubi (2022) further demonstrated the relationship between the COVID-19 pandemic and food scarcity among different population groups.

Expanding on these results, this study revealed that 70% of the participants reported not having enough food for their entire family compared to pre-pandemic times. Only 21% of the participants stated that they had enough food for their families despite the challenges posed by the COVID-19 pandemic. This disparity could be explained by the fact that some participants in the study were formally employed, and the pandemic had a lesser impact on their food security compared to the majority who were informally employed and experienced immediate job losses due to the COVID-19 restrictions.

These results emphasize the urgent need for interventions and support to address the food insecurity exacerbated by the COVID-19 pandemic, particularly for vulnerable populations. Efforts should be directed towards ensuring equitable access to food,

supporting livelihoods, and addressing the underlying socio-economic disparities that contribute to food insecurity in order to improve the overall well-being of individuals and communities.

The results of this study highlight the significant impact of the COVID-19 pandemic on people's food choices and their ability to afford nutritious meals. Many participants reported that their food choices were greatly limited, and they could only eat what they could afford. This compromised their ability to achieve a balanced and healthy diet. The study also revealed that the pricing of food was affected, making it more difficult for people to afford the food they needed. This aligns with the results of a South African study by Wegerif (2020), which observed that food became inaccessible to many as the informal sector increased prices following the closure of retail businesses during the initial COVID-19 lockdown.

Additionally, a common challenge faced by participants was the long queues to purchase food. During the early stages of the pandemic, controlled measures were implemented, allowing only a limited number of people to access stores at a time. This led to prolonged waiting times and further hindered people's ability to obtain food.

The study results also revealed that a significant number of participants (84%) constantly worried about running out of food before they could afford to purchase more. This highlights the interconnectedness between food insecurity and socio-psychological issues such as stress, anxiety, and depression, as suggested by studies (Arndt et al., 2020; Jafri et al., 2021).

Furthermore, the study indicated that many participants (86%) could no longer afford proper meals. Prioritizing inexpensive food over nutritious options became a necessity for survival. This not only posed a threat of hunger and malnutrition but also had implications for physical and mental health. Many participants (79%) reported cooking cheap food due to financial constraints. For a significant portion of participants (64%), experiencing hunger while unable to afford their preferred food was a new and distressing experience.

These results are consistent with other studies that highlight the high prices of food in the black market, making it unaffordable for many individuals in South Africa (Agyei et al., 2021).

In summary, the results underscore the profound impact of the COVID-19 pandemic on people's food choices, affordability, and overall food security. The constraints imposed by the pandemic have led to compromised dietary quality, increased worries about food availability, and limited access to nutritious meals, thereby posing significant physical, mental, and socio-economic challenges to individuals and communities.

5.2.4 The impact of COVID-19 on the affordability of food

The results of this study highlighted that 70% of the participants indicated that they have experienced the decrease of food security since the outbreak of COVID-19, compared to only 3% of the participants who indicated that they did not experience food shortages. Perhaps the huge number of the respondents in this study that pointed to the fact that there were critical challenges of food insecurities reflects the results by Hodder (2020) who showed that most of the informal employment sector did not survive the COVID-19 era, causing a huge number of the population without formal employment to succumb to the negative implications of Covid-19 in terms of food insecurities. This is also likely in the results of this study, given that the context of this study is rural, with predominantly informally employed population as was shown by the study that the majority did not reach tertiary level of education with most (42%) of the participants indicating that they have at least reached primary level of education.

These results are interesting in revealing how difficult COVID-19 has posed to most of the population in the rural South Africa. Perhaps this is linked to the fact that most of the participants indicated that they lost their source of income because of COVID-19. The loss of employment constrained the affordability patterns among most of the families. This is like what the study by Donnelly, Zajdel and Farina (2022) have identified that affording food was worsened the levels of inequalities that exists in most developing countries.

The results of this study also showed that the affordability patterns of food were affected by COVID-19. Most of the participants in this study indicated that they were compelled to eat the same type of food during because they could not afford the variety they were used to before COVID-19 outbreak. A South African study by Wegerif (2020) also highlighted that the affordability patterns of food for most people was worsened by the informal sector that was now selling food on higher price rates after most of the retail businesses such as Shoprite and Pick n Pay were immediately closed in responding to the initial COVID-19 lockdown restrictions (Wegerif, 2020). Only 2% of the participants in this study acknowledged that they could still afford the food as they used to before the outbreak.

The results of this study link the affordability of food to unemployment rates. The affordability of food was also depended to whether the bread winner of the family was still employed and having a sustainable source of income. Most of the participants (65%) in this study indicated that they are no longer able to afford the food because the breadwinner for the family was no longer employed. Further, most of the participants (64%) acknowledged that they cannot afford the food they used to afford before COVID-19 because they were no longer employed. A South African study by Wegerif (2022) also revealed that most of the people in rural areas who were surviving with farming before the pandemic find it very difficult to adapt and survive under COVID-19. Their source of survival – agriculture – was disturbed by the pandemic when all the people were restricted in their movements. This category of people could not afford to purchase food since they were dependent on farming (Wegerif, 2022).

The results of this study elucidated that most people were highly affected by the outbreak of COVID-19. The unemployment rates that came because of COVID-19 were devastating to a lot of families. The food security was disturbed when the family breadwinners were left without employment. The rural setting was also another challenge. The results of this study indicated that the experiences of food security among the people in rural areas were unique. In the rural areas of South Africa, there is a considerable number of people whose livelihood depends on farming (Cousins, Dubb, Hornby and

Mtero, 2018). Hence, a South African study by Wegerif (2022) also revealed that most of the people in rural areas surviving farming finds it very difficult to survive under COVID-19. This category of people could not afford to purchase the food since they were dependent on farming (Wegerif, 2022). This category of the population does not survive on purchasing food, they live through farming.

The results revealed that most affected breadwinners were the ones working for non-professional industries. This also points to the notion that the informal employment is not sufficient to sustain families during the time of crisis. The study by Hodder (2020) further indicated that most of the informal employment sector did not survive the COVID-19 era, however the formal sectors triumphed using technology that allowed employees to work from home. This has negative consequences and huge implications for the families that their breadwinners are not employed. The means of survival for the families without employment is critical for an average family in South Africa (Klasen and Woolard, 2009). Posel and Casale (2021) also adds that the survival tactics were also worsened by the Covid-19 pandemic especially to the poor majority in South Africa.

5.2.5 The associations between food security variables and sociodemographic factors

The associations between food security variables and sociodemographic factors were explored in this study to gain insights into how different factors contribute to food insecurity during the COVID-19 pandemic. Several sociodemographic variables were considered, including age, gender, employment status, and education level.

Regarding age, the results of this study showed that most participants who experienced food insecurity were breadwinners and parents, indicating that they were responsible for providing for their families. This aligns with the study by Wilson, Lee, Fitzgerald, Oosterhoff, Sevi, and Shook (2020), which highlighted the impact of COVID-19-related employment instabilities on family job insecurities.

In terms of employment status, the study found that those working in non-professional industries and informally employed individuals were most affected by food insecurity. These results are consistent with the research conducted by Shammi, Bodrud-Doza, Islam, and Rahman (2020), which emphasised the need to safeguard the needs of vulnerable ultra-poor groups to mitigate socio-economic crises caused by COVID-19.

Furthermore, participants who were formally employed, such as civil sector workers (e.g., police officials, nurses, doctors, and teachers), were better able to support their families despite the disruptions caused by the pandemic. This finding suggests that formal employment provided some level of protection against food insecurity during this crisis. Similar observations were made in the study by Hodder (2020), which indicated that the informal employment sector faced greater challenges during the COVID-19 era, while the formal sectors were able to adapt through remote work arrangements.

Education level, although not explicitly mentioned in the provided excerpt, could potentially be associated with food security. Higher levels of education are often associated with better employment opportunities and income, which could contribute to improved food security. However, without specific information on the relationship between education and food security in this study, further research is needed to explore this association.

It is important to note that these associations between food security variables and sociodemographic factors are influenced by contextual factors and the specific circumstances of the study population. The results from this study align with existing literature, showing similarities in the impact of sociodemographic factors on food security during the COVID-19 pandemic.

In summary, the results suggest that sociodemographic factors such as age, employment status, and education level are associated with food security during the COVID-19 pandemic. The study provides evidence that certain groups, such as informal workers and those in non-professional industries, were more vulnerable to food insecurity. These

results underscore the importance of considering sociodemographic factors when designing interventions and policies aimed at addressing food security challenges during times of crisis.

5.3 SUMMARY

This section provides a synopsis overview of the results of the study.

5.2.1 Summary: Impact of COVID-19 on the availability of food among households of Collins Chabane Municipality in Limpopo, South Africa.

This study was conducted in one of the rural areas of Limpopo Province, Collins Chabane Municipality where it was revealed that most of the participants in this study had no formal employment or source of income that was sufficient to sustain their food securities during Covid-19 pandemic and the restrictions that accompanied the pandemic. The results of this study revealed that COVID-19 had a negative impact towards food securities among households. However, the challenges on food securities that were created by COVID-19 was not experienced the same way among these households. Although most of the participants indicated that they had high challenges to their food securities, there was a few who were not affected by the challenge. Some of the reasons for those who indicated that they were not affected by COVID-19 is that the breadwinners in the families were professionally employed and did not lose their source of income despite them not reporting to work during the initial stages of lockdown restrictions.

5.2.2 Summary: Impact of COVID-19 on the accessibility of food among households of Collins Chabane Municipality in Limpopo, South Africa.

COVID-19 pandemic and the restrictions thereof also showed the existing levels of socio-economic inequalities that exists in South Africa, particularly in the context of this study. Some of the participants did not indicate that they were formally employed but they showed that they never experienced a challenge with food insecurity issues under

COVID-19. This study revealed the difference socio-economic experiences, affordability of basic food and livelihood sustainability of the ordinary South African from the rural setting under COVID-19. COVID-19 disturbed the ecosystem of the food supply chain and attainment of many, especially in the rural areas where not everyone survives with direct purchasing of food in retail shops. People had to adapt to the new norm created by COVID-19 where food has become a top priority commodity that was not only expensive but scarce too.

The RESULTs of this study showed that pandemics such as Covid-19 have devastating implications for the vulnerable population in developing such as South Africa. The pandemic coupled with the socio-economic challenges that the poor majority were already facing. Hence, governments and other related departments such as the Department of Social Security in South Africa could design policy strategies on how to respond to pandemics such as Covid-19 in the event of future occurrences. This will help lessen the impact of such catastrophes to the vulnerable population that have been identified in this study.

5.2.3 Summary: Impact of COVID-19 on the afford of food among households of Collins Chabane Municipality in Limpopo, South Africa.

This study was also set to investigate the affordability patterns of food within households in the selected setting. The questionnaire that was used by the researcher to collect the data, guided by the research objectives, revealed that the affordability patterns of food were extremely low, especially among those that indicated that their sources of livelihood was diminished at the dawn of Covid-19. Apart from the food being out of reach for many participants in this study, the challenges of affording the food were also exacerbated by the fact that the food prices were also fluctuating in responding to the high demands, especially from shops that are individually owned. The problem of affordability was also worsened by the fact that the food was not easy to access because of long queues and the number of food outlets being limited to a select few at the beginning of the pandemic. The results revealed that there was a positive relationship between the affordability of

food and those who indicated that their source of income was not affected by the Covid-19 pandemic, however, these were a select few across the entire study.

5.3 RECOMMENDATIONS

The following recommendations were made based on the results of the study:

5.3.1 Recommendations to the government

The impact of COVID-19 pandemic on the global economy and the general social welfare of people resulted in different research investigating the relationship between COVID-19 and the challenges experienced. If stringent measures such as the lockdown restrictions that reduced access to food, jobs, and any active participation of individuals to sustain their livelihood, the government needs to come up with a contingent plan through policy reforms to cater to the poor and historically disadvantaged people such as those without the source of livelihood.

COVID-19 regulations and restrictions limited the movement of people and practices. However, there were other professions that were special. Small scale agriculture – animal husbandry and crop planting of staple food such as maize – should be considered area of priority since it could be the only means of livelihood for many people in the rural areas. This is likely to lessen the burden on the government initiatives such as the number of families to be considered priority to be provided with food parcels.

5.3.2 Recommendations to the Department of Social Development

There should be synergy between various stakeholder in helping the vulnerable people during pandemic outbreaks in COVID-19. Since the department of Social Work has been a leading partner in providing social service and aid to the poor and vulnerable, the department of Social Work should be the one leading in the channelling of services to those in need. Apart from leading the initiative, the department of Social Work should also assist with identifying key families in need that critically need social welfare, healthcare, and education.

5.3.3 Recommendations to community stakeholders

The results of this study exhibited that there were unique experiences as a result of COVID-19. These unique experiences based on context could help the government to tailor the assistance that is most relevant to the identified category of the population. The literature showed that people experienced different challenges based on context such as the challenge to access healthcare for others, to some it was the challenge to access education, while others experienced food insecurities. Thus, through policy reforms, the government could tailor assistance relevant to these geographical locations and their needs. This is indicative that the universal approach to assist people in need under pandemics such as COVID-19 is problematic in that services will be provided to people who are not in need of them while there are people really in need of the services without getting them. The appropriate channeling of services to the relevant category of people is effective in reaching high levels of satisfaction and content.

5.3.4 Recommendations for further research

COVID-19 pandemic showed that it is difficult for the government to monitor situations carefully during national and international disasters. Further research could attempt policy reforms on disaster management strategies looking at the possible ways or contingent plans on how the government could assist vulnerable people. The poor and those historically disadvantaged were the ones to be affected harshly by COVID-19. It could also be beneficial for further research to investigate how people in the urban areas were affected by COVID-19 compared to those in rural areas. This will assist in showing the nature of intervention relevant for each category of the population during in COVID-19 pandemics. Directly, this same study can be done in other provinces as a way of doing further studies, exploring different perspectives, challenges, and experiences.

5.5 LIMITATIONS OF THE STUDY

Although the population for this study was relevant to inform of the objectives of this stud, the sample remains relevantly small to inform of the boarder decisions on the effect of Covid-19 on food securities. Further research could be conducted that includes different demographic based on race and location, such as urban and rural settings, to identify similarities and differences in the patterns of data that is provided by the respondents. The researcher found it difficult to locate the potential participants in this study. Although the participants that were included in this study were sufficient to inform of the research objectives set, for more convenient research participants, further similar research should not limit to try and gather data from the respondents in their households, they should visit most convenient places such as the shopping malls and even recreational areas where people can be accessed at easy.

5.6 PLAN FOR DISSEMINATION OF RESULTS

The final mini dissertation was submitted to the University of Venda library for reference by future researchers. The final copy of the dissertation will also be submitted to the Royal Council of Mabidi village. The results from the study will be published in peer-reviewed and accredited national and international journals as well as presented at seminars and conferences.

5.6 CONCLUSION

The results of this study were discussed in this chapter, showing how relevant these results are to the previous research. The discussions were further linked to the objectives set for this study. It was evident from the results that COVID-19 challenged most crucial aspects of life. The sources of livelihood for many were diminished and people were put to a test despite government intervention of providing g food parcels. This chapter provided an integrative discussion on the results of this study, providing the conclusive remarks, recommendations and established the areas for further research.

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ANNEXURE 1: INFORMED CONSENT

RESEARCH ETHICS COMMITTEE

UNIVEN Informed Consent

LETTER OF INFORMATION

Title of the Research Study: COVID-19 disease: Impact on food security among rural households of Collins Chabane municipality in Limpopo province, South Africa.

Principal Investigator/s/ researcher : (Mathavha A, student)

Co-Investigator/s/supervisor/s : (Prof Mashau N; Dr Manganye BS, Lecturer)

Brief Introduction and Purpose of the Study: The purpose of the study is to determine and describe the impact of COVID-19 disease on food security among rural households of Collins Chabane municipality in Limpopo province, South Africa.

Outline of the Procedures: The study will use the quantitative data collection method. The researcher will collect the data using the administered questionnaire by the research. The data will be collected through visiting participants at their households. The researcher will translate the questions in the questionnaire and write the responses of the participants who does not know how to read and write English. Each questionnaire will take 20-25 minutes to answer. Only female and male adults that are the permanent residents of Mabidi Village will stand the chance to be included in this study. The data contained in a questionnaire will be loaded into the Statistical Package for Social Sciences (SPSS) software version 25 to be analysed.

Risks or Discomforts to the Participant: there are no risks or discomforts that this research will cause.

Benefits: There are no monetary gains for the participants to participate in this study. Participation in this study will be voluntary. However, the recommendations of this research could be used for future preparation on responding to pandemics such as COVID-19 in terms of food securities from both government and the general citizens.

Reason/s why the Participant May Be Withdrawn from the Study: Participants are not compelled to participate in this study, and they can withdraw from participation at any time. There are no adverse consequences for the participant should they choose to withdraw from participating.

Remuneration: There is not any monetary gains or any other type of remuneration for participants in this study.

Costs of the Study: There are no costs expected to be covered by the participants in this study.

Confidentiality: There are no names or any identifying information that will be required from the participants in this study.

Research-related Injury: There are no research-related injuries anticipated in the data collection procedure in this research. The researcher will allow the respondents to withdraw from the study if the respondent feels they no longer want to participate in the research.

Persons to Contact in the Event of Any Problems or Queries:

Persons to Contact in the Event of Any Problems or Queries: (Dr Mashau N, 015 962 8892) Please contact the researcher (0817625371), my supervisor (Manganye B.S) or the University Research Ethics Committee Secretariat on 015 962 9058. Complaints can

be reported to the Director: Research and Innovation, Prof GE Ekosse on 015 962 8313 or Georges Ivo.Ekosse@univen.ac.za

CONSENT FORM

Statement of Agreement to Participate in the Research Study:

- I Mathavha Aluwani, hereby confirm that I have been informed by the researcher about the nature, conduct, benefits, and risks of this study –
- Research Ethics Clearance Number: ……..
- I have also received, read, and understood the above-written information (Respondent Letter of Information) towards the study.
- I am aware that the results of the study, including personal details towards my sex, age, and date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during this research which may relate to my participation will be made available to me.

Full Name of Participant Date Time Signature

I, …….. …….. ……. …….

(Mathavha Aluwani) here by confirm that the above respondent has been fully informed about the nature, conduct and risks of the above study.

Full Name of Researcher

…… Date…….. Signature……

Full Name of Witness (If applicable)

…….. Date …….. Signature……..

Full Name of Legal Guardian (If applicable)

…… Date…….. Signature……..

Please note the following:

Research details must be provided in a clear, simple and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level- use Flesch Reading Ease Scores on Microsoft Word), selecting of a non-threatening environment for interaction and the availability of peer counseling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the participant e.g., parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g., a wrong date or spelling mistake, a new document has to be completed. The incomplete original document has to be kept in the participant's file and not thrown away, and copies thereof must be issued to the participant.

ANNEXURE 2: RESEARCH INSTRUMENT

RESEARCH INSTRUMENT

SELF-ADMINISTERED QUESTIONNAIRE

Instructions:
Please answer all the questions as honestly as possible. The information collected for this study will be used for academic purposes for this research. You do not need to identify yourself and the information provided will be treated with confidentiality. Where required please indicate your answer with a cross (**X**) in the appropriate box, using a black or a blue ballpoint pen

SECTION A: SOCIO-DEMOGRAPHIC INFORMATION

1. Gender

Male	1	
Female	2	

2. Age range

18 – 30 years old	
31 – 40 years old	
41 – 50 years old	
51 – 60 years old	

3. Marital status

Not yet married	1	

Married	2	
Single	3	
Divorced	4	
Widowed	5	

4. Which ethnic group do you belong to?

Venda	1	
Tsonga	2	
Sepedi	3	
Other, specify	4	

5. Educational level

Primary	1	
Secondary	2	
Tertiary	3	
Never attend	4	

6. How many are you at home?

…….....

7. Who is the breadwinner?

My self	1	
Mother	2	
Father	3	
Grandparents	4	
Sister/brother	5	
Other, specify	6	

8. Employment status of the breadwinner

Unemployed	1	
Employed	2	

SECTION B: IMPACT OF COVID-19 ON THE AVAILABILITY OF FOOD

9. Do you think COVID-19 had reduced the availability of food in your family?

Yes	1	
No	2	
Not sure	3	

10. Do you have enough food for the whole family?

Yes	1	
No	2	
Not sure	3	

11. Did you reduce the way you used to have food because of COVID-19 pandemic?

Agree	1	
Strongly Agree	2	
Disagree	3	
Strongly Disagree	4	

12. We eat the same thing for several days in a row because we only have a few various kinds of food in hand

Agree	1	
Strongly Agree	2	
Disagree	3	
Strongly Disagree	4	

13. I cannot make any food I want, because row materials I bought are ran out and I did not have enough money to buy more.

Yes	1	
No	2	

14. It has become difficult for you do get the food that you used to get because you are no longer working.

Agree	1	
Strongly Agree	2	
Disagree	3	
Strongly Disagree	4	

15. It has occurred that you no longer have enough food because the breadwinner of the family is no longer working.

Agree	1	
Strongly Agree	2	
Disagree	3	
Strongly Disagree	4	

SECTION C: IMPACT OF COVID-19 ON THE ACCESSIBILITY OF FOOD

16. Covid-19 has affected me because (tick all relevant)

I cannot go to work anymore	
I cannot do my personal business anymore	
There is also a shortage in supply of food and water	
Income reduced	
Fewer family members were able to work	
I cannot visit my relatives	
We cannot attend social gatherings	

We cannot take vacations anymore	

17. It has occurred that during initial the COVID-19 lockdown level 1 last year that you had money to buy food, but you could not manage to buy it anywhere.

Agree	1	
Strongly Agree	2	
Disagree	3	
Strongly Disagree	4	

18. It has occurred that when the COVID-19 lockdown began, the food was scarce to get.

Agree	1	
Strongly Agree	2	
Disagree	3	
Strongly Disagree	4	

19. It has occurred that when the covid-19 lockdown began, I stood on the long que to buy food, but I did not get any

Agree	1	
Strongly Agree	2	
Disagree	3	
Strongly Disagree	4	

20. It has occurred that during the initial stages of COVID-19 lockdown you had sometimes bought the food at high prices more than the normal retail prices before COVID-19.

Agree	1	
Strongly Agree	2	
Disagree	3	
Strongly Disagree	4	
Not Sure	5	

SECTION D: IMPACT OF COVID-19 ON THE AFFORDABILITY OF FOOD

21. Do you worry whether your food will run out before you get money to buy more?

Yes	1	
No	2	

22. Do you worry about where the next day's food is going to come from?

Yes	1	
No	2	

23. The food that I bought did not last and I did not have money to buy more.

Yes	1	
No	2	

24. I ran out of the foods that I needed to put together a meal and I did not have money to get more.

Yes	1	
No	2	

25. I cannot afford to eat the way I should, because I do not have enough money.

Yes	1	
No	2	

26. I cannot afford to eat properly, because I cannot afford enough food.

Yes	1	
No	2	

27. I am often hungry, but I do not eat because I cannot afford enough food due to the pandemic.

Yes	1	
No	2	

28. I eat less than I think I should because I do not have enough money for food.

Yes	1	
No	2	

29. I cannot afford to feed my child(ren) the way I think I should.

Yes	1	
No	2	

30. I cannot give a balanced meal because I cannot afford that

Yes	1	
No	2	

31. My child(ren) are not eating enough because I just cannot afford enough food.

Yes	1	
No	2	

32. I know my child(ren) are hungry sometimes, but I just cannot afford more food.

Agree	1	
Strongly Agree	2	
Disagree	3	
Strongly Disagree	4	

33. I made only cheaper foods, and I could not make varied foods, because I did not have enough money

Yes	1	
No	2	

34. It has occurred during the current year that due to the lack of sufficient funds you have reduced or removed meals from your diet

Agree	1	
Strongly Agree	2	
Disagree	3	
Strongly Disagree	4	

35. It has occurred during the current year that you were hungry, but you did not eat because you did not have enough money.

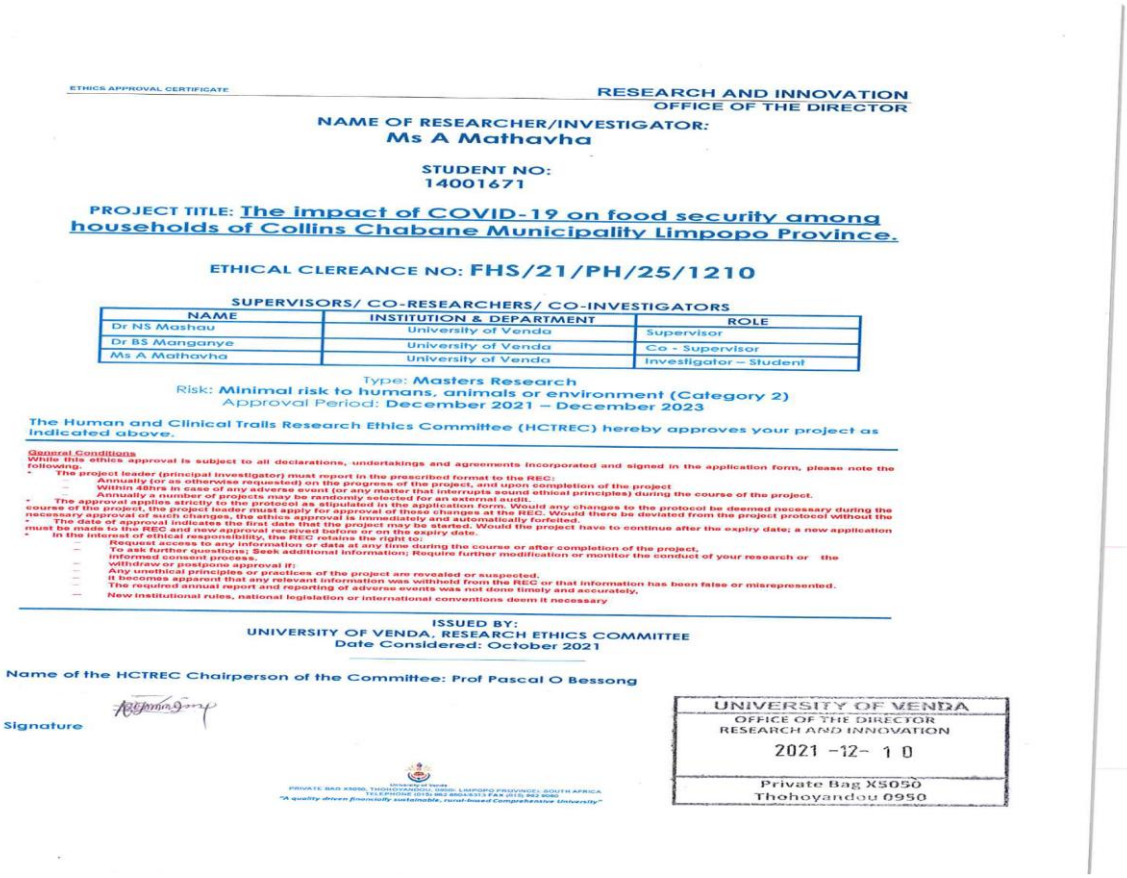
Yes	1	
No	2	

36. It has occurred during the current year that due to the lack of sufficient funds you have reduced from your essential meal

Agree	1	
Strongly Agree	2	
Disagree	3	
Strongly Disagree	4	

THE END….. THANK YOU

ANNEXURE 3: ETHICAL CLEARENCE CERTIFICATE



ETHICS APPROVAL CERTIFICATE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Ms A Mathavha

STUDENT NO:
14001671

PROJECT TITLE: The impact of COVID-19 on food security among households of Collins Chabane Municipality Limpopo Province.

ETHICAL CLEREANCE NO: FHS/21/PH/25/1210

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr NS Mashau	University of Venda	Supervisor
Dr BS Manganye	University of Venda	Co - Supervisor
Ms A Mathavha	University of Venda	Investigator – Student

Type: Masters Research
Risk: Minimal risk to humans, animals or environment (Category 2)
Approval Period: December 2021 – December 2023

The Human and Clinical Trails Research Ethics Committee (HCTREC) hereby approves your project as indicated above.

General Conditions
While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following.

- The project leader (principal investigator) must report in the prescribed format to the REC:
  - Annually (or as otherwise requested) on the progress of the project, and upon completion of the project
  - Within 48hrs in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.
  - Annually a number of projects may be randomly selected for an external audit.
- The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project, the project leader must apply for approval of these changes at the REC. Would there be deviated from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date; a new application must be made to the REC and new approval received before or on the expiry date.
- In the interest of ethical responsibility, the REC retains the right to:
  - Request access to any information or data at any time during the course or after completion of the project,
  - To ask further questions; Seek additional information; Require further modification or monitor the conduct of your research or the informed consent process,
  - withdraw or postpone approval if:
  - Any unethical principles or practices of the project are revealed or suspected,
  - It becomes apparent that any relevant information was withheld from the REC or that information has been false or misrepresented.
  - The required annual report and reporting of adverse events was not done timely and accurately,
  - New institutional rules, national legislation or international conventions deem it necessary

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE
Date Considered: October 2021

Name of the HCTREC Chairperson of the Committee: Prof Pascal O Bessong

Signature

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