Cape Peninsula
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THE EFFECTS OF PIG FARMING ON UNEMPLOYMENT ALLEVIATION IN BUFFALO CITY, EASTERN CAPE

by

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DECLARATION

I, Nosipiwo Mpalala, declare that the contents of this dissertation/thesis represent my own unaided work and that the dissertation/thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

Signed Date

ABSTRACT

South Africa experiences an extreme unemployment and poverty rate. The last two years witnessed an enormous job loss owing to the COVID-19 lockdown regulations. Interventions, support, and economic shifts are required to reduce unemployment, such as pig farming. The essence of this research was to examine pig farming's effects on unemployment alleviation in Buffalo City, Eastern Cape. This research aimed to advance knowledge on small-scale pig farming to enable job creation while encouraging individuals to farm. The research objectives and questions were achieved by adopting a mixed-method approach. The area of study is Buffalo City rural communities in the Eastern Cape. For this study, unemployed individuals were selected to better understand the effect of unemployment in South Africa. Data were collected through interviews and questionnaires with the aid of field workers. The study revealed that farming activities provide a source of income, with several households depending on it as a livelihood. The collective advantage among pig farmers is the availability of space for farming activities. Most farmers are engaging in pig farming as a necessity. The government has two crucial functions in the sustainability of pig farming activities, such as to create and enable an environment for the business to thrive.

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DEDICATION

For my late mother, Ms Mpalala-Mafani. By action, she inspired me to never give up on my goals. She made me reach levels I have never imagined. *Radebe, Bhungane, Mthimkhulu, Makhulukhulu, Zikode, Mashwabada inkomo nempondo zayo, izinzipho zimnyama ngokuqhwayana*. May your beautiful soul continue to rest in peace, *mama wam.*

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ABBREVIATIONS AND ACRONYMS

AADP	African Agricultural Development Programme
APES	Academic and Professional Editing Services
ASF	African swine fever
BC	Buffalo City
BCM	Buffalo City Municipality
CASP	Comprehensive Agricultural Support Programme
CWE	Carcass-Weight Equivalent (measurement of livestock production)
DAFF	Department of Agriculture Forestry and Fisheries
DALRRD	Department of Agriculture, Land Reform and Rural Development
EC	Eastern Cape
FAO	Food and Agriculture Organization
FFS	Farmer Field Schools
IBM	International Business Machines
SADC	Southern African Development Community
SAPPO	South African Pork Producers' Organisation
STATS SA	Statistic South Africa
TAP	Technical Assistance Programme
VAT	Value-Added Tax

GLOSSARY

Unemployment	Unemployed includes all persons between 15 and 65 not working but actively looking for work
Poverty	The inability of individuals or households to attain sufficient resources to satisfy a socially acceptable minimum standard of living

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CHAPTER 1:
INTRODUCTION

1.1 Introduction

It would be ideal for South Africa if “the rights of all people, the democratic values of human dignity, equality and freedom” are adhered to (The Bill of Rights, 1996). This remains a constant challenge; the country experiences a high unemployment and poverty rate. Published poverty levels and trends by Stats SA 2017 display a significant rise in the poverty level of South Africa, emphasising the significant rise in 2015. This level fluctuates continuously, “approximately 55.5 percent (30.3 million people) of the population is living in poverty at the national upper poverty line (-ZAR 992) while a total of 13.8 million people (25 percent) are experiencing food poverty” (World Bank, 2022). According to a feature statement by the World Bank (2016), economic growth is required to improve income-generating opportunities of the underprivileged, such as raising the value of the agricultural products produced by the poor or generating better jobs; therefore, the focused to ensure the viability of establishing small-scale pig farming in Buffalo City (BC) in the Eastern Cape (EC) to ascertain its effect on poverty reduction.

The poverty concern could be provided significant importance because South Africa is among the countries with the highest unemployment rates (Ranchhod, 2019). Pig farming could produce more jobs in South Africa because of its significance in creating job opportunities and reducing unemployment in the country. This is considered in the study by Antwi and Seahlodi (2011), suggesting that the agriculture sector is an integral part of the economy of South Africa, and the emergence of pig farming would create vast employment opportunities in the country. The elimination technique of unemployment through farming is considered because South Africans are highly engaged in farming activities, supporting pig farming development. Pig farming is observed as paramount significance because the pig farming technique contains critical importance, as Antwi and Seahlodi (2011) revealed; pig farming produces a reasonable amount of employment in various cities of South Africa. Small-scale pig farming directed employment opportunities in the country.

1.2 Problem statement

Unemployment has been an ongoing challenge for years; in the second quarter of 2022 (Stats SA, 2022), it was standing at 33.9% with continuously fluctuating levels. Steenkamp (2015:6) confirms that unemployment remains high; several people still lack necessities, such as food and shelter. Ferreira (2016:809) explains that the reasons for South Africa's high

unemployment rate are many and diverse. Some areas of the country, such as the EC, are surrounded by under-used land, which can be used for crop or animal farming, including pig farming; however, the region has an extreme poverty and unemployment rate. In the second quarter of 2022, the unemployment rate was at 33.9%; the highest unemployment rate during this period was recorded in the EC at 42.8% (Stats SA, 2022).

Several South Africans cannot fulfil a significant function in society; they contribute less productively to the economy and cannot satisfy their basic needs because of unemployment. The extreme unemployment and poverty rate also contributes destructively to revenue collection; fewer people return personal income tax, with more people dependent on social grants. “Revenue collection, on which government depends to fund social and economic spending programmes, fell short of projections by R48.2 billion in 2017/18” (Stats SA, 2018).

On 1 April 2018, the value-added tax (VAT) was increased from 14% to 15% to meet new commitments while preventing further erosion of the public finances (Stats SA, 2018). Job creation is, therefore, vital for more people to become self-sufficient. “Jobs are the cornerstone of economic and social development” (World Bank, 2012). The government and all segments of society need to collaborate to discuss this challenge to reduce South Africa's high unemployment rate.

Considering the recent released crime statistics, unemployment is a challenge. “Housebreaking, theft of motor vehicles, murder and consumer fraud all increased between 2017/18 and 2018/19” (Stats SA, 2019). Ebenezer and Abbyssinia (2018:236) correctly perceive that the country endures severe poverty, inequality, unemployment, and food security despite government intervention and social security programmes. Unemployment is one of the significant factors contributing to poverty. A study by Ramphoma (2014:65) confirmed that poverty relates to elevated unemployment levels. “Unemployment inhibits the economic growth of a nation and contributes to the problem of ongoing poverty, which cannot be lessened without that growth”. (Grosso & Smith, 2012: 79).

Varied and multiple interventions, support, and economic shifts are required to reduce unemployment levels; therefore, to contribute towards reducing unemployment, the focus of this study was to ascertain the viability of establishing small-scale pig farming in BC in the EC.

1.3 Rationale and significance of the study

This research aimed to advance knowledge on small-scale pig farming to enable job creation while encouraging individuals to farm. It emphasises certain aspects of this industry while

informing better decision-making. Individuals desiring to venture into a business will benefit from this study through unearthing opportunities. Lastly, it can aid the field of farming as well as policy makers, in moving the discussion forward and serve as a guide in policy development and relevance in pig farming.

1.4 Aim

The study aimed to explore the viability of extending pig farm programmes in BC in the EC.

1.5 Research objectives

1. To explore the effects of pig farming on poverty alleviation in Buffalo City, Eastern Cape
2. To determine the influence of government programmes on pig farming in the community
3. To determine the constraints that may hinder people from engaging in pig farming despite the abundant farmland in Buffalo City
4. To identify programmes aimed at encouraging pig farming and other livestock farming in Buffalo City
5. To identify development opportunities in pig farming programmes in Buffalo City
6. To ascertain government policies that can be introduced to encourage pig farming

1.6 Research questions

1. What are the effects of pig farming on poverty alleviation in Buffalo City, Eastern Cape?
2. What influence do government programmes have on pig farming in the community?
3. What are the constraints that may hinder individuals from engaging in pig farming despite the abundant farmland in Buffalo City?
4. Which programmes are aimed at encouraging pig and other livestock farming in Buffalo City?
5. What are the development opportunities in pig farming programmes in Buffalo City?
6. Which government policies can be introduced to encourage pig farming?

1.7 Research paradigm

Rehman and Alharthi (2016:51) defined a paradigm as a basic belief system and theoretical framework, including assumptions about 1) ontology, 2) epistemology, 3) methodology, and 4) method. It is an individual's way of understanding and studying the reality of the world. The pragmatism paradigm is most suitable for this research. Wahyuni (2012:71) remarks, "the emphasis is on what works best to address the research problem at hand".

1.8 Approach and design

This study employed a mixed-method research approach, defined by Molina-Azorin as “the combination and integration of qualitative and quantitative methods in the same study” (2016:38). According to Creswell and Clark (2017), combining quantitative and qualitative approaches yields a better understanding of research problems than either approach alone.

1.9 Data collection methods

This study employed interviews and questionnaires to collect data. An interview is a “qualitative research method relying on directing questions to collect data. Interviews involve two or more people—one of whom is the interviewer asking the questions” (George, 2022).

1.10 Demarcation/delimitation of the study

The area of study is BC rural communities in the EC. According to the 2016 community survey, Buffalo City Municipality (BCM) is in the EC with an area density of 2 750km² and a total population of 834 997.

1.11 Literature review

The following literature review describes the employment opportunities that can be provided to underdeveloped districts in the EC, South Africa. This literature review emphasises the employment opportunities, such as, pig farming to assist those in undeveloped districts in finding employment and combating poverty.

1.11.1 Poverty prevalence

Recent statistics of the World Bank (2018) emphasise that in 2015, 10% of the world's total population lived on less than US $1.90 a day. In comparison with the statistics of 2013, a decline in the rate of 1% is observed; 1.1 billion people globally live in extreme poverty. It was estimated that in 1990, 1.85 billion were surrounded by prevalent poverty; however, the estimates for 2015 indicate a decline with the rate of 736 million people living in poverty. This suggests a significant development to overcome the increasing poverty rate.

According to Stats SA, a significant rise exists at the poverty level in South Africa. The recent report “Poverty Trends in South Africa” emphasised an observed decline in the poverty level between 2006 to 2015; however, the poverty level raised significantly in 2015; until now, this level fluctuates continuously with the region because of government’s lack of investment and

development (Stats SA, 2017). As stated by Gcumisa et al. (2016:616), social grants are one of the main social networks by the government of South Africa, aimed at alleviating poverty. Social grants are a large part of the income for several South African households. Salaries or wages are the second sources of income at 30%, crop production at 12.7%, and livestock production contributes 10% of South African household income.

1.11.2 Importance of employment to overcome poverty

Sekhampu (2013:150) contends that widespread poverty is among the most challenging concerns globally. The fundamental causes and issues need to be identified to overcome poverty. Several issues and causes are discussed in prior studies, encouraging poverty to prevail. These concerns include low income, less employment, and less development as apparent causes driving poverty. Ramukumba (2014:26) remarks that inadequate employment is the most significant challenge to overcome in poverty. According to (Buerger 2012:570), employment is one of the most effective ways to combat poverty. Employment opportunities in small or underdeveloped districts lack large volumes of employment opportunities for their citizens. Such regions lag in development and investment, providing employment opportunities. Another reason is that such regions are often neglected (Teschner, 2012:498); therefore, only a few of those living in extreme poverty find local employment or establish small businesses. The most observed occupation among such people is farming, managing cattle, and other small labour occupations.

1.11.3 Pig farming programmes for small districts

Pig farming is not a new industry, Patra et al. (2014:9) contend that the emergence of pig farming is mainly because of the high demand for pig meat and other benefits. Pig farming involves developing livestock pigs; they are bred and grown till they reached the required weight for slaughtering. A significant advancement can be observed in this sector, reflecting how important and efficient pig farming became, with an increasing pig product demand. Insignificant development in this sector is presented in small districts; however, the emergence of pig farming programmes is essential in providing employment opportunities for locals (Ha, 2016:40).

Most pig farms are familiar with the conventional methods of feeding, growing, and caring for the livestock, presenting employment opportunities. The sector is experiencing further advancements. This implies that even though the sector within the district is being neglected

and providing inadequate growth opportunities, pig farming remains a significant source of employment for the people in this area of the country.

1.11.4 Growth opportunities for pig farming programmes

The pig farming growth is justifiable for several reasons. The sector received considerable attention in recent years while presenting employment opportunities for the locals. Most countries' regulatory authorities, such as health and safety and the livestock sector emphasised the improved standards (Thomson et al., 2013:498). This forced farms to take significant measures to further advancements within the sector, with a significant employment generation opportunity for the locals, allowing them to institute farming. The government sector focused on assisting local farmers in awareness and training while funding further growth of the sector (Farmer's Weekly, 2016).

1.11.5 Sustainable resources for pig farming programmes

According to Aarestrup (2012:465), sustainable farming refers to successful farming. It has become essential for farmers to pursue sustainable practices, enabling long-term benefits and sustainability. The pig farmers need to meet the supply and demand with economical and efficient resources. Manure and emission management has been a significant challenge for pig farmers. Efficient and sustainable manure management can enable farmers to recycle the manure for fertilisers, useful in producing crops; these crops can be used to feed the pigs.

1.11.6 Overview of pig farming programmes in the Eastern Cape

The pork industry of South Africa is small, with the registration of only 243 commercial farmers. An estimation of small-scale farmers farming in small districts and others is 1500 to 3000. The South African pork industry produces only 0.5% of pork globally. This is despite the favourable geographical location and atmosphere for the growth of pigs. This signifies that the sector needs proper attention and pig farming programmes (Farmer's Weekly, 2016). The EC is renowned for its pig farms because of its suitability of the landscape, comprising mountainous regions and forests support a pig farming environment.

1.12 Ethical consideration

Participants were informed of the reasons for the study while explaining the interview process. Written consents were obtained from potential participants. They were informed that they can withdraw from the research at any stage. Before completing the questionnaires, participants

were notified of their rights. Individuals were well-informed that all collected data are confidential and their details will not be divulged. No animals were used during this research.

1.13 Study outline

The study comprises the following five chapters:

Chapter 1:
INTRODUCTION

This chapter introduces the research, the problem statement, and the study objectives.

Chapter 2:
LITERATURE REVIEW

This chapter comprises a detailed presentation of the literature review.

Chapter 3:
RESEARCH METHODOLOGY AND DESIGN

The research methods and design used to conduct this study are summarised in this chapter.

Chapter 4:
DATA PRESENTATION AND ANALYSIS

The presentation of the results of the study is included in Chapter 4.

Chapter 5:
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter 5 is the final chapter, presenting the conclusion, findings, and recommendations. This chapter is followed by a list of references used in this study.

CHAPTER 2:
LITERATURE REVIEW

2.1 Introduction

This chapter provides a critical assessment and discussion of the topic while acknowledging other researchers. It explores the effects of pig farming on unemployment alleviation in BC, EC. The literature review determines the influence of government programmes on pig farming, ascertains the constraints that may hinder pig farming engagement despite the abundant farmland, and investigates if programmes are aimed at encouraging pig and other livestock farming in BC. The literature review identifies development opportunities in pig farming programmes and government policies that can be introduced as encouragement.

2.2 Theoretical framework

Several authors defined a theoretical framework; Adom et al. (2018:6) define it as a framework based on an existing theory in a research area, reflecting the hypothesis of a study. “It serves as the guide on which to build and support your study, and also provides the structure to define how you will philosophically, epistemologically, methodologically, and analytically approach the dissertation as a whole” (Grant & Asanloo, 2015:12). The theoretical framework comprises the chosen theory/theories, supporting an understanding and intention to research a topic. Unemployment and poverty have undesired consequences, harming several South Africans and, therefore, causing social problems. This research specifies two sociological theories, discussed in the following sections.

2.2.1 The structural functionalism theory

According to Gomez-Diago (2019:658), functionalism is a theoretical perspective focusing on the functions of social structures, such as institutions, hierarchies, and societal norms. In this theory, functionality refers to how an activity assists or interrupts system maintenance. Upen (2017) explains that functionalism demonstrates that all aspects of society—good or bad, is essential to its survival; therefore, these aspects are essential in stabilising society and maintaining social order. Hegde (2020) remarks that the developer of this theory is Emile Durkheim, who believed that, in a functionalist society, everyone had a function and a purpose; the division of labour always clarified everyone's responsibility.

2.2.2 The conflict theory

“Conflict theory is the sociological theory that looks at society concerning a power struggle between groups within society over limited resources, under a post-industrialised capitalist society. These resources are the modes of production” (Hayes, 2022). The conflict theory contends that society is always in conflict because of endless competition for finite resources. This theory implies that those who own wealth and resources protect and store those them, while those who do not, do what they can to protect them. Hegde (2020) suggests that Karl Marx’s social theory focused on the conflicts arising among classes within society. Marx explained conflicts between the lower class and the upper class. Both theories relate to this study as unemployment and poverty are social concerns, where government and citizens have a function.

2.3 Pig farming in South Africa

Pork remains one of the smallest businesses in the general agricultural sector of South Africa, contributing 2.1%. Pig farming is crucial to food security and poverty reduction. In the last decade, the mean gross value of pig farming in South Africa was Rands 3.5B (billion) per annum (the Department of Agriculture, Forestry and Fisheries [DAFF], 2017). The main pig breeds in South Africa are the Kolbroek, Landrace, Large White, and crossbreeds (Epol, 2019). When evaluating the reasons for pig farming indicates that among several South Africans in pig farming, 63% are reared for domestic consumption; 33% are reared for income alone and to add to consumption. South Africa registered a steady increase in pork contribution to the gross national value of agriculture production between 2006/07 and 2015/16; this is mainly because of price increases and intensified pork consumption (DAFF 2017:3).

The pork industry in South Africa remains small, with 243 registered commercial pig farmers that own 110400 sows. An accurate figure of small farmers remains unknown, yet estimated between 1500 and 3000, owning to a projected 16000 sows and an average of five to 50 sow units. The pork industry of South Africa contributes below 0.5% to global total pork production, slaughtering 2.8 million pigs annually. South Africa's Department of Agriculture, Forestry and Fisheries confirm 19 stud breeders and 400 commercial pig farmers in South Africa (DAFF, 2017:4).

Mugido (2017:2) remarks that for the last 10 years, pork production in South Africa increased at a 3.5% average rate of growth per annum owing to an increased demand from consumers. For the last decade, South Africa registered a 2.2% increase in pigs slaughtered annually,

suggesting slaughtering of heftier pigs. The post estimates of pork production follow the tendency in 2017/2018, increasing to about 3% annually, reaching 258000 tonnes in 2018 and 250000 tonnes in 2017. The resident bumper corn harvest of 16 million tonnes is the reason for the production growth, which leads to decreased feed prices and improved pork production and profitability.

Attributable to the increased lamb and beef prices, a growing demand exists in South Africa for pork products. Post approximations indicate an increase in South Africa's pork imports to slightly above 2.5% annually, reaching 33000 tonnes carcass-weight equivalent (CWE) in 2018 and 32000 tonnes CWE in 2017 (DAFF, 2018:4). Estimations are that South Africa's pork exports shall remain constant at 14000 tonnes CWE in 2019, “pork exports in South Africa represent 6% of native pork production” (Mugido, 2017:3).

Pig farming remains distributed in South Africa's nine provinces, with the highest concentrations in Limpopo, North West, Western Cape, KwaZulu-Natal, and Gauteng, partially owing to religious and cultural preferences and the accessibility to feedstuffs (the Department of Agriculture, Forestry and Fisheries,2017:3). Distributing pigs per province is illustrated in Figure 2.1. BC district municipality recorded a value of R222 000 in pork exports in 2016, contributing 2% to the national exports' income. BC concentrates on pig farmers, also called emerging small-scale farmers (the Department of Agriculture, Forestry and Fisheries, 2017:13).

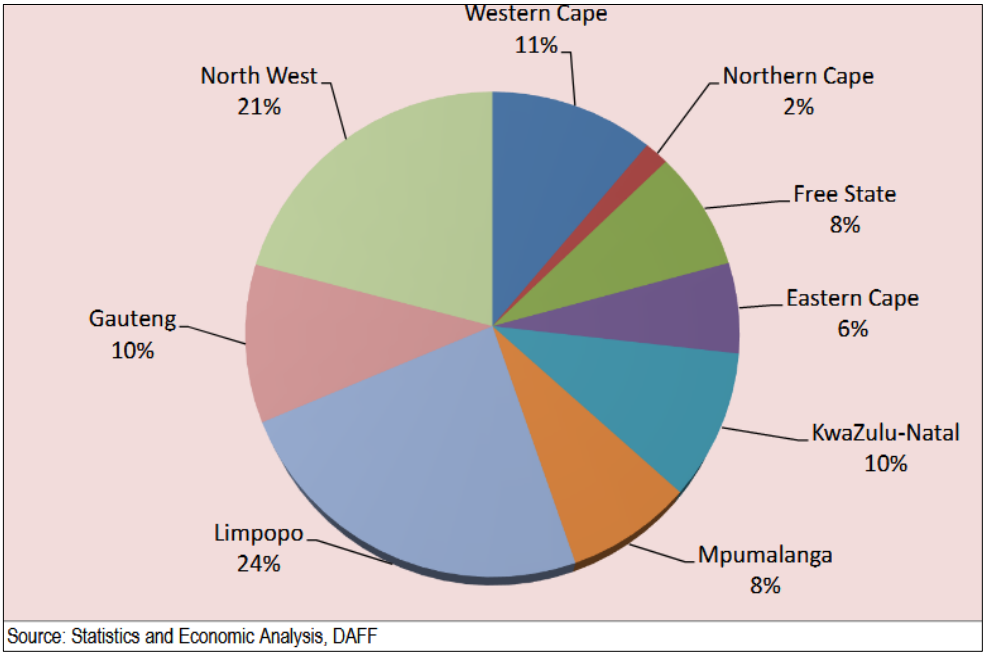

Figure 2.1: Pig distribution per province in 2016

Buffalo City Municipality is in the EC, South Africa. The municipality registers a 35.1% rate of unemployment and a 0.69% rate of population growth. The youth unemployment rate in the municipality is 45.1%. With only 67.6% of the working age, the dependency ratio in BC is 47.9%. BC communal areas remain characterised by low agricultural productivity, overpopulation, unemployment, and underdevelopment, escorted by high illiteracy rates, a trend that has occasioned poverty and extreme reliance on remittances (Statistics South Africa, 2019).

According to Gcumisa et al. (2016:616), social grants are one of the leading social networks used by South Africa's government to alleviate poverty. Social grants are a large part of the income for several South African households. Salaries or wages are the second sources of income at 30%, crop production at 12.7%, while livestock production contributes to 10% of South African household income. Pension pay-outs are the leading source of income for pig farmers. The smallholder or small-scale pig farmers contribute to the total pig herds in South Africa, remaining challenged by factors, such as a lack of access to better markets and breeding stock, low feed qualities, deficient breeding, and veterinary services (Matabane et al., 2015:20). The main limitations to optimal productivity in South Africa's pig farming include housing, genetics, investment cost, economies of scale, marketing, nutrition, poor biosecurity, systems of land tenure and environmental concerns (Munzhelele et al.,2017:63).

2.4 The effects of pig farming on poverty alleviation in South Africa

The Food and Agriculture Organization [FAO] (2015) remarks that poverty rates remain high in several countries, especially in rural areas. FAO (2015) reports that 77% of the deprived rural communities globally rely on farming for their livelihood. An increasing number of studies established that agriculture significantly reduces poverty, considering that most poor people live in rural areas and depend mainly on agriculture. Katagame et al. (2017:12) concludes that most small-scale farmers could increase their education levels and financial authority attributable to pig farming. Accordingly, “most of the farming products are for the consumption of the household or even converted to money for family maintenance purposes” (Munzhelele et al., 2016:1).

Pig farming contributes to improving the livelihoods of small-scale farmers. Katagame et al. (2017:12) conclude that most small-scale farmers have increased their education levels and financial authority attributable to pig farming. Commercial pig farming and pork export in municipalities have improved the employment status (DAFF, 2017:6). Today, pig farming has offered jobs to people engaged in the line and systems of pork production, the pig farming

educationalists, feed production businesses, transport companies, and marketing. Pigs have high efficiency in feed alteration, short gestation, and producing huge offspring. The rural and small-scale pig farmers consider farming pigs an avenue for job creation among villagers.

Ryan (2018) contends that pig production and farming is now a viable system of livestock, providing meat for a balanced household diet, sale, and consumption, and poverty reduction. Access to formal and external markets is an influential factor in the predomination of pig farming. Pig farming is no longer a source of income but a form of investment, while reducing socio-financial risks, providing protein to household members and manure to crop fertilisers (Russo & Von Blottnitz, 2017:467). In the rest of the nations, manure from the pigs is used in fuel processing, methane production, stoves, and feeding fish (Msibi & Kornelius, 2017:13). With the frequent load-shedding and high electricity price in South Africa, using methane from pig waste assists the nation in decreasing the burden on the electricity grip.

Munzhelele et al. (2017:63) remark that pig farming offers food security for disadvantaged groups. Smallholder pig farming is a way for bettering social security for deprived households, mainly income-generating. Food security means the capability of a person to access adequate food (Schodl et al., 2017:33). Matabane et al. (2015:19) remark that pig production is a vital element for improving the uncertainty of household food and poverty reduction in poor countryside areas; more particularly pig farming owing to easy rearing, availability of materials, and feeding.

2.5 Programmes encouraging pig farming in South Africa

The South African Pork Producers' Organisation (SAPPO) is one of the main programmes for pig farmers—a mouthpiece for all pork producers. SAPPO comprises five local establishments, including, Transvaal Pork Producers' Organisation, Cape Pork Producers' Association, KwaZulu-Natal Pork Producers' Organisation, Free State Pork Producers' Organisation, and the Eastern Cape Pork Producers' Association. SAPPO liaises with government, sectoral institutions, meat industry performers, and international interest groups, to facilitate, represent, and support all pig farmers in South Africa in their pursuit of sustainability and profitability. This is an intensive and highly specialised form of farming; therefore, the organisation believes that commercial pork producers should assist developing pig farmers in becoming sustainable producers. SAPPO mentors, trains, manages, and coordinates emerging projects of pig farmers countrywide (SAPPO, 2019).

The SA Pork Academies is another programme offering practical pig production training. For instance, the South Africa Pork Baynesfield Academy focuses on developing and educating pig farmers, extension officials, ambitious developing pig farmers, animal health technicians or other individuals interested in pig farming. AgriSETA and the National Certificate accredit all unit standards in such academies: Animal Production – NQF level 1 (Baynesfield Estate Country, 2019).

The South African Government and the FAO-developed and established extension services programmes in South Africa. These programmes include farmer field schools (FFS) for livestock and provide successful knowledge transfer on production matters (FAO, 2019). The FAO-developed method is founded on the learning-by-doing notion where the smallholder pig farmers learn directly from field experiences. Extension entails combining production skills and knowledge with some training in business skills and marketing. Sustainable enterprises only prosper when there is a pig market and if the smallholder farmers have marketing knowledge, understand local markets, or can trade their products. Extension service workers support smallholder pig farmers by ascertaining credit availability, the challenges and opportunities in South Africa's pig and linked sectors, marketing developments, input feed supply, and encouraging associations of pig farmers (FAO, 2019).

The South African Government developed and implemented several agricultural programmes, such as the Comprehensive Agricultural Support Programme (CASP), which came into effect in 2004. This project falls within the mandate of the Department of Agriculture, Forestry and Fisheries. This programme aims to provide post-settlement support to the targeted beneficiaries of land reform and other producers with acquired land through private means (DAFF 2004). The programme targets “the hungry, subsistence and household food producers, farmers, and agricultural macro-systems within the consumer environment”. The agricultural sector is crucial to rural development and contributes to any initiative to alleviate financial conditions. Administrative procedures are the challenge to government programmes and this may discourage several from pursuing the support.

The African Agricultural Development Programme (AADP) is also a government initiative, established as a technical assistance programme to contribute to regional stability and the sustainable development of African economies. The Technical Assistance Programme (TAP) is an essential enabler of regional development in the Southern African Development Community (SADC), with potential long-term benefits for South Africa. Policies define limits or boundaries and articulate narrower goals than strategic objectives (Agriculture, Land Reform and Rural Development n.d.)

2.6 Government policies encouraging pig farming in South Africa

2.6.1 Grants and assistance

Munzhelele et al. (2017:65) remark that one of the needed government policies is grants and assistance by government alongside pig farming management and production training. The government must pass policies for the pig farmers to obtain government support; the support must be backed up with training, optimising the received assistance. Such policy will help minimise minor difficulties experienced in pig farming, improve pig administration, and improve profitability for rural or small-scale pig farmers. The South African Government should facilitate the farmers' access to a reliable source of funding to acquire a more extensive and efficient production infrastructure for larger breeding herds through the Department of Agriculture. The national and municipal governments in South Africa must consider tax discounts or reductions on feed products for rural or small-scale pig farmers (Munzhelele et al., 2016:7).

2.6.2 Establishing breeding institutions

Various pig farmers in South Africa participate in dangerous behaviours, including borrowing boars from the auction, free-range sourced boars or untested boars from relatives and neighbours (Munzhelele et al., 2017:67). Other Pig farmers in South Africa “often settle for lower quality boars sourced from auctions” (Munzhelele et al., 2016:8). Limited pig farmers purchase from recognised breeding projects or breeders. The dwindling numbers of piglets for each sow annually and poor conditions of the pig body remain linked to weak breeding policies (Van Marle-Köster & Visser, 2018:813). The government must establish and implement good breeding programmes that enhance better genetic possibilities among pig farms. (Ibeagha-Awemu et al., 2019:15).

These breeding, research and development institutions will help offer the pig farmers improved breeds and low costs than the current practice where the rural farmers are breeding out low-quality boars. Participation of farmers in the identification of pig genotypes that have preferred traits is necessary for sustainable conservation and breeding programmes in systems of communal production (Madzimure et al., 2015:826). The South African Government must consider establishing institutions for breeding boars in all municipalities (Ibeagha-Awemu et al., 2019:15). The current input systems negate the advantages of government programmes. A need exists to revise current farming models to facilitate the easy intervention of government presenting pig farming as more appealing to rural farmers.

2.6.3 Information and technology transfer

According to Gcumisa et al. (2016:619), government must focus on transferring information and technology to enable farmers to improve pig management. The municipalities' Department of Agriculture needs to offer subsidies to smallholder pig farmers on feeds and establish cooperatives to permit easy acquisition of medications and feeds in bulk. Such a policy would enable pig farmers to benefit from bulk discounts. Agricultural authorities in South Africa must help farmers develop cooperatives and community self-help groups. The cooperatives will have the advantage of bulk feed purchase with the benefits of discounts and economies of scale, reduced tariffs on transport through wholesale transport, and better-negotiating powers.

2.6.4 Health management policies and biosecurity

The government should enact or pass health management policies and laws on pig farming (Khwidzhili & Worth, 2017:85). A need exists for intervention from the Department of Agriculture, Land Reform and Rural Development (DALRRD). For instance, DALRRD government professionals must continue to offer free consultations to rural farmers around South Africa's municipalities. Petrus et al. (2011) concluded that vaccination lack of knowledge was observed among several farmers. Pigs are susceptible to various diseases and infections; therefore, reliable health care and veterinary services are essential. Basic knowledge of major diseases becomes compulsory; this enables early identification and control.

Roelofse (2013:31) mentions that small-scale farmers lack knowledge of biosecurity issues Mathole et al. (2017:220) affirm that species livestock in rural areas is held as mixed flocks with inadequate biosecurity. Mokoele et al. (2014:7) suggest that production-limiting diseases, respiratory complexes, and lameness-associated problems are the main concerns. Muhanguzi et al. (2012:449) maintain that “parasites and diseases ranging from helminths to highly contagious and infectious diseases such as African swine fever continue to devastate the pig industry”; therefore, vaccinations and other treatment programmes can improve care for pigs, ensuring health and mortality; however, vaccinations and medicines can be costly. DAFF (2013) recommends practising good biosecurity; this assists with preventing and spreading diseases on farms while lowering disease treatment costs. Regular and thorough cleaning of pig housing is advisable to reduce the risk of disease outbreaks. Controlled pig movement is good for managing disease, while a decent housing system prevents pathogens build-up linked to muddy rural environments (Alarcón et al., 2021:3).

2.6.5 Market and price regulation

The government needs policies on the pork market and price regulation. The rural or small-scale farmers need the government's protection from large-scale commercial pig farmers with domestic and export markets for pork products (Venter, 2019:14). The government must curb any price inflations and offer a fair market for all pig farmers. For instance, Lowveld remains in the redline zone where pig farmers are forbidden from retailing their products and pigs in other regions as a way of disease control (Mendelson et al., 2018:294). Such policies and systems are advantageous to pig farmers, since no transport costs and pig condemnation prevail in the region. Midveld and Highveld accommodate crucial auction areas, indicating a market preference for the pigs for farmers to emerge with easy market access (Sojl et al., 2015:277). Elias et al. (2016:50) suggest the government should establish efficient and effective policies on agricultural quality extension services for farmers—mainly pig marketing—marketing information and production services.

2.6.6 Housing standards and policies

According to bokoh et al. (2017:65), the South African Government needs to pass standards on housing systems for pigs. Pig housing provides an environment to enable the animal to breed or grow most favourably. Roelofse (2013:31) mentions that “profitable pig farming requires suitable housing for each of the production stages” pigs at various stages of growth require diverse temperatures. Good infrastructure requires funds. Manchidi (2009) reveals that housing pigs in various production stages holds challenges. It causes frequent fights during feeding as pigs compete for feed and water; this disadvantages the younger pigs and causes insufficient nutrition. Injuries and wounds sustained during these fights have become a potential source of infection of various diseases.

Last, when a boar and sore are housed together for extended periods, it adversely affects mating; the boar's libido drops owing to exhaustion (Matabane et al., 2015). Pig farming in South Africa attracts disadvantaged community members, including using inexpensive local materials to design pig pens and reduced housing costs for the livestock. Good policies on housing standards would protect the pigs from stress, diseases that cause some slow growth, and unnecessary deaths (Matabane et al., 2015:21).

2.6.7 Pig waste management policies

The influence of pig manure on the environment is one of the main challenges for the pig farming industry. A need exists for sustainable development policies in the industry because the higher the pig manure, the higher the effluents and serious influence on the environment (Ngwabie et al., 2018:36). Pig manure pollutes the soil, water, and air. Proper pig waste management policies help in fertiliser management, provision of nutrients to crops, and improvement of soil properties (Molina-Moreno et al., 2017:4).

2.7 Government programmes influence pig farming in South Africa

The leading influence of government programmes on pig farming in South Africa is the enabling commercial environment, assisting pig farmers and suppliers of input, access to required items, including medicines, feed, and processing and slaughtering equipment. Government programmes, such as subsidisation, enabled pig farmers to local access of the needed items, such as feed (Antwi & Seahlodi, 2011:41). Suppliers are inspired to serve large scale (industrialised) and small-scale farmers. The formation of a national pork association (SAPPO) resulted in increased participation for varied stakeholders and assurance of influence in decision-making processes within the pig sector. SAPPO's composition represents stakeholders from all trade and production scales—mainly women.

The focus on gender concerns in promoting smallholder farmer organisations has increased pig farming participation. Though social and cultural barriers still affect women's participation in business matters or pig farming, women are now responsible for employment and pork production. Women groups provide numerous benefits, assisting them in improving production and marketing knowledge including more youth employment (SAPPO,2019). Government programmes on market regulation provide a levelled field, supporting pig farmers' establishments. Pork export associations have increased market access for smallholder pig farmers.

Small-scale farmers can easily enter formal or official supply chains. Large commercial pig farmers aiming for export and urban markets have open windows of pork quality and incorporation in their chain of marketing (Matabane et al., 2015:21). Government programmes on pork standards, observed native breeds meeting the needed criteria for international export and inclusion in the marketing chain on a good foundation. With increased access to high-value inputs and feeds, access to the needed genetic material became less demanding for small-scale pork farmers.

2.8 The constraints hindering pig farming engagement despite the abundant farmland in Buffalo City

Mokoele et al. (2014) conclude that nutrition and feeding are vital in animal production and health. Pigs, therefore, require a healthy and balanced feed with nutrients; this is important for their production and reproduction. Matabane et al. (2015:22) identified feed as the most critical pig farming input; therefore, a shortage or high prices harm the farmer. According to Lapar and Staal (2010:2), feed amounts to 64-96% of production cost in small-scale pig farming. The high price of grain cause most small-scale farmers to use a combination of purchased feed and own produced feed, although the Animal Diseases Act (Act 35 of 1984) prohibits swill feeding in South Africa unless the swill is boiled for at least an hour or sterilised. The slaughtering of swill-fed pigs is not allowed in South African abattoirs, limiting their trade and profitability of such products.

Kitchen pig food may also prove to be harmful to the livestock, resulting in botulism and other animal diseases (Coleman, 2018:39). Owing to financial constraints, Mokoele et al., 2014:8 claim that emerging small-scale pig farmers are prone to swill feed their pigs with a potential outcome of disease spread. Munzhelele et al. (2017) conclude that smallholder farmers would continue to feed swill and alternative feed sources owing to the high price of commercial feed. Boettiger (2000:30) suggests that animal feed production uses cheap by-products to reduce feed costs; a mechanised feeding system and wet feeding might be the solution to reducing feed wastage.

Table 2.1: The daily water requirement for pigs according to their ages

Age of pig	Daily water requirements
Lactating sow	24–45L/day
Dry sow and boar	12–15L/day
Finisher	9–12L/day
Grower	5–7L/day
Weaner	3–5L/day

Source: www.agric.wa.gov.au

Munzhelele et al. (2017:59) explain that land ownership is critical to the success of pig production. Boettiger 2010:31 contends that land tenure is the biggest challenge for several

South African farmers. A great deal of time and effort is spent in resolving this challenge. The authors further remark that they will be globally competitive only when South African farmers have 100% land tenure security. Large numbers of people lease land for farming activities. This option involves more finance than holding ownership. The land size varies according to the number of pigs and the chosen pig-keeping system.

The land should have a reliable water supply as pigs have good growth and production. Water intake is important for milk production during lactation; Table 2.1 displays the daily water requirements of pigs at various growth levels. The cleaning of pig pens requires water. Water is also required for irrigation of crops used for food. The greater the distance between the household production site and water source, the higher the probability of not providing water regularly (Mokoele et al. 2014:8). Baleta and Pegram (2014:19) state that South Africa is a water-stressed country with around 1 000 m3 of available per capita annually.

Krüger, Van Marle-Köster, and Theron (2017:689) remark that the other constraint hindering pig farming engagement is the shortage of breeding pigs (boars). An adverse perception prevails among pig farmers in South Africa about small-scale breeding of boars since boars are used only for breeding, discouraging farmers from keeping their pigs (Gouws, 2019:41). There is a scarcity of breeding pigs (boars) in various parts of South Africa. The high maintenance costs for a boar are a main constraint hindering pig farming despite abundant farmland. While in commercial pig farming, sows are pre-selected for mating based on a predetermined criterion, this is frequently ignored in small-scale or rural pig farming, resulting in inbreeding or poor pig quality.

The lack of needed resources, low education levels, unplanned systems of production, and housing, such as free roam, are the leading constraints or causes of inbreeding in small-scale or rural pig farming and its limitations. Inbreeding causes loss and increased homozygosity, causing lethal genes. Inbreeding spoils the decent genotypes when there is the mating of closely related animals (Pekkala et al., 2014:1107).

Matabane et al. (2018:3) remark that pre-weaning mortality remains a leading constraint to pig farming and production. Numerous factors can influence the cause of death, “mainly during the first 48 hours after farrowing, crushing by the sow being the first cause” (Mainau et al.,2015:1). Wabacha et al. (2004:197) attribute 69% of pig death to overlay. Overlay is frequent where sows roll and lie down when sleeping. Pre-weaning mortality decreases pig farming profitability. Feeding the pig energy feeds throughout farrowing lessens the time of farrowing and rates of pre-weaning mortality (Roy et al., 2018:1293). Disease outbreak is one

of the biggest threats to pig production, causing economic losses. Mokoele et al. (2015:9) remark that the frequent outbreak of diseases is another constraint or threat to pig farming; this may include zoonotic diseases, such as porcine cysticercosis, Trichinellosis, toxoplasmosis, Trypanosoma brucei, and gambiense infections (Kambashi et al., 2014).

Tomass et al. (2013) contend that Ascaris suum and Cryptosporidium are economically important parasites. African swine fever (ASF) threatens the food security of the affected country (Kambashi et al., 2014). FAO identified ASF as the most serious infectious disease in pigs in Africa (FAO, 2017:5). Pig diseases arise from dreadful sanitary practices in pig farming (Iweriebor et al., 2015:136). Farmers in South Africa lack the capacity for early disease identification, besides the lack of skills and access to veterinarians, extension services, and preventive health care (Guinat et al., 2016:12). The inadequate animal husbandry training of extension officers observed a deterioration in pig production. Beltran-Alcrudo et al., (2019:64) associate the deprived pig farming services in South African municipalities with low salaries for the municipality's agricultural advisers and the shortage of extension officers in the municipality.

The lack of pig farming skills in South Africa's small-scale farmers is another constraint hindering pig farming engagement despite abundant farmland (Matabane et al., 2015:24) and using unconventional pig farming methods (Thutwa et al., 2020:8). Such lack of skills causes a decrease in pig reproduction, poor growth, and increased mortality. The mating of young gilts in rural small-scale pig farming at early ages is a practice with complications on pig offspring and production since it occasions small litters, low weight at birth, poor growth, and rearing ability. Compared to mature sows' offspring, gilts' offspring are lighter at birth. Piglets of such gilts grow slower than those from mature sows. Piglet mortality reduces sold pigs, whereas the selection of decent breeding sows reduces pre-deterring mortalities and the culling of the mature sows (Clark et al., 2016:476).

Seasonal price fluctuation in pig markets, competition, and the dangerous distances to transport the pigs to the available markets are additional constraints to pig farming and production in South African municipalities (Sishuba, 2016:32). South Africa houses several rural regions (formerly homelands) with inadequate access to markets and poor pig markets and transport infrastructure. The long distances from farming areas to the market limit the farmers from selling their livestock without government support (Mugodo et al., 2017:2392). Unreachable markets limit farmers in South Africa's rural regions from marketing their pigs (Molina-Moreno et al., 2017:5). Farmers retail at low-value markets, including the abattoirs,

community members and local auctions. Decent pig transportation markets enable respectable prices for farmers.

Transportation remains essential to pig farmers meeting good market prices because adversely conveyed pigs cause bruise injury to the animals' blood vessels. Farmers without vehicles are at a disadvantage. According to Petrus et al. (2011), they use services of other transporters, therefore, paying transportation costs which shrink their income. The national and municipal governments are unsupportive to the small-scale or rural pig farmers in identifying the needed market before production, making and providing research on required product standards, quality, and quantity (Khapayi and Celliers, 2016:41).

The pig farmers selling processed and slaughtered animals also encounter high transaction costs. Smallholder pig farmers pay high taxes at the auctions because the more pigs sold, the higher the taxes paid to the auctioneers (Matabane et al., 2015:20). Matabane et al. (2015:23) identified the lack of resources and knowledge to realise the needed market standards and grades as a constraint of smallholder or rural pig farmer marketing. The lack of support from government or pig farming institutions, deficient marketing policies, and high exportation costs are other constraints, hindering pig farming engagement.

2.9 Conclusion

Pig farming is complex and not as straightforward as it might appear, involving concurrent activities to ensure its success. Knowledge and skills in business management and pig husbandry are critical for a successful pig establishment. The South African Government must consider establishing institutions for breeding boars in all municipalities. Farmer participation in identifying pig genotypes with preferred traits is necessary for sustainable conservation and breeding programmes. Agricultural authorities in South Africa must help farmers develop cooperatives and self-help groups. Pre-weaning mortality remains a leading constraint to pig farming and production. A lack of skilled pig farmers in South Africa may hinder pig farming engagement.

CHAPTER 3:
RESEARCH METHODOLOGY AND DESIGN

3.1 Introduction

This chapter focuses on the method adopted in this study. It mentions the components involved in conducting this research from the population, frame, and sampling techniques employed for the interview. Finally, this chapter explains the manner of analysis and the data collection method.

3.2 Paradigm

According to Khatri (2022:1435), a paradigm is a theoretical foundation for research, or a perspective on how to conduct research. The methodology, approach, ontology, and epistemology used in research are all part of the paradigm. Several methodologies may be present in one paradigm; researcher may use any of them. These methodologies are research approaches that can assist in conducting a systematic study. Kivunja and Kuyini (2017:26) claim that the research paradigm “has significant implications for every decision made in the research process, including choice of methodology and methods”.

Graue (2015:6) remarks “the epistemology and ontology of the researcher are the philosophical foundation and thus impacts the study”; however, according to Wahyuni (2012:71), “instead of questioning ontology and epistemology as the first step, pragmatist supporters start with the research question to determine their research framework”. The pragmatism paradigm was most suitable for this research. Wahyuni (2012:71) remarks “the emphasis is on what works best to address the research problem at hand”. The pragmatic research paradigm was considered because it was based on mixed research methods, “enabling the researcher to understand better the social reality” (Wahyuni, 2012:71).

Research can follow a deductive, inductive or abduction approach. Saunders et al. (2012:150), draw a distinction between the three approaches; deduction is used to develop a theory and hypothesis (or hypotheses), as well as a research strategy to test the hypothesis. Induction involves the collection of data and the development of a theory as a result of the data analysis. Data are used in abduction to investigate a phenomenon, identify themes, and explain patterns to generate a new or modify an existing theory that is then tested, often through additional data collection.

3.3 Research method

This study adopted a mixed-method research approach— “mixed methods research is the combination and integration of qualitative and quantitative methods in the same study” Molina-Azorin (2016:38). This approach provides a better and more complete understanding of the research problem than either method alone. According to Saunders et al. (2012:169), mixed methods may aid in establishing the credibility of a study or in producing complete knowledge. Harkiolakis (2017:17) defines qualitative research as a “methodology designed to understand human behaviour and, specifically, the beliefs, perceptions, and motivations that guide decision making and behaviour”.

McLeod (2019) lists diary accounts, in-depth interviews, documents, focus groups, case study research, and ethnography as examples of qualitative research methods. The findings of qualitative methods provide a comprehensive understanding of how people perceive their social realities and the way they act in the social world. Quantitative research involves “the basics of what it is, a more in-depth representation defines quantitative methodologies as an attempt to measure (positivist stance mainly) an objective reality (realist stance mainly)” (Harkiolakis, 2017).

A quantitative research design typically includes a tailored mix of data collection methods, questionnaires, interviews, observations, and records. Qualitative studies, therefore, refer to the meanings, concepts, definitions, characteristics, metaphors, symbols, and outlines of objects. Conversely, quantitative studies refer to counts and measures of objects, the extents, and distributions of our difficulty matter, aspect magnitude, quantity, and probably.

3.4 Research design

The selection of suitable research design also plays a significant role in the successful conduct of research. This is established according to Lewis (2015), communicating that selecting an unsuitable research design would not provide the desired outcomes, and the research objectives will not be achieved. The triangulation research design successfully met the study's objectives. Multiple data collection techniques within a single study ensured accurate data is called triangulation (Saunders et al., 2012:179). Creswell and Clark (2017:82) remarks that a triangulation design employs qualitative and quantitative methods simultaneously; both carry equal weight in discussing the research problem while comparing the results from the analysis of both datasets. The research design and method are aligned.

3.5 Demarcation of study

The area of study was BC rural communities in the EC (Figure 3.1). According to the 2016 community survey, BCM is in the EC with an area density of 2 750km² and a total population of 834 997. The climate is mild, with year-round sunshine and an average rainfall of 850mm. BCM is easily accessible and, therefore, chosen owing to the limited data collection time frame.

Figure 3.1: Study area presenting Buffalo City

(Municipalities.co.za)

3.6 Population

According to the 2016 community survey, BC has a total population of 834 997. The target population are those between ages 15 to 64 in BC, estimated at 510 000 in the fourth quarter of 2017 by Stats SA. Unemployed individuals and existing farmers were randomly selected to better understand the relative effect of unemployment in South Africa, to provide more insight into the phenomena. This was considered, since the unemployed could converse on pig farming with the regard to creation of employment opportunities. Officials from Department of Rural Development and Agrarian Reform were interviewed to obtain a complete representation of the problem while observing the policymakers' opinions.

3.7 Sample method

According to Turner (2020:8), in research, sampling is a subset selection of the population of interest. This study employed a simple random sampling technique, “in the simplest case of random sampling, each member of the population has the same chance of being included in the sample, and each sample of a particular size has the same probability of being chosen” (Welman et al., 2005:52). The total sample size for this study was 164 respondents with an 80% confidence level, 50% expected frequency and 5% acceptable margin of error. Participants were randomly selected from Mdingi, Tolofiyeni, and Masingatha. At times, participants directed the data collectors to other pig farmers in their respective communities.

3.8 Data collection instrument

This study used interviews and questionnaires to collect data. An interview is a “qualitative research method, relying on directing questions to collect data. Interviews involve two or more people—one of whom is the interviewer asking the questions” (George, 2022). These methods enabled collecting first-hand data. Semi-structured telephonic interviews, paired with open-ended questions, were used to collect data. Interviews were recorded with the participant's permission, and transcripts were typed. Questionnaires comprised open and closed-ended questions, used for data collection. A pilot study was conducted at Langa Township, a few kilometres outside Cape Town, to ensure reliability and validity. Random selected residents from Langa were handed questionnaires to check the validity of the questions. Saunders et al. (2012:430) define reliability as the extent to which the employed data collection techniques will produce consistent findings.

3.9 Data collection fieldwork

The data collection period ranged from 6 January 2020 to August 2022. The data were collected with the assistance of field workers. Initially, two fieldworkers were employed on the ground; however, another field worker was added owing to time constraints. They administrated the questionnaires in the three villages. The first batch of questionnaires was circulated and completed before the COVID19 pandemic. When the government announced lockdown restrictions, all fieldwork had to be put on hold. Upon the relaxation of the COVID19 restrictions, the fieldworkers regrouped and completed the process. The researcher led the telephonic interview.

3.10 Data analysis

The interpretations and discussion of findings from the generated results from the data analysis were verified on Excel and other data analysis software. The qualitative part of data was analysed through a thematic approach using NVivo software, developed by *QSR International*—excellent for analysing qualitative data and other related academic and research functions.

3.11 Ethical consideration

The study purpose and interview process were explained to the participants. All participants provided written consent and were notified that they could withdraw from the research at any stage. Data collected in this study are confidential, while participant details are secured; this is indicated on the questionnaire and interview forms. An ethical certificate was obtained before data collection; no animals were physically part of this research.

CHAPTER 4:
DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter focuses on a systematic analysis of the collected data. The interpretations and discussion of findings from the generated result from the data analysis are considered. XLSTAT and SPSS 28 were used for the quantitative aspect of the questionnaire and NVivo for the qualitative. The essence of this research was to examine the effects of pig farming on poverty alleviation in BC, EC.

An indispensable response was provided to five distinct research questions in this chapter. The first section focuses on the respondents' demographic distribution, including age, gender, religion, and family size. The subsequent section presents a descriptive analysis of the questionnaire items.

4.2 Respondents' demographics

Measuring the demographic information of the respondents is necessary for any research that considers the instrumentality of the questionnaire. This is because it provides useful information about the profile of the respondents and this can sometimes be necessary, owing to its reliability in the desired responses needed for analysis and interpretation. Table 4.1 below signifies respondents' demographic distribution.

Table 4.1: Respondents' demographic descriptive analysis

Variables	Categories	Frequency	(%)	Total Frequency	Total Percentage
Gender	Male	86	52	164	100
	Female	78	48		
Village	Tolofiyeni	44	27	164	100
	Mdingi	62	38		
	Masingatha	58	35		
Location	King Williams Town	157	96	164	100
	Not indicated	7	4		
Age	15-25	12	7	164	100
	26-30	16	10		
	31-35	17	10		
	36-40	26	16		
	Above 40	93	57		
Family size	0-4	76	46	164	100
	5-9	83	51		
	10 and above	5	3		

Variables	Categories	Frequency	(%)	Total Frequency	Total Percentage
Family head	Male	93	57	164	100
	Female	64	39		
	Youth headed	7	4		
Education level	Informal	7	4	164	100
	Primary	20	12		
	Secondary	93	57		
	Tertiary	44	27		
Religion	Catholic	111	68	164	100
	Christian	17	10		
	Others	13	8		
	Traditional	23	14		
Employment status	Yes	43	26	164	100
	No	121	74		

4.2.1 Gender

Figure 4.1 displays respondents' gender distribution. Pig farming can be a tedious exercise and its coordination is determined by the strength of the farmer. It is, therefore, paramount to consider the gender of the respondents; 52% were male, while 48% were female.

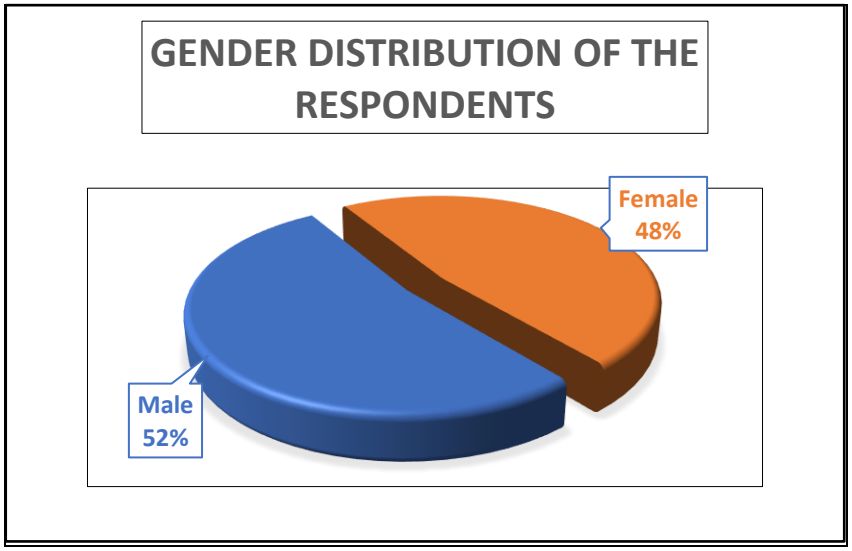

Figure 4.1: Gender distribution

4.2.2 Age

Pig farming is demanding; 57% of the respondents were above 40; only 7% were between 15 and 20; 10% were between 26 and 30, and 31 and 35. The remaining 16% were between 36 and 40 years. Above 80% of the respondents were at least 30 years.

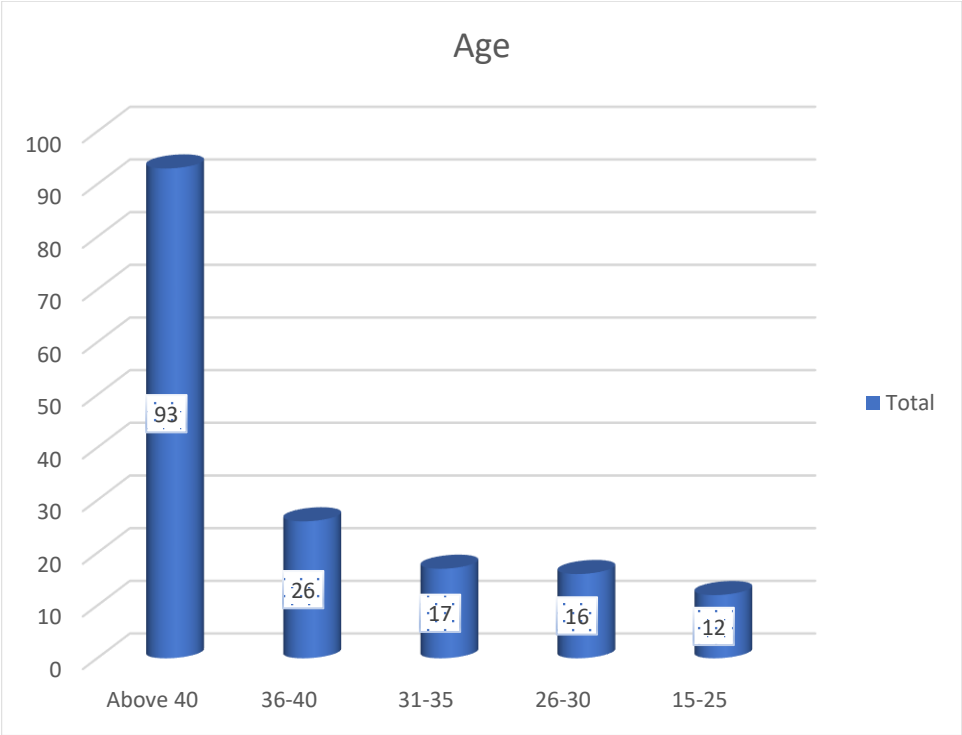

Figure 4.2: Age

4.2.3 Location

Pig farming is a business dependent on the environment; therefore, the farm location has a great effect on productivity; 96% of the respondents were from King Williams Town, while the remaining 4% did not indicate their town; however, the questionnaires revealed that 4% are from the same region.

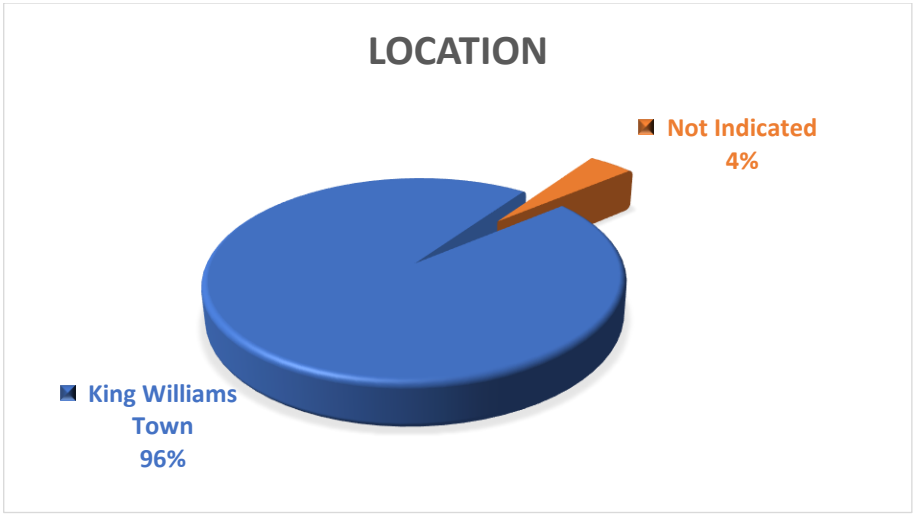

Figure 4.3: Location

4.2.4 Villages

The respondents represent people from three villages: Mdingi, Masingatha, and Tolofiyeni—all in King Williams; 44 (27%) of the respondents came from Tolofiyeni village; 62 (38%) came from Mdingi village; the remaining 58 (35%) were from Mashingatha village (Figure 4.4); therefore, it can be concluded that the highest percentage of the respondents were from Mdingi village.

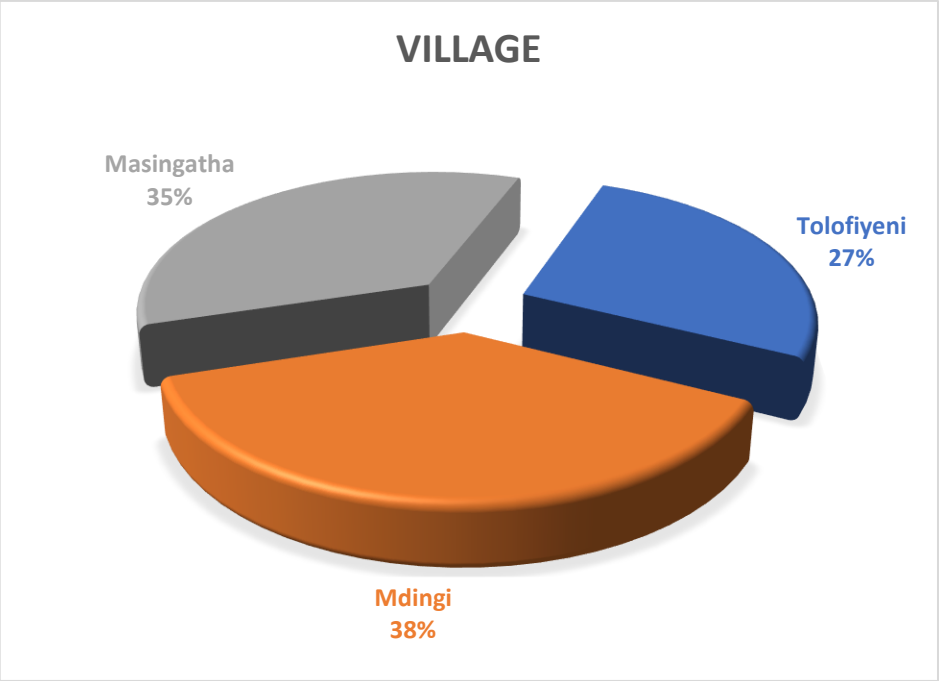

Figure 4.4: Villages

4.2.5 Family size

The family size, acquiring prominence, is ranged five to nine, with 83 (51%) of the respondents held this size. Forty-six per cent of the respondents indicated their family size as between five and nine, and the remaining 3% had at least 10 family size.

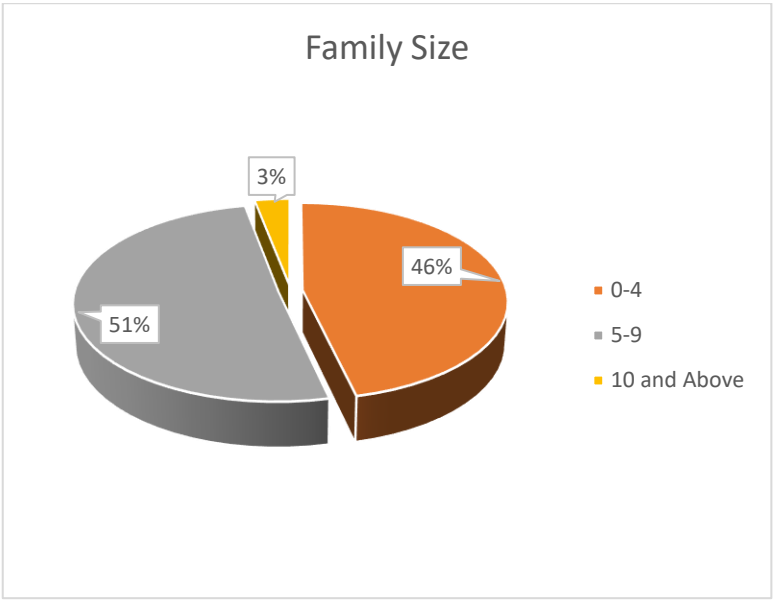

Figure 4.5: Family size

4.2.6 Family head composition

Fifty-seven per cent, of the families represented were headed by grown-up male adults; 64 (39%) of the families were headed by female adults; youths headed the remaining seven families (4%) (Table 4.1).

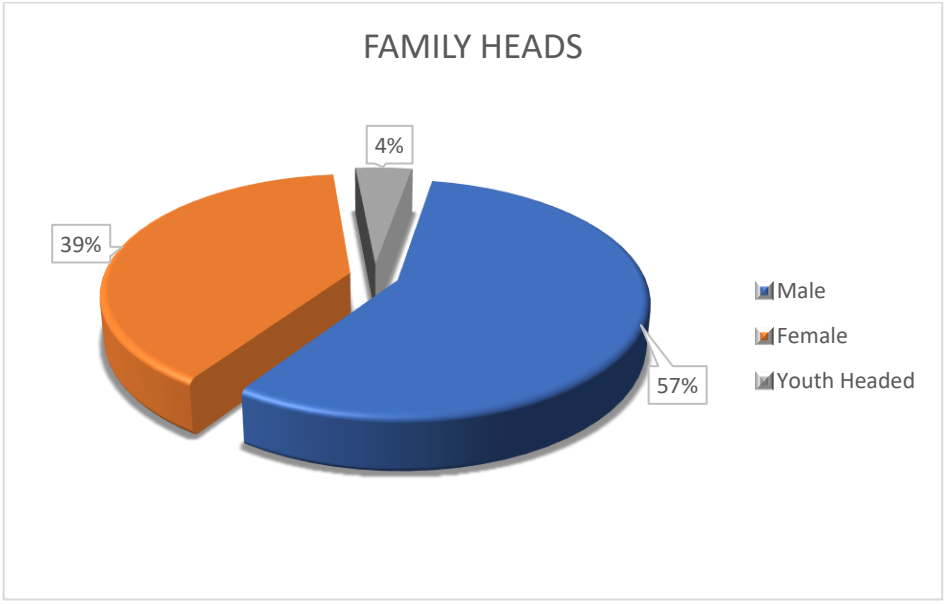

Figure 4.6: Family heads

4.2.7 Educational level

Figure 4.7 reveals that 57% of the respondents were secondary school graduates; 20 (12%) were primary school leavers; 4% received informal training. The remaining 27% held higher institution certificates.

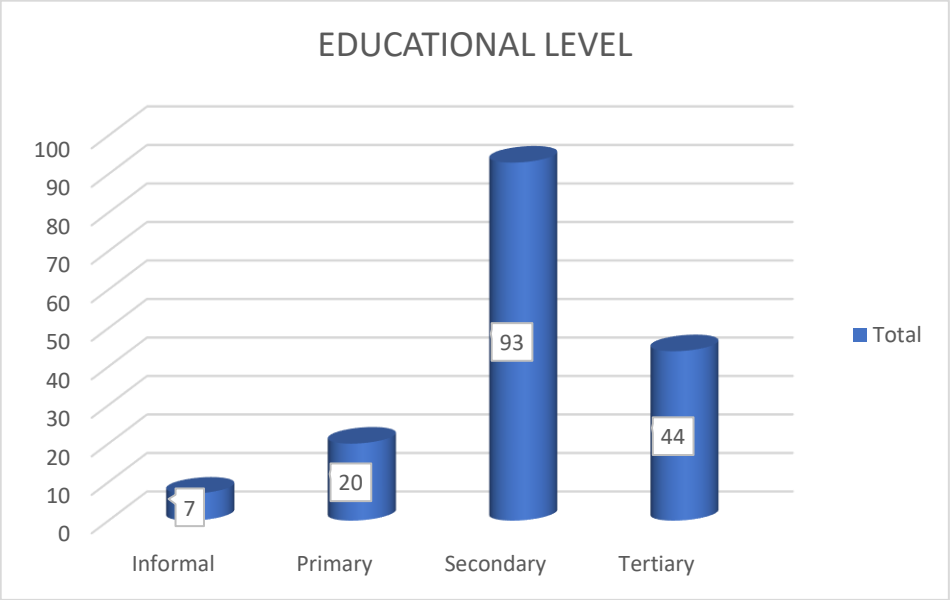

Figure 4.7: Educational levels

4.2.8 Religion distribution

Owing to the variance in the religious beliefs of people, pig farming is not a business that everybody would desire. From 164 people, 111 (68%) of the respondents were Catholics; 10% were Christians and the remaining 22% included other religions, such as traditional religions, excluding Islam. None of the respondents practised Islam, but several were Christians, and other Catholics.

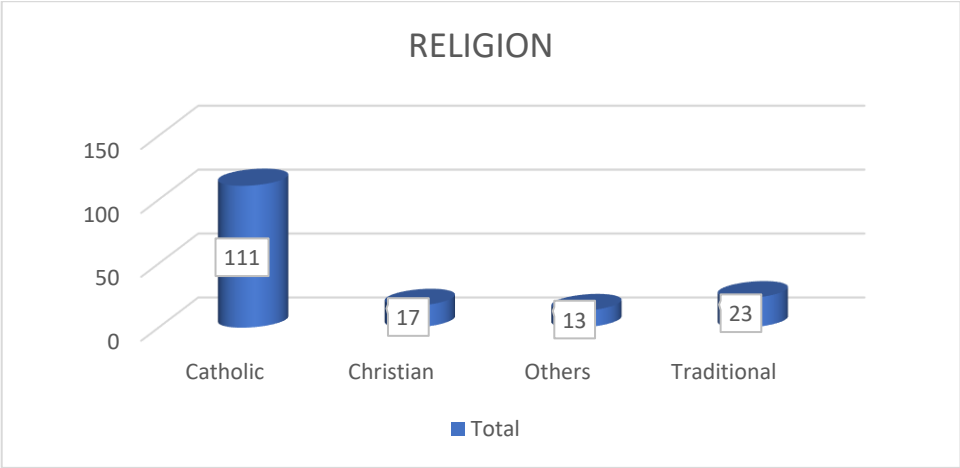

Figure 4.8: Religion

4.2.9 Employment status

Pig farming requires attention; therefore, it is necessary to measure the availability of respondents by identifying employment where they collect wages or salary. The result of the observation displays that 26% of the respondents received salaries; the remaining 74% are not employed where they collect salaries or wages. This amplifies the level of unemployment in the region and the tendency to venture into pig farming and how it can alleviate unemployment in the region.

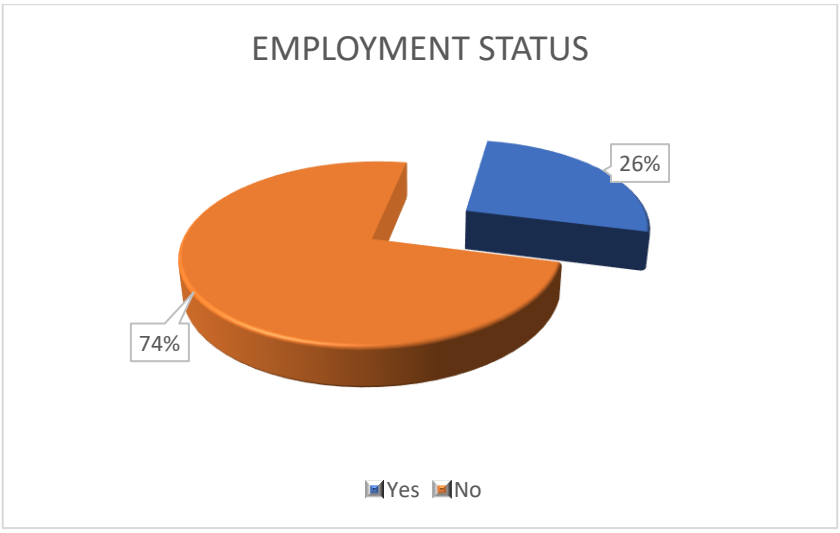

Figure 4.9: Employment status

4.2.9.1 Employment status distribution

From the working respondents, either as self-employed or workers for someone, collecting salary or wages, 12.2% were self-employed. These included entrepreneurs, tailors, and drivers; 9.8% are office workers, were clerks, office assistants, and cashiers. The least number of such categories were workers in the education sector (educators, 3.7%). The remaining 23.8% were general workers, including cleaners, supermarket attenders, and public services, such as the police and military.

Table 4.2: Occupational classification

Occupation classification	Frequency	%
Not applicable	83	50.6
Self-employed	20	12.2
Office worker	6	9.8
Educator	6	3.7
General service	39	23.8
Total	164	100.0

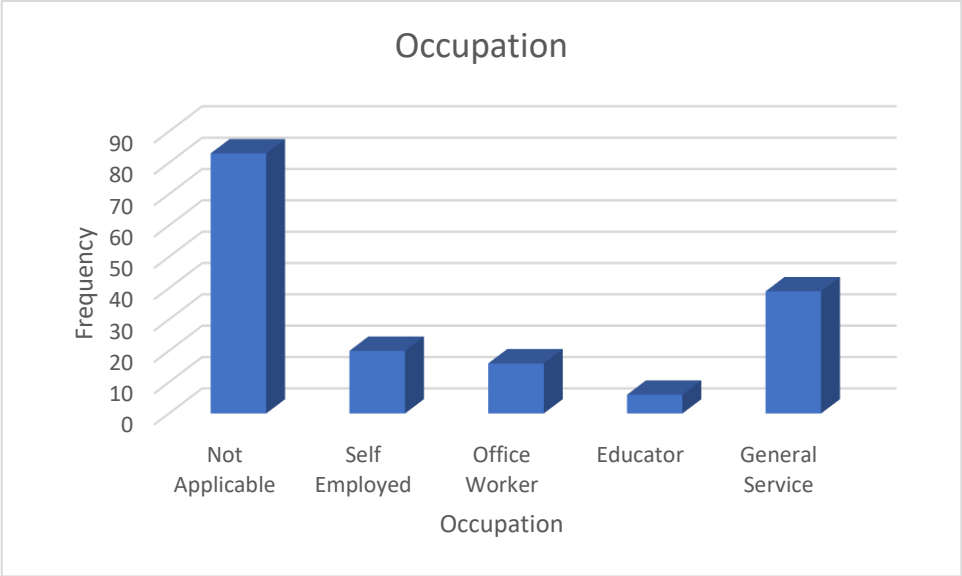

Figure 4.10: Occupation status

4.2.9.2 Income classification

From these respondents, 4.3% were earning R10,000 and below as salary or wages; 16.5% earned between R1100 and R3000 monthly; R3100 and R5000 (2.4%); 1.8% between R5100 and R7000 and between R7100 and R10,000 monthly; 2.4% earned more than R10,000 monthly.

Table 4.3: Demographic description of earnings

Income classification	Frequency	%
Not applicable	116	70.7
R1000 and below	7	4.3
R1100-R3000	27	16.5
R3100-R5000	4	2.4
R5100-R7000	3	1.8
R7100-R10,000	3	1.8
Above R10,000	4	2.4
Total	164	100.0

Figure 4.11: Income distribution

4.2.9.3 Time spent at work

Respondents (9.1%) spent one to 10 hours at work monthly; 5%—11 to 20 hours; 1.8%—21 to 30 hours; 18.3%—41 to 50 hours; a little above 4%—51 and 60 hours; 1.2% spent at least 70 hours at work monthly. Several of these workers, therefore, spent 41 to 50 hours at work weekly.

Table 4.4: Description of time spent

	Frequency	%
1-10 Hours	15	9.1
11-20 Hours	8	4.9
21-30 Hours	3	1.8
31-40 Hours	11	6.7
41-50 Hours	30	18.3
51-60 Hours	7	4.3
Not applicable	88	53.7
Above 70	2	1.2
Total	164	100.0

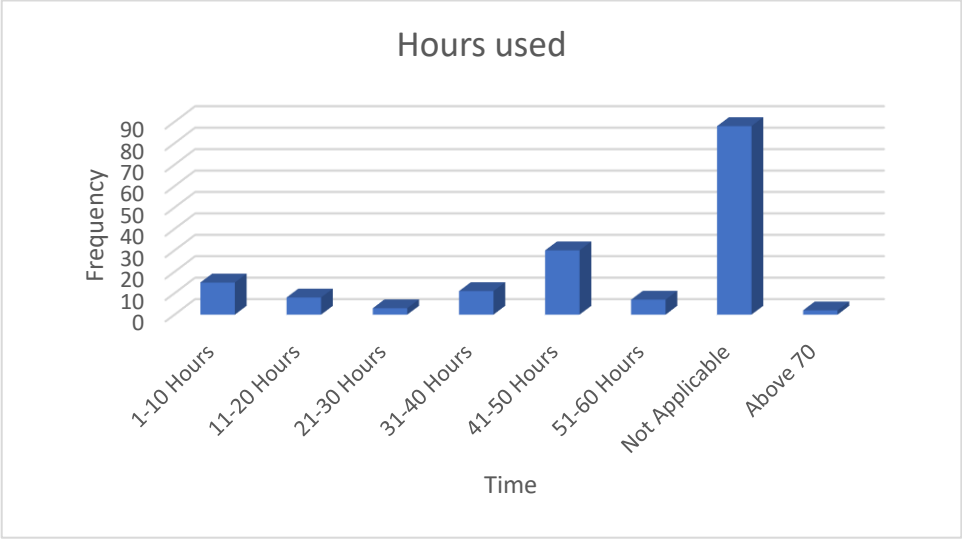

Figure 4.12: Hours spent at work

4.3 Data presentation and response analysis

Respondents (164) responded to this research instrument; 141 (86%) indicated that their religion does not hinder them from contact with pigs;11% did not respond to the question; the remaining 3% indicated that their religions affect their contact with pigs. This information confirms that the research was administered among valid samples.

4.3.1 Disinterest in pig farming

Respondents (32%) indicated no interest in pig farming because of a lack of government support and private organisations. Respondents (35%) believed that it is because of the lack of support from the municipality causing disinterest in pig farming. From those surveyed, 16.5% concluded that the local universities failed to provide support. A little lower than 20% of the respondents complained about the lack of support by the veterinary experts in free or reduced fees for services. Forty-two per cent were eager to start pig farming but are hindered by inadequate funds. Only 10% (17) of the respondents provided a lack of access to farmland as the reason for their disinterest; 3% (5) were not interested in farming, including pig farming; 15 (9%) signified a lack of pig farming knowledge as a reason for their disinterest. Nine respondents confessed they could not venture into pig farming because they observe it as a profession of intense labour—they could not bear to endure the rigour of such laborious work.

Table 4.5: Disinterest in pig farming

ITEMS	YES	NO
No support from organisations	53 32.3%	111 67.7%
No support from the municipality	58 35.4%	106 64.6%
No support from local universities	27 16.5%	137 83.5%
No support from vets in free or reduced fees for services provided	32 19.5%	132 80.5%
No financial means to start	69 42.1%	95 57.9%
No access to farmland	17 10.4%	147 89.6%
Not interested in farming	5 3%	159 97%
Do not know of pig farming	15 9.1%	149 90.9%
The profession of intense labour	9 5.5%	155 94.5%

4.3.2 Farm management

According to Table 4.6, 62% of the respondents were full-time workers, whereas 29.3% were part-time workers; 5.5% of the respondents employ par-time labourers whereas 1.8% of respondents employ full-time labourers.

Table 4.6: Farm management

Items	Not indicated	Full-time	Part-time
Do you manage your farm full-time or part-time?	14 8.5%	102 62.2%	48 29.3%
Are the labourers part-time or full-time?	152 92.7%	3 1.8%	9 5.5%

According to Table 4.7, 91% of the respondents do not have labourers managing the farm for them, whereas 9% have labourers. More than average (51.8%) of the respondents attend to the farm work, whereas2.4% of the respondents engage the labourers in non-pig farm activities; 5% can remunerate their labours on time. Approximately 10% of the respondents covered their expenses by their income, whereas 11.6% could not afford to cover the expenses of farming by the income they generate.

Table 4.7: Labourer farm management

Item	Yes	No	Not indicated
Does a labourer manage your farm for you?	15 9.1%	149 90.9%	0 0%
Do you do all the farm work yourself?	85 51.8%	79 48.2%	0 0%
Do the responsibilities of the labourers include any non-pig farm activities?	4 2.4%	160 97.6%	0 0%
Are you able to remunerate your labours on time?	9 5.5%	5 3%	150 91.5%
Are your monthly farming expenses covered by your income?	16 9.8%	19 11.6%	129 78.7%

4.3.3 Reasons pig farming is unfeasible

The results, as seen in Table 4.8, indicate that thirteen respondents believed there is no market for pigs in BC municipality; 6.7% agreed there on too many competitors; 7.9% asserted that pig farming is not viable in their municipality because of a lack of cash stability. Table 4.8 below provides the breakdown.

Table 4.8: Reasons pig farming is unfeasible

Items	Not Indicated	Yes
No market for pig products in Buffalo City	151 92.1%	13 7.9%
Too many competitors	153 93.3%	11 6.7%
No cash stability	151 92.1%	13 7.9%

4.3.4 Viability of extending pig farm programmes in Buffalo City in the Eastern Cape

It is apparent from Table 4.9 that (47.5%) respondents disagreed that BC in the EC accommodated and implemented programmes for traditional pig farming methods. Seventy-eight respondents negate that BC in the EC has accommodated and implemented programmes on industrialised (commercial) pig farming. The contradiction was made by over 46% of the respondents on BC in the EC having accommodated/ implemented programmes on integrated systems of pig production alongside other initiatives, such as fish farming.

Table 4.9: Viability of extending pig farm programmes in Buffalo City

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Buffalo City Municipality in the Eastern Cape has accommodated/ implemented programmes for the traditional methods of pig farming	24 14.6%	54 32.9	74 45.1	11 6.7%	1 0.6%
Buffalo City Municipality in the Eastern Cape has accommodated/ implemented programmes on industrialised (commercial) pig farming	23 14%	55 33.5%	71 43.3%	14 8.5%	1 0.6%
Buffalo City Municipality in the Eastern Cape has accommodated/ implemented programmes on integrated systems, of pig production alongside other initiatives such as farming fish	24 14.6%	52 31.7%	71 43.3%	16 9.8%	1 0.6%

4.3.5 The influence of government programmes on pig farming in the community

The data in Table 4.10 indicates that (96) respondents falsely agreed that BC in the EC established education extension and advisory services to increase access to knowledge in areas of pig farming technologies; 68% of the respondents did not believe that BC developed policies on disease control programmes in pigs. The statement “The BCM has provided and encouraged access to financial services for commercial pig farming” was rejected by over 100

respondents. Twenty-six from 164 respondents did not believe that BC is reviving cooperatives and marketing boards alongside the regulation of the pig farming sector.

Table 4.10: The influence of government programmes on pig farming

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Buffalo City Municipality in the Eastern Cape established education extension/advisory services to increase access to knowledge in areas of pig farming technologies	35 21.3%	61 37.2%	42 25.6%	24 14.6%	2 1.2%
Buffalo City Municipality developed policies on disease control programmes for pigs	34 20.7%	79 48.2%	30 18.3%	20 12.2%	1 0.6%
Buffalo City Municipality provided and encouraged access to financial services for commercial pig farming	53 32.3%	58 35.4%	35 21.3%	15 9.1%	3 1.8%
Buffalo City Municipality is reviving cooperatives and marketing boards with the regulation of the pig farming sector	5 3%	21 12.8%	109 66.5%	16 9.8%	13 7.9%

4.3.6 Reasons for disengagement in pig farming in Buffalo City despite abundant farmland

The results in Table 4.11 indicates that from the surveyed respondents, 64% confirmed inadequate access to knowledge in new pig farming technologies in BC. Slightly above 84% of the respondents confirm that BC lacks pig disease control programmes. The majority (84%) settled that several farmers in BC lack access to financial services to engage in commercial pig farming. Above 65% of the respondents believe that several pig farmers encounter marketing barriers, such as insufficient market amenities, loading ramps and scale pens, scarce market data, low prices, and the high costs of transactions.

BC holds limited export and interest rate subsidies owing to the privatisation of pig farming cooperatives and the marketing control boards, supported by 43.9% of the respondents; 68% responded negatively concerning religious, behavioural, and cultural taboos on pork consumption in BC, leading to fear of deprived domestic marketing probability in producers;

70% concluded that the government lacks a policy on pig production in the national livestock development programme. These categories of respondents are, therefore, oblivious to any government policy on pig production. The policies affecting pig farming in a national livestock development programme have not been implemented in their localities.

Table 4.11: Barriers to pig farming effectiveness

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
There is inadequate access to knowledge in areas of new pig farming technologies in the BCM	7 4.3%	10 6.1%	42 25.6%	85 51.8%	20 12.2%
The BCM lacks disease control programmes for pigs	6 3.7%	7 4.3%	13 7.9%	103 62.8%	35 21.3%
Various farmers in the BCM lack access to financial services to engage in commercial pig farming	5 3%	6 3.7%	15 9.1%	89 54.3%	49 29.9%
Many pig farmers encounter marketing barriers such as insufficient market amenities, loading ramps and scale pens, scarce market data, low prices, and the high costs of transactions	34 20.7%	3 1.8%	20 12.2%	102 62.2%	5 3%
There are hardly any export and interest rate subsidies in the BCM owing to the privatisation of pig farming cooperatives and the marketing control boards	3 1.8%	22 13.4%	67 40.9%	58 35.4%	14 8.5%
There are several religious, behavioural, and cultural taboos on pork consumption in the BCM leading to fear of deprived domestic marketing probability in producers	54 32.9%	58 35.4%	21 12.8%	25 15.2%	6 3.7%
The government lacks a proper policy on pig production in the national livestock development programme	7 4.3%	11 6.7%	33 20.1%	76 46.3%	37 22.6%

4.3.7 Programmes aimed at encouraging pig farming and other livestock farming

Over 57% of the respondents as seen in Table 4.12, did not conclude that BC in the EC is developing and upgrading infrastructure, such as roads, lines of communication, and facilities for farming. Disagreement was amplified by 67% of the respondents that BC in the EC developed free education/ enlightenment/ training programmes on pig farming and digital

information centres in all its rural communities; 69% disagreed that BC in the EC developed a health management system and programmes for pig farming, including free traditional or pharmaceutical medicines; 28.7% of the respondents disagreed that BC in the EC is gradually introducing interest-free agricultural loans to pig farmers, requiring no collateral.

Table 4.12: Programmes aimed at encouraging pig farming

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The BCM of the Eastern Cape is developing and upgrading Infrastructure such as roads, lines of communication and facilities for farming.	78 47.6%	16 9.8%	29 17.7%	39 23.8%	2 1.2%
The BCM of the Eastern Cape has developed free education/ enlightenment/ training programmes on pig farming and developing digital information centres in all its rural communities.	45 27.4%	65 39.6%	29 17.7%	18 11%	7 4.3
The BCM of the Eastern Cape has developed a health management system and programmes for pig farming, including offering free traditional or pharmaceutical medicines.	46 28.0%	67 40.9%	24 14.6%	24 14.6%	3 1.8%
The BCM of the Eastern Cape is gradually introducing interest-free agricultural loans to pig farmers requiring no collateral.	21 12.8%	26 15.9%	71 43.3%	42 25.6%	4 2.4%

4.3.8 Growth opportunities in pig farming programmes in Buffalo City

A higher percentage of the respondents (90%) in Table 4.14, support that BC in the EC must reinstate marketing boards for pig farming to encourage price negotiation. Over 90% of the respondents believe that BC must offer export and interest rate subsidies for products from pig farming; 90% of the respondents agreed that BCM in the EC must establish free veterinary services for pig farmers; 90% advised that BC in the EC should lease out the government's land to prospective pig farmers. Most respondents (98%) supported that pig farmers and the administration of BC in the EC must enter partnerships on the discovery of market and product value addition. Respondents agreed that the government should formulate a proper policy on pig production, religious, behavioural, and cultural change of people while including it in the national livestock development programme.

Table 4.13: Growth opportunities in pig farming programmes

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Buffalo City Municipality in the Eastern Cape must reinstate marketing boards for pig farming to encourage price negotiation	2 1.2%	1 0.6%	13 7.9%	104 63.4%	44 26.8%
Buffalo City Municipality in the Eastern Cape must offer export and interest rate subsidies for products from pig farming	1 0.6%	2 1.2%	8 4.9%	99 60.4%	54 32.9%
Buffalo City Municipality in the Eastern Cape must establish free veterinary services for pig farmers	3 1.8%	1 0.6%	5 3.0%	95 57.9%	60 36.6%
Buffalo City Municipality in the Eastern Cape should lease out government land to prospective pig farmers	1 0.6%	1 0.6%	7 4.3%	94 57.3%	61 37.2%
Pig farmers and the administration of Buffalo City in the Eastern Cape must enter partnerships on the discovery of market and product value addition	0 0%	0 0%	2 1.2%	97 59.1%	65 39.6%
Government should formulate a proper policy on pig production, religious, behavioural, and cultural change of people and include it in the national livestock development programme	0 0%	0 0%	3 1.8%	95 57.9%	66 40.2%

4.4 Inferential analysis

Researchers adopted inferential statistical analysis in analysing and interpreting data from various fields of learning (Al-Imam, 2019; Parasteh Ghombavani et al., 2020; Salazar et al., 2021). Data can be qualitative or quantitative, depending on the research design (Almalki, 2016; Elsesser & Lever, 2011; Mayer, 2015; Pluye et al., 2009). The analysis of a qualitative part of this data was conducted through a thematic approach using NVivo software, developed by *QSR International*. The software is excellent for analysing qualitative data and other related academic/research functions and it has been widely used by various researchers (Di Gregorio, 2000; Hilal & Alabri, 2013; Ishak & Bakar, 2012; Leech & Onwuegbuzie, 2011; Welsh, 2002; Wong, 2008; Zamawe, 2015). The quantitative part of this work was analysed using various quantitative analytical software, such as Excel and SPSS. Excel and SPSS have been widely considered because they are uncomplicated and accessible (Abbott, 2014, 2016; Pfister et al., 2013; Prvan et al., 2002; Smith, 2003). Excel was developed by Microsoft, while SPSS was

developed by IBM (International Business Machines) incorporation, a multinational computer and information technology company.

4.4.1 Objective 1: To explore the effects of pig farming on poverty alleviation in Buffalo City, Eastern Cape

4.4.2

Eighty per cent of the respondents had a secondary school certificate, implying that most were literate; therefore, the level of unemployment in South Africa is alarming, signifying that the poverty rate will be moderately high. This follows the recent rating, presenting South Africa as the most unequal nation globally; this is revealed by the Gini coefficient of 0.6 (STAT SA, 2019) as cited by (De Vos, Obokoh, & Abiola, 2020). To change this endemic situation because of poverty—ravaging the land, the respondents resulted in pig farming as a panacea.

When asked why pig farming helps them, as recorded in Table 4.14 below, 70% responded supplying food for their families through pig farming;19% have pig farming as their only means of income; Though few, these only earn an income through pig farming; 31.7% embark on pig farming as an additional source of income. They have other occupations either full-time or part-time, but they still farm as additional work to boost their income; 11.6% received pigs as gifts while one-quarter received funding for their pig farm.

Table 4.14: Effects of pig farming on poverty alleviation

Purpose of farming	%
To feed your family with the pigs you raise	70.1%
It is your only income	18.1%
To add to your other incomes	31.7%
The pigs were provided to you, or you already had pigs	11.6%
Funding was provided to farm with pigs	25%

The first significant response during the interviews confirms the inimical high rate of unemployment in the community. Several respondents affirmed an indisputable high rate of unemployment in the community. In his regard, a respondent remarked:

> “The community is impoverished and there is a lack of job opportunities”.

According to him, the poverty state of the community is appalling, and this is attained by the exhilarating rate of joblessness in the community. According to some responses, pig farming is viable because:

> “The community has nothing to do, and many are unemployed. It will enable them to provide food for their families. Pig farming will also be a tool to fight poverty”.

> “It is possible because it is difficult for us as youth to get employment, especially for those of us who are over 35 years old”.

> “Yes, most of the youth are unemployed, so it is an opportunity for them to create jobs”.

> “Yes, we are not employed, and we also have ample land space. We need financial support ".

From their responses, it could be deduced that employment at a certain age will be difficult. A respondent remarked that, for those above 35, employment is dismal. Many, in their attempts to overcome this disheartening impoverished state, pursued and considered several resources. According to them, several in the community are jobless while having sufficient space around them; they could explore the resources for their survival. Considering their responses, several factors lead to involvement in pig farming in the communities:

4.4.2.1 Availability of land and other resources

Several respondents revealed abundant land space in the community; this is a sufficient push and sure instrument that adjudges the viability of pig farming in the community:

> “We have land for farming, and we are also able to source water. The only thing that lacks is support from the municipality”.

The availability of land space and sufficient water is a justifiable reason to consider pig farming as a panacea out of the dungeon of joblessness and poverty, ravaging the land. Many remarked that pig farming is feasible in the land with the presence of sufficient space and water.

> “We are unemployed, we have land for pig farming. It will assist us with generating an income because there are no jobs”.

> “Community members such as pork meat and there is land to do that. There is water and electricity for efficient piggery”.

> “Because there is water and electricity and enough space to build pig housing”.

According to the respondents, besides the land space spurring pig farming in the community, there is abundant water and stability of electricity. This means that factors, such as water and electricity, are a major consideration in piggery and pig farming.

> “There is land, and the community is also interested because pig farming is profitable”.

Another factor presented guaranteeing the viability of pig farming in this region is individuals' interest in pig farming. People become involved in pig farming enthusiastically—perhaps because of available land space and other basic resources, but also because it serves as a fall back for families in times of need. According to the respondents:

> "We have large land, it's enough for pig farming. It will also help to support the family"
>
> "We have enough space to farm pigs. People from my community enjoy farming pigs, it's such as chicken, almost every household has it".

Availability of land and water stirred many in the region to pig farming.

> "We have plenty of unused space in our yards that can be used to farm pigs. We also have unused land for large-scale farming".

People's involvement in pig farming in the region is possible, even for large-scale farming.

4.4.2.2 Affordability of pig farming

Another factor that stirs people up to pig farming is that pig farming is inexpensive and easy to manage and sustain. In the words of the respondents:

> "It's easy to look after them; all we have to do is to feed them and ensure they have enough water".

They could only have them in their gardens, even if they cannot afford larger land space for large-scale pig farming. Many found it inexpensive to manage because they have farms where they produce mielies (maize) to feed the animals; they would not always need to spend extra cost to maintain their farm.

> "We have gardens which we plough so it is very easy to feed the pigs"
>
> "One would build a pigsty in his own yard and feed them daily in the morning".
>
> "We plough mielies which assist us in feeding pigs, and we are not far from a river"

Some respondents believed pig farming does not need an elevated level of expertise, therefore, they could afford to rear pigs at ease. Several also affirm the viability of pig farming because the area is free and not susceptible to epidemics, such as swine flu and other environmental hazards, such as drought.

> "Pig farming is viable in my community because we are hardly affected by drought and even by animal diseases such as swine flu. We have been only hit once or twice"
>
> "It is easy to farm pigs even though droughts don't affect them much".

Some respondents assert that pigs are easy to breed—they do not take time to grow; therefore, they are rearing them. A respondent remarked that pork meat is in high demand, and this is a push for them to consider rearing it. Pigs can be confined in a place, and this makes it interesting to be reared. According to a respondent:

> "It is because pigs reproduce at six months, and it takes only about 6 months for pigs to be ready to be slaughtered".

> "It is easy to farm pigs because they can almost eat anything even when you don't have feed you can go to your neighbours and ask for leftover food and even supermarkets to ask for expired food".

Respondents insisted that pig farming needs little attention, pigs hardly become sick; if they are fed, they are good to go. It was revealed that vaccination of the animals is not expedient, just feed them and give them water, and they will be fine.

4.4.2.3 Community business

Respondents confirmed that pig farming is viable in their area because it is a community business. They practised it over the years, obtaining sufficient experience in pig farming. The interest of the upcoming adults is also strongly aroused by their sight of this agelong venture in their land. A respondent remarked:

> "Pig farming is valuable because people from my community love pig and all my life I grew up people in the community farming pigs"

This demonstrates that pig farming has been widely practised in their land as the sole source of economic sustenance.

> "It's because pig farming has been part of our lives in my community, and in addition, some people get offered pigs to farm by community members".

The community sometimes offer pigs and piglets as gift instead of money. This stimulates the receiver to trading. A youth knowing the benefits of pig farming, being offered pigs will cherish and nurture it. They could sell it for an income or could slaughter it for food purposes. The economy of the land, therefore, are boosted.

> "Because we farm pigs to feed our families and we usually get them from relatives and family friends".

Various families receive their sustenance and income from pig farming. Some respondents clarified that their families benefit maximally from pig farming.

> "Most of us grew up in families that were farming pigs for additional income or to feed the family, so the skill is there".
>
> "I sell pork meat, which I slaughter by myself, and it helps me to put food on the table; therefore, I believe pig farming is viable in my community".

Various families in this community observe pig farming as effortless and as a means of survival. The community also has its culture connected to pig meat. They use it for their traditional ceremonies and social functions.

> "People enjoy farming pigs for traditional ceremonies, for example when a boy goes to initiation school".
>
> "Because the most people from my community enjoy pork meat. I don't see anything that can stop us from farming pigs as we are not from the Muslim community whereby, we might have been not allowed to farm them".

Pig farming is chiefly workable and achievable in the community because no religious bias is present. The community are non-Islamic; therefore, they could proceed raising pigs with no religious constraints; it can be concluded that the involvement of people in pig farming helped the community in poverty alleviation to the barest insignificant minimum; therefore, pig farming has a statistically significant and positive effect on poverty alleviation in BC, EC.

4.4.3 Objective 2: To determine the influence of government programmes on pig farming in the community

4.4.4

Using chi-square in testing the goodness of fit and dependency of two or more variables has been widely considered by scholars as a lucid way of establishing the dependence of a variable (Howell, 2011; Satorra & Bentler, 2001).

Table 4.15: Influence of government programmes on pig farming – Chi-square tests

Chi-square tests			
	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson chi-square	138.163[a]	12	.000
Likelihood ratio	135.894	12	.000
Linear-by-linear association	16.126	1	.000
N of valid cases	656		
a. 4 cells (20.0%) expected count of less than 5. The minimum expected count is 2.75			

As explained in Table 4.15 and Figure 4.13, 80% of the expected count is five, which means the chi-square rule has not been violated; therefore, it measures the dependence of pig farming on government programmes as assessed. The Pearson Chi-Square value being 138.163 and the significant value below the threshold value of 0.05 implies a significant association between

the influence of government programmes and the practicality of pig farming. To measure the effect of size, several methods can affirm the outcome of the crosstab's procedure depending on the number of variables. The phi-coefficient is commonly used for cross-tabulation between two variables—a correlation coefficient value that ranges from 0 to 1.

The Cohen (1992) criteria are often used to describe this size, assuming 0.10 for small effect size, 0.30 and 0.50 for medium and large effect sizes, respectively. According to Table 4.15, the effect size of government programmes on pig farming (phi = 0.459) 0.5 displays an enormous influence of government programmes on the practicality of pig farming. The government can, therefore, play an active role in creating an enabling environment for sustainable growth in the EC. The strength of pig farmers depends on government intervention. This strongly indicates that the government's intervention and implementation of supportive programmes will assist in improvement to pig farming. Figure 4.13 below displays that several respondents disagreed that the government has not been influential in the pig farming process. This means there the municipality should function to ensure safe intervention in pig farming, ensuring sustainability. Pig farming has an enormous potential to create job opportunities for the youth in the EC.

Table 4.16: Symmetric measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by nominal	Phi	.459			.000
	Cramer's V	.265			.000
Interval by interval	Pearson's R	.157	.038	4.063	.000[c]
Ordinal by ordinal	Spearman correlation	.177	.039	4.597	.000[c]
Measure of agreement	Kappa	.008	.022	.349	.727
N of valid cases		656			
a. Not assuming the null hypothesis					
b. Using the asymptotic standard error assuming the null hypothesis					
c. Based on normal approximation					

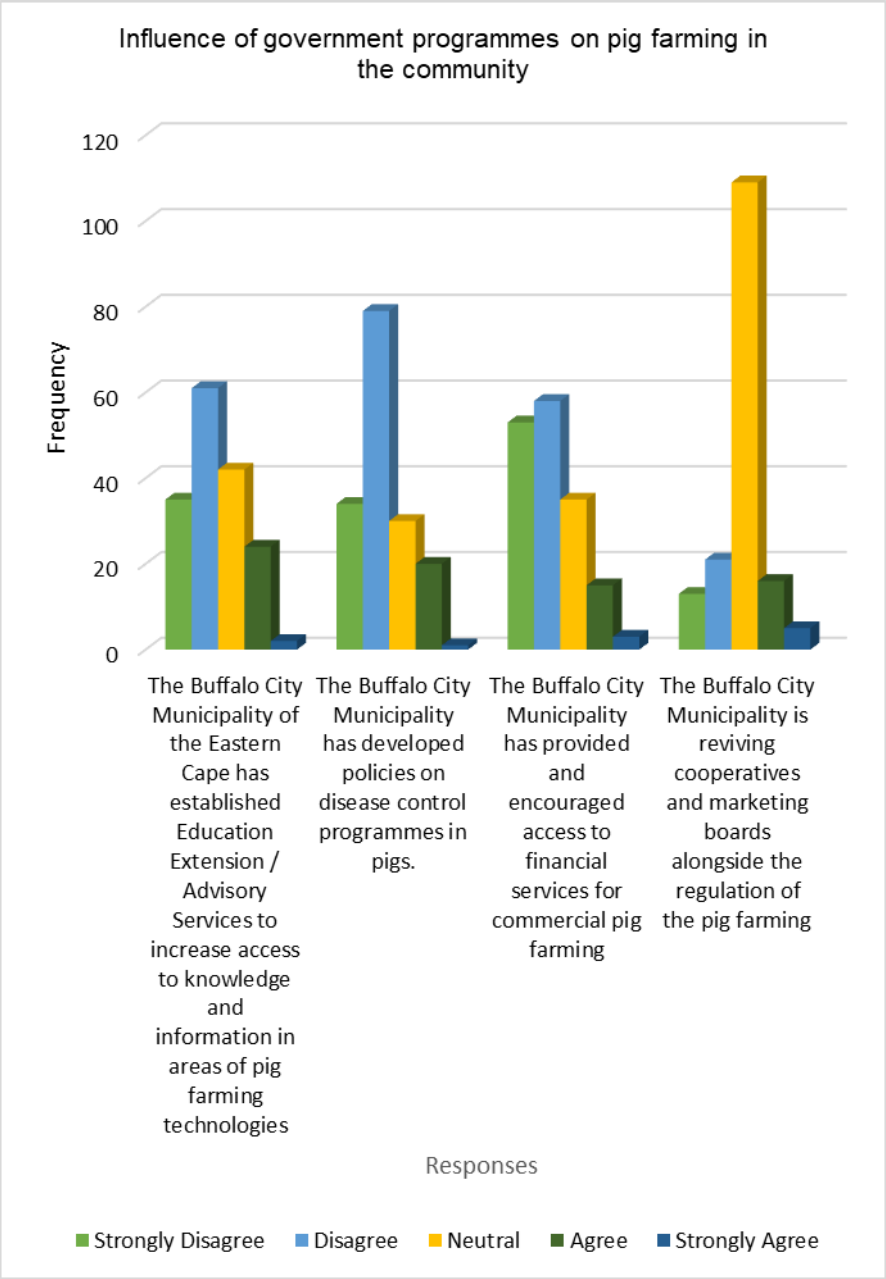

Figure 4.13: Cross-tabulation of the perceived influence of government programmes on pig farming

4.4.5 Objective 3: To determine the constraints that may hinder people from engaging in pig farming despite the abundant farmland in Buffalo City

Table 4.17: Constraints that may hinder pig farming engagement

Items	Disagree	Neutral	Agree
Inadequate access to knowledge in areas of new pig farming technologies in Buffalo City	17 10.4%	42 25.6%	105 64%
Buffalo City Municipality lacks disease control programmes for pigs	13 8.0%	13 7.9%	138 84.1%
Many farmers in Buffalo City lack access to financial services to engage in commercial pig farming	11 6.7%	15 9.1%	138 84.2%
Many pig farmers encounter marketing barriers, such as insufficient market amenities, loading ramps and scale pens, scarce market data, low prices, and the high costs of transactions	37 22.6%	20 12.2%	107 65.2%
There are hardly any export and interest rate subsidies in Buffalo City owing to the privatisation of pig farming cooperatives and the marketing control boards	25 15.2%	67 40.9%	72 43.9%
There are several religious, behavioural, and cultural taboos on pork consumption in Buffalo City leading to fear of deprived domestic marketing probability in producers	112 68.3%	21 12.8%	31 18.9%
The government lacks a proper policy on pig production in the national livestock development programme	18 11%	33 20.1%	113 68.9%

The results, as seen in Table 4.17, 64% observed inadequate access to knowledge in areas of new pig farming technologies in BC, constituting a great barrier on the path of the farmers in raising their pigs. Because of their belief that the municipality is hardly struck by epidemics, 84.1% remarked that BC lacks disease control programmes for pigs, and this could lead to a great loss during breakout of a disease; 84.2% of the respondents equally believe that several farmers in BC lack access to financial services to engage in commercial pig farming. Farming is, therefore, below their desire over the years hindering their potential quota to the economic development of the municipality.

Various respondents (65.2%) observed that several pig farmers encounter marketing barriers, such as insufficient market amenities, loading ramps and scale pens, scarce market data, low prices, and the high costs of transactions. These barriers present a great threat to marketing

their products. Respondents (43.9%) observed limited export and interest rate subsidies in BC owing to the privatisation of pig farming cooperatives and the marketing control boards. In consonance with the qualitative data obtained, 68.3% of the respondents disagreed on religious, behavioural, and cultural restrictions on pork consumption in BC, leading to fear of deprived domestic marketing probability in producers. Religion and cultural practices are not observed as barriers to rearing of pigs in the district. Respondents (68.9%) confirmed that the government lacks a proper policy on pig production in the national livestock development programme.

The people are ready to become involved in pig farming, however, a major problem is that they received inadequate support from the municipality. Several youths who would have happily taken the opportunity of pig farming without awaiting the government's input. They would be strongly constrained by a lack of major capital. Various respondents strongly expressed that support from the government is the lubricant for their enthusiastic participation in pig farming. The implements and medicine needed by pig farmers could sometimes be too expensive for these impoverished farmers to survive. An intervention from the government, could facilitate their needs.

> "Majority of community members are unemployed. Hence, I'm also looking for support in the form of feed, materials to build the pig housing and other form of assistance I can get from the municipality".

Various farmers lack funds to start with farming. Some received pigs as gifts and could not sustain them, therefore, they strongly need support from external bodies, especially, the government. A respondent categorically confirmed this as a conditional statement. According to him, pig farming is only viable if the government can assist the community:

> "Youths in our community are interested in pig farming but they don't have any money to startup".

> "Yes, it is but if only we can be given proper resources such as shelter and feed for the pigs it can work".

This shows, the people's readiness to work; they cannot be regarded as indolent. They are ready to work but are constrained by the affordability of the initial capital. If there can be help from the municipality at least, they are ready to work, boosting the economy of the nation. The government at the municipality level will easily obtain their Internal Growth Rate from these farms while providing employment opportunities for the people, reducing the strain on the government. Investing in these farmers is an indirect means of expanding the government's revenue opportunities.

4.4.6 Objective 4: To identify programmes aimed at encouraging pig farming and other livestock farming in Buffalo City

4.4.7

This aspect surveys the arrangement of the municipality aimed at encouraging pig farmers and livestock farming. Most respondents (57.3%), as shown in Table 4.18, refused that BC in the EC is developing and upgrading infrastructure, such as roads, communication lines, and farming facilities. They have neglected for a prolonged period, lacking the provision of infrastructures. A respectable number disagreed that BC in the EC has developed free education/ enlightenment/ training programmes on pig farming and digital information centres in all its rural communities. The people of BC insisted that they have not been enjoying the provision of education and enlightenment from the government.

Table 4.18: Programmes aimed at encouraging pig and other livestock farming in Buffalo City

Items	Negative	Neutral	Positive
Buffalo City Municipality in the Eastern Cape is developing and upgrading Infrastructure, such as roads, lines of communication and facilities for farming	94 57.3%	29 17.7%	41 25%
Buffalo City Municipality in the Eastern Cape has developed free education/ enlightenment/ training programmes on pig farming and developing digital information centres in all its rural communities	110 67%	29 17.7%	35 15.3%
Buffalo City Municipality in the Eastern Cape has developed a health management system and programmes for pig farming, including offering free traditional or pharmaceutical medicines	113 68.9%	24 14.6%	27 16.5%
Buffalo City Municipality in the Eastern Cape is gradually presenting interest-free agricultural loans to pig farmers, requiring no collateral	47 28.7%	71 43.3%	46 28.0%

Various respondents, 68.9%, insisted that BC in the EC did not develop any health management systems and programmes for pig farming, including offering free traditional or pharmaceutical medicines. This caused pig farming a tedious and demanding exercise on the path of the farmers; however, 28% of the respondents observed that BC in the EC is gradually presenting interest-free agricultural loans to pig farmers requiring no collateral. The responses reveal low support from the government to the inhabitants of this municipality. If the plight of these people can be considered and the government construct and implement programmes

as suggested in this study, the economy of the area will be facilitated, leading to people experiencing a more convenient life.

4.4.8 Objective 5: To identify development opportunities in pig farming programmes in Buffalo City

4.4.9

This objective demonstrates suggestions that can enhance pig farming in the municipality. BCM in the EC must reinstate marketing boards for pig farming to encourage price negotiation, supported by 90% of the respondents; 93% supported the veracity that BC in the EC must offer export and interest rate subsidies to pig farming products; this will help the farmers with extended opportunities while expanding their horizons in the capacity of pig farming, ensuring more productivities.

Table 4.19: Development opportunities in pig farming programmes

Items	Negative	Neutral	Positive
Buffalo City Municipality in the Eastern Cape must reinstate marketing boards for pig farming to encourage price negotiation	3 1.8%	13 7.9%	148 90.2%
Buffalo City Municipality in the Eastern Cape must offer export and interest rate subsidies for products from pig farming	3 1.8%	8 4.9%	153 93.3%
Buffalo City Municipality in the Eastern Cape must establish free veterinary services for pig farmers	4 2.5%	5 3.0%	155 94.5%
Buffalo City Municipality in the Eastern Cape should lease out government land to prospective pig farmers	2 1.2%	7 4.3%	155 94.5%
Pig farmers and the administration of Buffalo City in the Eastern Cape must enter partnerships on the discovery of market and product value addition	0 0%	2 1.2%	162 98.8%
Government should formulate a proper policy on pig production, religious, behavioural, and cultural change of people and include it in the national livestock development programme	0 0%	3 1.8%	161 98.2%

Respondents (94.5%) as indicated in Table 4.19, plead for the government to establish free veterinary services for pig farmers and to consider leasing government land to prospective pig farmers; therefore, potential farmers will have sufficient space and opportunity to express their

capabilities. Ninety-eight per cent of the respondents asserted that pig farmers and the administration of BC in the EC must enter partnerships on the discovery of market and product value addition, enhancing smooth product exchange. Most (98.2%) responded that the government should formulate a proper policy on pig production, religious, behavioural, and cultural change of while implementing it it in the national livestock development programme. This will ensure safe and constituted support for the effective practice of pig farming in the municipal area.

4.4.10 Objective 6: To ascertain government policies that can be introduced to encourage pig farming

4.4.11

The results in Table 4.20 are the policies that have not been practiced before, which must be enacted to ensure progress in pig farming economic inputs. Accommodated/implemented programmes lacked for the traditional method of pig farming, greatly affecting the productivity of pig farmers; provision for these programmes is required for transformation. Several disagreed, 47.5%, on existing industrialised (commercial) pig farming common in the area. A policy must be implemented to support the industrialisation of pig farming.

Table 4.20: Government policies that can be introduced to encourage pig farming.

Items	Disagree	Neutral	Agree
Buffalo City Municipality in the Eastern Cape has accommodated/ implemented programmes for the traditional methods of pig farming.	78 47.5%	74 45.1	12 7.3%
Buffalo City Municipality in the Eastern Cape has accommodated/ implemented programmes on industrialised (commercial) pig farming.	78 47.5%	71 43.3%	15 9.1%
Buffalo City Municipality in the Eastern Cape has accommodated/ implemented programmes on integrated systems, of pig production alongside other initiatives, such as farming fish.	76 46.3%	71 43.3%	17 10.4%

Buffalo City Municipality in the EC failed to accommodate and implement programmes on integrated systems and pig production with other initiatives, such as fish farming. A deliberate focus on enacting and implementing such programmes in the government policy, will ensure pig farmers with sufficient ground to conduct their activities.

4.5 Interview with the Eastern Cape Provincial Government

Each government department conducts the laws and policies passed by Parliament or the Cabinet. The DALRRD's mission, as pronounced on its website, is to “accelerate land reform, catalyse rural development and improve agricultural production to stimulate economic development and food security” (Department of DALRRD, 2019). They aligned their outcomes with the seven priorities to drive the National Development Plan. The Department of Rural Development and Agrarian Reform at provincial level, is responsible for implementing and monitoring these outcomes.

4.5.1 Interview with a South African Government representative

The study shares learnings from a government representative on pig farming/production. The South African Government is an institutional body housing a constitutional democracy with a three-tier system of government and an independent judiciary. DALRRD officials provide farmers with technical advice on how to produce pig farming and pig production. No financial assistance has been implemented or is readily available for piggery; this indicates that the department can only assist (the public) with writing business plans accompanied by the knowledge and expertise available within the department and its constituents.

Besides the East London branch, 17 service centres/satellite offices are in BC and Amathole district. Amathole is along the coastal line of the southern part of the EC with the former Ciskei and Transkei homelands. Officials in these service centres comprise services officers and veterinary services known as animal health technicians. They must visit farmers to inform and update them on the programmes the department offers. They usually have awareness campaigns; the extension officers establish workshops with the farmers and have information days. These service centres have an open-door policy.

Programmes specific to pig farming do not exist, supporting agriculture only. Individuals interested in pig farming receive assistance and advice. The department sends extension officers to the site to inspect pig farming suitability. Advice is offered concerning the structure to be implemented. The advice can also regard the direction of the structure and requirements. An engineering service assists with drawing pig pens. In some instances, funds are available for specific items, such as if the farmer needs a borehole; assistance with the application for providing a borehole is provided. The directorate manages such assistance.

Pig farmers primarily obtain assistance under such programmes; these programmes are not only directed at pig farmers but at all farmers in general. The CASP funds focus on

infrastructural needs and are aimed at agriculture in general. No individual programme focuses on pig farming only. A directorate assists pig farmers to register their co-ops; however, no funding is provided. The state assumes the responsibility to support specific aspects of animal health. Government offices embrace guides identifying free veterinary services. Farmers are charged a minimum set fee for some of the veterinary services. Individuals are encouraged through workshops and roadshows through varied platforms; however, owing to a lack of resources and means, a lack of interest is observed. It is concluded that some are not interested.

The environment is highly conducive to pig farming; however, adequate support is required for it to succeed. Inhabitants are interested in pig farming, but the industry is difficult to infiltrate. With the right level of support and the correct structures, the individual can make a profit, observing that pig farmers before 1994 were subsidised. Many people believe farming pigs is easy, whereas it is complex. It requires much funding. Without the required level of funding, profit cannot be made. The profitability of pig farming also depends on the numbers; farming in small numbers will not ensure a profit. Farming large numbers with a fully-fledged pig production unit leads to business success. The area needs pig farming attention as pig policies lack.

4.6 Discussion of findings

South Africa has the highest unemployment rate globally and is the most unequal country. The failure rate of small and medium enterprises (SMEs) stood at 75% in the first five years of establishment. The proportion of households depending on government welfare grants is 40% of the populace. Pig farming provides opportunities as a viable business for the community to sustain themselves; however, government support and seed funding have been a major constraint for most pig business farmers. The study reveals that farming activities provide a source of earning with several households depending on it as a means of livelihood. This result confirms the work of Matabane et al. (2015) who revealed that pig production is a vital element for improving the uncertainty of household food and poverty reduction in the rural communities. The common advantage to all pig farmers is the available space for pig farming activities. Several farmers engage in pig farming as a necessity. This implies that the reasons for pig farming are for survival, categorised as necessity entrepreneurship. This study reveals that 70% of respondents have no other sources of income, depending only on pig farming as their main income. The government have two crucial functions in the sustainability of pig farming. These responsibilities include creating an enabling environment for the business to thrive and developing agricultural support policies pig farmers. According to the government official, they

support specific aspects of animal health; they should provide free veterinary services in disadvantaged areas as 94.5% plead that the government should establish free veterinary services. The municipality can also provide seed funding or developmental funds for pig farmers and its value chain sustainability. Respondents confirmed that the environment is highly conducive to pig farming; however, adequate support is required successful pig farming.

CHAPTER 5:
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises the main findings of the research objectives and goals and their value and contribution. The study's focus was to ascertain the viability of establishing small-scale pig farming in BC in the EC to contribute to reducing unemployment. The study presents a summary discussion of the critical findings and, last, the recommendations. In conclusion, this chapter presents the study limitations while recommending future research.

5.2 Summary of the research problem, objectives, and questions

5.2.1 Problem statement

Unemployment in South Africa remains elevated, and several lacking basic necessities. In the second quarter of 2022, the unemployment rate was at 33.9%. The highest unemployment rate during this period was recorded in the EC at 42.8%. The extreme unemployment and poverty rate also harm revenue collection as fewer people contribute to personal income tax with more becoming dependent on social grants. Unemployment is one of the major factors exacerbating poverty. South Africa's crime statistics confirm unemployment as a major challenge.

5.2.2 Research objectives and questions

Table 5.1: Research objective and questions

Research objectives	Research questions
1. To explore the effects of pig farming on poverty alleviation in Buffalo City, Eastern Cape	1. What are the effects of pig farming on poverty alleviation in Buffalo City, Eastern Cape?
2. To determine the influence of government programmes on pig farming in the community	2. What influence do government programmes have on pig farming in the community?
3. To determine the constraints that may hinder people from engaging in pig farming despite the abundant farmland in Buffalo City	3. What are the constraints that may hinder individuals from engaging in pig farming despite the abundant farmland in Buffalo City?
4. To identify programmes aimed at encouraging pig farming and other livestock farming in Buffalo City	4. Which programmes are aimed at encouraging pig and other livestock farming in Buffalo City?
5. To identify development opportunities in pig farming programmes in Buffalo City	5. What are the development opportunities in pig farming programmes in Buffalo City?
6. To ascertain government policies that can be introduced to encourage pig farming	6. Which government policies can be introduced to encourage pig farming?

5.3 Summary of research methodology and design

The study combined and integrated qualitative and quantitative research, known as mixed methods research. The triangulation research design was employed to meet the study objectives. Qualitative and quantitative methods were employed simultaneously. Both methods conceded equal weight in discussing the research problem. Randomly selected unemployed individuals and existing farmers were interviewed to better understand the influence of unemployment in South Africa. Policymakers from BC and the Department of Rural Development and Agrarian Reform were interviewed to acquire a comprehensive understanding. Data for this study were collected through interviews and questionnaires. The

XLSTAT and SPSS 28 generated results for the quantitative aspect of the questionnaire and NVivo for the qualitative aspect.

5.4 Conclusion on findings

5.5 Research aim

The research findings suggest that pig farming can be viable; however, it requires intervention from the government. Policy development should be considered an essential pig farming sector, with the lack of pig laws or regulations.

5.5.1 Objective 1: To explore the effects of pig farming on poverty alleviation in Buffalo City, Eastern Cape

Abundant land space and interest in pig farming exist, which guarantees its viability. Some respondents observed that pig farming does not need a high level of expertise, therefore, they could afford to rear pigs at ease. The area is free and unsusceptible to epidemics, such as swine flu and other environmental hazards, including drought. Since pigs are easy to breed and are quick to grow, they are rearing them. Religious bias here is non-existent, therefore, pig farming is primarily viable and achievable in the community. The community is non-Islamic; therefore, they may raise pigs without fear of religious repercussions. Pig farming ensured reduced poverty in the community. A youngster who understands the benefits of pig farming, presented with pigs, will cherish and nurture them, while selling and earning an income; the pork meat can also be consumed or vended.

5.5.2 Objective 2: To determine the influence of government programmes on pig farming in the community

The study results confirm that pig farming has considerable potential for presenting job opportunities for the EC's growing youth population. Pig farmers rely on government intervention to survive. Various respondents disagreed that the government has had a considerable influence on the pig farming process. This means that the municipality needs to accomplish substantial progress to ensure safe intervention in pig farming; however, the government official reported campaigns and other support available to farmers. The government does not consult the farmers; they decide on their behalf. Consulting with them, should inform on the support required.

5.5.3 Objective 3: To determine the constraints that may hinder people from engaging in pig farming despite the abundant farmland in Buffalo City

Inadequate access to knowledge exists in areas of new pig farming technologies in BC. Several contemplate that the municipality lacks a proper policy on pig production in the national livestock development programme and disease control programmes for pigs; therefore, this will lead to a great deal of loss during a breakout of a disease. The implements and medicine required by pig farmers may be expensive. The impoverished, farming to survive, may not afford these costs. Government intervenes will facilitate matters. Support from the government is the lubricant required for their enthusiastic participation in pig farming as several observed a lack of export and interest rate subsidies in the municipality.

5.5.4 Objective 4: To identify programmes aimed at encouraging pig farming and other livestock farming in Buffalo City

Most respondents denied that BC in the EC is developing and upgrading infrastructures, such as roads, communication lines, and farming facilities. According to the responses, the government provided little support to the inhabitants of this municipality. The plight of these individuals should be considered. The government should, therefore, implement the programmes suggested in this research. The economy of the area will benefit greatly, and the people will live a more comfortable life. No individual programme focuses on pig farming only. The CASP funds focus on infrastructural needs and are aimed at agriculture in general. The state assumes the responsibility to support specific aspects of animal health.

5.5.5 Objective 5: To identify development opportunities in pig farming programmes in Buffalo City

Evidence from this study suggests that to encourage price negotiation, BC in the EC must reinstate marketing boards for pig farming and should offer export and interest rate subsidies to pig farming products, allowing farmers to extend and expand their horizons in the capacity of pig farming to increase productivity. The residents urged the government to provide free veterinary services to pig farmers and to consider leasing government land to prospective pig farmers. The environment is highly conducive to pig farming; however, adequate support is required for it to succeed. With the right level of support and the correct structures, the individual can make a profit. The profitability of pig farming also depends on the numbers; farming with small numbers will not ensure profit.

5.5.6 Objective 6: To ascertain government policies that can be introduced to encourage pig farming

Buffalo City Municipality in the EC failed to accommodate and implement programmes on integrated systems and pig production with other initiatives, such as fish farming. Pig farmers will have sufficient ground to conduct their activities with deliberate attention on enacting and implementing such programme in the government policy.

5.6 Recommendations

This study revealed the effectiveness of the viability of small-scale pig farming in BC in the EC to reducing unemployment. Some respondents observed that pig farming does not need a high level of expertise, therefore, they could afford to rear pigs at ease thus confirm that pig farming has considerable potential for presenting job opportunities for the EC's growing youth population. Although the findings denied that BC in the EC is developing and upgrading infrastructures, such as roads, communication lines, and farming facilities. This can be the basis for providing direction and guide government departments with planning, monitoring, and service delivery in the rural areas; several respondents specified they have been long neglected, lacking the opportunity to enjoy provided infrastructures. Government implemented farming programmes, but they are nonspecific to pig farming, confirmed by a government official in this study. The finding can set the foundation for policy development targeting small-scale pig farming. The environment is highly conducive to pig farming; however, adequate support is required for it to succeed. The upcoming pig farmers primarily require financial support. Government provides funding for other farming activities; a future study should be conducted to investigate why residents are not involved in farming activities despite ample land and funding. The unavailability of the BCM official/s was the most significant disadvantage for this research; future research should include their perspective.

5.7 Research limitation

Permission to interview officials from BC was secured from the city manager; however, the relevant officials did not confirm the meeting, despite several requests. For future study, it is advisable to physically visit the municipal office. Few or no studies focus on municipal intervention/s, a study that focus on how the municipality perceives its rural farming interventions could be beneficial in closing the gap between demand and supply. Last, this study was conducted at BC in the EC, with a sample size of 164 participants. It, therefore, may not apply to the entire South Africa.

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APPENDICES

Appendix A: Research questionnaire

Graduate School of Business Management

Business & Management Sciences Faculty

Dear Sir/Madam,

Invitation to participate in an academic research

My name is **Nosipiwo Mpalala**, I am a master student of Business Administration at the Cape Peninsula University of Technology conducting research on **"The effects of pig farming on unemployment alleviation in the Eastern Cape"**. I kindly wish to invite you to participate in this research by filling out this attach questionnaire which will take 10-15 minutes of your time. **Masixole Mlambisi** who is my research assistant will assist you should you have any questions.

Please note that the information obtained from this questionnaire will be treated in strict confidentiality and will be used only for research purpose. Your participation in the study is voluntary and you can withdraw at any time.

Kind Regards

Nosipiwo Mpalala

Your consent to participate in this study will be highly appreciated.

Respondent's signature: _____Date: _____

Contact details_____

QUESTIONNAIRE FOR THE VIABILITY STUDY OF PIG FARMING IN THE BUFFALO CITY MUNICIPALITY OF THE EASTERN CAPE.

Questionnaire No……

My name is Nosipiwo Mpalala, a postgraduate student at the Cape Peninsula University of Technology. This questionnaire is to solicit your response on the viability of pig farming in the Eastern Cape. Participation is voluntary and all responses shall be treated in absolute confidentiality, and it is for research purpose only.

The questionnaire below is intended for those who currently farm five or more pigs and also those unemployed. It should take 10 minutes.

Guidelines of the questioners (please read/understand the following before answering the questions):

- This questionnaire comprises two Sections.
- The questions below refer to your current pig farming operations, and neither your past experience nor do they refer how you would, such as it to be.
- You are encouraged to answer the questions to the best of your ability, memory and knowledge even if your answer is just an estimation, approximation or an educated guess.
- Please make an “X” at all the relevant ticking boxes.
- Please circle the question number of the questions if you do not understand, unwilling to answer or the question does not fit your farming experience or characteristics or does not apply to you.
- You are encouraged to write extra comments (if you have any) regarding the questions on the back of the question’s page.

SECTION A: BACKGROUND

Household demographics

1. Location……... Village……
2. **Sex:** □Male □Female
3. Please select your age

□15-25 □26-30 □31-35 □36-40 □above 40

4. **Family size** ……. members
5. **Family head**: □Male headed □Female headed □Youth Headed □ Child headed-younger than 18 years
6. **Education level of family head:** □Primary level □Secondary level □Tertiary level □Informal
7. **Religion/sect:** □Catholic □Protestant □Islam □Others (specify) -----

8. Employment Status

a) Have you ever been employed earning wages or salary, either full-time or part-time, including self-employment? Yes ☐ No ☐

b) If unemployed, are you pursuing formal employment currently? Yes ☐ No ☐

c) If employed, what is your occupation, or what kind of work did you do? And how much you earned? how many hours per week did you work?

d) If employed in past, was the previous job better or worse than pig farming experience and earning?

9. If pig farming supports the job creation, why are you not expanding?

□ There is not enough viable labour available, or you do not have enough time.

□ There is not enough water available for a bigger herd.

□ Your current feed supplier will not have enough feed available.

□ There is not enough demand (sales) for your pigs.

□ You cannot afford to expand.

□ You do not have enough pig farming expertise.

□ You are content with your current farm size.

Reason for Pig Farming

10. Why are you farming with pigs?

□ To feed your family with the pigs you raise.

□ It is your only income.

□ To add to your other incomes.

□ The pigs were provided to you? Or you already had pigs.

□ Funding was provided to farm with pigs.

□ You enjoy farming with pigs.

□ Other reason(s): _____

11. a) How many years have you farmed at your current farm / backyard? _____Years

b) How many years in total have you farmed with pigs? _____Years

c) Do you have access to electricity? □Yes □No

d) Do you have access to water? □Yes □No

SECTION B: PIG PRODUCTIVITY

1. Does your religion affect your contact with pigs? □Yes □No
2. If you have answered no to the above question, why are you not interested in pig farming?

□ No support from organisations.

□ No support from the municipality.

□ No support from local universities.

□ No support from vets in the form of free or reduced fees for service provided.

□ No financial means to start

□ No access to farm land

□ Not interested in farming

□ Do not have knowledge of pig farming

□ Profession of intense labour

□ Other reason(s): _____

Labour

3. How do you manage your farm?

□ Do you manage it full-time or part-time, which? _____

□ Do you have a labourer that manages your farm for you?

□ You do all the farm work yourself.

□ Other reason(s): _____

a) How many labourers do you currently employ? _____People

b) Are they part-time or full-time labourers? _____

c) How many labourers are working on the pig farm at a time? _____

d) Do their responsibilities include any non-pig farm activities? _____

e) Are you able to remunerate your labours on time? □ Yes □ No

f) Are your monthly farming expenses covered by your income? □ Yes □ No

4. Is pig farming viable in the municipality? □ Yes □ No

5. If no, why do you think it is not viable?

□ No market for pig products in Buffalo City

□ Too many competitors

□ No cash stability

□ The climate in the municipality is not suitable for pig farming

□ Start-up costs are too high

□ Other reason(s): _____

6. Are there pig farm programmes in the Buffalo City? □Yes □No

7. Do you think the government is doing enough awareness of the pig farming programmes in the Buffalo City? □ Yes □No

8. Why do you think pig farming is viable in your community?

9. How do you feel about pig farming as a tool for job creation? Please expand your answer

1. Evaluate the statements below on the viability of extending pig farm programmes in Buffalo City in the Eastern Cape. **Use the following scale as appropriate. Strongly disagree SD- Disagree D – Neutral N - Agree A – Strongly agree SA**

Statements	SD	D	N	A	SA

Buffalo City Municipality in the Eastern Cape has accommodated/ implemented programmes for traditional method of pig farming					
Buffalo City Municipality in the Eastern Cape has accommodated/ implemented programmes on industrialised (commercial) pig farming					
Buffalo City Municipality in the Eastern Cape has accommodated/ implemented programmes on integrated systems, that is, of pig production alongside other initiatives, such as farming fish					

2. Evaluate the statements below on the influence of government programmes on pig farming in the community. Use the following scale as appropriate. Strongly disagree SD- Disagree D – Neutral N - Agree A – Strongly agree SA

Statements	SD	D	N	A	SA
Buffalo City Municipality in the Eastern Cape has established Education Extension / Advisory Services to increase access to knowledge and information in areas of pig farming technologies.					
Buffalo City Municipality has developed policies on disease control programmes in pigs.					
Buffalo City Municipality provided and encouraged access to financial services for commercial pig farming.					

Buffalo City Municipality is reviving cooperatives and marketing boards alongside the regulation of the pig farming sector.					

3. Evaluate the statements below on barriers and reasons why most people are not currently engaged in pig farming in Buffalo City despite the abundant farm land. **Use the following scale as appropriate. Strongly disagree SD- Disagree D – Neutral N - Agree A – Strongly agree SA**

Statements	SD	D	N	A	SD
Inadequate access to knowledge and information in areas of new pig farming technologies in Buffalo City.					
Buffalo City Municipality lacks disease control programmes for pigs.					
Many farmers in Buffalo City lack access to financial services to engage in commercial pig farming.					
Many pig farmers encounter marketing barriers, such as insufficient market amenities, loading ramps and scale pens, scarce market data, low prices, and the high costs of transactions.					
There are hardly any export and interest rate subsidies in Buffalo City owing to privatisation of pig farming cooperatives and the marketing control boards.					

There are several religious, behavioural and cultural taboos on pork consumption in Buffalo City leading to fear of deprived domestic marketing probability in producers.					
The government lacks a proper policy on pig production in the national livestock development program.					

Evaluate the statements below on existing programmes aimed at encouraging pig farming and other livestock farming in Buffalo City. **Use the following scale as appropriate. Strongly disagree SD- Disagree D – Neutral N - Agree A – Strongly agree SA**

Statements	SD	D	N	A	SA
Buffalo City Municipality in the Eastern Cape is developing and upgrading Infrastructure, such as roads, lines of communication and facilities of farming.					
Buffalo City Municipality in the Eastern Cape has developed free education/enlightenment/training programmes on pig farming and developing digital information centres in all its rural communities.					
Buffalo City Municipality in the Eastern Cape has developed a health management system and programmes for pig farming including offering free traditional or pharmaceutical medicines.					
Buffalo City Municipality in the Eastern Cape is slowly rolling out interest-free agricultural loans to pig farmers without requiring any collateral.					

Evaluate the statements below on development opportunities in pig farming programmes in Buffalo City. Use the following scale as appropriate. Strongly disagree SD- Disagree D – Neutral N - Agree A – Strongly agree SA

Statements	SD	D	N	A	SA
Buffalo City Municipality in the Eastern Cape must reinstate marketing boards for pig farming to encourage price negotiation.					
Buffalo City Municipality in the Eastern Cape must offer export and interest rate subsidies to products from pig farming.					
Buffalo City Municipality in the Eastern Cape must establish free veterinary services to pig farmers.					
Buffalo City Municipality in the Eastern Cape should consider leasing out government land to prospective pig farmers.					
Pig farmers and the administration of Buffalo City in the Eastern Cape must enter partnerships on discovery of market and product value addition.					
Government should formulate a proper policy on pig production, religious, behavioural and cultural change of people and include it in the national livestock development programme.					

THANK YOU

Appendix B: Interview questions

- **My name is Nosipiwo Mpalala, a postgraduate student at the Cape Peninsula University of Technology. This interview / questionnaire is to solicit your response on the viability of pig farming in the Eastern Cape.**
- **The interview / questionnaire should take less than an hour.**
- **Participation is voluntary and all responses shall be treated in absolute confidentiality, and it is for research purpose only.**

Question 1

What are the pig farming strategies, interventions and tools in place to assist small scale pig farmers in the Eastern Cape?

Question 2

How does government disperse information to the communities on programs offered to support pig farmers?

Question 3

Please describe the pig farming programs in the Eastern Cape with focus on the Buffalo City Municipality. Please provide brief explanation how these programs are implemented.

Question 4

How do you evaluate the government programs offered to farmers? How do they influence performance and sustainability of the farmers, please provide more explanations?

Question 5

The Eastern Cape is surrounded by abundant land. How is government encouraging low-income communities in the Buffalo City Municipality to engage in livestock Farming? Why do you think people are not interested in pig farming?

Question 6

Is there financial support given to upcoming pig farmers and how is it distributed? What are the qualifying criteria for such support?

Question 7

Would you describe the environment in the Buffalo City Municipality as conducive for pig farming? The environment in this case includes infrastructure like roads, lines of communication and facilities of farming.

Questions 8

Is there a policy on pig production in the national livestock development programme? How is it implemented? What other policies can be introduced to encourage pig farming?

Is there anything more you would add?

Thank you for giving off your valuable time to respond to my questions. Once again, all information you provided will be treated with confidentiality and will be used for research only.

Appendix C: Language editing certificate

Nr: 202651

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Contract title:	THE EFFECTS OF PIG FARMING ON UNEMPLOYMENT ALLEVIATION IN THE BUFFALO CITY OF THE EASTERN CAPE
Author/s:	NOSIPIWO MPALALA
Institution:	Cape Peninsula University of Technology
Date Issued:	16 September 2022

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