DETERMINANTS OF EMERGING SMALL-SCALE PIG FARMERS ' PARTICIPATION IN HIGH VALUE MARKETS IN DR KENNETH

KAUNDA DISTRICT, SOUTH AFRICA.

BY

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DECLARATION

I, Masenyeke Priscilla Suzen Sentsho, declare that the dissertation entitled "Determinants of emerging small-scale pig farmers'participation in high value markets in the Dr Kenneth Kaunda District," hereby submitted for the degree of Master of Science in Agricultural Economics has not previously been submitted by me for a degree at this or any other university. I futher declare that this is my work in design and execution and that all materials contained herein have been duly acknowledged.

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SIGNATURE :.....

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ABSTRACT

This study analyses determinants of small-scale pig farmer's participation in high value/mainstream markets. The study was conducted in Dr Kenneth Kaunda District Municipality. The Dr kenneth Kaunda District is divided into four municipality, a selection of participants was stratified in to four parts selected from 40 to 20 pig farmers per municipality. A stratum was used as an administative units then random sampling was used to select participants for the study.(stratified rondom sampling). A structured questionnaire was used to collect data and analysis was done using the Statistical Package for Social Sciences (SPSS) version 20.

The results shows that farmers sell their products to low value markets; those who sell in high value markets do so through middlemen, even though they have over 5 years expirience and sell first grade products. The biggest constraints faced by pig farmers are lack of access to marketing information for high value markets, poor market infrastracture, high transport cost and the least are lack of finance and lack of storage. Farmers who participate in high value markets are faced with high trasaction costs and levies at auctions and abattoirs. It was found that in oder to increase farmers'annual farm income and access to high value markets, farmers have to increase their breeding herd, have adequate knowledge on the requirements of high value markets, reduce transport cost and maintain contact with extension services.

The probit model was used to determine the influence of the independent variables on emerging small-scale pig farmers' participation in high value markets. The model has a good fit and was significant at 1%. Eight explanatory variables were significant while the other seven variables were insignificant. There is a 100% probability of income surplus which could be used to increase the number of breeding stock and provide better opportunities for participation in high value markets.

The recomendation are: that small-scale emerging farmers should be provided with adequate information and be trained on the standands set by high value markets. Establishment of new and strengthening of existing producer organisations and cooperatives towards collective action, enhancement of extension officers'capacity and services, youth and women involvement in pig farming.

It is concluded that improving farmer's knowledge on high value market standards and reduction on transaction cost would increase their likelihood to participate in high value market.

***Key words**: Small-scale emerging pig farmers, high value market participation, technical factors, probit regression model, Dr Kenneth Kaunda District.*

ACRONYMS

ARC Agricultural Research Council

ACB Agricultural Credit Board

BEE Black Economic Empowerment

CASP Comprehensive Agricultural Support Programme

DAFF Department of Agriculture, Fishery and Forestry

DBSA Development Bank of Southern Africa

DRKKD Dr Kenneth Kaunda District

FAO Food and Agriculture Organisation

FSP Farmer Support Programme

LRAD Land Redistribution for Agricultural Development

MAFISA Micro Agricultural Financial Institutions of South Africa

NWU North West University

NAMC National Agricultural Marketing Council

SAPPO South African Production Organisation

SPSS Statistical Package for Social Science

RSA Republic of South Africa

READ Department of Rural, Enviroment and Agricultural Development

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CHAPTER ONE

1.0 INTRODUCTION

In South Africa, the agricultural sector is composed of two categories of farmers: the first type consists of subsistence farmers who produce on a small-scale, predominantly black farmers.The second type consists of commercial farmers who mainly produce on a large-scale, predominantly white farmers. The small- scale is highly labour- intensive but with low capital intensity and production is mainly for home consumption.This is in contrast with the situation in many other countries in the world where a wide range of farmers/agribusiness types can be found. Black small-scale farmers are recongnised as stakeholders in farming. However, majority of black farmers in South Africa find it challenging to break into the commercial sector due to lack of knowledge, finance and advanced technology compared to white farmers (Jacobs, 2008). This dualism system has created unequal distribution of land, economic assets, support services, market access, infrastructure and income.

In addition, this has led to greater inconsistency in income distribution in the agricultural sector (Ghatak & Ingersent, 2009). Agriculture constitutes one of the methods of alleviating poverty in rural areas. In developing countries, agriculture plays an important role in the livelihood of individuals, as many depend on the production of agricultural produce for consumption and income. Although agriculture plays an important role, many are still sceptical about emerging farmers' contribution to the economy compared to commercial farmers.

The limited contribution to the economy by small emerging farmers is due to constraints and challenges faced by the farmers.Marketing constraints arise due to factors such as limited knowledge about market information (none or poor provision of agricultural information is a key factor that greatly limits agricultural development), lack of market infrastructure (farmers are located in remote areas, therefore, lack of storage facilities and, poor road networks), high transaction costs (producers will not use a particular channel when the value of using that channel is outweighed by the cost), pricecompetition, acces to market, transport, quality of products, storage, finance, socio economic factors, low educational level of emerging farmers, agricultural marketing policies imposed and lack of financial support (Chaminuka and Seayolo, 2008).

Marketing is a business activity associated with the flow of goods and services from production to consumption. The marketing of agricultural products begins on the farm, with planning of production to meet specific demand and market prospects. Marketing is considered complete with the sale of fresh or processed products to consumers or manufacturers in case of raw materials to an industry. Agricultural marketing also involves the supply of inputs to farmers for production purposes (Kohls and Uhl, 2002).

The government and agricultural marketing policies play a crucial role in promoting pig enterprise for emerging farmers. It is through proper marketing channels, government intervention and agricultural policies that pig industries can grow, including the number of farmers in such industry. Pig farmers in Dr Kenneth Kaunda District of the North West Province have proven their capability to sustain the pig industry. However, inadequate infrastructure, high transaction cost, poor marketing channels and barriers to market, and market information prompted the researcher to undertake this study.

1.1. STATEMENT OF THE PROBLEM

The demand for pork in Dr Kenneth Kaunda Ditrict in the North West Province has been on the rise due to increasing income and urbanisation of the population. The focus of this research is on the pig enterprise solely , whereby emerging small scale pig farmers in the industry are constrained from participating in the high-value markets although this district farmers have comparative advantages. Although the consumption of pork is low in South Africa compared to other countries in the world, the pig industry is given less attention compared to livestock and crop enterprises. However, the industry has proven that with adequate support from government and SAPPO,there is high market for pork.

The South African Pig Production Organisation (SAPPO 2012), reports that the main constraints identified by the farmers were in the area of marketing and access of weaner piglets by farmers participating in grower piggery production system. However, the details of the marketing constraints have not been researched. A dual market structure exists in the pig industry (emergingandcommercial high value markets). However, large-scale/ commercial farmers are capturing the high value market that pays premium for quality products while emerging small- scale pig farmers have limited access to such markets because of some constraints which need to be researched. This trend is said to be limiting the participation of emerging small- scale farmers in high value markets and in the livelihood opportunities in the

pig production in study area, hence the need to investigate the problem and propose recommendations to improve their participation in high value markets.

1.2 RESEACH QUESTIONS

The reseach questions asked were:

- What are the different types of products sold by the emerging small-scale pig farmers?
- What are the different types of pig markets that existing in the study area?
- What are the marketing constraints faced by farmers?
- What are the factors limiting farmer's access to high value markets?

1.3 OBJECTIVES OF THE STUDY

The main objective of the study was to analyse the main factors influencing the participation of pig farmers in high value markets in Dr Kenneth Kaunda Ditrict of the North West Province.

1.3.1.The specific objectives of the study were to:

- Identify personal and socio-economic characteristics of emerging small-scale pig farmers of the study area;
- Examine the types of pig markets in the study area;
- Determine the types of products sold by emerging small- scale pig farmers;
- Ascertain the effects of socio-economic factors on annual net incomes of emerging small- scale pig farmers,
- Determine the effects of personal and socio-economic factors on the participation of emerging small- scale pig farmers in high value markets,and
- Identify marketing constraints faced by emerging small- scale pig farmers in the study area.

1.4 HYPOTHESIS

There is no significant relationship between socio-economic factors and annual farm incomes of emerging small - scale pig farmers.

1.5 SIGNIFICANCE OF THE STUDY

Policy recommendations from the study may be used by policy- makers and implementers to address some of the marketing constriants faced by emerging pig farmers in the study area. Furthermore, this study will expand existing information on the subject matter, hence other researchers could use it for further references. The reseach could be used by extension officers in identifying and closing the gaps between of their respective emerging small scale farmers in the study area. Future reseachers outcomes could use it as a reference in their studies. It could also be used as a measuring tool, to check the development of emerging small- scale farmers in the study area and for future participation in high- value markets.

1.6 CHAPTER SUMMARY

The government and agricultural marketing policies play a crucial role in promoting pig enterprise for emerging farmers. It is through proper marketing channels, government intervention and agricultural policies that the pig industry can grow, including the number of farmers in such industry. Many farmers in Dr Kenneth Kaunda District are trying to establish markets for themselves by securing contracts to produce for high-value markets such as supermarkets and abattoirs. However, the idea seems to fail due to the fact that high-value markets give preference to large and established producers who are able to deliver good quality products and sustain the ongoing supply of products.

CHAPTER TWO

2.0 LITERATURE REVIEW OF THE STUDY.

2.1 INTRODUCTION

This chapter addresses issues pertaining to marketing constraints faced by emerging small scale farmers in the pig industry.A brief review of agricultural marketing policies, marketing information, market access, factors of production, extension services,factors affecting pig production, farming organisation,marketing and production goals, transportation of pigs to the market, bio-security and disease control, factors affecting pig production,factors affecting farmers' participation in high-value markets,marketing strategies that can improve pig farming, and views by other reseachers about smallholder farmers' participation in high value markets.

2.1.1 Defination of Market Value

The price an asset would fetch in the market place. Market value is also commonly used to refer to the market capitalization of a publicly-traded company, and is obtained by the multiplying the number of its outstanding shares by the current share price.High value products are a way for small-to-moderate sized farms to remain economically viable even if they can't compete with large-scale commodity production. A stacked enterprise making a high value product can also buffer risks of volatile prices.

How do you tap into a high value market?

Many consumers are seeking to find a more wholesome product that reflects their values. In fact, a nationwide Roper poll found that, by a 2:1 margin, consumers trust small farms more than large industrial farms to produce safe food responsibly.These are the customers that small farms with specialty products need to reach. But getting product to customers can be difficult, especially with considerations of an individual farm's low production volume, seasonality, shipping costs, and supply interruptions. Fortunaterly there are ways to market that avoid many of these problems and help you reach customers:

- farm-based bsuinesses
- farmer-owned cooperatives
- other joint marketing setups
- direct marketing to customers

What is higher value markets?

Customers these days are looking for products that are produced in environmentally friendly, humane and socially responsible ways. Reaching these alternative markets and customers can be key for small farmers.Customers want to know about who grows their food and how they grow it. By building your product and brand around the qualities customers want, a farmer can capture a larger share of the consumer food.

2.2 MARKETING POLICY OF SOUTH AFRICA

South African agriculture experienced major policy changes in the past decade. The centralised control of agricultural markets was removed, trade was largely liberalised and equitable access to services and resources for all groups of the population was vigorously promoted. After the apartheid era, the main objective of government (through agriculture) has been to improve the livelihood of the disadvantaged through creation of employment opportunities, reducing the income gaps between the poor and the rich and in building a stronger economy.In the period before 1994, the government supported white farmers by granting them subsidies, grants, loans for fencing, dams, houses, veterninary and extension advice(Masters and Servants Acts,1911-1932). White farmers were given special credit facilities, tax relief and protected from foreign competition. White farmers were accessing more commercial markets while black farmers were excluded from accessing most markets for farm commodities. This could be observed through the Masters and Servants Acts (1911-1932) The purpose of the Act was to promote and increase the supply of cheap black labour and to forbid farmers from breaking contracts or changing employers. Furthermore, a wide range of instruments were introduced by the government to support white farmers. These instruments included the Land and Agricultural Bank. The securing of input supply and marketing services for farmers under the Co-operative Societies Acts of 1922 and 1939; and the tightening of controls over produce marketing under the Marketing Act of 1937 and various other bits of legislation.

Accordingto Vink and Kirsten (2000), agricultural co-operatives were generally established as agents of the relevant boards. Theco-operativesfunctioned as regional monopolies.Under these schemes, farmers were paid a fixed price at delivery to the co-operatives, regardless of where the delivery was made. This resulted in substantial gross subsidization from farmers proximate to the market to farmers situated farther away from the market. In the 1950s, the Agricultural Credit Board (ACB) was established to give loans to white farmers who were no

longer found adequately creditworthy by commercial institutions. Infrastructure was built, strong support services established and assistance provided through the Land Bank for the acquisition of land for farming by the Whites.

Agricultural policy in South Africa in the 1980s was established by the 1983 Constitution, and the continuation of a dualistic agricultural policy contained therein. Policy with regards to "white" commercial agriculture was outlined in a White Paper on Agricultural Policy. The objective was to guide the development path of agriculture to ensure that factors of production would be used optimally with respect to economic, political and social development as well as stability, while also contributing to the promotion of an economically sound farming community. This was to be achieved through production, marketing and other goals.

Production goals:

Production goals integrate towards optimum use of natural agricultural resources; the preservation of agricultural land; the pursuit of a high number of well trained and financially capable farmers; and the optimum use of labour. The government's objective was to ensure that potentially productive land was maintained as agricultural land and to retain any other land identified as agricultural land for agricultural purposes.

Marketing goals:

Marketing goals included the pursuit of orderly marketing, duly considering the principles of the free market system and the maintenance of specific quality and hygiene standards of South African agricultural products.The government promoted a free market system, hence the state ensured that their involvement did not distort production, marketing and price structures.

Other goals:

General goals included self sufficiency in food, optimum participation in international trade of agricultural products, maximisation of the contribution to agriculture development,
according to Vink and Kirsten (2000), one of the main aims of the Agricultural Policy was "self–sufficiency with respect to food, fibre and beverages and the supply of raw materials to local industries at reasonable prices (RSA, 1984). Vink and Kirsten (2000) also suggest that the White Paper (1984) motivated by this policy aims at the following: "For any country, the provision of sufficient food for its people is a vital priority and for this reason, is regarded as

one of the primary objectives of an agricultural policy. Adequate provision of this basic need of man not only promotes, but is also an essential prerequisite for an acceptable economic, political and social order and for stability.The agricultural sector encountered a drastic change from the mid 1980s to 1990. The budgetary allocation for white farmers decreased by 50 percent, and the tax treatment of the agricultural sector changed in terms of reduction of subsidies obtained by farmers (Vink and Kisten, 2000).

2.3 AGRICULTURAL POLICY CHANGES SINCE 1994

Since the establishment of the new democratic government in 1994, agricultural policy frameworks have gradually been changing. The government has revised policy objectives. The main objectives are: to reduce poverty; improve food security; increase productivity and profitability in the sector and broadening access to agriculture. The White Paper on Agriculture (1995) states the following main policy objectives:

2.3.1 Strategicobjectives of the policy .

- To build an efficient and competitive agricultural sector.
- To contribute to the objectives of Growth, Employment and Redistribution (GEAR) Strategy, aimed at the achievement of economic growth through the reduction of income inequalities and the elimination of poverty;
- To support the emergence of small and medium-size farms side by side with large-scale commercial farms.
- To preserve agricultural natural resources and develop supporting policies and institutions.

Furthermore, policy reforms were now directed at achieving a stronger market orientation. The Marketing of Agricultural Products Act of 1937, which was amended several times in the 1950s, 1960s and 1980s, was replaced by the Marketing of Agricultural Products Act (1996) which was more concerned in reducing state intervention in agricultural marketing and in the prices of products. The main objectives of the new Act were to provide free market access for all market participants; promote efficiency of marketing of agricultural products, improve opportunities for export earnings and enhance the viability of the agricultural sector.Governments focus has now shifted to improving the well being of individuals and in securing the nation's interest. According to Vink and Kisten (2003), Van Schalkwyk outlined the Table below to indicate the differences in Marketing Acts of 1968 and 1996.

Differences in MarketingActs of 1968 and 1996

Markets Act of 1968	Markets Act of 1996
Increased productivity	Increased marketing efficiency
Reduction of marketing margins	Optimum export earnings
Increased consumption and food self-sufficiency	Food security at household level
Maximum commercial producers on land	More accent on small – scale farmers
Intervention based on single channel, pool, surplus removal, fixed prices, quotas, price support, promotion, general and special levies, registration, records and returns	Limited to levies, expert control, pools,registration, records and returns
No political process to approve levies apart of the Minister.	Consultation process prescribed by Act inclusive to all directly affected groups
No maximum period and interim testing intervention	All statutory measure to be introduced for a fixed period and tested at least every two years.

Source: Van Schalkwyk, Itulics. (2003)

According to Vink and Kirsten (2006), the White Paper on Land Policy of 1997 focused on promoting "both equity and efficiency through a combined agrarian and industrial strategy in which land reform is a spark to the engine of growth''. The main objectives of land reform are to improve household welfare and alleviate poverty.

2.4 MARKET INFORMATION

According to Kohls and Uhl (2002), the importance of market information is to enhance decision making by farmers. Market information helps farmers decide when, where to sell and which agency is the best to sell farmers products. The role of market information is imperative in the competitive market processes that regulate product flows and prices in the industry. There is lack of information available to the farming community about the prices and trends in demand and supply.There is no channel to receive the exact information about prices of agricultural products at the earliest. Farmers have to sell at prices prevailing in the unregulated markets, therefore, unable to avail the benefits of selling in regulated markets

(Pandey and Tewari, 2004).Market information is useful in structuring an appropriate agricultural and marketing policy for the future. Market information is also useful to formalize an export and import policy in the interest of farmers and consumers, leading towards a competitive situation of the market. It is difficult to achieve a competitive situation in the market without sufficient information. It regulates the economic system and helps obtain more output at minimum cost. Moreover, market information decreases the role of middlemen and their profit. It removes unnecessary payment by the buyer (Pandey and Tewari, 2004).

2.4.1 Sourcesfor thedissemination of market information

Dissemination of market information can also be done through the following channels: newspaper (publish information about the prices of various commodities), magazines and journals (provide information about prices on a weekly, fortnightly or monthly basis). However, this information becomes late and not as useful as that of daily newspapers, radio and television, government departments, post and telephone, price bulletins and personal contact.

2.4.2 Limitation of marketinformation

Due to variation in the quality of regional differences,market information has certain limitations: Ignores retail prices, most of the collected information is related to wholesale price. Retail prices are ignored for the following reasons:

- Delays in news – market information is reported late, causing a delay in announcement and publication of information, so it loses its practical utility;
- Incomplete information some information given about the commodity in major markets does not have information regarding varieties of products in different regions. Sometimes, prices are quoted for A grade qualityproduct but there can be a big difference in the variants of the products. This becomes a serious limitation in the use of market information;
- Bias of the reporters sometimes, information is manipulated according to the bias of the reporter. This leads to misunderstanding and wrong information; and
- Illiteracy becomes a limitation of market information as some farmer cannot use it due to their inability to read.

2.5 MARKET ACCESS BY FARMERS

Many farmers in Dr Kenneth Kaunda District are trying to establish markets for themselves by securing contracts to produce for high-value markets such as supermarkets and abattoirs. However, the idea seems to fail due to the fact that high-value markets give preference to larger and established producers who are able to deliver good quality products and sustain ongoing supply of products. One way of improving market access for emerging small-scale pig farmers is to develop marketing infrastructure in rural areas with focus on of emerging small-scale pig farmers. The key challenge at local government level is to ensure that whatever marketing infrastructure should be provided is appropriate and optimally situated and be beneficial to producers. The only way to improve market access is through improved market information (Kohls and Uhl, 2002).

According to Kohls and Uhl, 2002 , emerging small- scale farmers in the pig industry have a chance to access the market because Enterprise Foods, a leader in the pork processing industry is under increasingly growing pressure to increase input supply into their factory from Black Economic Empowerment (BEE) suppliers. Around 60% of their inputs consist of pork. The company has also specified that they will offer contracts to any emerging farmers who could supply them with high quality products. Pigs are supposed to be delivered to Enterprise Foods on a weekly basis. The company also specified that they were prepared to offer contracts to emerging farmers on the basis that they will be setting the price of the product based on the price of the feed.Considering the fact that the feed is the highest variable cost on a pig farm, this offer is of utmost importance in creating stability for the farmer. There is a good market for grazing pigs, especially for export markets in Europe andtheUnited States of America. The grazing of pig for production has not been fully explored but suits emerging farmers who also produce other livestock types using the grazing approach. Another good market is on traditional pig breeds, usually kept on subsitence level by a number of small scale and emerging farmers to enter this industry. The demand for pork is also on the increase due to the increase in beef prices.

According to Jacobs (2008), smaller communal farmers and land reform beneficiaries will find it difficult to compete against established historically advantaged farmers. Smaller farmers, either those entering in the sector through land reform or those in communal areasshould be assisted to gain greater access to markets. Jacob (2008), also maintains that greater market access should be facilitated through the removal of entry barriers ranging from

lower input costs as well as opening of new local and export markets to this categories of farmers. Strategic partnership between smallholders – and large scale commercial farmers and commodity producers association should be formed. Complementary policies that were adopted such as the Strategic Plan and AgriBEE, recongnised the need for supportive measures and interventions to allow emerging small scale farmers meaningful access to market.

2.6 STORAGE

Storage plays a pivotal role as it allows producers to preserve goods for a longer period of time and for the goods to always be fresh and healthy for consumers. Storage helps to spread supply throughout the year and to maintain better prices. According to Kohl and Uhls (2002), storage is interrelated with other marketing functions, such as transpotation, processing, financing and risk bearing. Farm products are considered being stored at the time they are in transit or in the processing operation. However, in rural areas, there are no proper storage facilities and farmers find it difficult to store products. Farmers are faced with high storage fees and sometimes, the cost of storage is higher than the expectation of rise of price in the future (Pandey and Tewari, 2004).

2.7 QUALITY OF PRODUCT

Pork quality is the set of characteristics that make it desirable. The main components affecting the quality of pork are water-holding capacity, colour, fat content and composition, oxidative stability and uniformity. These factors mentioned above can be due to the following attributes: the breed, genotype, feeding, pre-slaugther handling, stunning, and slaughter method, chilling and storage conditions. The quality attributes of fat content, composition, uniformity and oxidative stability are mainly affected by genotype and feeding strategy, while water-holding capacity and colour are affected by almost all the above mentioned factors. Extensive research has proven that the more patiently and humanely a slaughter animal is handled, the better the quality of meat. This implies a better price and reduction in financial losses (Kemm, 1993).

The quality of the product is important as it is vital for food safety. In order to ensure food safety, elimination of disease and improved production efficiency must be assured because the industry is enforcing bio-security measures. Due to lack of affordable veterinary services and financial constraints in some areas, this can be a challenge for emerging farmers. The objective of stock breeder is progressive improvement of net productivity with the emphasis

on reproductive adequacy, physical soundness carcass acceptability and feed conversion and growth rate (Cole, 1971).

2.8 BIO-SECURITY AND DISEASE CONTROL

According to Kohls and Uhl, 2002, South Africa is further handicapped by the fact that two of the diseases most feared in the world are endemic, namely; African Swine Fever and Foot and Mouth disease. Because of the management importance of disease control, the layout of the piggery should be designed with this in mind.Visiting pig breeders, sales representatives and delivery vehicles which move from one piggery to the next creates the utmost danger in the spreading of diseases. To eliminate infection through these sources, the following precautions could be built into the layout:

- The piggery should be surrounded by a security fence; admission should only be possible through the office of the manager;
- Feed is delivered from outside into the feed silo, which is built into the fence, or into feed tanks, which are filled from outside by means of an air-pressure or auger pump; and
- Pigs are moved into or out of the piggery by means of a loading ramp opposite the finishing building. Visitors should park outside the fence near the office.

Emerging farmers are weak in terms of sticking on to ensuring bio-security measures. In most instances, strict hygiene standards such as washing and cleaning of pig houses is not practised. In addition, there is poor drainage of affluent dam which makes the spread of disease more deadly.

2.9 FINANCE

Due to high risk and uncertainties in agricultural production, productivity prices and slow turnover, financing in the farm sector is a problem (Pandey & Tewari, 2004:8). Most of small farmers have no access to credit or loans. This is because they do not have enough assets at their disposal and their credit record very bad for them to access loans. Banks use assets such as property as a form of security when issuing loans. Majority of emerging farmers are either on communal or traditional land. It is challenging to secure a proper loan (due to lack of collateral security) from banks or other finacial institutions. Moreover, farmers are unable to improve their farming activity due to lack of finance (Ghatak and Ingersent, 1984). In addition, programmes like LRAD, MAFISA and CASP are too bureaucratic and take long to

access a grant. In most cases, the grant is too little and mostly granted to groups rather than individuals. The only way to develop the agricultural sector in a country is through the infusion of much needed credit in the agricultural and rural sector (Pandey and Tewari, 2004). The demand for capital arises due to the following:

- The need for land and agricultural implements, machinery and livestock;
- Requisite inputs such as seeds, irrigation systems, fertilizer and feed;
- The need for food, clothing and shelter to maintain the farmer and his family during the period of production; and
- To meet emergency needs.

2.10 TRANSPORTATION

The livestock industry loses millions of Rands every year due to bruising and injuries sustained in the loading, transportation and off-loading of livestock. The type of vehicles used for transportation of animals is very important (Kemm, 1993). Since many small-scale emerging farmers do not have their own transportation and considering the fact that road infrastructure in rural communities is not in good conditions, farmers rely heavily on (contract transport) public trantsport to bring their output to the market and this increases the farmers' transportation costs. Road infrastructure and telecommunication need to be improved for the cost of transportation to be reduced. Improved road conditions and transport systems between towns and rural areas, and within rural areas, will serve many purposes by giving farmers better access to banks and other services. This will also provide farmers with better access to input and output markets and facilitate the participation of emerging farmers in the market (Chaminuka, 2008).

2.11 SOCIO-ECONOMIC FACTORS

Socio-economic conditions can greatly affect the income of small -scale farmers. According to Chaminuka (2008), some farmers are sceptical about innovation, hence farmers doubt the use of modern technology. This can decrease the income of farmers. Chiminuka further suggests that the majority of small-scale farmers live in rural communities where road infrastructure is poor. Poor quality or road infrastructure increases the cost of marketing of inputs (Ogunsumi, 2007). Other factors that contribute in decreasing farmers' income listed below.

2.11.1 Cultural beliefs

The word pig is often used as an insult.It is traditionally believed that the animal is fat, dirty, ugly, smelly and eats anything. Pigs are mainly kept hidden from the public view, therefore, prompting less moral concern over slaughtering and eating. Pork is considered to have high fat content, tape worm and needing to be cooked thoroughly (Cole, 1994).

2.12.2 Feedcosts

Production costs in pig farms are subjected to high feed costs. Feed costs represent roughly 70% to 80% of total variable production costs. The main cost is incurred by the sows. In order to accomplish optimal carcass weight, pigs need to feed ad lib. To reduce feed costs per unit, the best number of wearners must be produced. Emerging pig farmers are continuously looking for cheaper alternative sources of quality feeds for pigs. The mistake that farmers make pertaining to feed is that pigs can consume anything. This causes farmers to raise pigs on swill others leftovers as feed. This has been the cause of many a heartache and financial woes once farmers realisethat it is not so. In addition, South Africa has put in place legislation prohibiting the use of some alternative feedstuffs for health and safety reasons .It is cost effective that farmers consider mixing own feed. However, farmers are required to have their own mills and access to cheap yellow maize. If farmers buy commercial concentrates, reliable transportation should be available (Kemm, 1993).

2.12 MARKETING FACTORS

2.12.1Market infrastructure of agriculturalprogrammes

Infrastructure in the pig enterprise plays a pivotal role and will increase farmers' net income.The government has introduced programmes such as CASP, LRAD and MAFISA with the aim of improving market infrastructure and market access for emerging farmers. Although infrastructure is provided in the pig industry,only few of such structures meet the minimum requirement hence only few of the farmers utilize the housing infrastructure.Commercial pig production requires a lot of investment in infrastructure in terms of housing. The houses should be built to certain specifications and requires infrastructure like water pipes, a drainage system and furrowing cages. Building the correct infrastructure can cost more than R5000 000, housing for a 100 sow production unit. In addition to this, a reliable transportation should be available (Kemm, 1993).

2.12.2 Pricing of pigproducts

Pricing for products is based on a basic price and premiums or penalties depending on the quality of delivered products.Premiums are paidfor quality in excess of the set standard and penalties apply to products of lower quality.Depending on the type of market, small-scale farmers are able to capture high-value market price provided the quality of the product is good. Pigs can be slaughtered at selected abattoirs only and farmers have to obtain permits from relevant abattoirs in order to market their pigs. In South Africa, pigs are slaughtered at abattoirs that belong to the Abattoirs Coorporation. At the abattoirs, pigs are sold daily through public auction and prices differ daily. Baconer and porker prices are cyclical. It is important that farmers analyse price trends before making any decision to sell. This will prevent farmers from sell pigs at the wrong time, when profit is at its worst. If market price drops below a certain price, namely the floor price, the Meat Board buys carcases at this price (Kemm, 1993:3-135).However, Brandson and Norvell (1983) suggest that there is lack of co-ordination between marketing and financial institutions. Farmers rely on commission agents to satisfy their financial needs and are exploited in the process. The commission agents not only charge high interest rates but also make commitments with farmers to sell their produce.

2.12.3 Role of agricultural extensionservices in linking farmers to markets

Agricultural extension services plays a crucial role in linking farmers to potential markets, improving the skills of farmers by teaching them how to negotiate for the market and appropriate ways to identify markets with high gross margins. According to Jones and Garforth (1994), the work of extension services has become more diversified. In less developed countries, the main focus remains on agricultural (mainly food) production, but there has been a growing recognition of the need to reach influence, and benefit multitudes of small, resource-poor farmers and their market needs. Strong efforts have been made in this direction, especially through the training and visit system organised by extension workers.Agricultural extension service has become a fundamental instrument for delivering information and advice as and as "input" into modern farming and output marketing. Farmers consider extension service as a form of assistance to help them improve their know-how and market their products. It also assists in efficiency, productivity, profitability and contributes to the food of the family, community, and society (Adhikarya, 1994). Agricultural extension speeds up the transfer of knowledge about new agricultural market opportunities, technologies and other research results. Extension workers provide training for farmers on a variety of

subjects and must have technical, economic competence, farming competence and communication skills to negotiate for their output market, especially high value markets to yield better gross margins. Therefore, extension workers require extensive training in order to maintain their credibility with farmers (Norton, Alwang and Masters, 2006).

According to FAO (1994), the Strategic Extension Campaign (SEC) has been introduced in Africa, the Near East, Asia, and Latin America. This campaign accentuates on problem-solving orientation, participatory planning approach, intensive extension personnel training, multimedia material development, and extension management, monitoring and evaluation .

Therefore, policy developers consider extension services as a policy instrument that can be used to increase agricultural production, link farmers to market opportunities, promote national food security and assist in alleviating poverty in rural areas, increase income and the well-being of farm people and promote economic growth.

2.12.4 Breeding herd

The size of breeding herd plays a crucial role in improving farmers' net income and accessing high-value markets. According to Kemm (1993), farmers who produce on a relatively large and effectivescale and keep feed expenses low are able to achieve larger profit margins. This is mainly due to the fact that farmers will be able to sell more and meet the demand of supplierson a daily basis. Increase in breeding herd can be achieved through the cross-breeding of pigs. Cross-breeding involves the mating of individuals from genetically different groups, breeds, strains or lines. Pigs have different genetics, for instance, the genetic composition of a Largewhite is different from that of a Duroc. Cross-breeding allows for improvement in genetic composition of pigs therefore improving quality of meat and increasing the number of litters. The aim of planned cross-breeding is to produce a type of animal more closely adapted to a particular environment and genetic condition than any readily available purebred (Cole, 1971).The advantage of using cross-breeding technique includes: larger litters, lower embryo and pig mortality, higher survival rate to weaning and higher weaning mass. The disadvantages of this technique are that boars of different breeds may have to be kept, more pigs have to be kept, management is more complicated and capital outlay is greater (Kemm, 1993).

2.13 FACTORS AFFECTING PIG PRODUCTION

The profitability of pig production is affected by many factors, the most important being management.To operate an efficient pig production unit, the farmer requires a good set of records that will enable him /her to recognise bottlenecks, and to carry out adequate profitability analyses. The farmer must also be able to assess market trends with respect to pork/baconer prices. According to Kemm (1993), the following are the factors of production affecting pig production.

Breedingunit

The breeding unit is of particular importance to the famer, as it provides the farmer with weaners for selling and or weaners for the fattening unit on the farm.The breeding unit therefore requires careful attention.

Number of weanersreared per sow per year

The number of weaners reared per sow per year and sold per sow per year is probably the most important factor influencing the profitability of the breeding unit.The number of weaners sold depends on the number of pigs born per litter, mortality and litters per sow per year.

Number of pigletsborn per litter

The more piglets born per sow per year is probably the most improtant factor influencing the profitability of the breeding unit.The number of weaners sold depends on the number of pigs born per litter, mortality and litters per sow per year.

Number of pigletsborn per sow

The more piglets born per sow per year, the better the profitability of the whole pig unit.The use of cross – bred instead of purebred sows and good management service will promote an increase in the number of pigs born.

Mortality

Death of piglets occurs during the first week, especially on the first day after farrowing Mortality is the result of bad mothering abilities of the sow, poor viability of piglets, exposure anaemia and contamination of piglets soon after birth.Reduction of mortality can be achieved

through supervision at farrowing, suitable accomodation, ensuring that the sow has milk and preventing diseases.

Record-keeping

Record-keeping plays an essential role for good management, selection and maintaining profitability.The system must be easy to use and providing information that will aid in management decisions. A record should be kept of serving dates, the number of pigs born, birth dates, feed consumption, reared deformities and slaughter mass. The records should include purchases and sales/transfers, feed costs, opening and closing values, veterniaries, labour and other allocatable costs. This is essential for the pig farmer as it may mean the difference between profit and loss (Kemm, 1993).

Farmersco-operatives

The term co-operative refers to working together with each other towards a shared aim. Marketing co-operative is a business organisation owned by farmers which aims at selling their products. This type of co-operation handles most types of farm products. Marketing co-operatives allow producers to achieve benefits they were not able to achieve on their own. Farmers joining force together can have greater powers in the market place. Moreover, co-operatives allow producers to take control over their products as they make way to consumers by allowing the products to by pass the middleman in the market channel. The main functions of agricultural co-operatives are to assemble the products of a number of producers into larger products to facilitate more efficient handling and more competitive sales, grade and ship these products to the market (Kohls and Uhls, 2002; Tracy, 1993).

Co-operative farming spreads scarce factors of skilled management, capital and, facilitates group decisions. According to Pandey and Tewari (2004), farmers are sceptical about joining co-operatives due to the following reasons:

- Ignorance: most farmers are unaware of the benefits of such organisations;
- Ignoring the market aspect: farmers never consider the importance of marketing to realise the highest possible price. This attitude becomes an obstacle to the formation of an organisation;
- Geographic spread: farmers are scattered throughout the country. It becomes difficult for farmers to form organisations, and

- Small marketable surplus: some farmers are left with small marketable surplus therefore, farmers do not take interest in efficient marketing toformaunion.

2.14 FACTORS AFFECT FAMERS' PARTICIPATION IN HIGH VALUE / MAINSTREAM MARKETS

In the North West province, emerging pig farmers face a number of constraints, which increase risk and uncertaininty, act as disincentives for increased production, consequently preventing them from accessing agricultural high value markets. This chapter discusses some general constraints faced by emerging small- scale farmers. According to Van Rooyen *et al.* (1987), emerging farmers in traditional agriculture will generally be capable of making rational economic decisions if the technical and economic constraints they face are removed. The comprehensive agricultural support services become neccesary to address the constraints. In 1980s, the Farmer Support Programme (FSP) successfully addressed some challenges in the former home lands of South Africa. The National Department of Agricultural, Fishery and Forestry initiated the Comprehensive Agricultural Support Programme (CASP) in relation to constraints faced by smallholder farmers in South Africa.

2.15 VIEW OF OTHER RESEACHERS ON SMALLHOLDER FARMERS' PARTICIPATION IN HIGH VALUE MARKET

Generally, very few smallholder farmers participate in formal markets. Severalresearchers have progressed on the subject, in an effort to identify impediments formarket participation, in South Africa such Fraser (1991), Makhura (2001) and Montshwe (2006). This researchbuilds its arguments based on the study of these researchers. Fraser (1991) researched on themarketing of agricultural produce by small-scale farmers in the former Ciskei (now part of the Eastern Cape Province).

In the study, marketing infrastructure is identified as one of the constraints to marketing. The study successfullyidentified the constraints and possible solutions to market participation. However,the study was carried out before the liberalisation of the market and did not include theeffects of market structural changes on market participation. MakhuraMakhura (2001) investigated the transaction costs and barriers in market participation ofsmallholder farmers in the Northern Province. Poor infrastructure, distance from themarket, lack of assets (for example lack of own vehicles) and inadequate marketinformation were identified as the main constraints to marketing. The study analysedthe effects of these factors on smallholder market

participation. It did not identify thecontribution of different variables on the probability of participating in the markets.

Montshwe (2006) researched on the factors affecting participation in mainstream cattlemarkets by small-scale cattle farmers in South Africa. In addition to Makhura'sconstraints, Montshwe (2006) included farmers training, herd size, household characteristics and support services as the constraints to smallholder cattle farming. Possible solutions have been suggested, but the fact that the study was limited to cattle farming, and left out pigs and poultry, necessitates investigation on the other types of farming.

Given the small marketed surplus from smallholder farmers and their locations which were often far away from production centres, traders obviously preferred produce from commercial farmers (Dorward *et al.,* 2005). Faced with thin markets, some smallholder farmers, especially those located in remote rural areas, could not trade their produce (Makhura, 2001). The situation forced somesmallholder farmers to resort to subsistence farming as they were ill equipped to market their agricultural commodities on their own.
However, Makhura (2001) further explained that some private traders attempted to purchase produce from smallholder farmers but offered these farmers very low prices arguing that they had to meet the cost of transporting the commodities to the market. Regardless of the unfavourable conditions, some business-minded smallholder and emerging farmers kept on marketing their produce (Freeman, 2004).

Although smallholder and emerging farmers market their produce, their survival in the market is questionable. Apprehensions about their ability to take advantage of emerging opportunities in the agricultural sector have already been raised (Kherallah and Kirsten, 2001). These doubts have been raised due to limited market produce,difficulty in enforcing contracts, reliability on middle men, remote locations and inability to meet stringent food safety norms. They also lack institutions and instruments to manage price and other risks. Such issues escalate transportation and associated transaction costs among smallholder farmers. Moreover, the agroprocessing industry generally prefers to source its raw material in bulk and from nearby markets and production centres (Hedden-Dunkhorst and Mollel, 1998). This creates a tendency for small and scattered production and lack of adherence toquality standards, smallholder and emerging producers may not be able to meet the market requirements in a cost effective manner.

The aforementioned difficulties faced by smallholder farmers also apply to smallholder farmers in the Eastern Cape Province. The province is South Africa'spoorest, with a predominantly rural population (FARM-Africa, 1999). Regardless ofthe fact that the province is poorest, some smallholdersand emerging farmers are producing for the market, and are determined to shift intocommercial farming. Such farmers could be used by the province to get out of poverty. To unlock the potential contribution that smallholder and emerging farmerscould make to alleviate poverty and improve the livelihoods of the rural poor in theEastern Cape Province, the development of strategies related to market access arenecessary (Montshwe, 2006). Improving the performance of agricultural markets will encourage trade in the area and enhance the livelihoods of smallholder and emerging farmers and growth of the province through multiplier effects.

Market access has to be accompanied by technical development and a supportive institutions. Such progress may be important for a movement towards commercial production and to , reap economic benefits for the province. Generally, very few smallholder farmers participate in formal markets. Several researchers have progressed on the subject, in an effort to identify impediments formarket participation. Fraser (1991), Makhura (2001) such as Montshwe (2006). This researchbuilds on the arguments advanced by previous researchers. Fraser (1991) researched on the marketing of agricultural produce by small-scale farmers in the former Ciskei (which is now part of the Eastern Cape Province). In the study, marketing infrastructure was identified as one of the constraints to marketing. The study successfully identified the constraints and the possible solutions to market participation. However,the study was carried out before market liberalisation and did not include the effects of market structural changes in market participation.

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2.16 ADVANTAGES OF PARTICIPATING IN A HIGH VALUE MARKETS

For emerging farmers to be intergrated along high value markets, they must be able to comply with market requirements such as economies of scale, good quality and consistency. Transport logistics and cold chain are necessities for emerging small- scale farmers if they are to participate in high value markets. The main advantages of being involved in an effective value market are the ability to reduce the cost of doing business, increase revenues, increase bargaining powers, and improve access to technology, information, capital and by doing so, innovate production and marketing processes in order to achieve in higher value and provide a higher quality of production to consumers (ADB, 2005).

High value markets can help emerging farmers to access markets and enter into formal market contracts that can be used to access credit, share information among partners, thus helping poor farmers to access information better than in spot market. Humphrey and Schmitz (2002); Hendriks and Lyne (2003) contended that for emerging small-scale farmers to participate successfully in high value markets , they should pool their individual supluses and market them collectively. They emphasised that farmers must coordinate horizontally in order to link vertically with intermediaries in preferred supply chains.

According to Bienabe and Vermeulen (2007), there are opportunities for the inclusion of emerging small-scale farmers intoinformal retail supply chains.There is a need for the establishment of strategic partnerships or mentorship programmes with established farmers in order to allow emerging small-scale farmers to increase their marketing volumes and access established production and marketing infrastructure.

2.16.1 External and internal constraints

According to the Development Bank of Southern Africa (DBSA, 1986), common constraints faced by smallholder farmers in less developed areas may be classified into two groups, external and internal constraints. External constraints emanate from the broader agricultural

enviroment and are largerly beyond the control of individual farmers. These include natural risks typical of agricultural activity, inadequate inputs, credit, mechanisation, and marketing services, poor institutional and infrastructural support, inappropriate policies and legislation, restrictive administrative and social structures, problems associated with the acquisition of agricultural resources.

Internal constraints are those that affect the farmer's ability to operate efficiently. Despite any innate potential, the farmer might have to allocate resources in an economically efficient manner. Normally, the farmer has some control over such constraints.

2.17 CONSTRAINTS FACED BY EMERGING SMALL-SCALE FARMERS IN OUTPUT MARKET

The participation of emerging farmers in high value markets is constrained by many challenges. A range of impediments to market participation has been identified, including lack of access to finance, on farm infrastructure, market information and training. The situationis worsened by the fact that farmers are located far away from the market and lack adequate infrastracture. Kirsten (1994) emphasised the need for structural reform if the participation of emerging farmers in the commercial agricultureal sector is to be enhanced.

Agriculture is becoming increasingly intergrated and emerging farmers are often disadvantaged, and therefore, action must be taken to help them drawn profit from their intergation into high value market.(Bienabe *et al*,2004). There is no doubt that agriculture is undergoing significant changes, and each partner in the agricultural supply chain has to be competitive to ensure profit returnfor all.

South Africa's agricultural policy has moved from a fully regulated marketing environment towards an open and transparent system where market forces determine price levels.The question that obviously arises is whether emerging farmers are able to compete in a free market environment. Vink and Kirsten (2000) contend that market liberation has ensured a leaner and stronger agricultural industry, with some farmers and agribusinesses able to apply in globally competitive enviroments. On the other hand, Magingxa and Kamara (2003) argue that market liberalisation has widened the gap between emerging farmers and commercial agriculture. Emerging small scale farmers are mostly ill equipped to respond to changing market conditions (Doyer,2002). Vink and Kristen (2000) found that the deregulation of agricultural markets in South Africa is beneficial for commercial agriculture and emerging

farmers who neccessarily have not enjoyed such gains due to thenumber of contraints that inhibit emerging farmer's acess to high valued market.

2.18 MARKETING STRATEGIES THAT CAN IMPROVE PIG FARMERS' PARTICIPATION IN HIGH VALUE MARKET

Access to market information

Lack of access to market information is a major constraints faced by emerging small scale pig farmers in Dr Kenneth Kaunda District. Marketing information should be disseminated to emerging small- scale pig farmers on a regular basis to ensure that they are always updated on changes in the market. Extension agents working in collaboration with economists should play a leading role in cascading market information to emerging small- scale pig farmers.

Rural market opportunities

It is important that small scale farmers do not focus only on long distance markets, especially when dealing with rural farmers, the majority of small scale marketsare poor and located in rural areas and before linking them to urban markets, it will be economically feasible to link them to local markets as this will reduce transactional costs.

High transaction costs

High transaction costs are caused, *inter alia*, by poor infrastructure and communication services in remote rural areas (D'Hease and Kirsten, 2003). Transaction costs also result from information inefficiencies and institutional problems such as the absence of formal markets (Makhura, 2001). Transaction costs include the costs of information, negotiation, monitoring, co-ordination, and enforcement of contracts. There is no doubt that high transaction costs tend to discourage commercialisation. Smallholder farmers are located in remote areas geographically dispersed and far away from lucrative markets.

Distance to the market, together with poor infrastructure and poor access to assets and information results in high business costs. Since smallholders are poor, they find it difficult to compete in lucrative markets due to high transaction costs. Traders with higher social capital are able to involve themselves in more capital-intensive marketing activities such as wholesaling and long-distance transport, whereas traders with poor social networks face major barriers to entry into more lucrative market segments (Kherallah and Kirsten, 2002).

Minimising transaction costs is the key to improving access to high-value markets in developing countries, because high transaction costs make it difficult for poor smallholder enterprises to market their produce. For smallholder farmers to be integrated into the agricultural supply chain, greater effort is needed to reduce transaction costs and improve efficiencies along the agricultural value chain.

Lack of on-farm infrastructure

Smallholder farmers do not have access to on-farm infrastructure such as store-rooms and cold-rooms to keep their products in good condition after harvest. Lack of access to facilities such as post-harvest, storage and processing facilities constitutes a barrier to entry into agricultural markets, since the emphasis of buyers is more on quality. Access to storage facilities increases farmers' flexibility in selling their products, as well as their bargaining power (Bienabe *et al.,* 2004).

Asymmetry or lack of information on markets

Rural producers, and especially small farmers, have little information about market demand, which is costly to obtain. They may gather information through contact with other actors in the commodity chain, but the accuracy of this information is not certified, since those actors might be exhibiting "opportunistic behaviour" (Bienabe *et al.*, 2004).

Smallholder farmers lack information about product prices at the local level, quality requirements, best places and times to sell their products, and about potential buyers. This in turn, reduces their ability to trade products efficiently and to derive full benefits from the marketable part of their production.

Low quantity and poor quality

Due to their low endowment in production factors, such as land, water and capital assets, the majority of smallholder farmers produce low quantities of products that are of poor quality. This leads to their products being neglected by output markets. Increasing concentration in the food value chain is a global trend, caused by increasingly demanding consumers and concerns about food safety, thistends to make it very difficult for smallholder farmers to enter high-value markets in light of the low quantity and poor quality of their products.

2.19 IMPORTANCE OF SMALL HOLDER FARMERS

The importance of smallholder agriculture in developing countries is currently being recognized. This explains why there are countries where land is transferred to smallholders and development programmes are redirected towards empowering these farmers (Dorward andKydd, 2006; Lewis, 1954 cited in Todaro, 1997). Proponents of smallholder farming argue that with enhanced market access, smallholder agriculture has the potential to commercialize and contribute towards food security and poverty alleviation; this could be achieved through reduction in food price and the creation of employment opportunities.

In addition, efficient smallholder agriculture leads to increased incomes and promotes equitable distribution of income, creates backward and forward linkages necessary for economic growth (Doroshand Haggblade, 2003; Magingxa and Kamara, 2003; Poulton *et al.*, 1998; Reardon and Barrett, 2000). In this way, the smallholder agriculture sector is not only important for their vitalisation of the agricultural sector, but for the economy in general.

In South Africa, the potential contribution of smallholder farmers to economic growth remains locked. The major challenges to the growth of smallholder agricultural are closely associated with lack of marketing knowledge and opportunities, calling for market oriented interventions. In marketing, the smallholder agricultural sector still resembles the past apartheid era, where the sector has difficulties in marketing produce through formal channels (Carter and May, 1999).

2.20 EMERGING SMALL-SCALE FARMERS IN MARKETS

Markets are important because they act as a mechanism for exchange, derive benefits such as income and open opportunities for rural employment (Dorward *et al.*, 2003; Machethe, 2004). Marketing activities such as processing, transportation and selling can provide employment for those willing to exit the farming sector. At the national level, Lyster (1990) identified that the involvement of smallholder farmers in markets contributes to poverty alleviation and is important for sustainable agriculture and economic growth. Poverty could be reduced through reducing the price of food, creating employment opportunities and farm income generation. Farmers' abilities to plough back their farm profits into the farm business result in sustainable Agricultural and economic growth (Dorward *et al.*, 2003).

2.20.1 Emerging small scale marketing channels

For farmers, growing and harvesting a crop and rearing animals form only half of the battle because they still have to market the produce. For emerging small-scale farmers in South Africa, marketing produce remains a challenge. This group of farmers encounters difficulties

in marketing, even though individual emerging small scale farmers may be integrated with national or international markets (Shiferaw *et al.*, 2006). Before choosing a marketing channel, smallholder farmers consider the costs associated with transportation, profits, level of trust among the available.

2.21 INSTITUTIONAL, TECHNICAL FACTORS AND MARKET CHOICES OF EMERGING SMALL-SCALE FARMER

In other instances, farmers market their produce through channels offering low prices because they either lack market knowledge or have difficulties in accessing markets that are morerewarding.Most of the produce from smallholder farmers in South Africa is sold locally, with only a small amount exported.

Generally, smallholder farmers market their produce individually in local markets, but make use of market intermediaries in international markets. Produce from smallholder farmers are sold to consumers and traders at farm gates, usually through informal transactions where prices and terms of exchange are unofficially negotiated.

These transactions between farmers and traders and between farmers and consumers most often, occur in spot markets (Kherallah and Minot, 2001; Ruijs, 2002).When compared to vertical coordination in the supply chain, some weaknesses are associated with spot markets. For instance, prices and conditions of delivery are negotiated for every transaction carried out in spot markets. This may result in increased marketing costs for the farmer. Moreover, farm gate sales tend to result in lower farmer revenue since the prices are relatively low and variable (Montshwe, 2006). Variable prices may result in the unavailability of scales for weighing produce, asymmetric market price knowledge and opportunistic behavior by the more informed traders.

Delgado (1999) mentions four keys to increased smallholder market access in Sub-Saharan Africa: access to assets, access to information, access to services; and access to remunerative markets. There are huge gaps in these fields all over Sub-Saharan Africa, including smallholder areas in South Africa. However, smallholder farmers tend to prefer farm gate sales because they receive immediate payments and do not incur marketing costs such as transportation costs and tax payments (Shiferaw*et al.*, 2006).

2.22 SUMMARY OF CHAPTER

Emerging small scale pig farmers participate in a variety of markets and actively seek to access larger markets beyond their immediate localities. But the degree to which smallholders participate in and share the benefits of greater access to high value markets depend on a combination of factors, such as the policy space, market infrastructure and how high value markets operate. Marketing policies that cater for emerging small-scale farmers have an important role to play in reducing the costs of selling their outputs through informal markets, supermarkets and regional fresh produce markets.

In high value markets, for instance, emerging small scale farmers often find their prices undercut by produce that traders buy from large-scale commercial farmers. Even if an emerging small-scale former is able to supply a higher-grade product to a high value market, individual small-scale farmers find it difficult to match the volumes of larger farmers. Supermarket chains, on the other hand, provide a lucrative niche market for emerging small-scale farmers but these downstream linkages are limited to emerging small scale farmers who meet product variety and quality standards.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter outlines the choice of the study area. It covers the population,the size of the area, climatic conditions, commercial and agricultural activities in the area and specific areas where the study was conducted. The data collection methods, sampling procedures,ethical considerations, outline of the study and data analysis are also presented.

3.2 Study Area

Dr Kenneth Kaunda Ditrict in the North West Province is a small district with a total surface area of 16 548 square kilometres and a population of 762991 as shown in Figure 3.1. A large part of the district falls within the maize triangle.The Ventersdorp,Matlosana and Tlokwe municipalities hold portantial agricultural land with good water reserves.These municipalities are known for producing maize, sunflower, and beans.The comperative advantage of the district is intensive production (pig,poultry,beef feedlot, and small stock production), of grain crops produced under irrigation and most of the dry land cropping with good yield is produced in the Ventersdorp Municipality. There are many agric-processing companies in the district, predominantly in Tlokwe. Fresh Produce Market is found on the N12 in Matlosana Municipality.Thedistricthas summer rainfall, at an avarage of 500 to 650ml/annum. Its temperature consists of hot summers and cold winters with frost.Hail is common during summer thunderstorms. The most important economic sectors are farming, financialbusiness services, logistics, communication and mining. The province's economy is moving away from traditional heavy industry markets and low-value added production towards refined high-value added productions, particularly in information technology, telecommunication and other high technology industries.

Since small-scale and emerging pig farmers are scattered in terms of geographic origins, the study wasconducted in Tlokwe, Ventersdorp, Maquishills and Matlosana municipalities, all situated in Dr Kenneth Kaunda District. These areas are known for producing vegetable and pigs. The focus of this research is on the pig enterprise solely, whereby emerging small scale pig farmers in the industry are constrained from participating in the high-value markets although farmers have comparative advantages. Although the consumption of pork is low in South Africa compared to other countries in the world, the pig industry is given less attention

compared to livestock and crop enterprises. However, the industry has proven that with adequate support from government and SAPPO,there is high market for pork.

Figure 3.1.Map of Dr Kenneth Kaunda District showing the various municipalities

3.2.1.Defination of variable

A characteristic, number, quantity that increases or decreases over time, takes a different values in different situations. Twobasic types are independent variable, that can take different values and can cause corresponding changes in other variables. The dependent variable that can take different values only in response to an independent variable.

3.3 POPULATION OF THE STUDY

All small-scale emerging pig farmers in Dr Kenneth Kaunda District the North West Provincce, South Africa constitute the population of this study . According to the Department of Rural, Enviroment andAgricultural Development (READ) (2014), there 212 emergingsmall-scale pig farmers in Dr Kenneth Kaunda District.

3.4 SAMPLE SIZE AND SAMPLING PROCEDURE

The sample size is important as it allowed the researcher to obtain as much information from different individuals as possible.The total number of emerging small scale pig farmers in the

district were 140. The farmers differ with the production scale, they sell their produce at abattoirs, auction sale, informal markets and villages(mostly sloughtered illigallyon their farms). The sample size stood at one hundred and forty (140) emerging small-scale pig farmers from different municipalities in the study area. The Dr kenneth Kaunda District is divided into four municipality, a selection of participants was stratified in to four parts selected from 40 to 20 pig farmers per municipality. A stratum was used as an administative units then random sampling was used to select participants for the study.(stratified rondom sampling). The researcher collected a list of all emerging small-scale pig farmers in the district, then one hundred and forty (140) farmers were randomly selected after stratification as shown below:

- Tlokwe Municipality - 40 emerging farmers
- Maqusihills Municipality - 20 emerging farmers
- Matlosana Municipality - 40 emerging farmers
- Ventersdorp Municipality - 40 emerging farmers

3.5 DATA COLLECTION

Questionnaires and interviews were used to collect data. Open and closedended questions were used in the questionnaire. Both primary and secondary information was collected and utilised. Primary data were collected in the field through structured standard questionnaire. Data was collected on personal characteristics, socio-economic aspects, production, financials, marketing and management aspects of participants. However secondary information was obtained from various sources such as journal publications, books, conference papers, and reports, especially on the quality and standard of products expected by high value markets. The reseacher administered the questionnaire. During the process, the research explained the questions thoroughly to respondents.The researcherwasunbiased as much as possible. This method of data collectioniseasier and reliablefor the researcher and participants, and allows direct personal contact.

3.6 ETHICAL CONSIDERATIONS

Ethics are described as a set of moral principles that offer rules and behavioural expectations about the most correct conduct (Onwuegbuzie and Teddlie, 2003). They provide the researcher with a guideline to moral conduct to prevent scientific misconduct. The ethical

considerations and guidelines as proposed by these authors were addressed at each stage of the proposed research.

In compliance with the regulations of the North West University (NWU), standardisation and uniformity were adopted for the study and procedure followed for all respondents. Permission to administer the questionnaireand to interview respondents was obtained from the Directors of the Department of Agriculture. The objectives of the study were to communicate to all the directors and participants. Participation in the research was voluntary and respondents and interviewees only focused on issues related to the study.Information was obtained from respondents treated as confidential and the results used solely for the purpose of the study.Respondents were treated with respect and dignity the results represent what was observed or said by respondents.

3.7 DATA ANALYSIS

Both quantitativeandqualitativemethodswereemployed in analysis the data. The quantitative method used a range of descriptive and inferential statistical procedures with techniques. The fully completed questionnaires were coded, captured and analysed using the Statistical Package for Social Sciences (SPSS, version 20). Graphs, histograms and tables were used to present frequency variables for objectives one to six.

3.7.1 Method of data analysis

The probit model was used to analyse the effects of socio-economicfactorson the participation of emergingsmallscalepigfarmers in highvalue markets. Probit analysis is a specialized regression model of binomial response variables.

The most logical approach would be to fit a regression of the response versus the concentration, or dose and compare between the different pesticides. Yet, the relationship of response to dose was sigmoid in nature and at the time, regression was only used on linear data. Therefore, Bliss developed the idea of transforming the sigmoid dose-response curve to a straight line. In 1952, a professor of statistics at the University of Edinburgh, David Finney took Bliss' idea and wrote a book entitled *Probit Analysis* (Finney, 1952). Today, probit analysis is still the preferred statistical method in understanding dose-response relationships.

In probit, since market participation is a qualitative dependent variable, it was necessary in the study to use a qualitative regression model (probit model) to determine the factors that

influence market participation by emerging small-scalepig farmers in the study area. The model is specified as follows:

Probit regression was used in the analysis and the equation is (model is specified) as follows:.

In probit, since market participation is a qualitative dependent variable, it was necessary in the study to use a qualitative regression model (probit model) to determine the factors that influence market participation by emerging small-scale pig farmers in the study area.

Probit regression was used in the analysis and the equation is (model is specified) as follows:

$$Y^i = \beta 0 + Yi = \beta o + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3 \ldots .. \beta n\ Xn + ei$$

Where: Y^i= Small-scale farmers participating in high value markets interviewed, as the independent variable

βi=significance

β0= insignificance

The dependent variable in this study is dichotomous by classifying participants who participate in the high value markets (Y=1) and those who do not participate in the high value markets (Y=0). The explanatory or independent variables (Xi) to be considered are presented below:

Y^i= Participation of the emerging small-scale pig farmers in the high value-markets (Participate = 1, Do not participate in high value market = 0)

The eight explanatory variables were significant in the study, whereas seven were insignificant. The eight significant variables, from the highest to lowest were farmers' knowledge on standards set for high value market, gender,race, age, religion, expenditure, annual income , and transaction cost hierarchically. The variables without significance (insignificant) marital status, youth in household,farm experience,educational level, extension contact, constraints, distance to high value markets, intercept.

3.8 OUTLINE OF THE STUDY

This study consists of five chapters. Chapter 1 consists ofthe introduction,problem statement, objective and significance of the study. Chapter 2 focuses on the literature review of the study. Chapter 3 outlins the research methodology. Chapter 4 is the presentation of results, discussion and analysis, Chapter 5 presents the findings, conclusion and recommendations of the study.

3.9 SUMMARY CHAPTER

The study is based on identifying marketing factors influencing the participation of emerging small-scale farmers in of high value market in Dr Kenneth Kaunda District in the North West Province in South Africa. One hundred and forty pig farmers were selected for this study out of the two hundred and twelve pig farmers in Dr Kenneth Kaunda District . Stratified rondom sampling was used to select participants. The researcher collected a list of all emerging small-scale pig farmers in the district.One hundred and forty (140) farmers were randomly selected rondomly after the stratification.Questionnaires and interviews were used to collect data. Open and closed-ended questions were used in the questionnaire. The probit model was used to analyse the objective on the effects of socio-economic factors on the participation of emerging small-scale pig farmers in high value markets.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 INTRODUCTION

The study was conducted in Dr Kenneth Kaunda District of theNorth West province with 140 small scale pig farmers. Questionnaires and interviews were used to collect data. Finding were used to collect data this chapter includes: educational background, types of markets, constraits to high value markets,type of products and knowledge on standard set for high value markets, size of breeding herd, contact with extension services and the results of regression analysis of effects of socio –economic and demographic factors on pig farmers's annual net incomes.

4.2 DESCRIPTIVE ANALYSIS

4.2.1 Gender of emerging small-scale pig farmers

In the agricultural sector, women play a pivotal role by contributing to farms and rural agricultural areas. They facilitate, promote and manage change in rural development. The study shows that the gap between males and females participating in the pig industry is not wide enough compared to the previous years. This implies that any development strategy for farmers in the area will benefit males and females almost equally. Female farmers shows, commitment and interest in pig farming.

Figure 4.1, indicates the gender differences among pig farmers. Only fourty five percent are women while fifty five percent are men. This scenario indicates that the majority of people involved in pig production in the study area are men. Agricultural advisers hold awareness campaigns to encourage women to participate in pig farming since has comparative advatage in the district. Their farming enterprises are supported through the Comprehensive Agricultural Support Programme (CASP).

The national and provincial Departments of Agriculture and Fishery honour yearly efforts made by female farmers and this plays a positive role in encouraging women to participate, in mainstream agricultural farming. Even though all support were given to women, their family responsibilities still hold them behind.A study conducted in Gauteng Provice (Antwi *inter alia,* 2011) shows that majority of pig farmers were men (seventy percent) and thirty percent women).

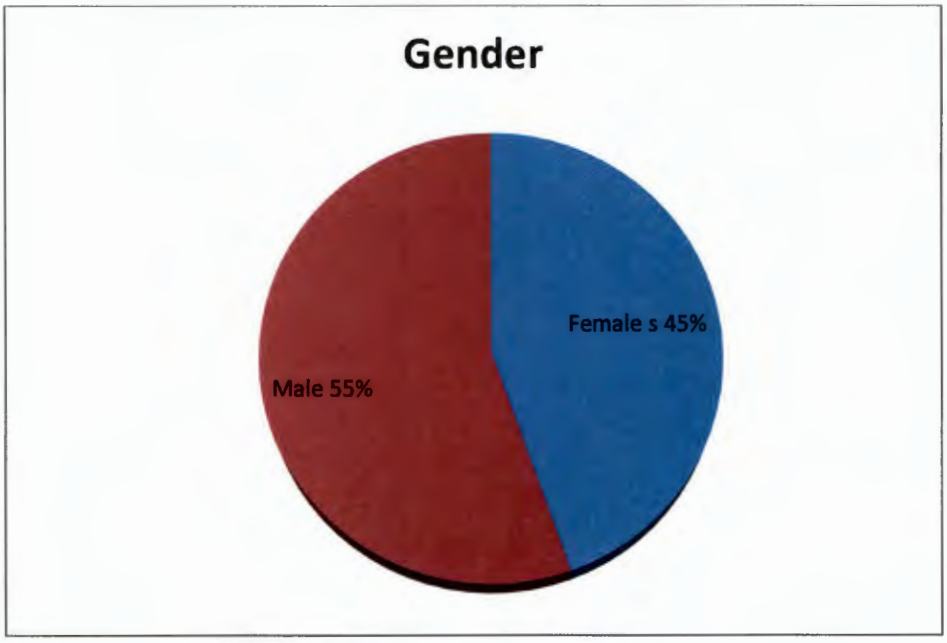


Figure 4.1: Gender of emerging small scale pig farmers

4.2.2Marital status of emergingsmall scale pig farmers

The marital status of a household is usually used to determine the stability of a household in African families. It is normally believed that married household heads tend to be more stable in faming activities than unmarried heads by Bridgett (2009). If this is true marital status of household heads will positively affect pig production and participation in high value markets. Table 4.1 shows that 35.9% of farmers are married and have relatively stable households, 22.3% are divorced, 13.7 % are living with partners, 18% are single, 5% are widower and 4.3% are widows. This is in line witha study conducted by Bridgett (2009), who found that 62% of respondents were married, an indication that that such households were relatively stable in the Kat River Farming environment.

Table 4.1: Marital status ofemerging small scale pig farmers

Marital status	Frequency	Percentage
Married	50	35.9
Divorced	31	22.3
Living with partners	19	13.7
Single	26	18.7
Widower	7	5.0
Widow	6	4.3

4.2.3 Age of the household head among emerging small scale pig farmers

Age of the household head is used as a proxy for experience in farming. This is expected to improve the intensity of market participation. In addition , to a certain extent, age indicates the position of the household in the life cycle. Experiance by heads of households further influences the farming and marketing activities of the members of the household since they usually get guidance from the head (Ngqangweni and Delgado,2003).

Figure 4.2 shows the age distribution of participants in pig farming. It shows that ten percent of participants are less than thirty years , 15% are between thirty and fourty years, 25 % are between fifty one and sixty years and ten percent of participants above sixty five year old. This shows that young farmers are now involved in agriculture.It also indicates that middle aged people are dominant in pig farming in the study area.

There are more unemployed middle aged people who choose agriculture as a means of fighting unemployment problem. Most of them are people who has were retrenched during the closing dowm of mines around Klerksdorp and Khuma in Dr Kenneth Kaunda, others are the ex farm workers and their children who got their land through the Land Redistribution Programme.The study accessed household socio-economic characteristics in relation to market participation. Egbetokun *inter alia,* (2012) indicate that the majority (62.6%) was of productive age, between 31 and 50 years, 26% were over 60 years and 11.4% below 30 years.This shows that there is potential for productivity to be high in the area, thus, increased market participation (Benfica *inter alia*, 2002).

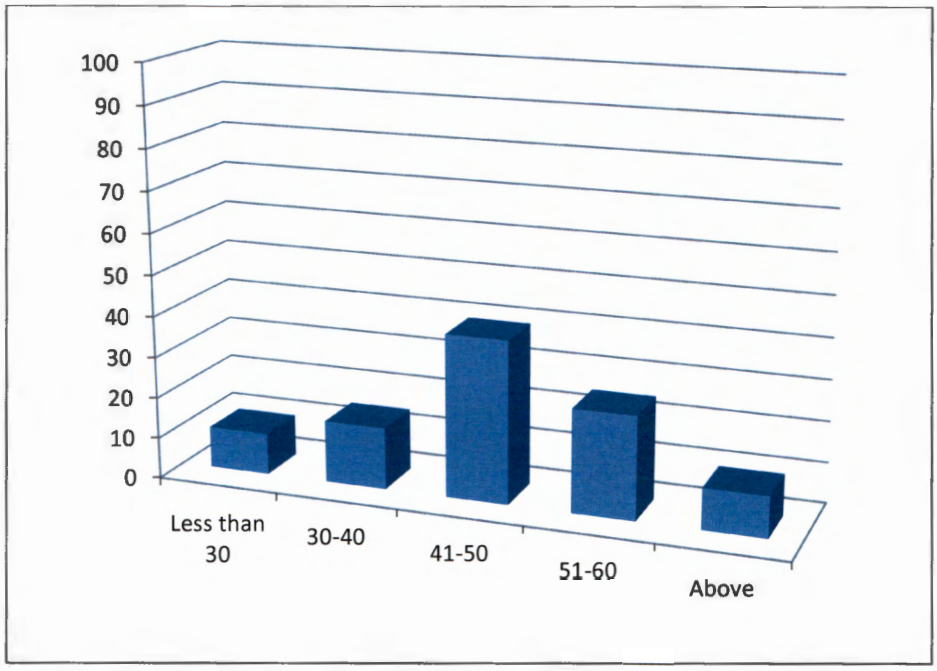


Figure 4.2. Age distribution among emerging small-scale pig farmers

4.2.4 Educational level of emerging small-scale pig farmers

In this study, the highest educational level achieved by household head was recorded to determine the human capital level of households and the ability to interpret market information. People with higher educational levels are more able to interpret information than those with low education or no education at all (Mather and Adelzadeh, 1998). Thus, educational levels affect the interpretation of market information and hence, market participation level of farmers.

Figure 4.3shows the educational level of pig farmers in the study area.It shows that only 17% of participants did not attend school, 8% had tertiary qualifications, 50% had completed secondary educational and 25% primary educational.Education is considered to have a positive effect on participation since it enables an individual to make independent choices and to act on the basis of the decision. This is because that most rural areas have no high level institutions and are far away from rural settlements. Not every farmer can afford to take their children to university after completing grade 12, they rather encourage them to learn farming in order to take over when they retire.Edward ,(2013) found that educated farmers constitute about 22% of sampled farmers.

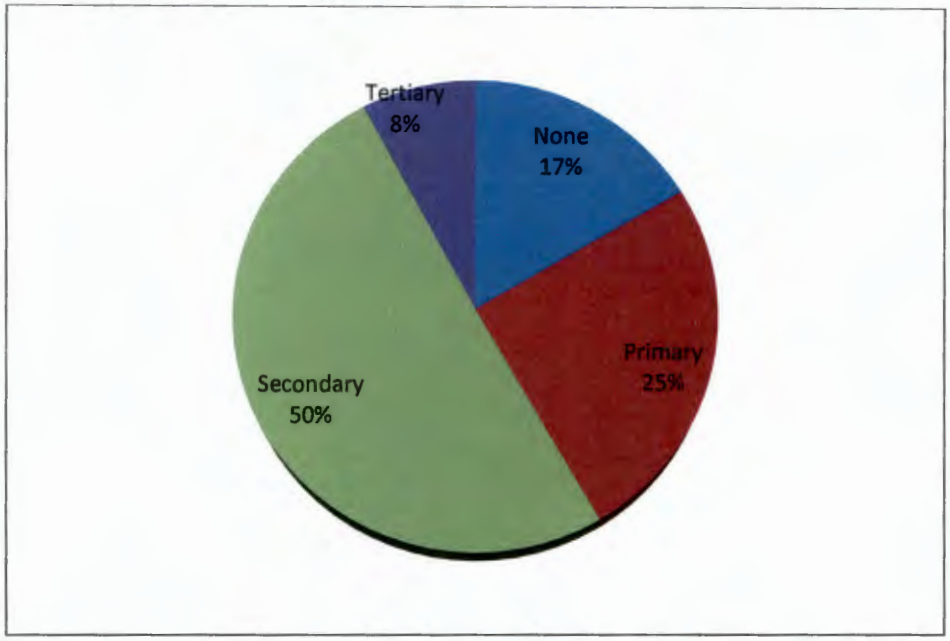


Figure 4.3: Educational level of emerging small-scale pig farmers

4.2.5 Farming experience of emerging small-scale pig farmers

The number of years spent by respondents in farming serves as a measure of experience and a direct indicator of production knowledge. This is expected to improve the intensity of market participation. Figure 4.4 shows the number of years in pig farming among respondents. It indicates that majority of the farmers (56%)have been in the pig farming business for ten to twenty years, 40% of the respondents had less than ten years, and only 4% had more than twenty years experience in pig farming.

The lowest is three years in pig farming and the highest is thirty five years experience respectively. The reason is because most farmers are ex-farm workers and in some cases, had acquired the farm through the Land Redistribution Programme. They have continued to farm with the enterprises on farm. According to Egbetokun *inter alia,*(2012), rice farming has been practised by respondents for over 10 years. The years of experience shows that the situation has been going on for a long time.

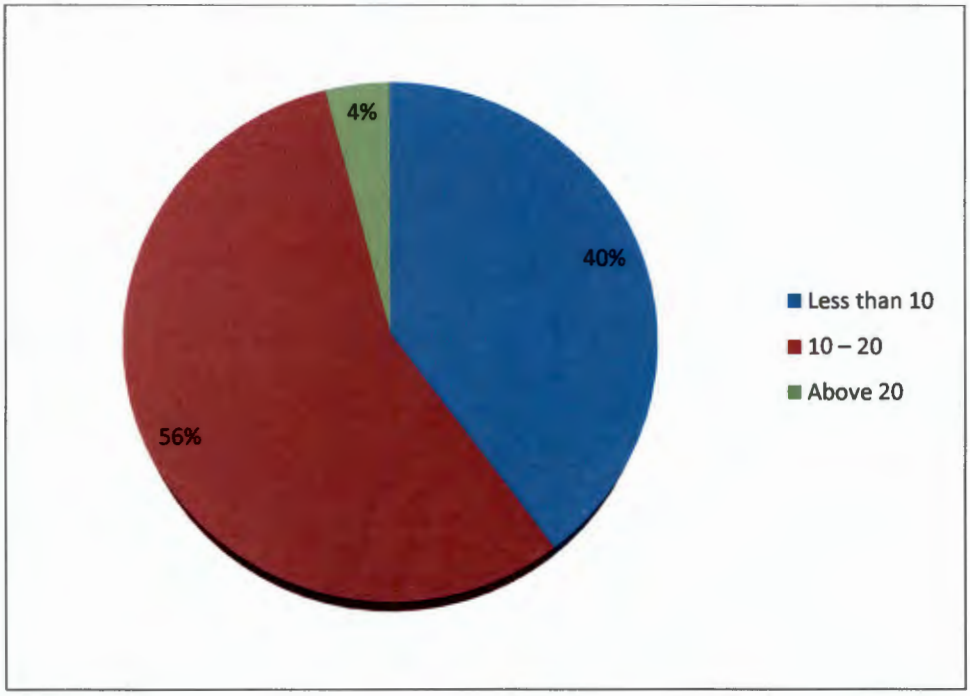


Figure 4.4: Farming experience of emerging small-scale pig farmers

4.2.6 The size of breeding herds in emerging small scale pig farmers'enterprices

The size of breeding herd plays a crucial role in improving farmers' net income and accessing high-value markets. Figure 4.5 represents the total number of breeding herds in a pig enterprise per participant. It shows that 90% of participants had more than twenty breeding herds, and only 4% have less than twenty, (the lowest number is five breeding stockand the highest is one hundred and thirty six).The total number of piglets (weaners) ranges from twenty to four hundred and fiftyper enterprise depending on the type of interprice. According to Kemm (1993), farmers who produce on a relatively large scale and keep feed expenses low are able to achieve larger profit margins. This is mainly due to the fact that farmers will be able to sell more and capable of supplying on a daily basis.

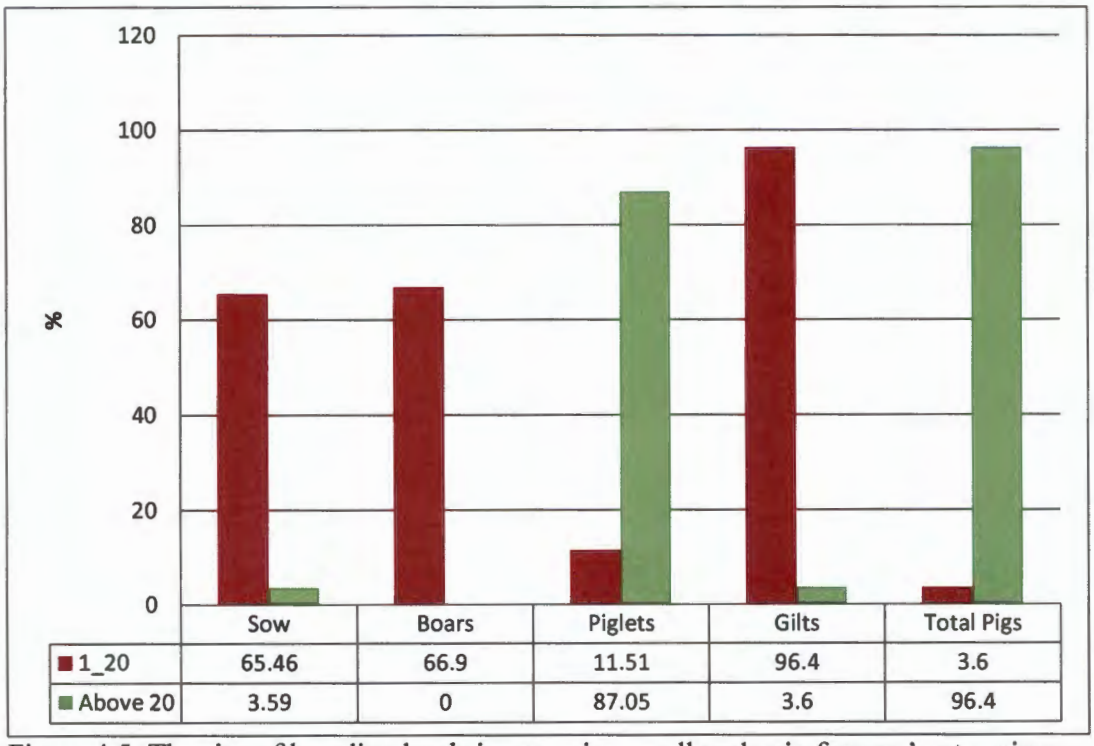


Figure 4.5: The size of breeding herds in emerging small scale pig farmers' enterprises

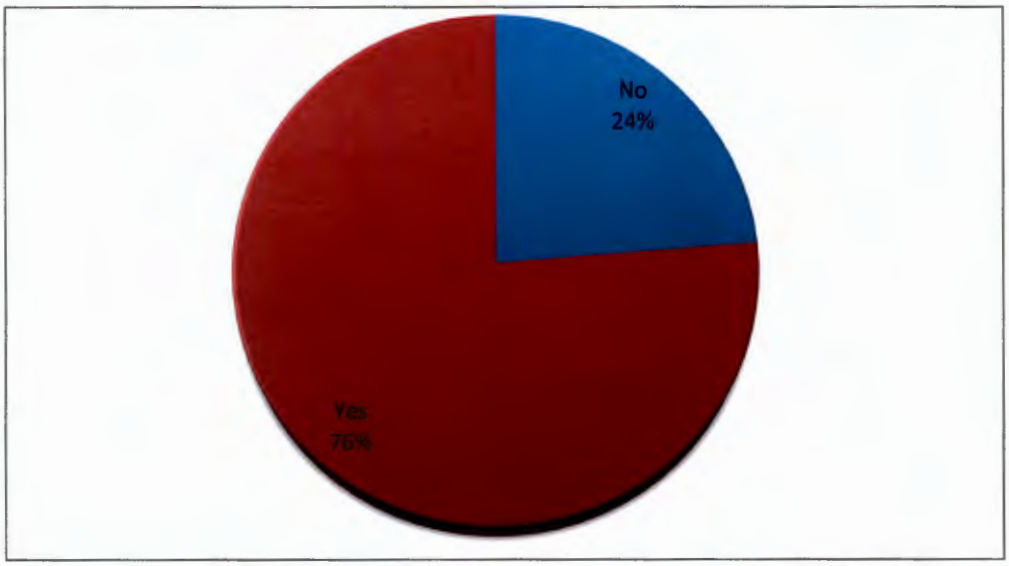
The Table 4.2 shows the type of pig enterprisethat emerging small-scale pig farmers uses. It shows that forty percent of farmers use the weaner grower unit, twenty seven percent use the breeding unit for their production while thirty three percent use both weaner grower and breeeding unit. Farmers who use both stand a chance of producing more and rearing weaners at lower cost compared to others and are likely to participate in high value market.According to Kemm (1993), farmers who produce on a relatively large scale and keep feed expenses low are able to achieve larger profit margins. This is mainly due to the fact that farmers will be able to sell more and capable of supplying on a daily basis.

Table 4.2: Type of pig enterprises of emerging small-scalepig farmers

Types of pig enterprises	**Frequency**	**Percentage**
Weaner grower unit	56	40.3
Breeding unit	37	26.6
Both	46	33.1

4.2.7 Contacts by emerging pig farmers with extension services

This variable measures whether farmers are in contact with extension officers more than twice a month. Agricultural extension service plays a crucial role in training farmers on marketing, improving the skills of farmers by teaching them ways of marketing and producing quality product for the intended market. According to Jones and Garforth (1994), the work of extension services has become more diversified. Figure 4. 6 shows that 70% of participants have contact with government extension officials for advisory services,twenty four percent have no contact with extension officers.



Figer 4.6: Contact with extension services by emerging pig farmers

Table 4.3futher shows the frequency of extension contact. It indicates that seventy three percent of respondents have contact with extension officials on a monthly basis, twenty three percent only bi-weekly while 3.6% get contact weekly. Extension service is an important source of farming information and advice to smallholder farmers (Enki *et al.*, 2001). Thus, it can be hypothesised that market access and extension contact will move in the same direction. The more extension contacts with the smallholder, the better the market access.

Table 4.3: Frequency of extension contact

Frequency of extension contact	frequency	Percentage
Monthly	102	73.3
Bi-weekly	32	23.0
Weekly	6	3.6
Total	140	100

4.2.8 Farmers affiliation with agricultural organisations

Most co-operatives allow producers to take control of their products as they make their way to consumers by allowing the products to by pass the middlemen in the market channel.

Table 4.4 shows different organisations that small-scale pig farmers had affiliation. The main functions of agricultural co-operatives are to assemble the products of a number of producers into larger products and to facilitate more efficient handling and more competitive sales, grade and ship these products to the market (Kohls & Uhls, 2002; Tracy, 1993).Co-operative farming spreads the scarce factors of skilled management, capital and, facilitates group decisions. (Pandey and Tewari, 2004).

Table 4.4: Types of agricultural organisations within the study area

Types of agricultural organisation	Frequency	Percentage
None	47	33.8
NAFU	38	27.3
NERPO	30	21.6
SAPO	24	17.3

This variable indicates whether the farmer has registered membership with Farmers' Union. The principal aim of an organisation is to assist previously disadvantaged resource-poor farmers through networking. Smallholder farmers and their organisations need to become aware of opportunities in the market. Figure 4.7 shows that fourty six percent of respondents in the study area are not affiliated to any agricultural organisation, while fifty four percent are affiliated. This will enable networking on issues that are affecting their production.

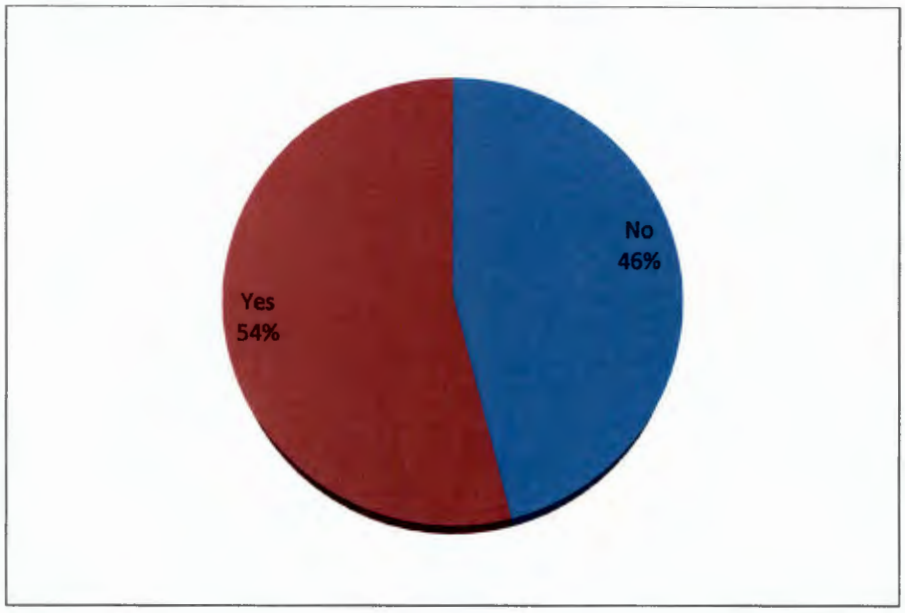


Figure 4.7: Farmers affiliation to agricultural organisations

4.2.9 Types of markets whereemerging small-scale pig farmers sell their produce

Farmers who sell theirproducts in high-value markets tend to improve their net income. However, due to safety regulations and standards required for participating in high-value markets, small-scale farmers end up selling in low-value markets. Table 4.5 shows that the majority of repondents (thirty nine percentage) sold their products at low value markets which includes selling at abattoirs, local butcheries, and local residents while sixty one percent of respondents sold products at high-value markets such as Pick 'n Pay, Spar or Ventersdorp Ok store and mostly participate through the middlemen (Syfersfontein, karoo Oosh agents.

Table 4.5: Types of markets used by pig farmers

Type of market used by pig farmers	**Frequency**	**Percentage**
Low-value market	54	39
High-value market	86	61
Total	140	100

Table 4.6 shows that fifty nine percent of respondents sell their products through middle men, thirty two percent sell to abattoirs and 8.6% sell direct to customers.Purchasing agribusiness companies are interested in buying from suppliers who are able to meet their procurement requirements. The study on the potential for contracting arrangements of emerging farmers in South Africa (Vermeulen *et al.*, 2007), concluded that contracting is an important instrument for emerging farmers to access supply chains. Almost 80% of the total volume of fruits and vegetables procured by agribusiness companies are for processing.

Table 4.6: Methods used by farmers in selling pigs

Methods of marketing products	**frequency**	**Percentage**
Direct to customers	13	8.6
Through middle-men	82	59.0
Through abattoirs	45	32.4
Total	140	100

4.2.10 Methods used by pig farmers to advertise their products

This variable shows the method used by farmers to advertise their products. Table 4.7 shows that fifty six percent of pig farmers use the radio to market their product, thirty five percent market their products through thetelevision, one percent market their products through leaflets while eight percent do not advertise their products.(Antwi *et al.*, (2011) found that in the market, most farmers use radio, mouth-to-mouth and co-operatives to advertise their products.

Table 4.7: Means of advertisement

Means of advertisement	**Frequency**	**Percentages**
None	11	7.9
Radio	78	56.1
Television	48	34.5
Leaflets	2	1.4

4.2.11 Farmers using marketing price and marketing information sources

This variable shows how many of the pig farmers use information sources and the marketing price. Table4.8 shows that sixty one percent of farmers are not using marketing information sources for their products and thirty nine percent are using marketing information sources.

Table 4.8: Number of pig farmers using marketing prices.

Use of marketing prices	Frequency	Percentages
No	85	61.1
Yes	54	38.8

Table 4.9 indicates that thirty seven percent of pig farmers find marketing prices information from Department Agriculture Rural Development, twenty five percent from butcheries, thirty one percent from auctioneers and seven percent contributed by private companies. Most of the farmers find their marketing information from DARD through contact with extension. This is similar tothe study conducted in Gauteng Provice by Antwi *et al.*, (2011) which shows that most farmers get their marketing information through contact with departmental agricultural extension officers.

Table 4.9: Source of marketing information

Source of marketing information	Frequency	Percentages
DARD	52	37.4
Butcheries	34	24.5
Auctioneer	43	30.9
Private companies	10	7.2

4.2.13 Types of products produced by emerging small scale pig farmers

This study has shown that the more patiently and humanely a slaughtered animal is handled, the better will be the quality of meat. Good quality meat will also receive better price and reduce fianancial losses. Bruises and injuries sustained in the loading, transportation and off loading of animals, in livestock industries cause significant finacial loss. Bruised portions have to be cut away as bruised meat is not fit for human consumption. It is therefore, important that slaughtered animals arrive at their destination fit and healthy for human

consumption. The results show that most respondents (79.1%) sell live pigs findings of Pandey and Tewari (2004) that lack of storage facilities increases the storage fees paid by producers.

Table 4.10: Types of products sold by emerging small-scale pig farmers

Type of products	Frequency	Percentage
Live Pigs	111	79.1
Slaughtered/ Processed pigs	29	20.8
Total	140	100

Table 4.11, indicates that farmers use different methods of marketing produce. Only 20.8% of farmers sell slaughtered / processed animals. Most farmers (59%) use middlemen.It was discovered that respondents who sold slaughtered / processed animals faced high transaction costs. These costs included: high slaughter fees, high storage fees and high transportation costs.

Table 4.11:Methods of marketing products

Method of marketing products	Frequency	Percentage
Direct to customers	12	8.6
Through middle men	82	59.0
Through abattoirs	45	32.4

4.2.14 Quality of products sold by emerging small scale pig farmers

Table 4.12 represents the meat quality sold by respondents. Fifty six percent of respondents produce first grade meat, thirty two percent produce second grade meat while twelve percent produce third grade.Even though respondents sold good quality products, accessing high-value markets was a challenge. Majority of the products were considered first grade. This indicates that bio-security measures are enforced on producers by the government. As suggested by Cole (1971), selling good quality products is vital for food safety. Furthermore, failure by emerging farmers to participate in commercial pig farming / hig-value markets is due to the huge investment required in infrastructure (GDACE, 2009). Farmers need to increase the size of production / breeding herd (at least 250 pigs / farmer) and those in the

grower unit should have 360 weaners/ production cycle and more in order to improve the chance of accessing high-value markets and improve their income. This is in line with the finding of Kemm (1993) that farmers who produce on a relatively large and effective scale are able to access high-value markets and have higher profit margins. Farmers may consider cross-breeding techniques in order to enhance the size of the breeding herd. This technique has been effective for commercial pig producers.

Table 4.12:Quality of products sold by emerging small scale pig farmers

Quality of products	**Frequency**	**Percentage**
Bad (3rd grade)	18	12
Average(2nd grade)	44	32
Good (1st grade)	78	56
Total	140	100

4.2.15 Distance to the high value markets

This variable measures the distance to the point of sale of the farm output, notably a market center where buyers congregate. The further the distance to the market, the higher the logistical problems in terms of availability of transport facilities and transport costs. Farmers who are located at considerable distances to the point of sale are likely to lack market access if they do not possess the means to transport their produce. Furthermore, high value markets may be located far away from the point of production.

Table 4.13 , shows that nineteen percent of farmers travel less than twenty kilometers, twenty four percent travel a distance more than fifty kilometers, while fifty seven percent travel, between twenty and fifty kilometers to high value market.This is in line with the finding of Kherallah and Kirsten (2001) that traders with higher social capital are better able to enter into more capital-intensive marketing activities such as wholesaling and long-distance transport, whereas traders with poor social networks face major barriers to entry into more lucrative market segments.

Table4.13:Distance to the high value markets

Distance to high value market	**Frequency**	**Percentage**
Less than 20km	**27**	19.42
20 – 50 km	**79**	56.83
Above 50km	**33**	23.74

4.2.16 Farmers' registration and levies paid for participating in high value market

High levy and transport cost play a vital role in reducing the net income of farmers. However, the scenario indicates that much needs to be done by the government and farmers in order to access high value markets. Figure 4.8 shows that only thirty five percent of pig farmers are registered to pay levies for their produce while majority, (sixty five percent) of farmers are not registered or pay levies for their produce. Most farmers in the study area sell their produce directly to consumers and others depend on middle men.This is in line with the findings ofKherallah and Kirsten (2002) that minimising transaction costs is the key to improving access to high-value markets in developing countries, because high transaction costs will make it difficult for poor smallholder enterprises to market their produce.

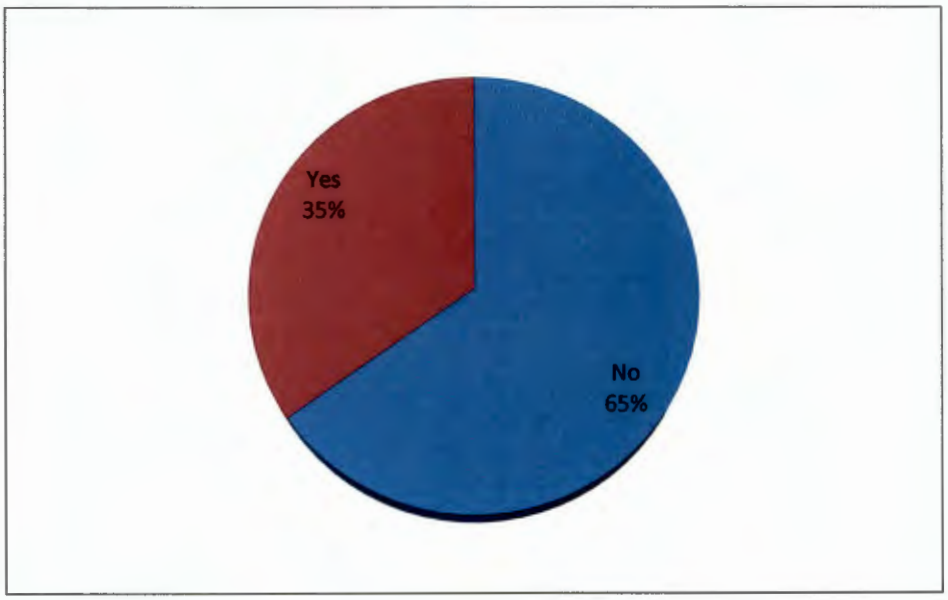


Figure 4.8: Farmer registered and their levies for participating in high value market

4.2.17 Annual farm income of emerging small-scale pig farmers

The annual farm income represents the return to capital and management. Annual farm income can be derived by subtracting the total cost from the corresponding total income. Farmers can increase net farm income through increased productivity and efficiency. Table 4.13,shows that nine percent ofpig farmers had a net income of less than R10 000 per annum, thirty three percent had annual farm income of R10000 to R50 000 and fifty seven percent had net farm income of above R50000 per annum.The least annual farm income obtained by a farmer with four sow breeding unit anually was R7 500, and the highest farmer with 169 sow breeding unit was highest with R460 000.Farmers with grower units had annual farm income

ranging from R100 000 to R 150 000.(expensive weaner and feed involved in farming system).

Farmers who produced their own weaners on a larger scale obtained better net income per annum. The variation is due to the fact that farmers with fewer animals sold pig in auctions only once or twice a year compared to farmers with many animals who sold pigs every two weeks at auctions. Moverover, farmers who obtained higher net farm incomes were aware of the price trends before selling products. This is similar to the finding of Kemm (1993) that accessibility of market information on price trends before selling products is essential for farmers. Kemm further highlighted that knowing price trends will prevent farmers from selling pigs at the wrong time, when profit is at its worst as this will provide farmers with better income from their produce.

Table 4.14: Annual farm income of emerging small-scale pig farmers

Annual income from pigs	Frequency	Percentage
Less than R10000	**13**	9.35
R10000 – R50000	**46**	33.09
Above R50000	**80**	57.55

4.2.19 Marketing constraints faced by small-scale pig farmers

The marketing constraints or challenges include factors which hinder farmers from producing for a higher value market such as Spar. Respondents involved in the study identified nineconstraints as ranked in Table 4.15. Respondents classified lack of access to marketing information as the biggest constraint (20.8%) and high transport cost as the least constraint (2.8%). Respondents indicated that lack of finance was due to the inability to access credit from financial institutions, due to lack of assets to secure contracts. The biggest challenge faced by farmers was collateral security due to the fact that they are on communal land and government land can not be handed over to the bank as security for credit. Lack of access to high value markets, storage, and poor market infrastructure contribute farmers' low net income. This results in the failure to meet market requirements for pigs which are ready for the market. This is consistent with the finding of Pandey and Tewari (2004) that lack of access to credit can hinder farm production. One can conclude that access to credit will increase production and create access to some farm operational needs.

Lack of access to market information was the main constraint for farmers involved in the study. Dissemination of information in rural communities is poor. This is in line with the finding by Pandey and Tewari (2004) who suggested that there is no channel to receive correct information about the prices of agricultural products at the earliest in rural communities. Farmers have to sell at prices prevailing in unregulated markets and therefore, unable to enjoy the benefits of selling in high-value markets.

Table 4.15: Market constraints faced byemerging small scale pig farmers

Market constraints	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	**8th**	**9th**	**10th**
Poor market infrastructure	11.6(12)	0.7(13)	8.6(13)	6.5(16)	7.9(15)	8.6(27)	14.4(10)	9.4(10)	11.5(15)	20.9(8)
Long distance to markets	5.8(11)	4.3(24)	2.2(13)	5.8(20)	5(11)	7.9(15)	14.4(8)	17.3(24)	23(7)	14.4(6)
Lack of own transport	15.1(11)	14.4(12)	8.6(25)	13.7(23)	8.6(10)	4.3(10)	10.8(13)	5.8(9)	5(18)	13.7(8)
Lack of finance	5.1(29)	14.4(24)	13.7(21)	7.9(11)	7.9(23)	12.2(12)	7.2(12)	10.1(5)	10.8(6)	10.8(4)
High transport cost	2.8 (7)	5(20)	5(19)	7.9(11)	16.5(11)	10.8(17)	12.9 (10)	19.4(14)	8.6(15)	10.8(15)
Lack of access to high value markets	8.6(21)	9.4(20)	9.4(12)	11.5(19)	10.8(12)	19.4(6)	7.2(15)	7.2(8)	10.8(7)	5.8(19)
Lack of storage facilities	7.9(4)	8.6(7)	18(7)	16.5(11)	7.2(23)	7.2(15)	9.4(18)	6.5(27)	12.9(12)	5.8(15)
Poor pig product from farm	7.9(8)	17.3(6)	9.4(3)	14.4(8)	7.9(7)	10.8(11)	5.8(20)	17.3(24)	5(32)	4.3(20)
Lack of access to market information	20.8 (16)	17.3(1)	15.1(12)	7.9(9)	16.5(11)	8.6(12)	3.6(20)	4.3(13)	2.9(16)	2.9(29)

4.2.20 **Farmers' knowledge on standards set for high value markets**

In order for farmers to have access to high-value markets, they need to be aware of the standards set by high value markets. Table 4.16 shows that the highest standard set for high value markets is biosecurity.While 50.4% of respondents had knowledge on disease-free animals. The 51.1% respondents were aware of biosecurity standards, 46 % were not sure of the quality of meat and meat grading standards.The first lowest standard indicated by respondents was the granding of animals. The 15% of respondents had knowledge on the granding of animals and 38.8 % know about the granding of animals, 46 % were not sure of the meat granding standards. The second lowest standard indicated by respondents was the

pricing of animals. The 15% respondents had knowledge on pricing of animals.The 36.7 % respondents knew about the granding of animals while 48.2 % are not sure of the meat granding standard. Lack of knowledge is a limiting factor for farmers to participate in high value markets. The study shows that even though respondents knew more about the standards set by high value markets for biosecurity, animal diseases,meat quality, weight at birth did not guarantee that they understood or knew standards set by high value markets. The study further shows that this might be one of the factors that preventemerging small-scale pig farmers from participating in high value markets.

The factors of production like animal weight, types of feed, water hygiene, live weight, slaughter weight are the basic standards set for pig farmers for participation in a high value markets.The majority of smallholder farmers produce low quantities of products of poor quality, which leads to their products being neglected by output markets. Good quality products and sufficient stock to supply to weekly market should be known to farmers. Kherallah and Kirsten (2002) maintained that, increasing concentration in the food value chain is a global trend, caused by increasingly demanding consumers and concerns about food safety. This makes it very difficult for smallholder farmers to enter high-value markets in the light of low quantity and poor quality of their products. Good quality products and sufficient stock to supply on a weekly basis to markets should be known to farmers.

Table 16:**Farmers' knowledge on standard set for high value markets**

Knowledge items	High		Moderate		Low	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Disease free animals	70	50.4	59	42.4	10	7.2
Biosecurity	71	51.1	60	43.2	8	5.8
Meat quality	59	42.5	65	46.8	15	10.8
Meat grade	50	36.0	73	52.5	16	11.5
Animal weight at birth	42	30.0	72	51.8	25	18.0
Types of feed	34	24.5	71	51.1	34	24.5
Water hygiene	33	23.8	62	44.6	44	31.7
Live weight	31	22.3	52	37.4	56	40.3
Slaughter weight	24	17.3	59	42.4	56	40.3
Grading animals	21	15.1	54	38.8	64	46.0
Pricing animals	21	15.1	51	36.7	67	48.2
Handling animal during transportation	25	18.0	47	33.8	67	48.2
Pig unit environment	33	23.0	38	27.3	68	48.9
Animal spacing	25	18.0	47	33.8	67	48.2

4.3 PROBIT REGRESSION ANALYSIS

The probit regression analysis shows the relationship between socio–economic characteristics of and emerging small-scale pig farmers participating in high value markets. Table 4.17, shows the results of the probit model used to determine the influence of the independent variable on emerging small-scale pig farmers'participating in high value markets. The model has a good fit and is significant at 1%.

Table 4.17 shows that eight explanatory variables were significant in the study, whereas seven were insignificant. The seven variables without significance from the highest to lowest are farming experience, youth in household,extension contact, marital status, educational level,distance to high value market, constraints hierarchically. The eight significant variables , are farmers' knowledge on standards set for high value markets, age,race, gender, religion, transaction cost, annual income, expenditure and intercept.

The probit model was employed to determine the participation of emerging small-scale pig farmers in high value markets. It sought to explain the probability of participation in high value markets as a result of any of the twenty one identified independent variables. The signs of the coefficients of independent variables and their significance were used to determine largely the impact of each variable on the participation of emerging small scale pig farmers in high value markets.

The number of young people in a household of emerging small-scale pig farmers has a negative coefficient and is not statistically significan.The coefficient of farming expirience did not comply and is not statistically significant.

The coefficient of the age of small- scale pig farmers did not have any significant relationship with participation in high value market. Gender has a positive coefficient and is statistically significant at five percent. There is 4.6 % probability that women and men emerging small-scale pig farmers will participate in high value markets This shows that there is a indirect relationship between gender and participation in high value market. Marital status has a negative coefficient and it is not stastistically significant. This also indicates that it has an indirect relationship with participation in a high value markets. Religion has a negative coefficient and is statistically significant at one percent. This also indicates that it has an indirect relationship with participation in high value markets.

The coefficient for annual farm income of emerging small-scale pig farmers complies with a priori expectations, it is negative and also statistically significant at one percent. An increase in production income will increase participation in high value markets while a decrease in income will decrease participation in high value markets. There is a 100% probability of suplus income which used to increase the number of breeding stock opportunities ofbetter participation in high value markets. Expenditure has a negative coefficient and is statistically significant at one percent. The coefficient for transaction cost is positive and statistically significant at one percent.This is a direct relationship indicating that small-scale emerging pig farmers who expirience high transaction costs have reduced profits for thier products. The higher the transaction cost, the lower the profit in high value markets. The lower the transaction cost, the higher the profit in high value markets.

Distance to high value markets is negative and not statistically significant. It has a direct relationship with participation in high value markets. The nearer the high value markets the more the farmers save on transport cost and petrol. Extension contact is positive but not statistically significant. The coefficient on farmers' knowledge on standards set for high value markets is positive but statistically significant at one percent.The more the farmers had knowledge on the standards set by high value markets as a requirement for them to qualify to participate in high value markets, the more they adhere to the set standards in order to qualify to participate. This increases income and reduces unnessary cost. Farmers will keep quality pigs, use proper feed, have a proper biosecurity and quality product at slaughter stage. There will be high participation of emerging small-scale pig farmers in high value markets. This will result in an increase in income that will improve the standard of production and the livelihood of small-scale emerging pig farmers. The is a positive coefficient on market contraints and is not statistically significant . The lesser the marketing constraints, the greater the opportunity for emerging small-scale pig farmers to participate in high value markets. Farming experience has a positive coefficient and is not statistically significant. Educational level of respondents has a negative coefficient is not statistically significant . The higher the educational level, the better the opportunity to participate in high value markets.

Table 4.17 Parameter estimates for probit regression analysis of determinants of participation in high value markets

Variables	Estimate	Std. Error	Z	Sig.
Farmers' knowledge on standards set for high value markets	.006	.003	1.741	.000
Gender	-.029	.015	-1.993	.046
Race	.066	.025	2.612	.009
Marital status	-.036	.030	-1.212	.226
Youth in household	-.001	.000	-1.379	.168
Age	.119	.028	-4.305	.000
Religion	-.312	.100	-.3109	.002
Farming experience	.002	.005	-354	.723
Educational level	-.028	.021	-1.355	.175
Extension contact	.004	.036	.122	.903
Distance to high value market	-.001	.001	-1.291	.197
Expenditure	-.048	.014	-3.340	.001
Annual income	.000	.000	-10.920	.000
Constraints	.005	.003	1.573	.116
Transaction cost	.000	.000	-1.647	.099
Chi-Square	3627.894			
Df	120			
Sig	.000			

4.4 SUMMARY CHAPTER

The results from the study showed that fifty five percent of male were involved in pig farming . The results also revealed that farmers sold products to low value markets. Those who sold to high value markets did so through middlemen, even though they have over 5 years experience and sold first grade products.

Farmers who participate in high value markets are exposed to high trasaction costs and levy fees by auctioneers and abattoirs. In order to increase farmers' annual net farm income and access to high value markets, farmers have to increase their breeding herd, have adequate knowledge about the standard requirements of high value markets, reduction of transport costs and maintain contact with extension services. The study has shown that farmers have limited knowledge on standards set by high value markets.

The probit model was used to determine the influence of the independent variables on small-scale emerging pig farmers' participation in high value markets. The model has a good fit and is significant at 1%. Eight explanatory variables were significant while the other seven variables were insignificant.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

This study identified determinants of emerging small-scale pig farmers' participation in high value markets in the pig industry. Emerging small-scale pig farmers have factors that influence their participation in high value markets. Infrastructure, transaction cost, marketing channels, access to markets, and market information were identified in the study as major determinants. This chapter outlines some major findings of the study and recommendations based on the objectives and findings of the study.

5.2 SUMMARY OF THE STUDY

5.2.1 Literature review

Low yielding agricultural technologies translate into low productivity and production in most African countries including South Africa where both private and public sectors experience the same problem. One of the objectives of the agricultural policy of South Africa is to support small and medium-scale farmers alongside large-scale commercial farmers, in order as to address food insecurity and poverty. This does not, however, come in a vacuum, as there are factors linked to the process. From the literature review, these factors includes: market information, market access by farmers, storage, quality of products, finance, bio-security and disease control, transportation, socio-economic factors such as cultural beliefs and feed cost, infrastructure, demographic factors such as gender, race, age per household.

Most of the factors mentioned above are directly linked to small-scale farmers and farmers have a responsibility to address them. Firstly, there seems to be communication break-down between the private sector, government and small-scale farmers in the sense that farmers are mostly found in marginalised areas making it difficult for information to reach them. It is therefore, the responsibility of the government to ensure that information reach these emerging small-scale pig farmers. This will ensure their participation in high value pig markets since they contribute in the economic development of their municipalities. Also, allocations should be made for marketing infrastructure development in order to empower resource poor farmers and taking into consideration some of the demographic factors addressed the in study.

5.3 RESEARCH METHODOLOGY

The study was conducted in Dr kenneth Kaunda District (Tlokwe, Ventersdorp, Maquassi Hills and Matlosana municipalities). The district is divided into four municipality, a selection of participants was stratified in to four parts selected from 40 to 20 pig farmers per municipality. A stratum was used as an administative units then random sampling was used to select participants for the study. Stratified random sampling was used to select one hundred and forty (140) small-scale farmers in all the municipalities.Interview and questionnaires containing open and closed-ended questions were used to collect data and administered by the researcher.

5.3.1 The probit regression results revealed the following:

- Farmers need to understand and have knowledge on standards set for high value markets, and the use thereof, this will enhances participation of emerging small-scale pig farmers in high value markets,
- Farmers' experience increases participation in high value pig farming. The higher the level of education and the longer the period of experience on an enterprise, the better the performance of a farmer;
- Youth in households involved solely in pig farming expected to participate more actively to increase income. They reduce labour cost since they become part of the farm labour and because of their educational levels, they are able to easily interpret information;
- If distance from high value markets is reduced, participation will also improve;
- Annual income of the farming enterprise will give small-scale pig farmers an opportunity to access high value markets, an increase in annual income means an increase in the opportunity to participate in high value markets since it provides a chance to adhere to requirements of high value markets. Surpluses could be used to purchase extra breeding stock and feed;
- Reduction of transaction costs increase participation in high value pig farming;
- Gender plays a vital role in participating in high value markets, both males and females can collectively improve pig production marketing.

5.4 CONCLUSION

- ✓ Knowledge on standards set for high value market; gender per household, lack of market information and high transport costs were found to be outmost determinants of small-scale pig farmers' participation in high value markets.

- ✓ The null hypothesis that there is no significant relationship between socio –economic factors on participarting of emerging small scale farmers in high value markets is zero. The study found that improving farmers' knowledge on high value market standards and reduction on transaction cost would improve their likelihood of farmers who participating in high value markets.

5.5 RECOMMENDATIONS

- **Provide access to marketing information to farmers**

Lack of information on high value markets impedes participation. It is thus recommended that the Department of Agriculture, together with relevant stakeholders, provide information sessions in communities where pig farming is prevalent in order to improve farmers' skills, knowledge and experience that will enhance quality production.

Integrate development between all spheres of non-governmental and governmental sectors responsible for piggery development in and outside the province. All stakeholders to work together towards improvement of pig production and encouraging small scale emerging pig farmers to participate in high value markets.

Theoretical and practical approaches of disseminating information could be applied according to the specific needs of both farmers in the market. It is recommended that the system for disseminating of research, production and market information be set up and coordinated by relevant industry role players in conjunction with the National Agricultural Marketing Council (NAMC), Department of Agriculture, and the Agriculture Research Council (ARC) as supporting structures.

- **Establish of new and strengthening existing producer organisations and cooperatives towards collective action**

If farmers could be encouraged to affiliate into co operatives, in order to attract to market their produce collective in order to meet supplies to high value markets, then the problem of lack of markets will be addressed.

- **Enhance of extension officers and services**

Extension officers should undergo capacity building programmes that will revitalise their skills and expertise in the field of pig farming. Also, extension services should be enhanced in terms of frequency of visits and upgraded in order to close the gap between extension officers and pig farmers.

- **Enhance youth and women involvement in pig farming**

It is recommended that the involvement of the youth and women in pig farming be encouraged. Equity partneships, youth or women cooperatives, or development projects are ideal to address this situation.

- **High transaction cost**

  Small-scale emerging pig farmer supplying high value markets are faced with high transaction costs. It is therefore advisable that the government provides small-scale emerging pig farmers with subsidy on the sloughter levies and transport cost. Farmer participating in auction and abaittoirs pay higher levies to middlemen and auctioneers. It is recommended that the governmemt examines such malpractices in close collaboration with its officials.

5.6 RECOMMENDATIONS FOR FURTHER RESEACH

- Small-scale pig farmers market animals through the informal sector. Further research dynamics and operation will assist in understanding its impact in formal markets and households in terms of poverty alleviation. Also, methods of marketing involved would assist in the formal sector.
- Cultural perceptions about the sector seem to play a role on the decision to participate in pig farming, especially on gender relations. Further research on this issue will enable policy-makers to deal with misconceptions.

5.7 SUMMARY OF CHAPTER

This chapter has presented the summary, conclusions and recommendations in order to improve the current sutuation of small-scale farmers in Dr Kenneth Kaunda District of the North West Province, South Africa. The factors, limiting emerging small-scale pig farmers participation in high value markets were outlined. Goverment should assist small-scale farmers with marketing infrastructure in order to improve participation in high value markets.

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APPENDIX 1: QUESTIONNAIRE

QUESTIONNAIRE SURVEY. Determinants of emerging small scale pig farmers participating in high value markets in Dr Kenneth Kaunda District, South Africa.

Name of Interviewer : M.P.S.SENTSHO.

Date : .....

Name of Respondent : .....

Location : .....

SECTION A

DEMOGRAPHIC INFORMATION

Please mark with an "x" where appropriate

1. Gender

Male ☐ Female ☐

2.Race

African ☐ White ☐ Indian ☐ Colored ☐ Others

3. Marital status

Married ☐ Divorced ☐ Living Partners ☐ Single ☐ Widower ☐ Widow ☐

4. Size of your household

Male	Female	Youth	disabled	pensioner

5. Age .....

6. Highest level of education

None ☐ Primary ☐ Secondary ☐ Tertiary ☐

7. Your religion

Christianity ☐ Traditional ☐Muslim☐ Other (Specify).....

SECTION B

Personal data

1. Farming experience (Years): .....

2. Do you farm with pig breed? Yes☐ No ☐

3.a) If yes which breed are you faming with?

Large white ☐ topics large white ☐ duroc breed ☐land race breed

3.b). which enterprises do you practice?

☐weaner grower unit☐ breeding unit ☐ both

☐Others(specify).....

3.c.)Provide data of farm/ stock

Sow	Boars	Piglets	Gilts	Total

4 a) Employment besides piggery : Yes ☐ No ☐

b) If yes, type of employment / occupation: .....

c) What is your monthly income from the other occupation? .....

How much are your farm expenses ...../annum?

d)What is your farm income ...../annum?

5. Land ownership

Private☐ Leased ☐LRAD☐PLAS ☐Communal☐ Commonage☐

6. a) Do you have employees on your project/farm? Yes ☐ No ☐

Male	Female	Youth		disabled
		m	f	

6.b) How many employees are employed permanently and seasonal?

Male	Female	Youth		Disabled
		m	f	

7.a) Do you have contact with extension agents? Yes ☐ No ☐

b). If yes how often?

Weekly ☐Bi-weekly☐ Monthly☐

c) Where is extension agent from?

Government ☐NGO ☐.Parastatals ☐ARC ☐ Agricultural Coops ☐

7.a).Affiliation to any Agricultural organization Yes☐ No ☐

b).If yes list names……

……

8.a). Network with other farmers Yes☐No☐

.b)what method of communication are you using

☐facebook ☐.emails☐fax ☐ cell phones ☐ chats☐

SECTION C Marketing

9a.) what are your market end product?

beaconers☐ porkers ☐.weaners ☐breeder stock

10.What are the types of products sold on the farm? .....

Live pigs ☐. Processed / Slaughtered ☐.

11. How would you rate the quality of the product sold?

Good . ☐ Bad ☐..average ☐

12. What is the price / kg of the product sold? .....

13. In which type of market are the animals sold?

High value market (supermarket eg. Spar) .....

Low value market (community) .....

14.a). How far is the farm to the market? .....

b) How far is your farm from the high value markets? .....

c) what type of pig market exist in study area?

d) Do you participate on high value markets? .....

Yes ... ☐. No.. ☐

e)i. If answer is yes state which one.....

e)ii. if answer is no state the limitation .....

15. a). Do you have your own transport?

Yes .. ☐. No... ☐

b). How money pigs do you sell per annum? .....

c). when last did you sell your pigs? .....

16. What is the total transactional costs do you incur?

Transport .....

Storage .....

Levy .....

Others .....

17 a) What is your annual income of the pig farming enterprise? .....

b) What is your annual expenditure of the pig farming enterprise? .....

18. how do you advertise your products?

Radio☐ TV☐ News paper☐ leaflets☐ Others(specify).....

a) Do you ever use market information?

Yes .. ☐. No ☐

b) If yes, what type?

c) Source: .....

19.How do you market your products?

Direct to consumers ☐ Through middlemen☐ Through abattoirs☐ Through auctions☐

20. Do you have to register and pay levy for participating in the high value market?

Yes . ☐. No. ☐.

21. if yes, how much levy do you have to pay? .....

SECTION D Constraints facing pig farmers.

22. What marketing constraints are you faced with? (Rank them: 1 been the most constraint)

Lack of access to high value market: .....

Poor pig product from the farm: .....

Lack of storage: .....

Lack of access to market information: .....

Lack of finance: .....

Lack of own transport: .....

High transport cost: .....

Long distance to the market: .....

Poor market infrastructure: .....

Small size production: .....

Others: .....

23.Rank your knowledge on standard products needed by the high value market.

Standards	high	moderate	low
Animals that are disease free			
Bio security			
Meat quality			
Meat grade			
Animal weight			
Type of feed			
Water hygiene			
Live weight			
Slaughter weight			
Grading of animals			
Pricing of animals			
Handling of animals during transporting			
Pig unit environment			
Animal spacing			