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MARKETING CHANNELS AND PROFIT MAXIMIZATION FOR SWINE PRODUCERS IN FREE STATE OF SOUTH AFRICA

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ABSTRACT

The purpose of this paper is to propose a workable and effective marketing channel intended to assist Free State swine producers to maximize profit. This study is motivated by the fact that the previous millennium witnessed the agricultural product market changing from a predominantly producer dominated market approach to a demanding, well informed, consumer dominated market. This call for the validation of similar studies in order to formulate informed marketing channel that will enhance profit maximization for swine producers in the Free State. The primary data was sourced using semi-structured questionnaire, while the secondary information was generated from existing / available relevant literature journals / periodicals. A judgmental sampling technique was used to determine the sample size of 80 swine producers. Regression analysis and Pearson Product Moment Correlation Co-efficient (PPMC), were used while the Analysis of variance (ANOVA) statistical tool was used to test the hypotheses with the aid of Statistical Packages for Social Sciences (SPSS) version 22.0. The finding showed that the different marketing channels adopted by the swine producers has no significant difference in the marketing channels adopted by swine producers in Free State. The knowledge of effective marketing channel will help the swine farmers to reduce cost of production and thereby maximize profit.

KEYWORDS

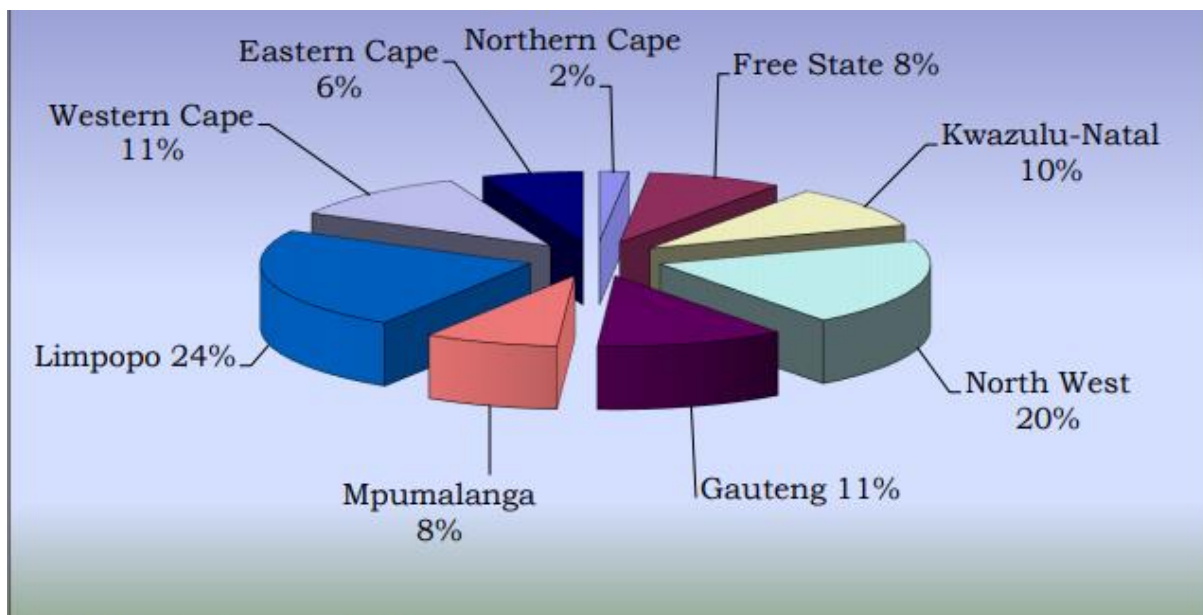
Profit Maximization; Swine Producers; Marketing Channel; Distribution Channel.



Introduction

Agriculture dominates the Free State landscape, with cultivated land covering 32,000 square kilometres, and natural veld and grazing a further 87,000 square kilometres of the province. The Free State Province is the granary of South Africa, with agriculture central to its economy, while mining on the rich goldfields reef is its largest employer [1]. That being said, the focus of this paper is around swine producers as a vital and integral part of the province's agricultural trajectory towards economic growth. The contribution of the swine industry to the country and province's economic growth can never be underestimated. Figure 1 below shows the production of pork per province during 2011. The lowest pork producing provinces are Northern Cape (2%) and Eastern Cape (6%) [2].

Figure 1 below shows the production of pork per province during 2011



Source: Statistics and Economic Analysis, DAFF

Marketing is a crucial part of any business endeavour, swine producers being no exception. It is a common knowledge that marketing drives a consumer economy, promoting goods and services and targeting consumers most likely to become buyers. Higher sales for a business that employs successful marketing strategies translate into expansion, job creation, higher tax revenue for governments and, eventually, overall economic growth [3, 4]. However, many producers of goods/services view marketing as the great unknown, requiring a huge budget with limited accountability and measurability [5, 6]. It stands to reason that a well-executed strategy and planning can mean the difference between an expensive miscalculation and a successful budget control campaign. Marketing pigs is an important aspect to profitable swine production. Pork processors have developed marketing grids that value carcasses [7, 8]. These grids are specific to each pork processor with premiums based on carcass weight and leanness. Although premiums depend on the pork processor, the overall trend is for processors placing more importance on carcass weight and importance on percent lean. Pigs need to be sold at an optimum weight in order to maximize profit [9]. The mission of swine programs is to facilitate the strategic marketing of products of the swine industries in the domestic and international markets and through various programs and services, promote a competitive and efficient market place that benefit *Free State producers and consumers* [10]. Successful marketing is a necessary part of any profitable enterprise, and alternative marketing is often necessary for sustainable swine producers to survive.

[11] concurs that marketing channels serve as a tread that links producers/manufacturers of goods and services to their consumers. It describes how products are delivered to target customers. Like any other producer/manufacturer, swine farmers are not immune to challenges of getting their products to ultimate consumer. Sometimes it could be that many swine farmers are not fully aware of what is happening elsewhere in the country regarding their sector. A determining factor not only on their choice of markets but also impact on the motivation to carry out swine farming as a viable business venture. Noteworthy, there are many different marketing channels for swine farm products in South Africa, like any other agricultural product, these present a number of opportunities and challenges [12]. Manufacturers can either use intermediaries to market and deliver products or independently manage the steps in the distribution process. Without doubt, the most common traditional form of distribution channel is the retail channel of distribution.

It is a common cause that a quality farm product requires premium markets for profit maximization. Profit maximization is a process that companies undergo to determine the best output and price levels in order to maximize its return [13, 14,15]. The company will usually adjust influential factors such as production costs, sale prices, and output levels as a way of reaching its profit goal. Profit maximization is a good thing for a company, but can be a bad thing for consumers if the company starts to use cheaper products or decides to raise prices [13]. Smallholder farmers usually concentrate on local butchers/abattoirs and pork joints which are sometimes exploitative and have no streamlined quality standards and appreciation. These limitations are created by mostly lack of necessary quantities and quality to penetrate premium markets. Considering the challenges of low sales return and profit maximization, this paper intends to not only to examine the effective marketing channels that will assist Free State Province of South Africa Swine producers to maximize profit, but also propose and advocates a practical model or framework to be adopted by swine producers.

The Changing Marketing Environment

Documentary evidence continue to indicate that any business organization, in any shape or form, including swine producers, does not operate in a vacuum [16, 17] numerous forces play a role in determining the company direction and course of action for all its marketing activities. Preparing a marketing environmental analysis becomes a critical imperative. It is an essential step in understanding and identifying all the external and internal elements which can affect the swine producer's performance. The analysis entails assessing the level of threat or opportunity the factors might present [17]. These evaluations are later translated into the decision-making process. The analysis helps align strategies with the swine producer's environment.

These forces are usually divided into two categories, namely, controllable and uncontrollable elements [18, 19]. *Controllable elements* are elements that come under company's influence, such as product, price, promotion, and distribution, whereas *uncontrollable elements* cannot be fully directed by the business and its marketers. These elements have strong external forces that are beyond the company's control. They include competitors, legal, politics, consumer behaviour, and etc., [18,11]. When a company operates in a foreign market, the management of marketing environment elements becomes especially challenging due to unfamiliar problems and unusual market behaviour. However, if it does not react to changes in the market, they will significantly affect the company's performance [20,11]. The detailed marketing environment analyses can be made by splitting the environment into three parts: the internal, the micro- and the macro-environments [21,22,11].

Macro-environment analysis

The macro environment is characterized principally by major external and uncontrollable factors that impact on (i) organization's decision making, (ii) its performance and (iii) strategies [17]. These factors include the political, economic, social-cultural, technological, legislative and ecological (PESTLE) aspects of the wider environment. Swine producers must monitor and identify those environments that might present opportunities and threats to the business including its future projections [23, 17]. Examples of the influences, and the way they can be classified using PESTLE framework are presented in Table 1 below.

TABLE 1. Examples of macro-environmental forces (Strategic management analysis 2014)

Factors	Examples
<i>Political factors</i>	Trading policies, export/import policies, war and conflicts, international legislation.
<i>Economic factors</i>	Inflation, unemployment, economic growth, interest and exchange rates.
<i>Social-Cultural factors</i>	Life-style trends, buying access and trends, demographics, advertising and publicity.
<i>Technological factors</i>	Communications technology, R&D activities, access to the Internet, rate of technological change.
<i>Legislative factors</i>	Consumer protection, taxation, employment law, insurance.
<i>Ecological factors</i>	Waste management, food and drink safety, climate change, air and water pollution.

Macro-environment analysis presents opportunities to be exploited, but also ensures that the swine producer is better prepared to defend against any threats better than its competitors [17].

Micro-environment analysis

Business challenges and opportunities do not only manifest themselves from outside the organization. A need for micro-environment analysis is always paramount. The micro-environment is made up of factors that are very close to the organization, which may interact with the firm [17,16]. The five forces model, developed by [24] which is applicable in any industry, can be used to analyse the company's position in the industry and evaluate its competitiveness. The model helps companies to assess the nature and understand dynamics of an industry and formulate sound strategies and compete effectively in the marketplace [25, 26]. Figure 1 demonstrates the framework and interrelation between the elements namely, (i) competitive rivalry, (ii) threat of new entrants, (iii) threat of substitute products/services, (iv) bargaining power of buyers, and (v) bargaining power of suppliers.

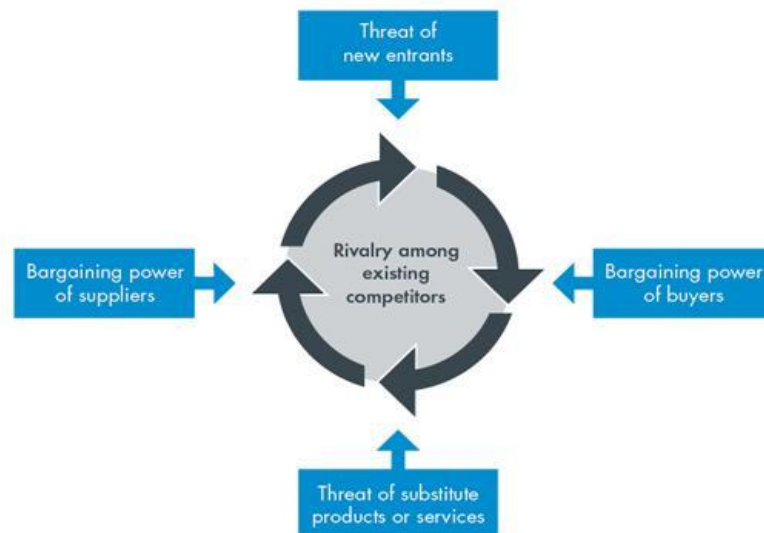


Figure 2. Porter's Five Forces model (adapted from Chartered Global Management Accountant 2014)

Internal environment

According to Ferrell and Hartline [27] if a company is already present in a market, its internal environment must be analysed before external market analyses. Internal environment consists of those elements the firm has a strong influence and control on. These elements are company objectives, strategies, decisions regarding marketing mix, management and employees, physical resources including infrastructure, vision and mission, research and development activities, working conditions, etc. [28]. Additionally, Cateora and [20] assert that the task of a company is to organize these controllable elements in the way that they benefit the company and do adjustments in response to changes in the external environment.

With the purpose to analyse the internal environment, first of all, the firm's current marketing objectives must be reviewed, they must be consistent with the company's mission and external environment. Second, the complexity of the strategic planning process, i.e. the process of identification and establishment of a company's corporate strategy, marketing goals and plans should be considered. The complexity or straight-forwardness of the process depends on a company's size and structure, for example strategic planning for large multinational corporations is very complex, whereas planning for a sole proprietorship is rather simple [29]. Third, the current and anticipated organizational resources should be reviewed. These include the examination of financial and human resources, relations with supply chain members and other partners [28]).

Reflection on the global trends in swine production

According to [30] A global decrease of pig meat production in 2011 narrowed the gap between pork and poultry meat for global tonnage, but both still maintain a faster growth rate than beef. [30] adds that data from the largest pig producing countries show changes in herd size as a restructuring takes place. Figure 3 illustrate graphically the global picture of pigs being processed and slaughtered.

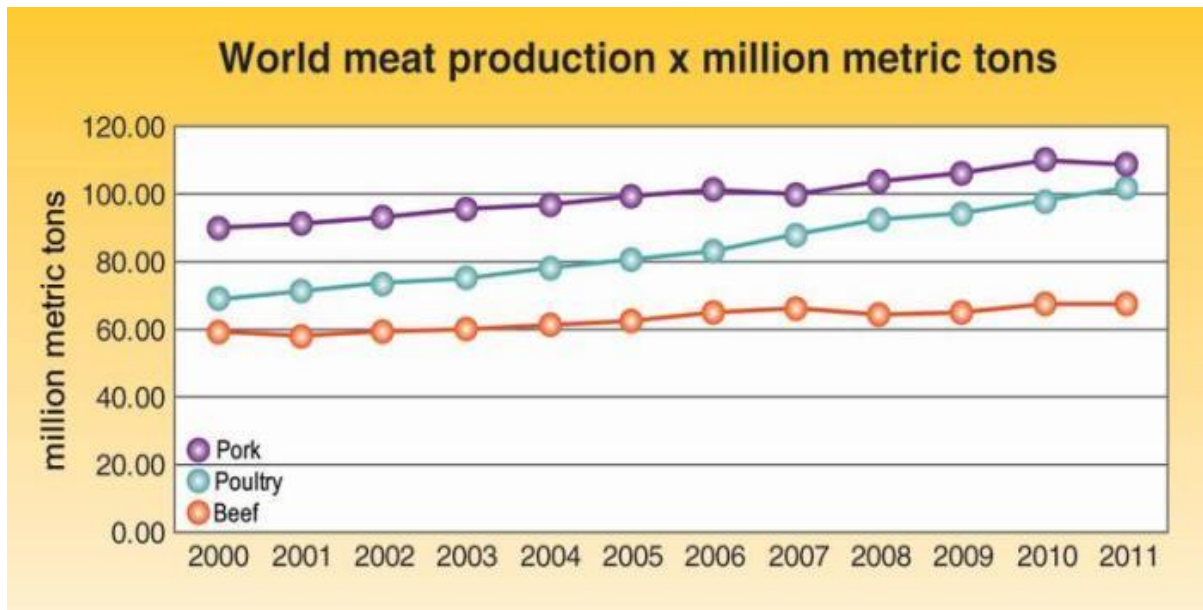


Figure 3. Pig Processing & Slaughter (Source: WATTAgNet.com)

The reports from America maintain that today, the majority of swine purchased by packers is procured through production contracts [31]. According to the United States Department of Agriculture (USDA) Agricultural Marketing Service (AMS), a small percentage of daily slaughter (less than 10 percent) consists of Negotiated Purchased Swine, which is defined as "cash or spot market purchase by a packer of livestock from a producer under which the base price for the livestock is determined by seller-buyer interaction and agreement on a delivery day." Additionally, the remaining daily swine purchases are procured under a variety of contracts. The report further cautions that in light of recent commodity price volatility and shifting market forces it is vital that producers are aware of relevant clauses in their current contracts and plan carefully when considering whether to enter into new production agreements [31].

A snapshot from the UK market shares an interesting picture. A different story to last year is reported for November 2014 finished pig prices. From the [32] report, the EU-spec GB SPP averaged 146.64p per kg, down just under 6p on the month and as much as 25p lower than the DAPP in November 2013. This puts the price at its lowest since the SPP began reporting in April, with the producer receiving nearly 17p less per kilo than in that month. The 6p fall represented the largest month-on-month decrease in pig prices in more than a decade and appears to be a continuing trend; in the week ended 13 December the SPP had fallen to 143.84p per kg. There have been plentiful supplies of pigs on the market recently, with slaughtering reaching levels not seen since before the 2001 FMD outbreak. Demand has not increased to match the higher supply, with low EU prices also weighing on the market [32].

A report from the emerging markets

The same report from [32] began by asking a very pertinent question, emerging markets support EU exports but for how long? Russia's ban on imports of EU pork has undoubtedly had a major impact on the pig market. However, EU pork exports have held up relatively well, with volumes down only 5% during the first nine months of the year and prices down less than 1%. Given that the Russian Customs Union accounted for 28% of EU pork exports (335,000 tonnes, equivalent to 2% of EU production) in January-September 2013, this shows the adaptability of EU exporters. Much of the excess pork was diverted to the established markets in Asia, China/Hong Kong, Japan and Korea. The

last two were suffering supply shortages due to PEDv outbreaks, as was the US, traditionally their main supplier. These three markets took 145,000 tonnes more EU pork between January and September this year. However, that still left nearly 200,000 tonnes of EU pork requiring a new home [32].

The South African Swine Marketing in perspective

According to [33] opined that South Africa's agricultural sector is dualistic with commercial sector co-existing with traditional subsistence sector. The subsistence sector involves small-scale production, highly labour intensive with low capital intensity and little division of labour. The commercial sector on the other hand involves high capital intensity, high levels division of labour and patronise both local and international markets. Congruent to this view, [(34) add that this concept of dualism system has created an unequal distribution of land, economic assets, support services, market access, infrastructure and income in all sectors of the economy. Furthermore, [33] maintain that agricultural practices are one way or approach of alleviating poverty in rural areas [35]. In developing countries, agriculture plays an important role in the livelihoods of individuals through the production of agricultural goods for consumption and income. A plethora of research, e.g. [12],[36], and [37] posit that albeit agriculture is important, many are still skeptical about the contribution of small and emerging farmers to the economy as compared to commercial farmers. The limited contributions to the economy by emerging farmers arise due to the constraints faced by the farmers which are many and varied, marketing, financial, technical, economic, land, social and cultural aspects [37].

Literature continue to show that the problem of marketing constraints arise due to many factors such as limited knowledge and use of market information [38], lack of access to high-value reliable markets [39] and high transactional costs. Other factors include: distance from the markets which tends to influence transaction costs, high feed costs [40], price and competition; lack of appropriate and affordable means of transport [41]; poor quality of products [42]; lack of storage facilities [39, 38]; adverse effects of culture [43] and socio-economic factors [41,44]; low educational levels of small and emerging farmers; agricultural marketing policies imposed, poor agricultural extension services [45,46,47] and lack of financial support [34,48]. That being said, the South African government's agricultural marketing policies play a crucial role in promoting pig enterprise for emerging farmers. It is through among others, (i) proper marketing channels, (ii) government interventions and (iii) other agricultural policies that pig industries can grow. Conversely, [33] bemoan the fact that pig farmers in the Gauteng Province have proven capability to sustain and improve the pig industry but this has not been achieved, a consequence of many hindrances constraints, for example, inadequate production infrastructure, high transactional cost, poor marketing channels and barriers to market information. They further indicate that demand for pork in Gauteng Province has been increasing rapidly due to increasing income and urbanization. At the small scale pig holders' forum held in the West Rand area of the Gauteng Province in September 2009, the main constraints as identified by the farmers was in the area of marketing [33].

[33] contend that 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 with reducing state intervention in agricultural marketing and product prices. 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. The government focus has now shifted to improving the well-being of individuals and securing of the nation's interest (The White Paper on Agriculture 1995). However, a dual market structure exists in the pig industry: the high-value markets (processors and supermarkets) for commercial pig farmers and low-value markets

(local auctions, pension point sales and abattoirs) for the emerging small-scale pig farmers. The large-scale commercial farmers capture the high-value markets that pay premium price for quality products while emerging small scale farmers have limited access to such markets.

The recent report from the SA Department of Agriculture, Forestry and Fisheries [49], mentioned a figure of more 2.4 million pigs slaughtered in 2013, resulting into over 186 million kilograms of pork. Evidently, these statistics paints a picture of a much steady increase in both pigs slaughtered and pork production over the past decade. Unfortunately, indications continue to show that the demand for pork meat in the country has outweighed the production [33]. From the report, in 2013 the production rate was over 180 million, while the consumption hovered around 200 million. This trend moved South Africa from being a net exporter of pork to net importer of the same.

Distribution Channels for the Marketing of Swine

It stands to reason that starting small is probably the best approach for the beginning swine production. Surely, producers need first to determine the best possible channel to adopt in marketing their product. Depending on the focus of the farmer, he/she may decide to sale directly grocery/butchery stores or to consumers. Any channel chosen will determine the effectiveness the sales. For a beginner it might be difficult to penetrate the grocery/or speciality food stores because the stores usually want guaranteed amount of supply which might be difficult for a beginner to meet. These specialist food stores sometimes lock themselves into exclusive contract with large suppliers. Other channels could involve selling frozen pork to friends and neighbours, to home delivery customers, farm meat stores, farmers' markets, and/or restaurants. Sales to groceries and/or specialty food stores may be more difficult for beginning marketers, because the stores usually want guaranteed amounts of frozen meat and are sometimes locked into exclusive contracts with large suppliers.

[50] states that some store managers may refuse to handle and display alternative meat products because as one explained, if his store made a big deal out of humane meat. Customers might start to wonder whether something was wrong with the regular meat [51]. Producers also need to consider that many grocery stores have slotting allowances. for space in their freezers or meat coolers. This may make them too expensive for small producers who do not generate enough turnovers. The channel begins with the primary producer/farmer. The pigs are slaughtered at the abattoirs. The meat is sold to the butcheries/wholesalers/retailers/processors. The meat can be bought by consumers directly from the abattoirs and/or butcheries and/or wholesalers and/or retailers. In some cases, the consumers buy live pig directly from the farmer and perform abattoir and processing activities him-/herself.

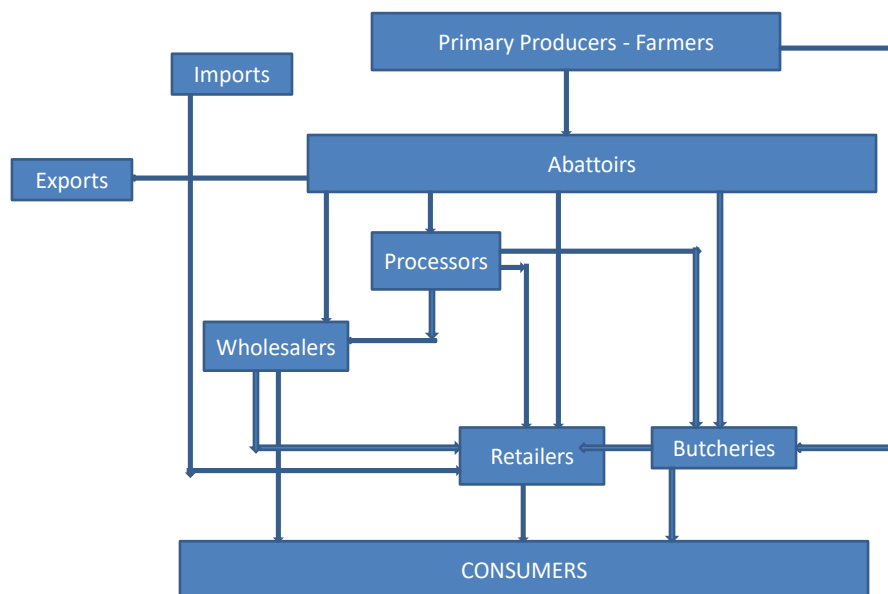


Fig. 2: Adopted from Pork Marketing Channel (RSA Agricultural, Forestry & Fisheries) 2014

Theoretical underpinning - Game Theory for Swine Marketing Channels

Albeit there is a litany of relevant theories such as Relationship Theory, Social Exchange Theory and Game Theory among others, the latter is chosen as the theory underpinning this paper. The mathematical theory of games was invented by [52]. Game theory is described as the study of the ways in which *interacting choices of economic agents* produce *outcomes* with respect to the *preferences (or utilities)* of those agents, where the outcomes in question might have been intended by none of the agents. Game theory has been traditionally used in military strategy [53]. It is [54] who conjectured that competition in markets is somehow similar to competition in the battlefield. Prompting researchers to pondering about the possibility to apply game theory to solve marketing problems, and in particular to use it as a tool to predict competitive behavior[55]. Later on, the debate has been extended to all the other possible uses of game theory in marketing. Management decisions about marketing mix have to be taken in situation of competition and variability in the business environment.

However, many earlier researchers the assumption on which game theory is based are too constrictive and too theoretic to be widely employed in managerial practice [56,57,58,59]). Furthermore, the axiomatic approach to define the player of the game clashes with the marketing research approach which is based on empirical observation, measurement and analysis of consumers' response. Although game theory has apparently a great potential for marketing [60], its role is still controversial in the marketing literature and its use as a marketing tool is very rare.

Game Theory and Distribution

The importance and relevance of game theory in the distribution channel can never be underestimated and needs to be contextualized. Documentary evidence exists where use of non-cooperative game theory to analyze the relations among producers and dealers along distribution channels is demonstrated. The approach used is usually the "leader-follower" [61]. Other studies approach the

problem of competition along distribution channel and showcase that the double marginalization is reduced by the increase of competition at retailer level [62,63]. Furthermore, [64] claim that a firm's distribution strategy often evolves over time, as firms start by selling through one type of channel, before widening their distribution strategy at a later stage. [65] mentions that [63] approaches the problem of distribution channel choice in a duopolistic market and shows how the integration of distribution function along the distribution channel creates higher price competition and lower prices compared to the utilization of dealers.

Undoubtedly, there are numerous possible applications of game theory for decision making in marketing management, albeit constrained to specific cases. [66] adds that the trick is to rationalise the consumers' decisions as much as possible, leading them down a controlled path where their actions can be predicted and responded to in the most effective way possible. Game theory can be of some utility in marketing decisions when the number of players is little. This is a big limitation which excludes it from effective application to business to consumer markets.

Direct Marketing

It is common knowledge that benefits of direct selling are arguably quite immeasurable compared to the indirect selling for both the producer and the consumer. Direct marketing involves selling products directly to consumers, thus allowing the producer the chance to receive a better price. Equally, selling directly to consumers increases the farmer's share of the consumer's food dollar, which often goes predominantly to middlemen and processors in conventional food supply systems [67]. Further, direct marketing allows producers to bypass traditional marketing channels and sell directly to consumers [5, 68]. This involves making a direct connection with consumers, determining their wants or needs, and producing the products that meet these needs. For the case in point, the researchers contend that direct marketing of swine refers to the sale of swine products directly from ranches/feedlots to consumers. Direct marketing includes sales to grocery stores, restaurants, door-to-door, at farmers' markets, and through Internet delivery. Figure 3 below depicts the developed and suggested flow.

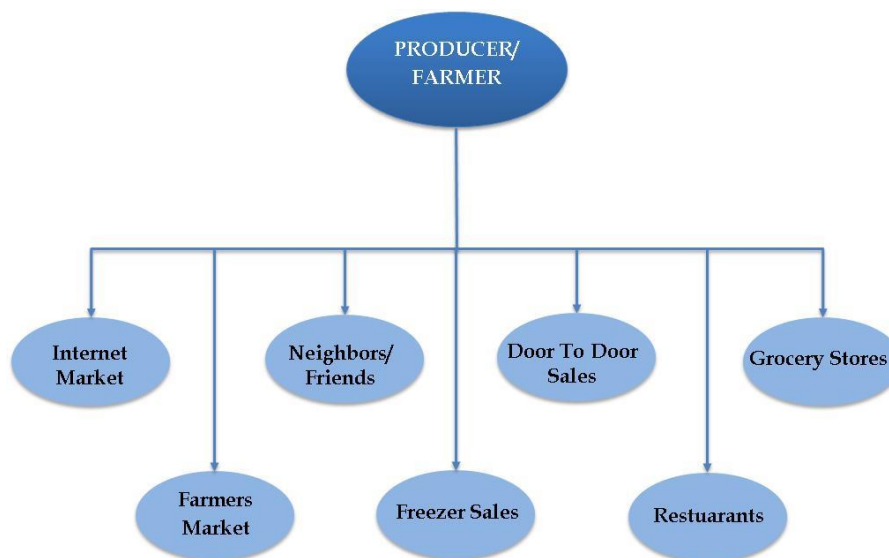


Fig. 3: Diagrammatical Representation of Direct marketing of Swine

Researcher's Concept 2018

It is the contention of the researchers that direct marketing of livestock products is not as common as direct marketing of fruits and vegetables because livestock products require a high degree of processing and are highly perishable. However, direct marketing can provide price premiums for producers [69]. Direct marketing represents a niche marketing strategy for beef producers. The niche involves consumers who are highly concerned about food safety, environmental impacts of food production, animal welfare, production practices and who support local agriculture.

Farmers' Markets

A report from an article in *Growing for Market* by Aaron Silverman, a pastured-poultry and -lamb producer, unpacks the rationale of direct marketing of meat at farmers' markets. [70] maintains that meat marketing at farmers' markets has been slow to develop and that the burden of regulations for processing meat is part of the problem. Regulations vary by state even between in-state localities but most are consistent in one area: all meat sold has to be processed in a licensed facility. [70] makes several suggestions for marketing meat in farmers' markets. Additionally, marketing meat at farmers' markets is similar to marketing any value-added product, and very different than marketing vegetables or cut flowers [71]. Purchasing meat requires a heightened level of trust by the customer, since neither fondling nor smelling is possible. Your ability to gain, and more important, retain your customers' trust will determine your success marketing meats at farmers' markets.

Indirect Marketing

In the context of marketing there are two types of marketing, direct and indirect [12]. The channel in which there is no direct communication to customers by the companies is called indirect marketing [12]. Basically, it is treated as the next stage for brand recognition and awareness. When customers are aware of the product and only require to be reminded about the product then indirect marketing will be used. Indirect marketing is generic in nature and no segmentation and targeting is required. The retention to customers is made by presenting them in symbolic representation without discriminating within the customers.

Indirect marketing is the distribution of products through an intermediary(ies) or channel(s) to the ultimate customer/consumer. It is also a way that most business does to market their ideas, products or service without using direct marketing and advertising [72]. Some methods of indirect marketing in swine marketing include abattoirs, butcheries, processors, specialist food stores, wholesalers, cooperatives, and retailers. In an indirect marketing situation, the intermediary receives a percentage or commission of the sale. In most cases, indirect marketing involves a producer taking the product to a livestock sale barn, production sale, or herd dispersal sale. In any of these situations, an intermediary assist with the sale transaction and receives a commission or percentage from the sale. After the animals leave the sale site, they may move to another farm, sale facility, or processor.

METHODOLOGY

Research design

The paper followed a positivist research approach, i.e. quantitative method [73]. A cross-sectional design was deemed appropriate, using a semi-structured research questionnaire to collect data from respondents at the selected municipalities. A cross-sectional survey collects data to make inferences about a population of interest (universe) at one point in time. [73], describe cross-sectional surveys as snapshots of the populations about which they gather data. Employing a purposive sampling technique.

Population, sampling and data collection

The study adopted the exploratory research method. The data collected from a population consisting of 1304 swine producers within the entire Free State province of South Africa as documented in the Free State Department of Rural Development and Land Reform database. Three local municipalities namely, (i) Maluti-a-Phofung (n=215), specifically, Thaba-Nchu and Qwa-Qwa; (ii) Mangaung (n=138) Bloemfontein/Botshabelo; and (iii) Moghaka (n=116), specifically Kroonstad, were chosen based on their large production of pig, with an aggregated total of 469. Due to distance between these areas, time and financial constraints, a targeted sample size of 80 pig farmers with business experience ranging between 5-15 years, were purposively selected for this paper. A sample size was arrived at by employing Mac'odo[74] Tara Yamani formula. These experimental sites were chosen because of the preponderance of swine farms in their localities.

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

The generated data were presented through the use of simple table frequencies and percentages. The data were analysed and the formulated hypotheses tested using the analysis of variance (ANOVA) statistical tool in Statistic Package for Social Sciences (SPSS) version 22.0.

Reliability and validity of the measuring instrument

The reliability and validity were ensured through the adoption of the measures of constructs and scale used in some duly accepted research works [75]. A pilot study was carried out in Bloemfontein where there is a good representation of swine producers. From the pilot study, the result yielded a Cronbach's Alpha value of $r = 0.71$, which confirmed the reliability of the measuring instrument. The general rule of thumb is that a **Cronbach's alpha** of .70 and above is **good**, .80 and above is better, and .90 and above is best (75Leedy & Ormrod, 2016).

RESULTS AND DISCUSSION

Table 2: Marketing Channels used by the Farmers

Which of the following marketing channels do you use?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wholesalers	6	7.5	7.5	7.5
	Butcheries	13	16.3	16.3	23.8
	Retailers	8	10.0	10.0	33.8
	Neighbours/Friends	29	36.3	36.3	70.0
	Farmers Market	8	10.0	10.0	80.0
	Cooperatives	4	5.0	5.0	85.0
	Auction	12	15.0	15.0	100.0
	Total	80	100.0	100.0	

Source: Field Survey 2018

Frequency Table above shows the frequency distribution of the marketing channels adopted by the respondents. The result shows that majority of the producers 36.3%(29) sell directly to

Neighbours/friends, while 16.3%(13), 15.0%(12), 10%(8), and 10%(8) of the respondents sell directly to Butcheries, Auction, Retailers, and Farmers market respectively.

Test of Hypothesis 1

HO₁: There is no significant difference in the marketing chanel adopted by swine producers in Free State.

Table 3. Mean, Standard Deviation and t-test showing Significant Difference in the the Marketing Chanelsadopted by Swine Producers in Free State.

Responses	N	Mean - x	SD	Df	t-cal	t-crit (0.05,79)	Sig. t	Level of significance	Dec.
Marketing chanel adopted by swine producers in Free State	80	3.01	1.127	79	1.0	1.98	0.921	0.05	Accepted

Source; SPSS 22.0 output based on field survey data 2018, detail in appendix

The summary of t-test result on the difference in the marketing chanel adopted by swine producers in Free State showed that the t-calculated is |1.00| and the critical (table) value of $t_{(0.05, 79)} = 1.98$. Since $t_{cal} = |-1.00| < t_{crit (0.05, 79)} = 1.98$, the researcher consequently accepts the null hypothesis. More so, the sig. t (0.921) > 0.05 level of significance, the researcher consequently uphold the decision reached earlier and conclude that there is no significant difference in the marketing chanel adopted by swine producers in Free State.

Our finding on the significance difference in the marketing channel adopted by the Free State showed that majority of the farmers preferred selling direct to neighbours/friends and the butcheries. This result is congruent to the one reported by Beltrán-Alcrudo et. al., (762018). Conversely, this is in contrast to the existing marketing channel of the RSA Agricultural, Forestry & Fisheries (refer to fig. 2).

CONCLUSION/RECOMMENDATIONS

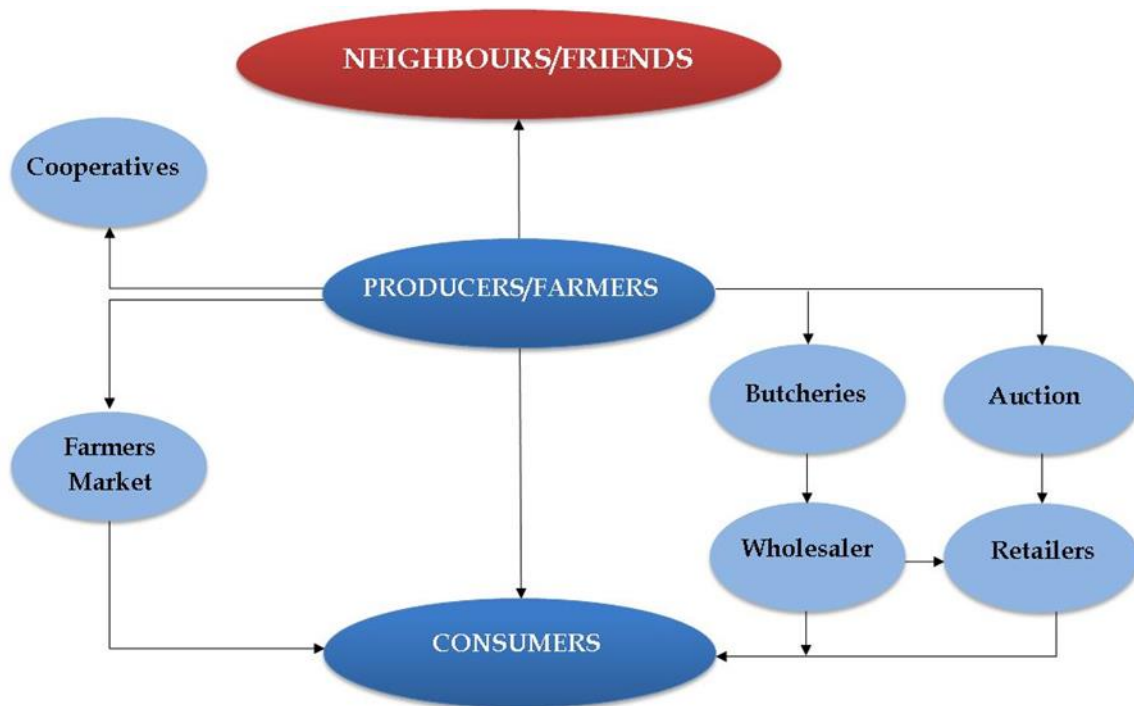
From the primary purpose of the study, a support the primary inference drawn is that there is a significant relationship between the marketing chanel adopted by the swine farmers in the Free State. Considering the different marketing chanel adopted by the swine producers, the findings revealed that there is no significant difference in the marketing chanel adopted by swine producers in Free State. Following the result of the survey carried out in this study the researcher came up with an effective marketing channel that will enhance the profitability of swine producers in the Free State. This will encourage the emerging farmers to get more involved in swine production. Based on the findings of the study, the following recommendations are advanced:

- That the farmers should be educated on the best marketing channel to use in selling their product since marketing is the bed hub of every business
- That government should encourage the emerging swine farmers by giving them soft loans

- That abattoirs should be built near to the farmers to reduce the cost of transportation
- That swine farmer should have access to agricultural bank loans.

Based on the findings of this research, we recommend the following marketing channel that will assist Free State Swine producers to maximize profit.

FIG. 4: Proposed Marketing Channel For Swine Producers In Free State Province of South Africa



Researcher's Concept (2018)

The concept state that the swine producer can sale the product direct to neighbours/friends /cooperatives /consumers. He can also pass through the butcheries to wholesaler to the retailers and then to the consumers. He can further pass through the auction to the retailer and to the consumers. Finally, he can pass through the farm market to the consumers. This concept reduces cost of long intermediaries for the farmers and thereby increases profit.

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