Exploring the most effective distribution channel for genetically modified corn hybrids in South Africa

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Mini-dissertation accepted in partial fulfilment of the requirements for the degree *Masters of Business Administration* at the North-West University

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Graduation: May 2022

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DECLARATION

I, **Andries Bernardus Wessels**, hereby declare that the work contained in this dissertation is my own original work and that I have not previously, in its entirety or in part, submitted it to any other university.

19/11/2021

Signature Date

ACKNOWLEDGEMENTS

I would like to extend my sincere gratitude to:

Our Heavenly Father for granting me the ability to pursue this opportunity and for His continued and lasting Grace.

Dr Francois Koekemoer for seeding the thought to pursue my MBA during one of our long distance cycling expeditions. A sincere thank you for his friendship and support during a challenging time and his unwavering belief in me throughout this endeavour.

Dr Carolina Botha, without whom this dissertation would not have been possible. Her support during the journey, the countless late nights and her emotional backing has been a tremendous source of inspiration. My deepest gratitude. One sentence is not a paragraph.

My parents, **Charles and Jeanette Wessels**, for a lifetime's commitment and self-sacrifice that allowed me to pursue my dreams and ambitions.

For **Team Dexty**, for providing not only a prolific environment for group assignments, but also for their friendship and camaraderie throughout the two year journey. It was a privilege to have been part of, and serve in, this high-performance team.

To **Elizma Fuller**, for her support on various fronts and being the first to soundboard the concept title and framework of this mini-dissertation to. Your understanding of the concept and the confirmation to pursue this project was instrumental. Your inspirational work ethic and grit motivated me to persevere.

My study leader, **Prof Nelda Mouton** for guidance and support during the compilation of the framework and the positive feedback that served as encouragement to continue.

And last but by no means least, **the farmers of South Africa**, especially the seven irrigation farmers who took part in this project. Thank you for welcoming me into your homes and sharing your stories. Thank you for persevering in adverse economic, environmental, and political conditions, and always pushing the boundaries of performance. South African citizens are blessed to have you as a strategic asset.

ABSTRACT

The distribution of genetically modified (GM) corn hybrids is a key element of the marketing mix for seed companies and a crucial element toward ensuring that demands and requirements of farmer customers are met. Distributions channels serve as direct or indirect pathways to allow farmers access to such GM corn hybrids. This qualitative study employed an interpretivist phenomenological approach to identify the most effective distribution channel for GM corn seed in South Africa's irrigation market segment. Other contributing factors that influence customer preference and the role that brand loyalty plays in the choice of GM seed distribution was also explored. Semi-structured interviews were conducted with seven irrigation corn farmers located in the Northern Cape Province of South Africa. Findings indicate that farmers in the geographic sampled area have no specific preference for either a direct or indirect distribution channel, but that they rather prefer the shortest route to market. These farmers also value personal relationships with their distribution channel partners but tend to be more loyal towards the brand of GM corn hybrids than towards the person selling it. Brand performance (yield) was also determined to be a key driver of distribution channel relationships. Recommendations include the implementation of an alternative distribution channel strategy that will allow seed companies to not only focus on the human interaction and the existing relationship, but also provide technologically advanced product support that could further promote a sense of trust and brand loyalty. The concept of key account managers is introduced that could serve as intermediaries in a business-to-business strategy linking large irrigation farmers to seed companies. This study further contributes to the field of GM corn hybrid distribution by proposing a model for an alternative distribution channel structure. Given the expanding value brought about by GM corn hybrids to South Africa's irrigated corn seed market, the findings of this study contribute to an understanding of the most effective distribution channel.

Key words: distribution channel, brand loyalty, customer preference, genetically modified corn hybrids

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LIST OF ABBREVIATIONS

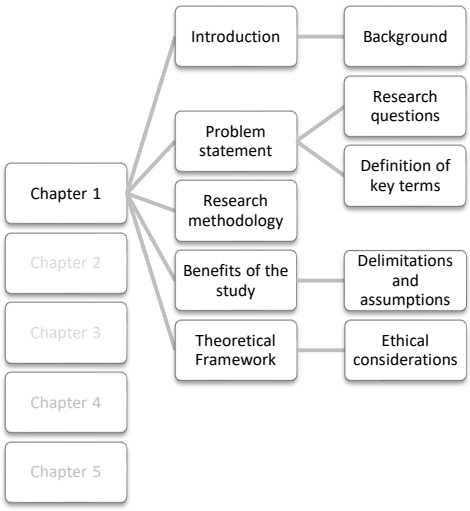
Table 1- 1: List of abbreviations used in this study

Abbreviation	Meaning
ABI	Agricultural Biotech Industry Forum
B2B	Business-to-business
DNA	Deoxyribonucleic Acid
GM	Genetically Modified
ISAAA	International Service for the Acquisition of Agri-biotech Applications
NGO	Non-Governmental Organisation
USA	United States of America

CHAPTER 1
INTRODUCTION

Global agricultural production has seen a drastic increase in genetically modified (GM) crops planted, not only in the United States of America (USA) but also in many other global markets, including South Africa. Growing evidence is surfacing that increasing yields and the reduced production costs linked to GM crops will improve productivity that will help feed the rapid growth in consumption (Wilson & Dahl, 2010:1). Several factors, including the preferred distribution channels for GM corn seed, impacts the way that GM technology reaches farmers and subsequently improves their productivity.

1.1 CHAPTER OVERVIEW



1.2 BACKGROUND

The global rate of GM crop adoption saw a continued increase to 191.7 million hectares in 2018. Worldwide, 26 countries cultivated the 191.7 million hectares of GM crops in 2018, an increase of 1.9 million hectares from 2017 (ISAAA, 2018:1). Expansion of GM crops is mainly driven by climate change and the emergence of new pests and diseases (ISAAA, 2018:2). South Africa's GM adoption rate upped from 93% in 2017 to 96% in 2018, maintaining the country's ranking among the top 10 GM producing countries globally over the last 20 years (ABI, 2019).

The distribution of GM corn seed is a key marketing concern for seed companies and is critical to meet farmer customers' demands and requirements. Distribution channels are therefore a pivotal contributor to the "place" element of the four "P's" (product, price, place, and promotion) associated with the marketing mix and enable seed companies to obtain a competitive edge (Neves *et al.*, 2001:518).

For direct distribution channels, Nordin (2005:579) posits that seed companies employ sales teams enabling them to support their farmer customers directly from regional supply points, ensuring high technical support and service levels while maintaining product quality. However, in a multi-level distribution strategy, seed companies supply a network of retail outlets. In this system, seed companies rely on agricultural cooperatives[1], commissioned agents, or distributors to connect with the farmer and provide sales and technical support (Mumby, 1994:48).

From a seed company's point of view, the marketing aim should be the accurate identification of the most effective distribution channel to farmer customers to allow them access to GM technology.

1.3 PROBLEM STATEMENT

Given the choice of existing direct or multi-level (indirect) distribution channels, seed companies are faced with the limitation to accurately determine which distribution channel their farmer customers prefer and accordingly align their marketing strategies (Rutsaert & Donovan, 2020:40). These researchers subsequently call for further research that explores farmers' perspectives, the process of seed selection and the role of distribution channels in farmers' purchasing decisions. An increased understanding is thus required of the determinants that influence the interactions between seed companies, the seed distribution channel and farmers. This corroborates the findings of Paksoy *et al.* (2012:2822), who state that maintaining a competitive advantage is one of the most prominent problems in selecting a distribution channel. The introduction of GM seed and the associated technical expertise has also necessitated a critical review of current practices to identify the most effective distribution channel for these high technology seed offerings.

1.4 DEFINITION OF KEY TERMS

Genetically modified corn seed: When GM plants are produced, foreign deoxyribonucleic acid (DNA) is inserted into the host plant cells. The seeds produced through this modification will inherit

[1] In Afrikaans referred to as Landbou Koöperasies.

the newly acquired DNA. Genomes are the genetic makeup of plants which are made up of DNA. The genome contains sections of DNA that transport the messages for the production of proteins, and these proteins give plants their characteristics, such as flower colour. Genetic modification is linked to the addition of a section of DNA into the host plant's genome, resulting in new characteristics. This modification includes changing the way in which the plant grows or making it resistant to pests (Griliches, 1980:498).

Distribution channel: Distribution channels are classified as pathways along which products move from producers or manufacturers to the end consumers (Mahasuar, 2019:13). They have been classified as ways along which products, information, and finance flow (Mulky, 2013:180).

Direct and indirect distribution: Direct channels use the internal organisation for the delivery of products, and indirect channels use agents, retailers and third-party service providers (Nordin, 2005:576).

Corn hybrid: According to Griliches (1980:502), corn hybrids can be defined as the invention of a specific method to breed superior types of corn seed for specific geographic localities.

Brand loyalty: Hsieh *et al.* (2012:311) describe brand loyalty as the unwillingness of customers to switch to alternative products or services despite efforts to sway their purchasing decisions.

1.5 RESEARCH QUESTIONS AND OBJECTIVES

1.5.1 Research Questions

Primary research question:

> Which distribution channel is most effective for distributing GM corn seed in South Africa?

Secondary research questions:

> Which factors influence farmer customer preference towards a specific GM seed distribution channel?
>
> What role does brand loyalty play in the choice of a GM seed distribution channel?

1.5.2 Research objectives

This study aimed to identify the most effective distribution channel for GM corn seed in South Africa's irrigation market segment. As secondary research objectives, contributing factors that

influence customer preference towards a specific GM seed distribution channel were explored. In addition, the role that brand loyalty plays in the choice of GM seed distribution was also investigated.

1.6 RESEARCH METHODOLOGY

This study was conducted through the use of qualitative research methods. Interpretivism was used as research paradigm while phenomenology was chosen for the study's research approach. Research design parameters included a unit of analysis consisting of seven irrigation corn farmers located in the Northern Cape province. These participants were selected through the use of purposeful sampling. Data for the study was captured through the use of semi-structured interviews and transcribed for analysis to identify patterns and themes.

1.7 IMPORTANCE AND BENEFITS OF THE STUDY

The ability to identify the most effective distribution channel for GM seeds means that seed companies can adjust their marketing strategy to best suit farming customer needs. In the selection of the farmer customer-preferred distribution channel, farmers would be better served to unlock the value of novel GM corn seed that would enhance farming productivity and ultimately profitability. Through improved understanding of the value that brand loyalty and customer preference brings in the choice of distribution channels, seed companies can gain clarity on whether to plan for the appointment of direct sales teams or the adjustment of existing agent/dealer incentives and commission structures to drive sales to the final farmer customer through an indirect distribution channel. By establishing this important marketing mix link, the preferred channel could establish a competitive distribution advantage for seed companies and create the platform for introducing new GM products in a very competitive landscape. Marketing campaigns and product launch activities could also be tailored around the newly acquired insights on brand loyalty and customer preference. In the academic context, this study contributes to the growing body of knowledge on this theme.

In the next section, the delimitations and assumptions of this study highlight the context in which the research was conducted. Subsequently, the proposed research methodology, gathering of data and analyses utilised in this endeavour are unpacked. Ethical considerations are also addressed.

1.8 DELIMITATIONS AND ASSUMPTIONS

1.8.1 Delimitations

Due to the limited scope of this study, only certain factors contributing to farmer customer choice of distribution channels were explored. In addition, the participants in this study were limited to a certain segmentation of farmer customers. Participants in this study were selected farmers in the irrigation segment of South Africa's corn production belt of the Northern Cape province. Corn farmers in the rest of the country's production areas were excluded from this study. Another delimiting factor for participants to qualify for inclusion was the total percentage of corn production as part of their farming operation.

1.8.2 Assumptions

The researcher used an inductive procedure to condense raw textual data into a brief, summative format for interpretation. It was assumed that a clear link would be established between the primary and secondary research questions and the findings derived from the data obtained in the questionnaire. The researcher would like to state a long-term employment history in this field, which could lead to certain assumptions and biases about the experiences of farmer customers and seed companies in their choice of and experiences with various distribution channels. This realisation does however motivate the researcher to critically examine and deconstruct such dominant discourses. Consequently, the use of game theory as a theoretical framework is also discussed.

1.9 THEORETICAL FRAMEWORK

Osborne (2004:1) explains that game theory supports the understanding of situations where decision-makers interact, and it illuminates economic, political and biological phenomena. The range of arenas in which game theory is applicable spans from rival companies competing for business to political candidates contending for votes. Osborne (2004:1) further states that game theory can be understood and applied through a variety of models that can be used to understand observations and experiences and is initiated with an idea linked to some components of the interaction of decision-makers. In the context of this study, the game theory application is to understand the interaction driving decision-makers on their choice of distribution channels for their GM corn seed purchases. The process of formulating and analysing a model could improve the understanding of the situation under consideration.

A similar description of game theory is given by Myerson (2013:2), who states that game theory can be considered as the study of models of cooperation and conflict between intelligent and rational decision-makers. Furthermore, game theory allows for techniques that analyses situations where two or more decision-makers make decisions that will impact on the other's welfare. From a practical perspective, this relates to the impact of the farmer customers' decision of distribution channel on the marketing decisions of the seed company.

1.10 ETHICAL CONSIDERATIONS

The ethical considerations of this study ranged from the unit of analysis' anonymity to the option for participants not to answer questions so chosen. Further ethical considerations included interviews that were conducted in the comfort of the participants' homes or offices with prior arrangement and without the invasion of privacy. Participants were also informed about the affiliation of the researcher to his employer. The necessary consent forms were also signed by participants before the onset of the interview. Ethics approval by the North-West University's ethics committee was also obtained (NWU-00013-21-A4). Subsequently all North-West University prescribed Covid-19 protocols were strictly adhered to. A fully detailed description of ethical considerations is given in Chapter 3.

1.11 OUTLINE OF CHAPTERS

Chapter 1: Introduction

This chapter of the research study set the context and background. It introduced the topic, research problem, and primary and secondary research questions. The problem statement was formulated together with the research goals, research method, and limitations.

Chapter 2: Literature review

In this chapter, a theoretical framework and additional context of distribution channels relating to the influence of brand loyalty and customer preference are given.

Chapter 3: Research Methodology

This chapter provides a description of the research design and methods chosen for the qualitative study along with the selected data collection methods used. Here, a clear description is given on how the selected methodology was used to address the research problem.

Chapter 4: Findings

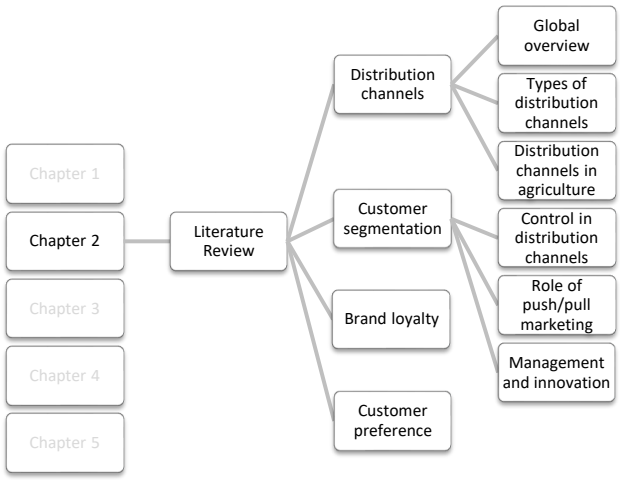
Inductive analysis is used to analyse the results of the study. After triangulation, findings are shared in an effort to answer the research questions.

Chapter 5: Discussion and recommendations

Based on the results of the study, this chapter draws conclusions and proposes recommendations.

CHAPTER 2
LITERATURE REVIEW

2.1 Chapter overview



2.2 Introduction

Although there is widespread consensus that the tangible output of a distribution channel consists of distribution services, these services are not well defined (Keh, 1997:152). A clear distinction is however provided by Betancourt and Gautschi (1988:2), who state that distribution channel services can be divided into logistical, informational, and product functional services. Their research also postulates a further refinement of these three services under product accessibility, product assortment, guarantee of product delivery at the right time and place, and the availability of product information.

Distribution channels are also a key marketing concern and a critical component to meeting farming customers' demands and requirements. Distribution channels are therefore a pivotal contributor to the "place" element of the four "P's" (product, price, place, and promotion) associated with the marketing mix that enables companies to obtain a competitive edge (Neves *et al.*, 2001:518).

This chapter defines various types of distribution channels in agriculture while exploring various distribution channel models in the seed industry. It also defines related concepts such as brand loyalty and customer preference.

2.2.1 A global overview of distribution channels

Addressing an increasingly complex agricultural market environment requires a shift from classical thinking to a better understanding of customer choice behaviour, given the availability of various distribution channels. Various research studies on different continents, including Mulky (2013:179) in India, Nordin (2005:576) in Sweden, Loomba (1998:143), Goodman (2015:2) in the USA, Goffin (1999:1) in the United Kingdom, Mikušová *et al.* (2018:298) in Slovakia, and Yrjölä *et al.* (2018:1133) in Finland, explored the use of various distribution channels in different markets.

The abovementioned studies clearly indicate that an effective distribution channel is characterised by certain key attributes. Various authors, including Mutsikiwa *et al.* (2012:19), Nordin (2005:577), and Sahadev and Jayachandran (2004:127), also found that these attributes included the ability of the distribution channel to sustain a competitive edge, execute high-performance business objectives, adapt to changing customer needs, and address the various components of the marketing mix.

Amendments to distribution channels are required when consumers change the way they purchase, when market or competitive expansion occurs, or when products evolve through their product lifecycles. No distribution channel remains static throughout the product's entire lifecycle (Sahadev & Jayachandran, 2004:121). By focusing on sales activities, distribution channels allow companies to focus on what they do best – focusing on core research, development and production activities (Szopa & Pękała, 2012:144).

Mutsikiwa *et al.* (2012:18) agree that the major objectives of a distribution channel are to reduce costs, support service levels, meet customer needs and deliver a sustainable competitive advantage. Also of importance in their study is the concept of distribution channel management, which refers to a set of approaches used to effectively harmonise the activities of companies, warehouses and retailers so that the products and services are distributed at the right time, in the right volumes, and at the right place to ensure that costs are reduced while meeting service-level agreements. The primary objective of distribution channel management is therefore to manage a network of intermediaries through upstream or downstream activities in the processes and activities that deliver value in the hands of the customer (Nordin, 2005:578).

Zemanek *et al.* (2019:4) add that cost, convenience and privacy also influence channel preferences and offers marketing managers insights on how to manage distribution channels. The marketing approach chosen by companies will subsequently result in the choice of a direct or indirect distribution channel.

Several types of distribution channels exist, ranging from direct distribution channels where manufactures engage directly with their customers, to multi-channel strategies, where various levels of intermediaries are used to engage with customers.

2.3 Types of distribution channels

Beck and Rygl (2015:174) define multi-channel distribution as the set of actions involved in selling products or services through more than one channel or all widespread channels. The type of distribution channel used will impact a firm's marketing decisions, sales force, pricing, and advertising. Therefore, a multi-distribution channel will use two or more channels to reach a farming customer. Each distribution level will target a different buyer segment with a different need and place the correct product at the right place to reduce costs. Not reaching customers in this way will result in distribution channel conflicts, costs increases, and diminishing demand (Goodman, 2015:4).

Trivedi (1998:897) envisions three possible distribution channels. Figure 1a (part of Figure 2-1 below) represents an integrated or direct distribution channel where the manufacturer "owns" his own retailer, enabling the manufacturer to set the retail price. In this system, the manufacturer directly engages with the customer through its own sales force without the use of intermediaries. Figure 1b represents a decentralised distribution channel in which producers sell products to retailers or dealers who in turn sell these at their own retail prices. These retailers serve as intermediaries in an indirect distribution channel. Lastly, in Figure 1c, a fully indirect distribution channel is described, where each manufacturer sells through multiple retailers. In the fully indirect distribution channel, the manufacturer sets a wholesale price to different retailers who in turn select different prices for their products; hence, the retail price for the same product may differ.

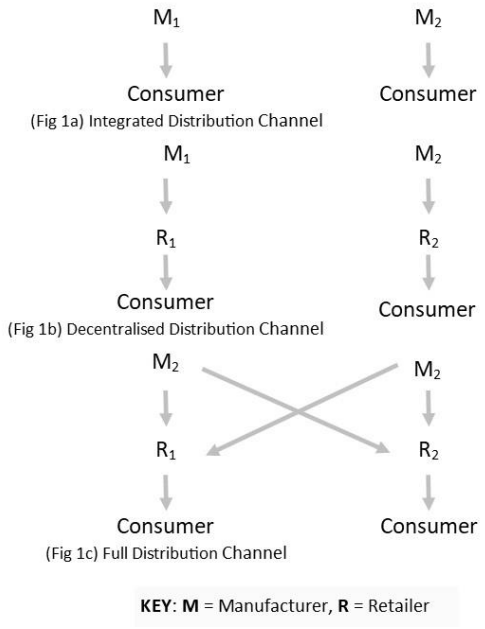


Figure 2-1: Types of distribution channels (Adapted from Trivedi, 1998:897)

2.4 Distribution channels in the agricultural and seed industry

Various distribution channels are also available in the agricultural sector, specifically as evident in the wine industry. Wineries face are faced with tough decisions on how to market their wines, having to consider issues related to sales volumes, brand awareness, and price sensitivity. It is therefore important for the wine industry to understand the different distribution channels as well as the opportunities and implications of every distribution channel. In indirect distribution channels, wine is transferred from wine producers to agents delivering wine to consumers. This indirect distribution could be short (winery-retailer-consumer) or long (winery-wholesaler-retailer-consumer). The direct distribution of wines is seen as the sale to customers without the use of intermediaries, usually in the form of on-farm sales (Casali *et al.*, 2018:450).

In the seed industry specifically, companies employ multiple distribution channel options, rather than only direct or indirect approaches. A recent and very relevant report from Agribenchmark (2021) states that increasingly sophisticated farming practices, distribution channels and online

purchasing platforms open up the opportunity for seed companies to engage in direct distribution. Although a shift away from local dealers to direct distribution would induce a significant change in how farmers make decisions about the seed they purchase, in reality, very few farmers currently purchase this way. For farmer customers, direct distribution would hold the benefit of increased volume discounts as a primary reason for direct purchasing. Seed companies are conversely wary of direct distribution as there is a risk of customers defaulting on payment and would rather have the local dealer bear the risk. The report concludes with an interesting finding, namely that farmers will relinquish the price benefit of direct purchasing given the agronomic advice and additional customer service obtained from their local dealers. Additional services like timely delivery, application, and financing services and a lower risk of on-farm inventory theft were also top of mind reasons in their choice of distribution channels. Because local dealers offer these services, they are likely to continue the distribution of seed to farmers despite seed companies offering better prices in a direct distribution channel system. Local dealers have worked tirelessly over generations to build rapport with farmer customers and a lot of social capital and, therefore, a relationship of goodwill exists between the parties and consequently, replacing long-standing relationships would be difficult.

Mutsikiwa *et al.* (2012:19) posit that the choice of distribution channel for a seed company is also inherently complex and that seed companies should consider the impact of the distribution channel on their brand's perception

Multinational seed companies also play a direct role in the distribution and marketing of their seed products to regional, national, and international markets. It is also common for seed companies to license marketing and distribution activities to smaller, localised seed companies to improve the access to their seed products to local markets (Butler & Marion, 1985:16).

2.4.1 Licensing as a link in the distribution channel

Large agricultural biotechnology companies began the acquisition of seed companies in order to own a local seed company that could act as a vehicle for the sale of their GM trait innovations such as herbicide tolerance or insect resistance. Their acquisitions included seed companies that were local leaders in corn and soybean seed. But these acquisitions did not stop agricultural biotechnology companies from further licensing their GM traits to other independent seed companies. Given that the distribution of seed products to independent seed companies is a key component of a licensing strategy, the viability of this sector is a key consideration in the distribution of GM traits (Wilson & Dahl, 2010:5). Agricultural biotechnology companies also make decisions regarding their GM traits distribution that include licensing to other seed companies as

well as through their own seed hybrids. A GM trait can be commercialised by issuing an exclusive license to one seed company, or by issuing a non-exclusive license to several downstream companies. As an example, a common licensing strategy would entail the broad-scale licensing of a seed company's GM traits to other seed companies and also to its competitors. This differs from other seed companies who would distribute their GM traits only through their own seed products. Of utmost importance here is the effect on choice for farmers. Farmers have choices with regards to conventional or GM seed, different GM traits, and ultimately seed companies and their distribution channels (Wilson & Dahl, 2010:2).

2.4.2 Seed distribution channels in various countries

Seed distribution is primarily driven by independent, commissioned agents, such as agricultural cooperatives, private retailers, and company salespeople. Different regions in different markets use different seed distribution models. For example, Leibenluft (1981:109) compared seed distribution in various parts of the USA. In the Mid-west, most GM seed was sold to farmer customers through farmer dealers who had been trained in the technical attributes of the product by the seed company. On the other hand, in the Southern part of the USA, most seed was distributed through agricultural supply stores. For large farms across the country, seed was sold directly to farmers by salaried company representatives (Leibenluft, 1981:110). The structure of such a distribution system is illustrated in Figure 3. Based on this structure, three distinct sources for seed distribution exist, namely the sales representative, the dealer, and the retailer. Purchases directly from the seed company are conducted through a sales representative. In contrast, purchases from a dealer are made through independent dealers, while retailers constitute agricultural cooperatives and various seed retailers (Luo *et al.*, 2019:15).

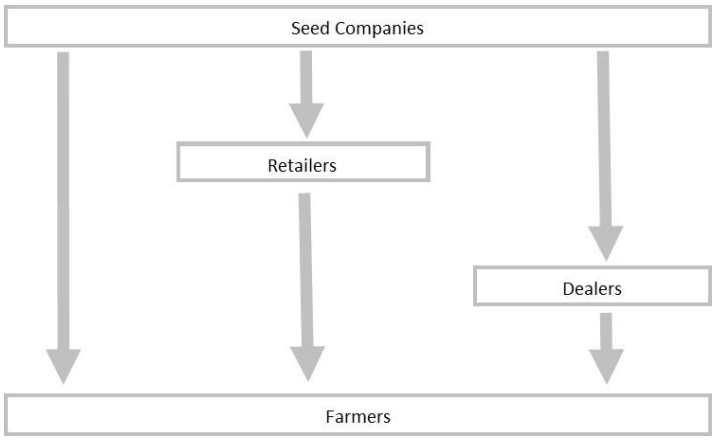


Figure 2-2: Seed distribution channel structure in the USA (Luo et al., 2019:15)

Research conducted by Rutsaert and Donovan (2020:40) gives valuable insight on the context of seed distribution channels in Africa's smallholder farmer segment. They state that most seed companies reach farmer customers through so-called agro-dealerships. Larger agro-dealers purchase seed directly from seed companies and not only sell directly to farmers but also supply smaller agro-dealers, often referred to as agrovets. Kenya and Malawi are the two markets in Africa with the most extensive agro-dealer distribution networks (Rutsaert & Donovan, 2020:41).

These agro-dealers form a critical distribution channel link for seed companies to obtain scale and reach efficiency in seed distribution. Direct sales for seed companies through their own retail outlets are limited given poor rural infrastructure and low population densities. Agro-dealers not only provide seed at competitive prices but also support with technical assistance on input use and production practices. Although seed companies rely on agro-dealers to distribute the majority of their seed volumes, agro-dealers are not their only distribution channel. Large direct sales to local or national governments, non-governmental organisations (NGOs) or relief programmes are also common distribution channels in many African markets (Rutsaert & Donovan, 2020:41).

Seed distribution channels in China have similar elements as the channels discussed above. Research conducted by Wen (2011:64) indicates that the Chinese seed industry's distribution channel consists of mainly two channels. The one channel is a direct-distribution channel approach, where seed companies sell directly through their own retail outlets to farmers, with the limitation that sales volumes are unstable. A direct model also increases trading costs. In the second and more prominent distribution channel, seed is sold to wholesalers, who in turn supply

a retailer who then sells to the farmer as end-user. This latter distribution model enables wider reach. In the Chinese seed industry, seed companies avoid a distribution channel where seed is sold from the seed company directly to a retailer, which effectively eliminates the wholesaler as an intermediary.

Wen (2011:64) also defines the important concept of exclusivity in the distribution channel. In an exclusive distribution agreement, specific wholesalers will be endowed exclusive selling rights to a certain seed product in a defined area. For the seed company, exclusivity entails the benefit of reduced distribution channel management and allows for supervision of the seed transaction and the protection of genetic intellectual property rights. Exclusive distribution will also incentivise wholesalers' selling activities and share the costs of marketing and promotional activities.

Seed distribution channels in South Africa are based on a combination of several models. Larger, multinational seed companies use a combination of distribution channels. They combine direct distribution channels (salaried representatives) as well as independent, commissioned agents to engage with farmer customers. Product exclusivity and predefined regional distribution territories outline the sales areas where these distribution channels may sell seed. Smaller, privately owned seed companies usually rely on a non-exclusive network of independent agents for distribution activities. These independent agents are allowed the operational flexibility of distributing seed for several brands and are not bound to a single seed company. The use of so-called business-to-business (B2B) distribution channels also allow South-African seed companies to distribute seed directly to larger wholesalers such as agricultural cooperatives and agricultural input suppliers (Lindeque, 2021).

An important dynamic relating to the South African distribution landscape is the role of agricultural cooperatives in the facilitation of seed distribution. Although also directly involved in the distribution of seed as a physical retail outlet, agricultural cooperatives also play an important role in financing farmers' seed purchases from other distribution channel platforms (Lindeque, 2021). This important role is further discussed during the findings of this study in Chapter 4.

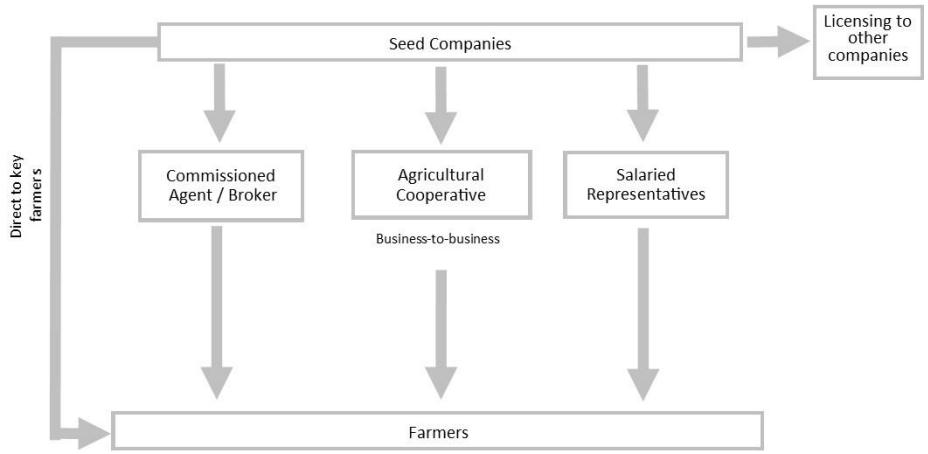


Figure 2-3: Seed distribution channel structure in South Africa (conceptualised by Author, 2021)

2.5 Customer segmentation in distribution channels

When seed companies design a distribution channel, they need to analyse customer needs and wants through segmentation to weigh major channel alternatives. As previously mentioned, farmer customers choose distribution channels based not only on brand loyalty but also on convenience, price, product assortment, and their individual goals. The terms and responsibilities of distribution channel partners need to be clearly defined to address pricing, conditions of sale, and the services rendered (Goodman, 2015:14). This argument is further supported by Paksoy *et al.* (2012:2824), who state that the customer profile is the main determinant for selecting a distribution channel.

The concept of segmentation is further explained by Feeney and Berardi (2013:21) in their study on the seed purchasing behaviour of Argentinian farmers, which is of particular relevance in this study because South Africa has a similar approach with regard to the following. It is stated that Argentinian farmers are not a homogeneous group, nor do they buy seed in the same way. They also differ in important differentiators such as farm size, age, location, educational background and, importantly, technology adoption. Segmenting farmers by more homogeneous classes based on their purchasing profiles are important measures for seed companies to better define their marketing strategies and distribution channel approaches (Feeney & Berardi, 2013:18). Marketing segmentation supports seed companies to develop particular marketing mix strategies

with which they target specific customers, focusing on their individual needs and individual profiles within their segment. Segmentation is required because farmers rarely have the same wants and needs. Through segmentation, seed companies can get closer to their farmer customers by creating an appropriate marketing mix (Kotler, 1997:65). Argentinian farmers can select their seed choices from varying quality, price, and brands, and they can also procure them from different distribution channels. Feeney and Berardi (2013:33) show that the surveyed Argentinian farmers can be classified into four segments, namely performance, price, balance, and convenience. Performance and balance farmers are classified as business buyers, as they base purchasing decisions less on cost and more on the productivity of the seed. Farmers in the price segment can be classified as economic buyers, as they purchase with the intention to reduce input cost. Convenience farmers, on the other hand, can be classified as relational buyers and prefer location and convenience for their purchases without regard for performance.

The business impact of this Argentinean study is important because it indicates that performance segment farmers require high-performing products, are also the most brand loyal, and are not price sensitive. In contrast, the convenience segment of farmers has the lowest brand loyalty. The balance segment of farmers is fairly large and also expresses brand loyalty. The results from the above study also underline the value of branding in the seed market to farmers in all segments. Seed companies in Argentina need to invest in brand development to maintain competitive positions.

Another interesting find was that across all segments, farmers highly valued the technical competence and expertise of the seed company's sales force. Salespeople are an important asset for seed companies through which they reach farmer customers and sell their seed products. This means that seed companies would need to invest in the training of their sales force in the technical requirements that farmers value most, especially when selling to the performance segment farmers, as this segment drives brand loyalty (Feeney & Berardi, 2013:30). This bears special significance in the context of this study given the rising prevalence of GM products.

The researcher postulates that given the production similarities between the Argentinian and South African farmers, many of the management implications discussed here will be similar for both markets. Brand loyalty drivers and segmentation results would likely be very similar given the shared interest in high technology inputs, especially in the performance farmer segment and the market forces at play for both farming groups on opposite sides of the Atlantic.

2.6 Control in the distribution channel

The control of a distribution channel member, according to El-Ansary and Stern (1972:47), can be defined as the capacity of a distribution channel member to control the decision variables in the distribution approach of other members in a given channel at a different level of distribution. As an example, a contractually bound (franchised) dealer would have less decision-making freedom than an independent, non-aligned dealer.

According to Weitz and Jap (1995:306), three controlling mechanisms exists to coordinate the activities of distribution channels. Authoritative control involves one party using its dominant position to control the actions of the other. In an intermediate distribution channel, one party controls the other party by the use of power. The ability to control distribution channel members arises from an imbalance in resources – the resource-rich member will assert power over the less-resourced distribution member. Contractual control involves a commercial agreement defining the responsibilities and rewards in channel activities. Exclusivity and commission structures are typically part of contractual control mechanisms. Normative control relates to a shared set of principles or norms that coordinates party activities and governs the distribution channel relationship. Norms are learned through historic interactions and market reputations. Long-term norms will relate to how trade-offs are made between long- and short-term profits, while the fairness norm will relate to how parties' interests are considered in decision-making.

The controlling power in a distribution channel refers to the capacity of a member in the distribution channel to affect other members' actions within the same channel structure. Traditionally, seed companies were deemed as the dominant force and determined the participation and loyalty of resellers. Wen (2011:64) further posits that this control leverage has, however, recently swayed in favour of the distribution channel given their large geographic reach and more specifically their high customer loyalty. As a result, downstream members of the distribution channel have become the dominant entity because they exert a more powerful controlling force than seed companies.

This controlling power in a distribution channel depends on three elements; i.e. the ability to provide preferred technologically advanced products, customer support and the availability of financial support to other members in the distribution channel. Seed retailers' strongest distribution channel control lies in their ability to control farmer customers' resources and the information of supply and demand. Seed wholesalers, however, can firmly control retailers by means of the inventory supplied or the financial terms and conditions offered for the inventory delivered. Through these control measures, wholesalers can gather customer resources and

market information. Seed companies' controlling power over the distribution channel lies in their ability to provide new and superior, technology-driven products through research and development. For seed companies to surpass the wholesaler's control, they have to continuously develop improved products that will incentivise wholesalers to buy from them specifically. The better a new GM corn seed hybrid performs, the more control seed companies will command. Through the selection of various non-exclusive distribution channel partners, the distribution channel could be broadened and product coverage and marketing efficiency could be increased (Wen, 2011:65).

Research by Trivedi (1998:897) however indicates that the introduction of competition at retail levels has a large impact on distribution channel choice and profitability. The introduction of this retail-level competition however removes the producer's monopoly and creates distribution channel coordination. Thus, producers can no longer use intermediaries as a shield against competition.

The introduction of an intermediary in the distribution channel holds benefits as well as threats for seed companies. Access to a larger customer base, greater market penetration, and reduced distribution costs through not having to establish own sales network are some of the key incentives for seed producers. However, several disadvantages also exist; i.e. loss of channel control, the intermediaries not fulfilling their duties, potential extension of payment terms, as well as channel conflicts (Szopa & Pękała, 2012:147).

2.7 The role of push/pull marketing in distribution

Currently, seed companies make use of distribution channels primarily for the distribution of their products, but much less so for the marketing promotion of these products. In general, seed companies have bypassed the distribution channel intermediaries all together to engage directly with farmers by focusing marketing activities on their end-users. This marketing method is referred to as pull marketing, where the demand is created by persuading the customers to select the product. Alternatively, push marketing is utilised to push products to customers through a distribution channel and is often used to create the first point of contact with a new product, although this requires a strong sales team. While both push and pull strategies need to be implemented for marketing success, it would seem that only pull strategies are being implemented in seed distribution.

Although these two concepts are well-known, Rutsaert and Donovan (2020:47) claim that they have not been thoroughly explored in seed distribution channels. An earlier link established by

Wen (2011:66) suggests that implementing a pull strategy can strengthen seed companies' control over the distribution channel, although acquiring the end-user's purchasing decision would force the intermediary member of the distribution channel to purchase from a certain seed company. The research by Rutsaert and Donovan (2020:47) further posits that from a farmer's perspective, the distribution channel option was not considered when making the GM corn seed selection decision. This raises important marketing mix questions: would future distribution channel strategies support a direct approach by seed companies with a passive engagement by the intermediaries? Or, should distribution channel strategies seek to build stronger links with intermediaries to implement push marketing of new GM corn seeds to farmer end-users?

2.8 Distribution channel management and the influence of innovation

According to Paksoy *et al.* (2012:2823), the success of a distribution channel strategy directly relies on the successful management of the distribution channel. The strategies employed by Paksoy *et al*. (2012:2823) to manage a distribution channel could be classified as follows:

- **Product-based strategy:** In this approach, distribution channel management is structured around the appointment of a dedicated product manager.
- **Geographic-based strategy:** Usually employed by multi-national companies across many geographic locations to enable them to rapidly respond to changing customer demands.
- **Customer-based strategy:** Distribution channel management is linked to the segmentation of customer needs and wants. Unlike product managers, market managers manage retailers and wholesalers in the distribution channel.
- **Function-based strategy:** Grouping of similar distribution channel activities to allow the analysis of sales performance.
- **Hybrid-based strategy:** In some cases, seed companies can combine several of the above-mentioned strategies to meet farmer customer needs.

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Paksoy *et al.* (2012:2822) further argue that distribution channel management is not just about selecting effective distribution channels but also the most challenging phase of distribution channel management starts after this phase. Research conducted by Casali *et al.* (2018:456) shows that in the wine industry, the greater the propensity for innovation through standardisation or process optimisations and cost reductions, the more wineries opt for the most direct distribution channel strategy. This means that innovation propensity supports companies to manage their

distribution channels and manoeuvre between different distribution channel options because they are allowed a flexible approach.

Rutsaert and Donovan (2020:47) urge seed companies to do more to link with the stakeholders in their distribution channels. To improve their B2B approaches, seed companies need to innovate in the way they engage and manage distribution channels and pursue more active marketing campaign approaches.

Producers, distributors and retailers have recognized that distribution channel management allows companies the opportunity to create strategic competitive advantage and obtain superior financial results. Distribution channel activities are a significant source of value-adding to end-users, much bigger than the value added by other marketing activities. Companies can use this substantial value add to gain a competitive advantage through cost reduction in distribution channel activities or using distribution activities to differentiate their products (Weitz & Jap, 1995:308).

As part of distribution channel management, the influence of brand loyalty and subsequently customer preference are explained as key determinants of a distribution channel.

2.9 Brand loyalty

2.9.1 Defining brand loyalty

More than mere semantics, a brand is the embodiment of the product or service, what it fixes, how well it fixes it, who it fixes it for, and how the customer feels by having it fixed (Pitta & Franzak, 2008:65). Babic-Hodovic *et al.* (2018:59) define brand loyalty as a key component of a company's survival and growth, especially for companies who experience stiff competition from regional and global brands. The identification of brand precursors and their impact on brand loyalty as well as the identification of customer preferences are becoming one of the most researched topics in empirical and theoretical studies. Brand awareness (brand knowledge) is a key antecedent of brand experience, image and loyalty and relates to the level of the brand's presence in the customer's mind (Kotler *et al.*, 2009).

Based on further literature review findings, customer brand loyalty in general can be defined as the level of a customer's motivational, brand-related and contextual state of mind, characterised by certain levels of cognitive, emotional and behavioural engagement activities in direct brand interactions. In this context, direct brand interaction relates to a customer's physical or direct

contact with a focal brand as opposed to indirect brand interaction through the means of mass communication (Hollebeek, 2011:790).

Customers often link themselves to a brand in much the same way that religious followers connect to their religion. Customer-brand relationships play a critical role in the brand-building process. Research studies have explored several customer-brand relationships, ranging from self-brand connection, brand loyalty, brand love, and brand attachment. In its extreme form, the emotional connection in a brand community resembles religious characteristics embodied in a pattern of faith and worship in the customer's mind (Wang *et al.*, 2018:736).

2.9.2 Brand loyalty in various contexts

Research by Sampaothong (2018:616) on fast-moving consumer goods in Thailand indicates that using the brand loyalty model developed by Aaker (2009:15) will form brand loyalty through three factors, namely brand awareness, brand association, and brand quality. Brand loyalty relates to both behavioural (repurchasing) and attitudinal loyalty (self-identification with the brand), while brand awareness refers to the customer's ability to recall the brand characteristics and attributes. Finally, perceived quality relates to the extent that customers believe that the product is suitable for its proposed purpose.

Evidence by Yeap *et al.* (2018:2, 8) from the Japanese fashion retailing industry describes brand loyalty as a firmly held commitment to repurchase a favourite product or service consistently in the future, thus creating same-brand or brand-set buying despite situational stimuli and marketing efforts that could lead to switching dynamics. Brand loyalty is also known to drive brand profitability, as brand-loyal customers are more prone to pay for the brand because the brand's value uniqueness cannot easily be substituted by another brand name. Similarly, brand loyalty supports market share growth, as repurchasing increases sales and supports word-of-mouth advertising.

In their study on Malaysian customers' brand loyalty towards automotive brands, Mabkhot *et al.* (2017:9-11) assessed three independent variables driving brand loyalty. The first is brand image, which, as defined by Kotler *et al.* (2009), is the perceptions and beliefs of the brand held by customers in their memory. Marketing programmes can build a positive brand image by creating a strong link between the brand and its image in the customer's mind. The second is brand personality, which, as defined by Aaker (2009:12), is a set of human characteristics linked to the brand. These traits include sincerity, excitement, competence and ruggedness. Brand personality also plays a role in self-expression to attract new customers. The third is brand trust, which is

classified as the willingness of the average customer to rely on the product to fulfil its stated purpose. Brand trust is also a key driver of attitudinal and behavioural loyalty. Customers who trust a brand are more inclined to stay with the brand, pay more for it, purchase new introductions under the same brand, and share their experiences of the brand (Chaudhuri & Holbrook, 2001:82).

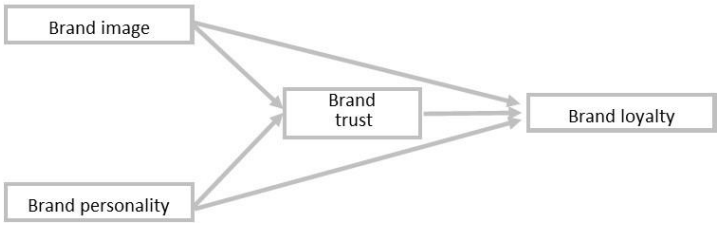


Figure 2-4: Independent variables for establishing brand loyalty (Mabkhot *et al.,* 2017:5)

A customer's cognitive brand loyalty activity includes the customer's level of brand engrossment, as opposed to an emotional activity that could be represented by a customer's brand-related inspiration or pride. Furthermore, a customer's behavioural brand loyalty activity could be expressed through the level of energy they experience from interacting with a focal brand (Patterson *et al.*, 2006:5).

For brand loyalty still, Hollebeek (2011:797) proposes a customer engagement/loyalty matrix (Figure 2-5), showcasing a caveat to the suggestion that a direct positive correlation exists between customer engagement and brand loyalty. The assumption that higher brand-engagement levels support increased customer loyalty outcomes to a certain point is challenged by the assumption that additional brand engagement beyond this optimum point may actually be detrimental to brand loyalty because it leads to customer fatigue.

Figure 2-5 indicates four customer segments based on brand engagement and subsequent loyalty levels. 1) The apathist is classified by relatively low brand engagement, although displaying higher levels of brand loyalty, especially in areas where choice is limited. Based on their limited brand engagement levels, they are limited in the risk of brand fatigue. 2) Exits are low-engaged customers who tend to leave the customer base and also pose a low risk to brand fatigue. 3) Activists show high brand engagement and are relatively brand loyal, making them a desirable customer base. They are, however, more prone to customer fatigue, given their high levels of

brand engagement, which can have an adverse effect on brand loyalty. 4) Lastly, variety seekers tend to defer from the customer base despite their high levels of engagement (Wright & Howcroft, 2008)

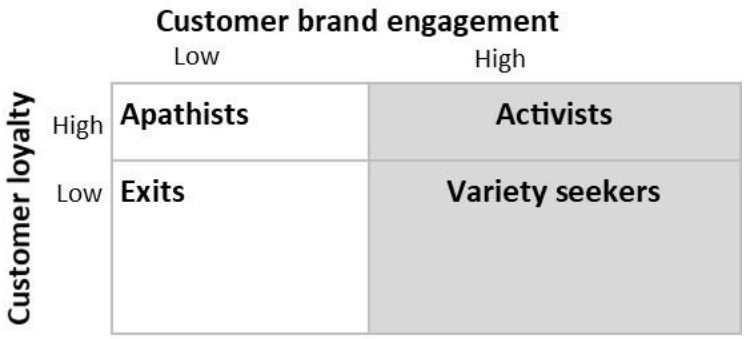


Figure 2-5: Customer engagement/brand loyalty matrix (Hollebeek, 2011:797)

Thus, while companies might gain customer loyalty related advantages from increased levels of customer brand engagement up to a certain point, an optimal level exists for each customer segment, beyond which further brand engagement may affect brand loyalty negatively, as illustrated in Figure 2-6 (Hollebeek, 2011:800).

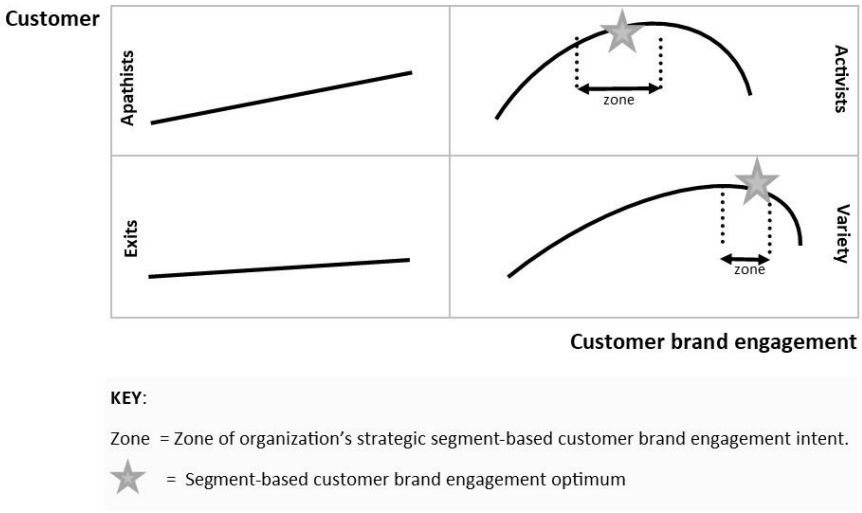


Figure 2- 6: Customer brand engagement/brand loyalty nexus by segment (Hollebeek, 2011:800)

2.9.3 Brand loyalty in the seed industry

In a relevant albeit vintage piece of agricultural distribution channel research, Kohls *et al.* (1957:449) shed light on the agricultural industry's critical question of which is more important in making the sale – the dealer (distribution channel) or the brand. Although dated, this almost historic source provides a basis for understanding the building blocks of brand loyalty. Their data supports the notion that the question of relative importance could not be established with certainty, but many findings showed that brand was the dominant factor due to the stronger pull of brand loyalty (Boateng *et al.*, 2020:479; Odia & Adekunle, 2020:44).

In the context of this study, brand loyalty is defined as the farming customer's commitment to purchase a preferred corn seed hybrid, now and in future, despite situational changes or marketing efforts that may have the potential of altering the purchase decision (Oliver, 1997:392).

Wahyudi *et al.* (2019:46) conceptualise brand loyalty as the customer's attitude to the brand that leads the customer to repeat purchases. This measure of customer loyalty gives insight into how much customers would recommend and continue to use products from the same brand in future. Brand loyalty is influenced by several factors, the most important being perceived quality. Another

determinant of brand loyalty is consumer satisfaction (Pribadi *et al.*, 2019:734). This is also true of the agricultural sector, and specifically, the seed industry.

Research conducted by Comi (2019:172) questions whether farmers feel more loyal towards their seed company or towards the dealer from whom they bought their GM seed. His findings indicate that farmers were more loyal to the technical know-how, friendship, and character of the dealer, stating that "farmers are some of the most loyal people you will find" (Comi, 2019:172). However, the same research revealed that farmer loyalty was not solely dealer flow-oriented but also brand-driven. Thus, when seed dealers contemplated switching brands, farmers would stay with the brand and not the dealer. Brand loyalty is often encouraged by trade discounts offered by seed companies, provided that a farmer customer decides to make that seed company the exclusive seed provider to that farm. However, complete brand homogeneity is not common in farming practices. Many farmers would split their plantings between two or more seed brands to mitigate production risks. Seed distribution channels often compare brand loyalty for seed products to brand loyalty for vehicle manufacturers (Comi, 2019:172).

Harbor and Roucan-Kane (2018:24) pre-empted that building strong brand loyalty is challenging for two reasons. First, the farmer customer base is constantly changing because of structural changes within the agricultural sector (consolidation leading to fewer farmers managing larger farming operations). And secondly, increased technological advancement, for example GM products, is providing a continuous stream of new products. Respondents in their survey were particularly interested in the non-price traits of branded products such as performance and technical support. The survey also indicated that brand differentiation and brand performance directly affected brand loyalty. Seed companies can address these issues directly if they seek to build brand loyalty. Additionally, marketing strategies for loyalty should not only focus on price but also on the value that farmers can unlock through quality and service.

2.9.4 Challenges in the seed industry

Seed companies currently face several marketing challenges with regard to distribution channels. For many seed companies, larger commercial farmers have replaced smaller farms as their main customers. The interaction between large commercial farmers and their seed companies has become similar to that observed in a traditional (non-farm) B2B environment. Understanding how this structural change affects distribution approaches has become important for the success of seed companies (Harbor *et al.*, 2008:18). Brand-loyal farmers can be classified by the actions that form part of their buying patterns. For instance, farmers who engage in search activities may be considered less brand loyal if their current seed purchases have led them to search for

alternatives. Growth in farming operations also links to brand loyalty, as farmers could potentially search for cheaper products to manage costs on larger operations. On the contrary, an increase in farm size could limit a farmer's time to search for alternatives, hence supporting brand loyalty. Additional variables that capture farmers' brand loyalty relates to opinions around the environment and willingness to try new products. A seed company's ability to understand their customers, relate to and validate their needs with new product offerings will support loyalty (Harbor *et al.*, 2008:21). Seed product traits and/or favourable product experiences can determine the decision to continue purchasing a certain brand. Quality and performance have also been identified as key contributors to brand loyalty. Perceived brand differences also encourage brand loyalty (Harbor *et al.*, 2008:22).

Increased farming productivity and loyalty to seed company brands can only be obtained when high performing seed varieties are delivered to farmer customers. This can be achieved when effective distribution channels are put in place to ensure that GM corn seed reaches farmer customers on time and when the distribution channel delivers the brand's value to the end-user. Any seed company's success depends on the development of innovative distribution channel strategies. It is therefore imperative that a seed company put in place a distribution channel that is responsive to an ever-changing business environment (Mutsikiwa *et al.*, 2012:17-18). Just as brand loyalty is a key factor in determining customer choice in a distribution channel, so too can customer preference be considered a key antecedent in this regard.

2.10 Customer preference

Chang *et al.* (2016:3777) explain that customers in a market have varying preferences in relation to price, product quality, and the associated brand. As indicated by Zafar and Ping (2020:14), in a Chinese study on customer preference for functional foods, non-sensory product attributes like packing material, brand, and price are important elements of influencing customers' attitudes and preferences. The importance of a product brand on customer preference is further underlined by an earlier study by Raj *et al.* (2013:48) conducted within India's Sports Utility Vehicle segment. As indicated in Table 1, this imported study identifies six key determinant factors for customer preference.

Table 2-1: Key determinant factors of customer preference (Raj *et al*., 2013:48)

Determinant factor	Customer preference antecedent
Product reliability	Features and benefits offered as well as product quality
Price	Reveals the price-sensitiveness nature of the customer making the purchase as well as the post-sale service offered
Brand uniqueness	Style and design of the offered product as well as the word of mouth associated at the time of purchase.
Trustworthiness	The influence of celebrity endorsement as a measure of faith that manufacturers can build on.
Product promotion	Customer preference was found to be highly influenced by promotional efforts ranging from event sponsorship to advertisements
Customer need sensitivity	Relates to the willingness of the manufactures to listen and respond to the needs of the customer and deliver long-term benefits.

In a related study on customer preference in the Indian banking sector by Panigrahi (2019:74), it is mentioned that factors such as convenience, time and technology, quality of service, and atmosphere play a larger role in the selection of the preferred bank than interest rates and e-banking services.

Balasubramanian *et al.* (2005:13) posit that customer preference towards different distribution channels is sparsely researched. Their research, however, indicates that by separating the overall utility obtained from product-and process-related utilities, some counterintuitive insights can be obtained. The research suggests that customers' distinct goals towards choice, value, buying brand attitudes, likelihood, and satisfaction can differentially affect their preferences. Similarly, customers' detailed goals during the different stages of purchasing will likely influence channel preference. Customer's preference toward a distribution channel while shopping is based on five goals as indicated in Table 2:

Table 2-2: Customer preference drivers towards a distribution channel (Balasubramanian *et al*., 2005:13)

Customer preference driver	Rationale
Economic goals	How the pursuit of efficiency and utility can influence distribution channel choice
Self-affirmation	The opportunity to play out their self-perceived expertise can influence distribution channel choice
Symbolic meaning	How the expected satisfaction anticipated from the event can influence distribution channel choice
Socialisation impact	How customers' needs to be part of social surroundings and stimulating environments can influence distribution channel choice
Shopping related schemes and scripts	How the goal of maintaining familiarity and consistency can influence distribution channel choice

2.10.1 Customer preference in the seed industry

On specifically linking customer preference to the seed industry, the study of Nolega *et al.* (2015:107) offers valuable insights. In this study, customers were questioned on why they preferred products from Kenya Seed Company over any other seed company's products. More than 30% of the respondents answered in favour of one key attribute: seed quality. This customer preference is also closely linked to a key complementary trait, namely *yield*. Other customer-preferred product attributes such as price, availability and disease tolerance scored lower in terms of customer preference. Another Kenyan seed study, this one by Rutsaert and Donovan (2020:500), obtained somewhat contradictory results to the seed quality argument postulated above, which is that Kenya Seed Company's dominating presence through a widespread dealer network and reliability of supply drove the customer preference for their products. Another interesting find in this study relates to price, where it is claimed that price indicates quality and pricing seed products lower than the opposition might send negative signals to farmers regarding seed quality. For a product whose attributes can only be assessed after product use, like seed, price and brand are the two main drivers that will influence customer preference at the point of purchase.

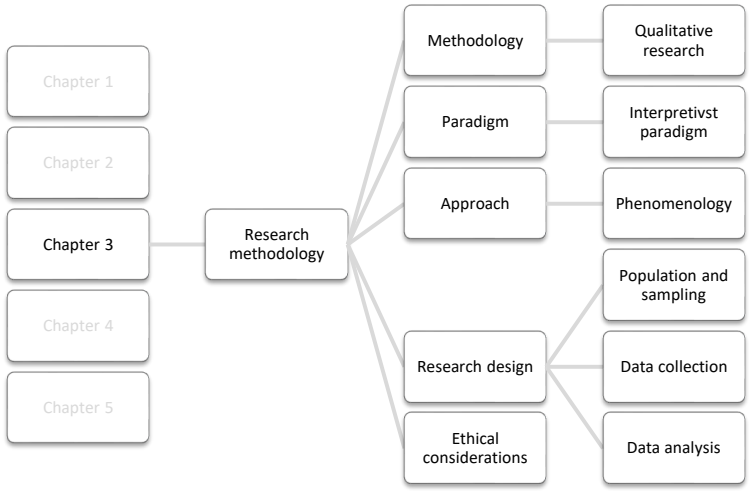
2.11 Conclusion

In this chapter, the researcher defined various distribution channels in agriculture, ranging from direct to various indirect distribution channel models in the seed industries of various countries. Related concepts such as brand loyalty and customer preference were also unpacked. The literature reviewed indicated that customer preference in the seed industry related to seed quality and price. The influence of the human component in seed distribution channels was also highlighted and indicates that farmers highly value the technical support of their agents or dealers. Control in the distribution channel is finely balanced between the seed company that develops new technologies and the distribution channel that owns the relationship with the farming customer. A key takeaway for marketing managers in their decision on how to structure distribution channels is the role of push/pull marketing that can influence the way in which farmers purchase seed. Farmers are also highly brand loyal and will stay with a company as long as they are supplied with technological advancements that ensure their farming sustainability. Licensing of seed and GM traits also form an integral part of distribution in the global seed industry.

The next chapter elucidates the research methodology followed in this study.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Chapter overview



3.2 Introduction

This qualitative study was conducted to obtain insight into the most effective distribution channel for GM corn hybrids in South Africa. The research was based on interpretivism as paradigm and the generation of knowledge rather than the testing of pre-defined theories at the onset. Phenomenology was employed as the study's approach. The researcher used semi-structured interviews to gather qualitative data and worked towards data saturation. A cross-sectional study was conducted at a single point in time. Cross-sectional designs can involve the collection of data to assess patterns of association between two or more variables (Bryman *et al.*, 2018:107). In this study, data was gathered from a specific population of irrigation corn farmers in a predefined geographical area in South Africa.

3.3 Research methodology

Research methods in general aim to determine the cause of events and their future predictability. Sometimes these designs are clustered together and labelled as "quantitative" because the focus is on how much or how many and the subsequent results presented in statistical formats. Rather

than establishing cause and effect and predicting or describing the distribution of some attributes, researchers are interested in understanding the meaning of a phenomenon for those involved. Therefore qualitative researchers are interested in uncovering how people interpret their experiences and what meaning is attributed to these experiences. Qualitative research is concerned with how meaning is constructed, how people make sense of their lives and worlds. The basic goal of a qualitative study is to discover and understand these meanings (Merriam, 2009:5).

Qualitative research offers a researcher the opportunity to, through a specific theoretical lens, study problems ascribed to a social or human problem. A qualitative approach to enquiry is used in a natural setting through data analyses that are inductive and derive patterns or themes and as such is informed by constructivism and interpretivism (Creswell, 2007:37).

Creswell (2007:40) further argues that qualitative research is conducted when researchers require a complex and detailed understanding of the research problem rather than relying on predetermined information from a literature review. This level of detailed understanding can only be obtained by talking directly with people, going to their offices or homes and allowing them to tell their stories, unhindered by what was previously read in literature. Qualitative research is conducted when the researcher aims to empower the individual to share their experiences, have the confidence to have their voices heard and minimise the power relationship that exists between the researcher and the study participants. Furthermore, the aim is to understand why participants answered in the way they did and the thoughts that drove their responses or the context in which they responded. Qualitative research is also used when quantitative measures simply do not fit the research problem. Some measures may simply not be sensitive to issues such as economic status or individual preference.

Fossey *et al.* (2002:730) describe qualitative research methodologies as the aim to understand the meaning and experience dimensions of human lives and their social environments. Good qualitative research is categorised by the alignment of the perspective (or paradigm) that drives the research question and the research method choice. Qualitative research's quality and the standards for ethics are also interconnected so that the subjective meaning, actions and social context of the participants are being represented faithfully.

3.4 Research paradigm

Chowdhury (2014:433) postulates that interpretivism refers to the approaches underlining the meaningful nature of people's character and participation in both social and cultural life. It denotes

that the research methods adopt the position that people's knowledge of reality is socially constructed by human actors and distinctly rules out the methods of natural sciences. It has its origin in the philosophical traditions of hermeneutics and phenomenology, with the German sociologist Max Weber being the central influencer. Interpretivists search for meanings and motives underlying people's actions such as behaviour and interactions with others within a societal and cultural context.

Kroeze (2011), defines interpretivism as philosophical systems focusing on reality as a man-made construction that can only be understood subjectively. Interpretivist research does not include falsifiable statements or strict hypotheses. For interpretivist research, it is ideal to use the term "premise' or "proposition" for the theoretical statement as opposed to the positivistic term of hypothesis.

This definition is further supported by Bryman *et al.* (2018:14) when they state that interpretivism relates to the views of writers to whom the use of scientific models bear no relevance in studying the social world. Hence, interpretivism is an epistemology (the question of acceptable knowledge in a discipline) contradictory to that of positivism in which writers take a philosophical stance that can be defined clearly in research. Interpretivists work from the principle that the subject matter of the social sciences (people and their institutions) differ fundamentally from the natural sciences. Therefore, the study of the social sciences requires a different research logic, one that relates to the uniqueness of humans. Table 3 provides an overview of the key differences between interpretivism and positivism.

Table 3- 1: Epistemological framework comparing interpretivism and positivism (Becker & Niehaves, 2007:209)

Criteria	Interpretivism	Positivism
Essence	Generation	Confirmation
Reality conception	Contextual realities	External reality
Knowledge conception	Subjectivism	Absolutism
Truth conception	Holistic views	Reductionism
Cognition conception	Rationalism	Empiricism
Methodology	Qualitative	Quantitative
Concept of rigour	Transferability	Reproducibility

Interpretivists search for meanings and motives underlying people's actions, such as behaviour and interactions with others within a societal and cultural context. In this study, interpretivism was used to understand the motives that irrigation corn farmers use in their distribution channel choice for the purchase of their GM seed.

3.5 Research approach

Phenomenology, as described by Schram (2003:71) is a study of people's cognisant experience of their life-world, everyday life and social feats. As a key contributor to the research approach, Moustakas (1994:13) defines phenomenology as a return to experience in order to gather comprehensive accounts that provide the basis for a reflective structural investigation that portrays the essence of the experience. Phenomenology seeks to disclose and explain the phenomena of behaviour, and in the case of this study, the choices regarding distribution channels by GM corn farmers. The underlying structures of an experience are then defined through an analysis of the originally given descriptors, as well as perceptions of the situation in which the experience happened. It often happens that the researcher has to put aside, or bracket, prior believes about a phenomenon of interest so as not to interfere with establishing the elements or structure of the phenomena. When prior beliefs are bracketed, awareness becomes heightened (Merriam, 2009:25).

Bryman *et al.* (2018:42) provide further insights into the phenomenological approach by stating that researching the world through the eyes of those with directly lived experience allows for the discovery of how participants interpret their experience and make sense of their world. Since reality is constructed collaboratively, the researcher is part of the process but seeks to limit internal preconceptions to understand the subjective experience of others.

A more philosophical explanation of phenomenology is provided by Moran (2002:4). According to his research, phenomenology is a radical way of practicing philosophy, which is a practice rather than a system. It is best understood as an anti-traditional style of philosophising that emphasises the attempt to obtain the truth of events and describe phenomena.

The proposed phenomenological study aimed to interpret the lived experience of a selected group of irrigation corn farmers in the Northern Cape province of South Africa. The study more specifically tried to discover how participants chose their distribution channels for GM corn seed and make sense of their experience during this important process.

3.6 Research design

3.6.1 Sampling method

The unit of analyses for this study consisted of irrigation corn farmers, who were primarily located in the Northern Cape province of South Africa. These farmers produce corn as part of a rotation system with wheat. The irrigation farmers of the study population in this specific site, are well versed in the latest GM seed technologies available in corn production. In fact, these farmers depend on such new technology for their farming operations to remain profitable. One of the key technology drivers farmers need access to is GM corn seed hybrids. The study population also associated technology in their seed purchases with a competitive edge, and subsequently link this technological edge with certain product brands that are available in the market.

The primary research question linked to the study population was to determine which distribution channel (direct or through intermediaries) they preferred to gain access to GM seed products in a competitive market environment. This perceived approach or preference to the distribution channel that supplies them with GM seed was the focus of the study. The study population's preferences for brand, performance and loyalty were also important traits that influenced their preferred choice of distribution of GM seed. Another key characteristic of the unit of analysis was that the age group was evolving to a younger generation (the sons of the previous farming generation) that were even more technologically advanced than the generation before them. This younger generation of irrigation farmers were well connected and quickly adapted to new product introductions.

The population sample was primarily located in the Northern Cape province of South Africa. More specifically, the unit of analysis was located along the irrigated farms bordering the Vaal and Orange rivers. Information on the unit of analysis was in the public domain. Bryman *et al.* (2018:187) state that by sampling in different locations (in this case different farms), the researcher could classify certain behavioural patterns of the unit of analyses contextually. The researcher therefore interviewed farmers *in situ* to enhance realism, provide a distraction-free environment, and increase the comfort of the interviewee to obtain high-quality information. Berg (2001:29) postulates that the study site should be one that is accessible and the unit of analyses available for the research to be conducted effectively. The unit of analyses for this study complied with all these requirements.

The concept of purposeful sampling as described by Patton (1990:169) relates to the deliberate selection of key participants for the value of their contribution to the study. In applying Patton's

purposeful sampling concept, specific populations were selected for their representativeness and typicality. A smaller sample with a systematic selection provided more confidence that the results could be generalised about the population at large.

Berg (2001:31), however, proposes that for qualitative research projects, researchers may rely on nonprobability samples where large scale surveys are not possible (as is the case in irrigated corn areas where only a few farmers are present). Saunders *et al.* (2009:233) agree in stating that non-probability sampling is used based on subjective judgement. Within non-probability sampling, the researcher used convenience sampling techniques given the low variation in the population.

Saunders *et al.* (2009:235) propose that for research where the aim is to understand commonalities in such a homogenous group as this proposed unit of analyses, twelve in-depth semi-structured interviews with participants should suffice. The researcher, however, conducted smaller but more focused semi-structured interviews with five irrigation corn farmers during a sixty-minute interview who consented to access to the unit of analysis. Participants were recruited with the assistance of local independent representatives. These representatives had constant access to farmers who meet the requirements for this study and were used as gatekeepers to recruit respondents. Representatives contacted possible participants and enquired about their interest in the project as well as to seek permission to share their contact information with the researcher. The researcher subsequently discussed a list of possible participants with these representatives, after which the researcher contacted possible participants via e-mail. This gave participants the option of easily accepting or declining the offer. Also, there were no economic or other incentives to have respondents partake in the interviews.

Table 3-2: Details of the particulars of the research participants (Conceptualised by Author, 2021)

Participant	Area	Age	Education
Participant 1	Prieska	50	Master's degree
Participant 2	Prieska	33	Master's degree
Participant 3	Douglas	38	Master's degree
Participant 4	Jacobsdal	47	Agricultural Diploma
Participant 5	Hopetown	48	Bachelor's degree

Participant 6	Douglas	41	Agricultural Diploma
Participant 7	Douglas	55	Agricultural Diploma

3.6.2 Data collection

The study aimed to determine the most effective distribution channel for GM corn hybrids while also determining the role of brand loyalty and customer preference. The outcome was to capture the key drivers that played a pivotal role in shaping the purchasing decisions of irrigation GM corn farmers in South Africa. These decision drivers included various product attributes that are valued by farmers.

The main method for data capturing was through the means of semi-structured interviews that included open-ended, predetermined questions (avoiding yes/no questions) followed up by probes and requests for more detail. Semi-structured interviews allow participants to express themselves freely and to define their own opinion independent from that of the researcher (Hancock & Algozzine, 2006:40).

The questions included in the interview schedule assisted in giving a broader societal context to the research aim. Silverman and Marvasti (2008:148) state that for novel researchers, the best practice is to keep questions simple and maintain a straightforward balance between topic, method and model. It is not possible to convert research questions into decisions for the methods to be used, the methods ultimately become the means to answer the research question. Therefore, interview questions should be derived from the research question to provide the data needed to answer those research questions (Bickman & Rog, 2008:236). The researcher used an audio recording of the interview (with the necessary informed consent) to transcribe the data for analysis. Audio taping also allowed the interviewer the opportunity for improvements in future areas of interviewing (Merriam, 2009:109). Field notes were also taken during the interview to assess after the interview for information on nuances and body language. These notes also allowed the interviewer to monitor the flow of information and to initiate the analysis of the data.

3.6.3 Data analysis

Verbatim transcriptions of interviews offer the best source for analysis (Merriam, 2009:110). Jenner *et al.* (2004:248) describe transcripts as the product of a notation system needed to make a fleeting interview permanently available in writing for empirical data analyses at a later stage.

The aim of the transcript is to accurately reflect the string of words uttered and also capture extra linguistic (eye movements) and paralinguistic features (laughing, throat clearing).

The researcher used his own transcription of the interviews and did not make use of a hired transcriber, as a transcriber might not have been familiar with the key terms and the context of agriculture. To enable the data analyses, the format of the interview was set up accordingly, specifically through the addition of line numbering on the transcribed page and by assigning the letter A to the Interviewer and B to the Interviewee. The addition of an area dedicated to notes was also added in the margin of the page to support open coding.

Merriam (2009:178) supports the concept of data categorising because category construction is data analysis. Category construction begins with the reading of the first transcript and making notes. During the review of the second transcript, the second list of notes will be merged with the first outlining a primitive classification system reflecting recurring patterns in the research that ultimately become the categories. At the onset of the analyses, the researcher aimed to have several categories (themes) that would eventually be reduced to a core few used to code the data. Merriam (2009:192) concurs when stating that when categories (themes) are reduced and refined, the analysis moves to a model that explains the meaning of the data. Since phenomenology was used as the qualitative research method, three phases of coding were used; i.e. open, axial and selective. Open coding was already mentioned and simply refers to tagging information relevant to the research. Axial coding entails defining the categories and refining them in selective coding, as a central or core category (theme).

3.6.4 Assessing and demonstrating quality and rigour

The requirements of reliability, replication, and validity are generally associated with demonstrating rigour in quantitative studies. Maher *et al.* (2018:2) confirm that the concept of rigour in research is less applicable to qualitative studies and thus contest the value of these concepts for such research studies. For the sake of this assignment, certain components of these concepts were adapted and interpreted within a qualitative paradigm.

An understanding of the definition of rigour motivates and enables the researcher to immerse themselves in the data and create deep and meaningful interaction with the data on various levels. This requires rich and saturated data that can be analysed through thematic coding to understand current practice and create new knowledge (Bryman *et al.*, 2018:342). Combining this with processes like document analysis and triangulation strengthened the effort of the researcher to understand a phenomenon. Such actions were grounded in a solid theoretical and conceptual

framework to ensure quality. This also promoted transferability in the study, as the rich descriptions enabled the reader to apply the findings to their unique context.

Although qualitative research is not meant to be reproduced and the same outcome will never be achieved twice, it remains important for a researcher to ensure dependability through findings and recommendations that could serve as basis or support for a next study.

The last component of rigour refers to the validity of the research study in its ability to answer the postulated research questions and contribute towards the growing body of knowledge in this specific field. Working towards academic rigour is not a once-off or linear process, but rather a dynamic interaction that is integrated within the whole process (Bryman *et al.*, 2018:25).

In addition, due to the researcher's intimate knowledge of the field which is grounded in practice and experience, the researcher demonstrated trustworthiness through an in-depth understanding of and reflection on the data shared by participants.

3.7 Ethical considerations

Ethical principles in business research according to Bryman *et al.* (2018:120), can be grouped into four areas: obtaining informed consent, not harming participants through the research conducted, not invading privacy, and no deception used during the interview techniques.

In relation to the potential harm to participants, care was taken not to allow for the identification of organisations or individuals when the findings were published. To further protect participants from harm, a confidentiality agreement was drawn up by the researchers' employer to disclose what information the researcher may have access to and what information about the written-up research report may be shared about the company.

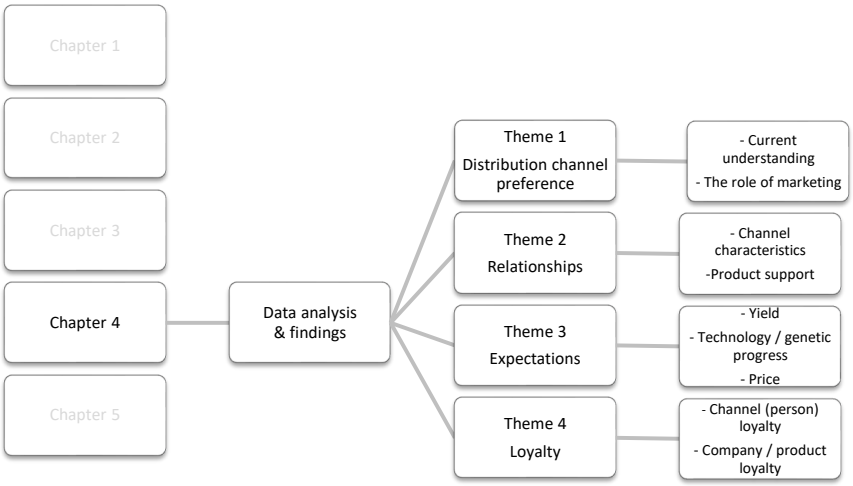
To manage the ethics risk associated with a lack of informed consent, the participants were fully informed about the interview process in a language that they understood. Participants were given sufficient information to enable them to decide if they want to participate or not. A consent form was also shared prior to the initiation of the interview. Participants were informed that the data will be published in a mini-dissertation and that possible research articles or conference papers might be produced. Privacy was also linked to the informed consent form. Participants were allowed the option not to answer certain questions if they chose not to do so. The identity of participants would not be made public during the publication of data and reporting of the findings.

The researchers' affiliation to his employer was revealed to participants to manage potential conflicts of interest. The researcher aimed to build trust and create rapport between himself and the participants to ensure that the research findings would be beneficial to both of them.

The researcher continued with the proposed study and the interview process upon receiving written approval from the Economic and Management Sciences Research and Ethics Committee. The researcher also obtained written approval for the research project from his employer to ensure that the research does not pose a potential ethical risk for the employing company. Necessary measures were employed to avoid plagiarism.

CHAPTER 4
FINDINGS

4.1 Chapter overview



4.2 Introduction

While Chapter 3 elucidated the qualitative research methodologies applied in this research study, this chapter shares disseminated data and the subsequent findings. Inductive reasoning was used to identify the following themes and sub-themes to answer the research questions:

Primary research question:

> Which distribution channel is most effective for distributing GM corn seed in South Africa?

Secondary research questions:

> Which factors influence farmer customer preference towards a specific GM seed distribution channel?
>
> What role does brand loyalty play in the choice of a GM seed distribution channel?

The themes and sub-themes deducted from the data can be summarised as follows:

4.3 THEME 1: Distribution channel preference

4.3.1 Sub-theme 1: Current understanding of the status quo

Disseminated data from semi-structured interviews indicates a strong requirement for a direct distribution channel with the shortest possible route to market to the end customer. Two very insightful learnings emerged from the data. Firstly, farmers stated that they see limited value in agricultural cooperatives as a distribution channel. Secondly, there was no clear distinction for farmers between a company representative and an independent agent in their choice of a distribution channel.

This insight was clearly supported by participants 6 and 7 who indicated that they prefer not to purchase their GM corn seed from their local agricultural cooperative. In fact, they mentioned that these agricultural cooperatives do not play a role in direct marketing activities at all. Participant 6 clearly stated that "*the cooperative would not have known about your need for GM seed if it was not for the local agent*" (line 25-26)[2]. Participant 7 concurred by saying that "*cooperatives do not sell seed*" (line 26-27). Farmer's general choice of direct seed purchases was also acknowledged by participants 1, 2 and 5.

Participant 5, however, highlighted a common misunderstanding of two common distribution channels employed by seed companies when he mentioned "*I purchase directly from the seed company's agent, the representative*" (line 11-12). This misunderstanding was also supported by participant 1 when he stated "*I assume they are agents*" (line 22). Interestingly enough, only participant 4 was, however, accurately aware that seed companies do indeed structure their distribution channels differently through either directly employed representatives or through an independent agent that sells on a commission base.

It is key to highlight the difference between these two distribution channels. For seed companies, a salaried representative and an independent commission-based agent are two different routes to a market and require different management strategies. The finding that most farmers do not have a clear understanding of the difference between these two distribution channels is a clear indication that seed companies have flexibility in their marketing approach to their market segment. The findings of this study highlight that farmers do not have a clear preference for either a direct representative or a commissioned agent, and only use cooperatives for the financing of

[2] Interviews were conducted in Afrikaans which is the native language of the respondents and then translated by the researcher. Translated transcriptions were sent back to the respondents to verify authenticity and factual correctness.

their seed purchases as agricultural cooperatives offer production financing loans for seed purchases.

Another finding indicates the emerging prevalence of digital technology associated with the placement of orders. This was highlighted by participant 1, who argues that "*the use of technology in the form of digital apps makes the transaction transparent and streamlined*" (line 74-49). The sample of farmers interviewed for this study are leaders in their respective areas, and throughout the interviews, they all accentuated the use of technology as a measure to maintain a competitive advantage. It was, therefore, no surprise that also in their choice of a distribution channel, technology in marketing strategies would be a key contributing factor.

4.3.2 Sub-theme 2: The role of marketing

Findings for this sub-theme indicate that in addition to digital technology, other marketing platforms that visually showcase product performance in the form of demonstration plots and field days have high value. The value of such digital marketing efforts will probably play a significant role in future marketing campaigns, but the value of a human interface in the distribution of seed is still very relevant.

Participant 1 underlined a key pre-requisite for the choice of a distribution channel as far as the role of marketing is concerned. "*The word-of-mouth message that gets around from your neighbour influences channel choice. This weighs more than what I read in the news or hear on the radio"* (line 179-182). This was further supported by the same participant's statement, mentioning that "*the strongest marketing message is from my neighbour when he says, have you heard, the biggest farmer in the area already plants 30% of his fields with this GM corn hybrid?"*

Both participants 3 and 4 reiterated the marketing roles that on-farm trialling efforts and new product launches play in their choice of a distribution channel. "*I can clearly see which company is present when we plant trials and which company wants to promote their product*" (line 35-41), states participant 4. An often-overlooked marketing theme was the role of packaging design. Participant 5 stated that the design of a seed bag has a first impression-based appeal that should not be underestimated. This sentiment was however not common throughout all the participants, but seed companies should take note that farmer customers value the design of a bag of GM corn seed, especially if yield differences among rivals is insignificant.

Participant 3 also presented a very strong argument on the value of on-farm performance trials. *"I have never purchased a GM hybrid because of a nice field sign next to the road, I purchase a*

certain GM hybrid because I have planted it in a trial and harvested the results" (line 291-294). A key finding on the future requirements of marketing in the choice of a distribution channel was mentioned by participant 1.

> *Brand awareness needs to be strong, it needs to be imprinted, through a logo on a cap or through an advertorial. Just as technology changes, so too has marketing. What works today, will not work in five or ten years from now, marketing angles should also be innovative* (line 241-245).

Finally, participant 1 also eluded to the role that field day's play as a marketing effort.

> *The presence of a company expert at a farmer's day gives legitimacy to their product and allows for the expert to answer questions. Even though the information is freely available on the Internet, an actual physical presence has value* (line 149-153).

The summated findings of this first theme indicate very strongly that participants in this study see limited value in purchasing from agricultural cooperatives and prefer the shortest route to market in seed distribution. In addition, these farmers' value brand equity and thus, seed companies should have a strong presence in on-farm research and demonstration activities. The notion that word-of-mouth marketing has more value than printed media campaigns also holds. The role of on-farm field trials that showcase new products is still one of the best ways to influence farmers' choice of a distribution channel. These on-farm field trials also indicate a company's willingness to do market development, and in turn, the word-of-mouth advertising that is generated supports future sales activities. An on-farm presence together with innovative marketing approaches generates the antecedents for customer relationship building.

4.4 THEME 2: Relationships

4.4.1 Sub-theme 1: Channel characteristics

This theme relates to the attributes associated with a distribution channel that are valued by farmer customers in their dealings with either agents, salaried representatives or agricultural cooperatives. Given the interpersonal nature of the agricultural business landscape in general, it is no surprise that participants required certain expectations and characteristics regarding partnerships with their preferred distribution channel. This encompasses personal relationships,

frequent on-farm presence and an in-depth understanding of their agricultural business needs and wants.

Trust as a pre-requisite for the personal element of such relationships, with a chosen distribution channel expressed by participants 4, 5, and 7. It was evident from the data that trust drives the connectivity between the person representing the distribution channel and the farmer customer. As confirmed by participant 4, trust not only relates to the human connection theme but also the distribution channel's faith in their products, whether or not it will bring value to their farmer customers. Participant 1 mentioned that trust is only gained over time. "*It is the person you work with, the agent that inspires trust in the company I work with*" stated participant 5 in lines 44-48.

Participants 1 and 2 clearly related to the need for professional after-sales service as another important characteristic of their distribution channel of choice. Participant 2 stated that *"I like to be challenged by my agent on my seed purchasing decisions to ensure that I continue to evaluate the options*" (line 132-133).

He further elaborated by saying

> *I am open to people (agents) who bring new insight into my farming ways, but then they also need to understand my ways of farming... but it also has to do with our relationship, we need to get along and know each other or else it would be difficult for us to maintain an open relationship… agents need to know me, the way I farm, and the soils I have* (Participant 2, line 134-140).

Of note was the realisation participant 3 came to when he mentioned that he knew both his main seed agents on a personal level. He elucidated on this statement by explaining that

> *my personal relationship with them sometimes makes it hard to choose between their products without the decision impacting the relationship. I have to set the personal relationships aside and simply go with the data that is available on the best performing GM hybrid in my area. It's the data that counts* (line 162-175).

Participant 6 humorously related to this difference between friendship and on-farm support when he stated that "*some agents will support you at farm level and for the right reasons, while other agents will only run off to support their golfing buddies*" (line 98-101). Participant 4 also confirmed the value of personal relationships when he stated that he would feel

> *more comfortable with someone who treats me with respect, rather than a cowboy who does not have the same value system that I have. I will easily relate to and build a connection with someone who has the same standards and values that I have* (line 54-62).

Participant 2 summarised the findings in this theme with a strong argument when he said that

> *firstly it's about seed quality, secondly about after-sales service, does he visit on a regular base, and does he know me, my problems and my way of farming* (line 91-95).

This sub-theme indicates the importance of trust as well as after-sales service. After-sales service is a key metric and the preferred distribution channel should also provide adequate product support.

4.4.2 Sub-theme 2: Product support

Given the high level of technical knowledge required to support the high technology farmers of the geographical area in question, product support is a key consideration for distribution channel preference. Participants in this study also underlined the value of product support in no uncertain terms.

Perhaps the clearest expression of this statement was made by participant 2 when he mentioned that the way in which a seed company handles complaints and the timely manner in which they react is imperative. He confirmed this sentiment by arguing that *"if they walk away from a complaint, I will not plant their GM corn hybrid again, even if it's the best one out there*" (line 101-104). The same participant made a further critical contribution to the study by saying that

> *even though you can also buy seed through the agricultural cooperatives, they do not support you, they only sell the product. They supply financial support, but there is no on-farm agronomy backing or after-sales service* (line 64-67).

Participant 7 echoed this sentiment by saying he valued the service he currently receives, the presence of the distribution channel partner on his farm and their expert knowledge, which often exceeds that of the farmer himself. He indicated that this was substantially different to an alternative distribution channel that only delivered the seed purchased and would not again make contact or physically visit the farm before harvest time.

Both participants 4 and 6 also shared these requirements for product support when they stated that their distribution channel of choice is one that is there year after year and presents in their fields regularly. Participant 4 elaborated by accentuating that continued technical support and regular contact was definitely beneficial to his choice of a distribution channel. In addition, participant 1 referred to important product support requirements not only directly related to technical support but also product life cycle stages and timely delivery. He captured his concerns with the following questions:

> *Does he deliver on his promises? Will the ordered GM seed volumes be available? Will delivery be on time? Will he warn you well in advance if a problem occurs with the product or inform you that a better one is replacing it?* (line 202-206).

In the same line of thought, participant 1 expressed his need for comprehensive product support in stating that "*I want to have all the information on the table, I need to know which GM seed hybrid works in my area given its performance history*" (line 72). Participant 5 also underlined the necessity of specialised product support in the case of a product complaint, while participant 2 stated the need for product support in terms of product placement. Varying farming conditions require different GM seed hybrids and the ability to match these requirements with the right product is also a key product support function by the seed companies' distribution channel.

In summarising the findings of this theme, the importance of relationships and certain personal characteristics need to be accentuated. Seed companies need to commit to, through their distribution channel, conducting regular on-farm visits and subsequently build such required personal relationships by understanding their customers' individual and product needs. Another pre-requisite of successful partnerships between the participants in this study and their preferred distribution channel is continuous product support throughout the season. The technology associated with GM corn hybrids require of seed companies to ensure adequate technical and product support at farm level. The successful relationship building and product support cultivates trust. This trust component is one of the determining factors in farmers' choice of their distribution channel. The findings of the next theme suggest that farmers might also have explicit expectations that shape their purchasing decisions. These key drivers include product attributes such as yield, technology and price, which eventually influence the choice of a distribution channel.

4.5 THEME 3: Expectations

4.5.1 Sub-theme 1: Yield

The value of yield as a key driver for decision making was also evident from the participants' feedback. All participants unequivocally stated that yield is the first and foremost trait that a GM hybrid should have. Participant 5 mentioned that he will not use a GM hybrid if the product has not proven itself over a course of three seasons under his production practices with consistent yield performance. This statement presents key information to a seed company and the distribution channel in use, as it will require a continuous on-farm testing effort to gain new customers. Participant 5 also supports the sub-theme's pre-amble by stating that "*we continuously strive for that ever-increasing yield target*" (line 142-14). Yield is thus primarily driven by technological advancements, and therefore, this aspect is discussed as a separate sub-theme in the following section.

4.5.2 Sub-theme 2: Technological and genetic progress

The participants interviewed for this study implement advanced technological practices and value the yield advancements that technology brings to their farming operations. In fact, they rely on technology to remain in business. They have a keen interest in new technological advancements and are usually first adopters of new innovations.

This technology requirement is supported by participant 2 when he accentuates the fact that technology in GM corn seed is very important.

> *If we can have technology in a GM corn hybrid that can tolerate stress during critical stages, we will be able to consistently hit the 19- to 20-tonne yield targets. I see no reason why we shouldn't be able to hit an average of 20 tonnes per hectare, the new technological innovations in GM corn will help us to achieve that* (Participant 2, line 295-305).

Participant 1 added a valuable contribution to the need for genetic progress in stating that "*as South African farmers we get access to the technology much later, we always lag behind the USA by five to six years*" (line 146-149). The need for constant genetic progress was also underlined by participant 4 when he expressed the urgency for genetic progress to produce GM hybrids with better performance but with similar needs for water, fertiliser and management inputs. He captured the essence of a distribution channel who understands this challenge in stating that "*the company who would be able to bring such new technology to market will have an edge*" (line 158-

159). This sentiment was echoed by participant 1, who expressed the necessity for "*a constant rollout of new products as well as a consistent genetic progress*" (line 179-180).

Participant 5 also reiterated the constant need for technological advancement when he mentioned that "*yield increases is what we strive for, as well as biotechnology, it is the way of the future*" (line 142-144). Participant 7 went as far as to say that old technology products no longer forms part of his product choice and that these older product versions should rather be discontinued by seed companies. Participant 4 admitted that

> *for my fields that don't have the highest yield potential, I don't use the fancy high technology hybrids because I know they will be limited by the conditions that would simply be stupid"* (line 106-111).

In contrast to these participants who heavily rely on technological advancements and genetic progress when considering product purchases and choice of distribution channels, the findings place more emphasis on the need for seed companies to stay ahead of the curve and constantly develop more competitive products. Considering all the aforementioned opinions, it is clear that the farmers in this sample understand the value that GM technology offers their farming operations and will, through their distribution channel of choice, only put this technology to use on their best fields with the highest returns on investment.

4.5.3 Sub-theme 3: Price

As mentioned in the first theme, namely distribution channel preference, farmers prefer the shortest route to market. This is driven by the influence that various intermediaries as part of the links in the distribution channel chain will have on the final price of the GM corn seed hybrid. Given farmers' need to manage their ever-increasing input costs, the findings on the expectation of price yielded interesting results.

Participant 1 shared his concern about seed companies approaching agricultural cooperatives and awarding trade discounts to them. "*I don't think that's a good idea. What is the reason for that?" Why can't I obtain the discount for myself as the end-user directly from the seed company?"* (Participant 1, line 323-328).

The influence of price as an expectation of the distribution channel had unanimous results. Although there were several semantic differences in the responses, the gist of the feedback was that as long as farmers obtained yield benefits from their GM corn seed hybrids, they were not concerned by the impact of price. Participant 2 put it bluntly when he said that "*for me, seed price*

is not a factor" (line 189-190). More explanatory responses, however, gave some context to the expectation of price. "*It's not always about money, it's about whether the product gives you results, you want to see something better every year,*" stated participant 6 in line 145-147. Participants 1, 5, and 6 concurred in stating that price becomes negligent if the GM seed hybrid's performance is superior. It was also commonly stated that participants 1, 5, and 6 would all be willing to pay a premium price for superior yielding GM seed hybrids.

The findings of this theme highlighted the emphasis that farmers put on a distribution channel's ability to deliver GM hybrids that constantly improve yield levels. These ever-increasing yield levels, as an output of technological progress, keep farmers viable and will also determine their choice of a distribution channel. Price, it seems, is not a fixed determinant of a distribution channel, as long as new products meet farmer customers' expectations. When these expectations are met, farmer customers tend to show loyalty towards the distribution channel and/or the product.

4.6 THEME 4: Loyalty

4.6.1 Sub-theme 1: Distribution channel (person) loyalty

When asked about their perceptions about loyalty towards their current distribution channel and product choice, participants varied widely in their replies. They indicated that there was no clear preference in terms of a specific loyalty to either the distribution channel that seed companies employ or the products that they sell. A clearer understanding of their conceptualisation of loyalty was obtained, however, through further dissemination of the data.

Only three of the seven participants indicated a definite loyalty towards the person representing the distribution channel. Participant 2 unequivocally declared that "*my loyalty would rather be with the person than with the company*" (line 216-217). Coincidently this participant also highly valued product support and the trust associated with the distribution channel that sells his GM corn seed (*cf.* Theme 2*)*. Both participants 5 and 7 communicated a sense of loyalty towards the person representing the distribution channel. Participant 7 voiced his conviction in stating that

> *there are two local agents representing the same seed company in my area. I only purchase from one of them, and not from the other one. If he was not available, I wouldn't purchase from that company, it's about the person* (line 70-73).

An interesting finding was recorded from participant 1, who, on the other hand, displayed a loyalty preference towards the product instead of the distribution channel (person) when he mentioned that

> *I need to maintain my economic relevance. If it means that I have to move to a new company and part ways with my current agent, I will do it, loyalty is not critical for my sustainability* (line 221-224).

The data indicated that the participants showed loyalty in one of two focus areas, namely distribution channel (person) or product and that they could easily motivate their rationale for this loyalty preference. Although three participants indicated loyalty towards the person representing the distribution channel, the majority of the participants (four) indicated loyalty towards the company and the product they sell.

4.6.2 Sub-theme 2: Product and company loyalty

The transition between distribution channel (person) loyalty and the loyalty associated with product and company was underlined in participant 7's interesting observation when considering his experience of the loyalty of distribution channels (people) towards their employers. From a farmer's perspective, his experience was that "*there are two sides to the story, agents will also move between seed companies, indicating their possible lack of loyalty towards a company*" (line 118). This participant was of the opinion that agents or representatives would often only remain loyal towards the seed company until they were presented with a better employment opportunity elsewhere.

Regardless of the possibility of his distribution channel accepting new employment at a possible rival company, participant 7 was adamant that "*I will however not move with him if I am still satisfied with the product*" (line 123). The value of this conviction is that this farmer will not switch companies if the agent or representative moves between different seed companies. This opinion was also upheld by participants 1 and 2. This is a very significant finding, as it indicates that farmers are cognisant of issues relating to the loyalty of agents and the seed companies they represent. But more importantly, in answering the first secondary research question, this finding clearly indicates that for farmers, product loyalty far outweighs the loyalty towards an agent that represents a seed company.

This sentiment of product loyalty was further corroborated by participants 1, 3, 4 and 6. Interestingly enough, during this part of the interview, even participant 5 contradicted his earlier

statement regarding a preference for distribution channel (person) loyalty when a probing question was posed. Participant 5 now stated "*I will stick with the company if the agent switches sides, definitely stay with the company*" (line 100).

In a very pronounced statement, participant 4 corroborated:

> "*I don't buy the person, I buy corn seed, so I will definitely stick with the company… whether Piet or Koos or Jan sells it to me doesn't matter, I buy what I need*" (line 125-133).

This sentiment was further supported by participant 1 who wondered whether he would join his agent should he move to a new company.

> *No, I will not switch. If I had to rate my loyalty, I would say 60% towards the company and 40% towards the person*" (line 172-175).

Even participant 2, who had strong views in support of distribution channel loyalty, indicated a level of product loyalty when he thought about the technological advances brought about by new products: "*I would be willing to look at new products from a new company if it solved my problems*" (line 342-346). Participant 7, who previously indicated a high premium for distribution channel (person) loyalty, did however acknowledge the fact that he might stick with a preferred company even if his agent was newly employed at a rival company, but reiterated the value that the personal connection holds in terms of loyalty.

Irrespective of the seed company, very clear preferences towards product loyalty were mentioned by participant 1. "*No, I don't have loyalty towards a company, if I get the best hybrid, I don't have any sentimental value towards the company,*" participant 1 explained in line 157-159. This quote indicates that certain farmers might also be willing to reconsider their loyalty towards a certain company if a better GM hybrid seed would become available at a competing company.

In summary, this theme focusing on loyalty yielded very contradicting results. Although some farmers place a very high premium on the person that represents the seed company's distribution channel, they will not necessarily switch companies if that agent or representative moves to a different company. Other farmers, however, indicated a clear loyalty towards a product irrespective of the distribution channel (person) or company linked to that specific product. Three types of loyalty were identified and explored in this theme, namely loyalty towards a person, loyalty towards a company, and loyalty towards a specific product.

4.7 Executive summary of findings

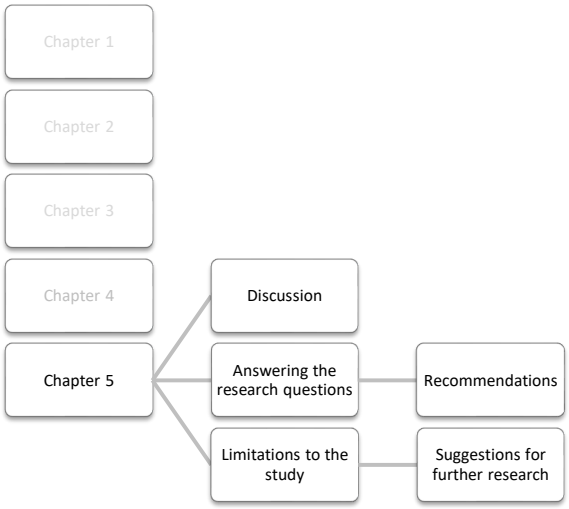
Table 4-1 below is a tabularised summary of the findings as detailed in Chapter 4.

Table 4- 1: Executive summary of findings (Conceptualised by Author, 2021)

Theme	Sub-theme	Key findings
Distribution channel preference	Current preference	Farmers prefer shortest route to market. Agricultural cooperatives have limited value. No clear distinction between commissioned agents and salaried representatives at farmer level.
	The role of marketing	Demonstrations and on-farm presence are highly valued. Innovative (digital) marketing strategies are required as farmers become more technology-driven. Word-of-mouth is still a key marketing platform.
Relationships	Channel characteristics	Personal relationships and regular on-farm visits build trust as a key determinant in choice of distribution channel.
	Product support	Prompt and responsible handling of product complaints is key. Provide expert technical support throughout the season (perceived to be lacking from the agricultural cooperatives).
Expectations	Yield	The chosen distribution channel should constantly strive towards increasing yield as a product attribute.
	Technology/genetic progress	Seed companies who deliver new technologies through their distribution channels will win new customers and retain current customers.
	Price	Not a determinant factor as long as new products are superior to their predecessors.
Loyalty	Distribution channel (person) loyalty	Farmers who highly value personal relationships and trust favour loyalty towards the person representing the distribution channel.
	Product/company loyalty	Loyalty to a competitive company product often outweighs loyalty towards the person selling it. Farmers might, however, switch companies if new rival products outperform current offerings.

CHAPTER 5
DISCUSSION AND RECOMMENDATIONS

5.1 Chapter overview



5.2 Discussion

For this section, the identified themes of Chapter 4 will be linked to the learnings in the literature review while also elaborating on surprising findings that were brought to light in this study. These learnings will be able to add to the growing body of knowledge related to this field of study while also filling the knowledge gap in certain areas.

For the first theme of distribution channel preference, the findings indicated that farmers would prefer the shortest route to market in purchasing their GM corn hybrids and obtain the benefits of trade discounts. However, as indicated by Agribenchmark (2021) and corroborated by several of the participants, this benefit of direct purchases is outweighed by the human element associated with purchasing from a distribution channel partner. The findings of this study support the notion that long-standing relationships will trump the trade discount benefit of direct purchases from a seed company without technical support and a human interface.

Although related to the clothing industry, the work of Yeap *et al.* (2018:2,8) was mirrored in the findings by underlining the value of word-of-mouth advertising as a key marketing action (*cf*. 2.10.2). Such word-of-mouth advertising drives brand loyalty and ultimately increases sales, as corroborated by Participant 1. Advertising as a marketing activity also drives brand loyalty and creates a top-of-mind perception with customers when it comes to brand image. Research by Beck and Rygl (2015:174) on the effect of a distribution channel on a company's marketing activities is also closely linked to the findings in this study. It could be deduced that control of the distribution channel through various marketing activities can be achieved, as each level in a distribution channel will target a different customer segment. The ability of a seed company to deliver "pull"-type marketing activities will allow the seed company greater operational control of the segmented customer profile.

Kotler (1997:65) mentions that segmentation of customers allows seed companies the opportunity to deliver the right marketing mix and develop marketing strategies that fit them accordingly. This was corroborated by the sub-theme focusing on the role of marketing, which identified on-farm demonstrations and digital marketing platforms as a key requirement for this specific irrigated GM corn farmer segment. An important learning from the findings was the role of exclusivity in the distribution channel and the effect that exclusivity has on marketing activities such as price and promotional activities, which are discussed later in this section.

From a marketing perspective, an interesting comparison became emerged from the similarities between Argentinean and South African seed companies, i.e. both actively invest in brand development to gain a competitive advantage.

The work of Rutsaert and Donovan (2020:500) was echoed almost unanimously by the participants when focusing on both the sub-theme of price and the theme discussing expectations. This correlation highlights the fact that the price of seed is perceived as a direct indication of the quality of the seed. As indicated in the findings on price, farmer customers would be willing to pay higher seed prices for new GM corn hybrids that will continuously outperform their predecessors. In essence, price was not a determining factor in the choice of a distribution channel. This finding regarding price was also linked to the work by Harbor and Roucan-Kane (2008:24), who state that farmers are interested in non-price related attributes such as yield and technical support.

In addition, two more interesting findings relating to price emerged from the literature review. Firstly, from Beck and Rygl (2015:174), who argue that the type of distribution channel used will influence the pricing strategy. This was indeed the case for seed companies in this study, as they use different pricing strategies for each distribution channel strategy. A practical example was

shared by Participant 1, who clearly expressed his interest in obtaining the price discount awarded by seed companies to agricultural cooperatives.

Secondly, from the study by Feeney and Berardi (2013:33), which showed closely aligned outcomes to the findings of this study. Their study classified Argentinean farmers' loyalty into four segments, namely performance, price, balance and convenience (*cf.* 2.6). Feeney and Berardi (2013:33) conceptualised performance buyers as being focused on the productivity of their seed purchased and not on cost, which directly impacts their definition of loyalty. This was mirrored very closely by the participants in this study, who can also be classified as performance buyers. However, Participant 4 highlighted that the status of being a performance buyer is closely linked to context and that certain irrigated fields that have limited yield potential would not justify expensive GM hybrids. This classifies him as a price buyer, but for that specific field only. The author postulates that this pricing choice is not driven by the high cost of GM corn hybrids in general, but that it is merely a decision that will align the yield potential of that specific field to a more conservatively priced GM hybrid.

The findings of Weitz and Jap (1995:308) link to the sub-theme of product support discussed in this study and accentuate that products by the distribution channel add more value than traditional marketing actions. Comi (2019:172) further supports the notion that farmers are loyal to the technical expertise of their dealer. The findings of these two studies are supported by the theme focusing on relationships elucidated in this study. Several participants clearly stated their continuous need for technical support throughout the season as well as the subsequent prompt handling of possible seed complaints. Feeney and Berardi (2013:33) also eluded to the value of product support for performance buyers, in this way highlighting the similar needs of both Argentinean farmers and their South African counterparts focused on this study.

As evident from the findings of this study, trust was another prerequisite for establishing behavioural loyalty. Farmer customers who are loyal to the brand are willing to pay more for it and will also share their experiences. This finding links with the work by Chaudhuri and Holbrook (2001:82).

Exploring the loyalty of farmer customers towards their preferred distribution channel yielded some interesting and unexpected findings, specifically relating to distribution channel control. The study by Wen (2011:64) states that, in the past, seed companies were the controlling entity in a distribution channel, but as of late, that control has swayed towards the distribution channel because they control the relationship with the farmer customer. This control relationship with the farmer customer encapsulates customer loyalty. Therefore distribution channels, especially

independent commissioned agents, have become the dominant force and exert more force than the seed company. However, as the findings of this study indicate, farmer customers require a continuous flow of new GM corn hybrids to remain competitive, and the ownership of these products allow seed companies the ability to regain distribution channel control and, ultimately, customer loyalty. The practical implication of distribution channel control is elaborated on as part of the recommendations of this chapter.

Vintage research by Kohls *et al.* (1957:449) shows, however, that brand loyalty is more prominent than dealer loyalty. Several participants of this current study still echoed this 70-year old finding that they would not switch brands even if their dealers were to switch between seed companies. Recent research by Comi (2019:172) also corroborated this finding that although farmers value the technical expertise of their dealers, they would maintain their brand of choice in the event of their dealers switching brands.

The findings of this study support the outcome reached by Comi (2019:172) that farmers will remain brand loyal as long as they are supplied with (GM corn hybrid) seed offering ever-increasing yield levels. Hollebeek (2011:797) showcased the customer engagement/loyalty matrix, indicating four distinct customer groups, namely apathists, activists, exits, and variety seekers (*cf.* 2.10.2). Applying the matrix to the findings of this study indicate that the sampled area, irrigation corn farmers, consists of variety seekers, as they are highly engaged in the brand, but also that they might defer from the customer base if new superior GM corn hybrids are available in future.

From the above discussion it is evident that the findings of this study not only supported available literature on previous research endeavours but also contributed new knowledge to the field.

5.3 Answering the research questions

As evident from the data gathered in Chapter 4, the primary research question of determining the most effective distribution channel for GM corn hybrids indicated that farmer customers had no clear preference of whether the person representing the seed company's distribution channel is a directly employed representative or a commissioned agent. The most effective distribution channel is therefore independent of whether the distribution channel's structure is direct or indirect for the area sampled.

The first secondary research question relating to factors influencing farmer customers' preference towards a specific distribution channel led to several findings. Participants in the sampled area

value technological advances to maintain profitability and will give preference to the seed company that can deliver these technological advances to them without delay while simultaneously avail on-farm technical support. Again these customer preferences are independent of a direct or indirect distribution channel. The customer preferences associated with the delivery of technology and product support lead to the outcome that agricultural cooperatives have little value as a distribution channel platform. The effect of price was negligible and not a driver of distribution channel preference. Seed quality was also identified as a strong antecedent for customer preference towards a distribution channel.

As for the second secondary research question relating to the role that brand loyalty plays in the choice of a distribution channel, the element of trust plays a key role in determining this outcome. Farmer customers place an emphasis on trust, as they rely on the distribution channel's support to not only supply them with new technology but also to provide the required technical support. It was surprising that the element of trust basically links the two secondary research questions. Of note is the fact that brand loyalty is also directly related to brand performance (yield/genetic progress) and greatly influences the choice of distribution channel. Marketing activities that deliver a positive brand image also increase brand loyalty among farmer customers.

5.4 Recommendations

Several practical recommendations are suggested to the GM corn seed industry at large to ensure that both farmers and seed companies are beneficiaries of the outcome of this study.

- As farmer customers in the sampled area have no clear preference for a distribution channel structure, the author proposes the establishment of a possible third option of a direct distribution channel structure specifically through **key account managers**. Although this was not considered as a possible distribution channel during the conceptualisation of this study, the findings clearly indicate the value of exploring this alternative distribution channel model. Such key account managers could serve as intermediaries for a B2B distribution channel strategy linking large irrigation farmers to seed companies (thereby considering both entities as legitimate businesses). It is crucial to accentuate the differences between the abovementioned salaried representatives and this new concept of key account managers. Key account managers would have a greater commercial mandate to negotiate trade discounts and payment terms with large farming entities. Key account managers also add one key value proposition to a seed company in comparison

to commissioned agents, i.e. that of exclusivity. Distribution channel exclusivity will imply single product focus for the person representing the distribution channel.

- The finding that no clear distribution channel preference was evident allows for distribution channel control benefits through the key account manager, which is discussed in the next two recommendations. Given the consolidation of farming operations in the sampled area, fewer but larger farming operations will ultimately prevail (larger farms, fewer farmers). This offers seed companies the opportunity to **engage directly** with these larger farming business entities through the abovementioned key account managers in a B2B distribution channel approach. The negotiation of trade discounts directly with these key accounts could allow for the benefits of larger volume purchases to be passed on directly to these larger and consolidated farmer customers as opposed to having to pay it as commission to a non-company affiliated commissioned agent.

- Seed companies often lack distribution channel control if commissioned agents control valuable market information and resources such as customer purchasing decision drivers. With a direct distribution channel approach, seed companies would have the ability to regain critical market information flow. This approach would allow unrestricted access and greater transparency towards market and customer demand information. A B2B distribution channel approach could swing **distribution channel control** back in favour of the seed company. Distribution channel control through key account managers would allow seed companies one additional benefit – to determine the pricing strategy as compared to retailers who set different price points as intermediaries.

- The findings of this study confirm that new and technologically advanced products offer superior yield levels leading to improved brand loyalty. This technological edge is unattainable by retailers or agricultural cooperatives and hence a limitation in their control of a distribution channel. The demand drive created by new products will also compel seed companies to increase investment in research and development. This role of innovative new products as a distribution channel strategy will therefore give a seed company a competitive advantage. Seed companies need to deliver a **consistent flow of high-yielding GM corn hybrids** that continuously increases brand performance (yield) for farmer customers to maintain their loyalty towards their preferred seed company.

- As indicated by the findings in Chapter 4, **agricultural cooperatives have limited value** as a distribution channel for GM corn hybrids in the sampled area. It is therefore recommended that key account managers who deal directly with larger farming entities only utilise agricultural cooperatives as a means to finance seed purchases where needed. Care should however be taken not to completely eliminate this platform, as several smaller farming entities in areas outside the sampled area still purchase from agricultural cooperatives. However, in the geographical area of the participants interviewed, the actual placement of seed company inventory at the premises of an agricultural cooperative could be terminated, as it has limited value as a distribution channel platform. In the proposed B2B-driven distribution channel, a mutually agreed-upon financing-based commission structure for the purchasing of large volumes could be negotiated with agricultural cooperatives.

- Marketing activities should focus on showcasing on-farm product performance through demonstration sites and the hosting of smaller but focused field days at these demonstration sites. These simple yet effective **pull-type marketing activities** would also allow the seed company additional control over the distribution channel as opposed to a push-type marketing strategy. Farmer customers will purchase directly from the key account manager if the seed company (and not a commissioned agent) influences the farmer's purchasing decision. Pull-type marketing efforts should aim to deliver the product's brand value (yield) through the proposed direct distribution channel to the farming customer.

- In addition to these on-farm pull-type marketing activities, the role of technology in the digitalisation of marketing activities also has several commercial benefits, especially for younger generation farmer customers. As the role of printed media in marketing is gradually making way for **digital marketing platforms**, a digital focus in marketing should be pursued by seed companies. Several digital platforms, including social media, could be utilised to share short one-minute videos on product performance or technical aspects relating to new product releases. These digital marketing infomercials could drive brand loyalty that in turn supports distribution channel preference, as supported by the findings in Chapter 4.

- A final recommendation, based on the findings related to product loyalty, highlights the opportunity for **licensing** competitive GM corn hybrids to opposition companies in an effort to create an additional distribution channel. Given the findings which indicate that farmers

will switch between seed companies if new GM corn hybrids outperform previous versions, the opportunity to out-license competitive products could allow additional distribution channels for proprietary seed companies. Allowing the licensee the opportunity to market competitive licensed GM corn hybrids in their own brand could allow the licensee the opportunity to serve as a fully-fledged and independent distribution channel for the proprietary seed company without competing with the proprietary seed company's own direct key account approach.

In chapter two, Figure 2-3 illustrates the current structure of distribution channels in South Africa. In an effort to incorporate the findings and recommendations of this study, a proposed alternative distribution channel structure is now suggested in Figure 5-1.

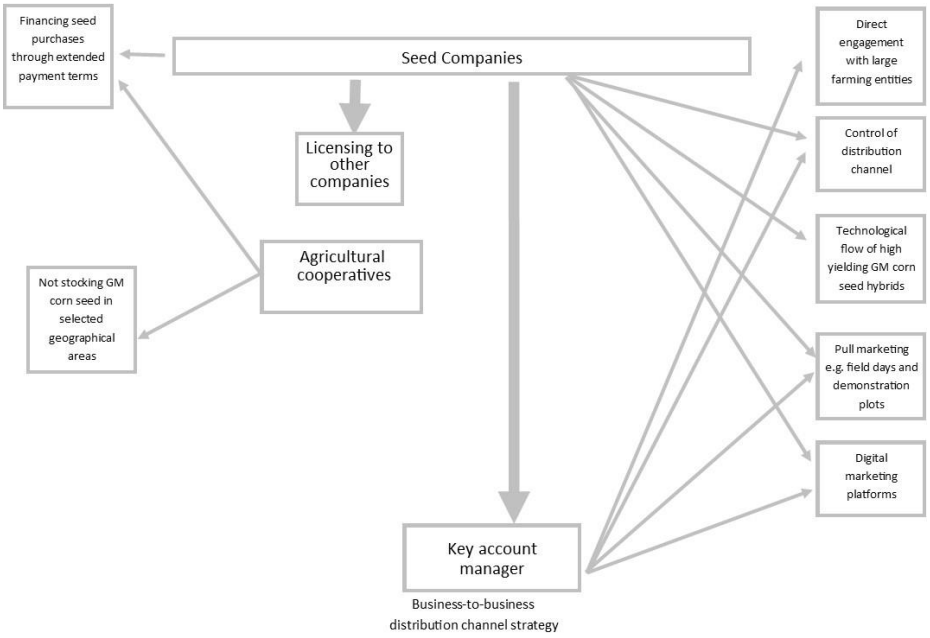


Figure 5- 1: Proposed distribution channel structure for the sampled area based on the recommendations (Conceptualised by the Author, 2021)

This proposed distribution channel structure not only serves as a suggested model for seed companies to implement, but it also confirms the value of game theory (the theoretical model in which this study was grounded) in marketing decisions.

5.5 Limitations to the study

Due to the limited scope of this study, only a small sample of the farmer population was utilised. Therefore, the findings and results of this study cannot be generalised. The findings of this study are, however, significant, as they present clear evidence of factors that influence the choice of farmers' distribution channels in the geographical area in question. A further limitation of this study was the sole focus on GM corn hybrids sold in South Africa's irrigated market segment and not to other crops such as wheat and sunflower seed in other production areas of South Africa. The recommendation for the appointment of a key account manager would be limited to the specific geographical region sampled while a different distribution channel approach might be relevant to other areas and other crops.

5.6 Suggestions for further research

This study could be extended to other geographical areas and also include a larger sample of farmers. This would make it possible to generalise some findings.

Several of the rival seed companies that compete for market share in the agricultural sector not only provide GM corn hybrids but also offer their farmer customers access to crop protection chemicals that safeguard their crops against weeds, insects, and fungal diseases. Thus, a future research opportunity exists to evaluate the value of bundling these two offers (seed and chemicals) in a single combination product offering and how this option would influence farmers' purchasing decisions.

As the next generation of farmers is the successors in the management of family farming operations, the role that digital marketing plays in reaching this technology-prone customer base could be of value for seed companies. In understanding the marketing platforms that appeal to this upcoming market segment, seed companies can more accurately position their marketing messages to their new target audience.

5.7 Conclusion

The rudimentary learning from this study was that people buy from people. The person representing the distribution channel, whether employed by the seed company or a commissioned agent, is irrelevant to the farming customer in the sampled area. However, the human interaction and the connection that the person representing the distribution channel has with the farming customer is of vital importance. Despite changes brought about by the digitalisation of distribution

and the threat that online distribution has posed to traditional brick-and-mortar distribution channels, the agricultural industry still values on-farm and in-person presence.

Given the expanding value brought about by GM corn hybrids to South Africa's irrigated corn seed market, the human element supporting this technology will be a key contributor to unlocking the technology's full value while ensuring that South African farmers maintain global relevance.

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ANNEXURE 1: LANGUAGE EDITING CERTIFICATE

Language Editor's Declaration

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To whom it may concern,

This document certifies that the manuscript/title listed below has been edited, within reasonable, ethical and professional limits, for syntax, grammar, spelling, punctuation and specific stylistic requirements of the English language by one or more qualified language practitioner(s) at Language Matters. The editor's revisions and comments serve as recommendations; the overall quality of the final manuscript's contents remains the responsibility of the client/author. The language editor does not accept responsibility for any changes made to the manuscript after the issuing of this declaration.

Manuscript title:	"Exploring the most effective distribution channel for genetically modified corn hybrids in South Africa"
Author(s):	AB Wessels
Date Issued:	19 November 2021

ANNEXURE 2: ETHICS APPROVAL

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Economic and Management Sciences Research
Ethics Committee (EMS-REC)

30 April 2021

Prof N Mouton
Per e-mail
Dear Prof Mouton,

EMS-REC FEEDBACK: 30042021 (Round Robin)
Student: Wessels, AB (37189182)(NWU-00013-21-A4)
Study leader: Prof N Mouton - MBA

Your ethics application on, ***Exploring the most effective distribution channel for genetically modified corn hybrids in South Africa,*** which served Round Robin, refers.

Outcome:

Approved as a minimal risk study. A number **NWU-00013-21-A4** is given for one year of ethics clearance.

Due to the Covid-19 lock down ethics clearance for applications that involve data collection or any form of contact with participants are subject to the restrictions imposed by the South African government.

Kind regards,

Mark Rathbone

Digitally signed by Mark Rathbone
DN: cn=Mark Rathbone, o=North West University, ou=Business management, email=mark.rathbone@nwu.ac.za, c=ZA
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Prof Mark Rathbone
Chairperson: Economic and Management Sciences Research Ethics Committee (EMS-REC)

ANNEXURE 3: INFORMED CONSENT

NORTH-WEST UNIVERSITY ®
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

Dear Participant

This **Informed Consent Statement** serves to confirm the following information as it relates to the officially approved research project at the North-West University on:

Exploring the most effective distribution channel for genetically modified corn hybrids in South Africa.

1. The sole purpose of this study is to obtain information from farmer customers to determine which distribution channel seed companies should utilize to introduce new GM seed in the irrigated corn market of South Africa.
2. Participation is completely voluntary, and you may opt-out at any time. You may also decide not to answer specific questions.
3. The procedure to be followed is a qualitative research design, which entails a semi-structured interview of approximately 40 minutes. Basic information will be asked regarding your perceptions, expectations and experiences regarding distribution channels. This will include questions on preference for certain distribution channels. Questions regarding purchasing decisions and brand loyalty will also be posed.
4. To protect your privacy, confidentiality of the data is guaranteed and only the combined results will be used for research and publication purposes. You may opt that a pseudonym be used in the research report. The data disseminated from this study will be used to inform findings in a mini-dissertation for a MBA as well as possible publications in the form or academic articles.
5. Also note that interview questions will not have a correct or incorrect answer. The aim is to determine your individual preference.

Please indicate your consent

I hereby give my consent after having read the above information that my data may be used as stated above.	**YES**	**NO**

Thank you for your time.

…… ……..

The researcher **The participant**

ANNEXURE 4: INTERVIEW SCHEDULE

How long have you been in the irrigation corn farming business?
Do you usually purchase your irrigation GM corn seed through a dealership or company representative and why?
Do you know if there are any alternative distribution channels available for irrigation GM seed in your area? If there are any, which?
What attributes instills confidence in the specific seed company (ies) that you buy from?
What drives you to purchase irrigation GM seed corn from a certain dealer/direct representative?
What is the attribute that you value most about a specific seed company's products? Why?
Do you feel greater loyalty towards the seed company itself or the specific agent/representative that you usually deal with?
What improvements would you like to see in future from the seed company that you currently buy from?
If new entrants are to launch in the market, what do they need to offer for you to consider a switch?