INFLUENCE OF PORTER'S FIVE FORCES ON THE COMPETITIVENESS OF AGRODEALER BUSINESSES IN NAKURU EAST SUB-COUNTY, KENYA

EILEEN INYANJI WANYONYI

A Thesis Submitted to the Graduate School in Partial Fulfillment of the Requirements for the Master of Science Degree in Agribusiness Management of Egerton University

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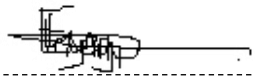
DECLARATION AND RECOMMENDATION

Declaration

This thesis is my original work and has not been presented in any university or institution of highe rlearning for the award of any degree.

Signature  Date: 12/11/2021

Eileen Inyanji Wanyonyi

KM19/11821/16

Recommendation

This thesis has been submitted with our approval as the university supervisors.

Signature  Date: 12/11/2021

Prof. Hillary Kiplangat Bett, PhD

Department of Agricultural Economics and Agribusiness Management

Faculty of Agriculture, Egerton University

Signature  Date: 12/11/2021

Dr. Edith Wambui Gathungu, PhD

Department of Agricultural Economics and Agribusiness Management

Faculty of Agriculture, Egerton University

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DEDICATION

This research is heartily dedicated to my mother Margaret Nyilile, daughters; Scheryl and Stephie and siblings; Meltreen, Schein and Nockler.

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My sincere gratitude goes to Egerton University for giving me a chance to pursue my Master of Science degree in Agribusiness Management. Special thanks goes to RUFORUM through TAGDev program at Egerton University for their support during my research work. I would like to acknowledge the contribution of the entire Agricultural Economics and Agribusiness Management department staff who kept me on toes and helped me achieve my academic goals. Special thanks to my supervisors; Prof. Hillary Bett and Dr. Edith Gathungu for their selflessness, guidance and great contribution to my research work. Indeed, their guidance and dedication made it possible for me to complete my thesis. My gratitude also goes to Prof. Patience Mshenga and Dr. Dickson Okello; who mentored me throughout the master program and ensured that I achieved my objectives. Equally, am indebted to my classmates for the support they provided through knowledge sharing during the entire program. Above all, special thanks to God for His love, favour, strength and guidance during my entire study period.

ABSTRACT

Agrodealers play a crucial role in the agribusiness value chain by linking input manufacturers to farmers. With a high number of agrodealer businesses in Kenya, the industry is highly competitive necessitating the businesses to design strategies to gain a competitive edge. Interaction of various forces in the industry has led to high competition with changes in the environment requiring constant strategic adjustments by the businesses in their bid to remain competitive. As such, businesses are at task to design strategies to enable them counter this pressure, ensure survival and increase their market share. Despite their importance in the agribusiness value chain, minimal efforts have been done to identify the challenges that agrodealer businesses face in their quest to overcome competition. This study focused on determining the influence of Porter's five forces on the competitiveness of agrodealer businesses in Nakuru East Sub-County, Kenya. Census study targeting all the 138 agrodealer businesses was carried out and achieved a 79% response rate. Semi-structured questionnaires were used for the collection of both qualitative and quantitative data which was analyzed through the facilitation of STATA. Factor analysis was used to assess the agrodealers perception of the main competitive forces in the industry while a multivariate probit model was used to analyze the effect of Porter's five forces on the choice of competitive strategies. Market share was used as a metric for measuring competitiveness with the Tobit model being used to estimate the influence of Porter's five forces and strategies on business market share. Results showed that competitive rivalry, buyer switching costs, operational costs, product substitution, and branding were the main forces leading to competition in the industry. Study findings revealed that significant factors that affect agrodealers' preferences for generic strategies are age, experience, group membership, education, ownership structure, engagement in other businesses, business age, business branches, competitive rivalry, product substitution, operational costs, and branding. Results further indicated that market share was greatly influenced by business age, promotions strategies, competitive rivalry, branding, business expenditure, and entrepreneurial skills. The study recommends both the national and county governments create an enabling environment by devising strategies that will help curb counterfeit inputs from accessing the market and selling input subsidies through agrodealer businesses to minimize competition. Furthermore, policies geared towards educating and training agrodealers on maximum utilization of Porter's generic strategies should be enhanced. There is also a need for agrodealer businesses to increase use of cost leadership strategies as they were found to have a positive impact on market share.

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LIST OF ABBREVIATIONS AND ACRONYMS

AGRA	Alliance for a Green Revolution in Africa
BCG	Bayesian Consulting Group
CGN	County Government of Nakuru
ECA	Economic Commission of Africa
GDP	Gross Domestic Product
GOK	Government of Kenya
KASP	Kenya Agrodealers Strengthening Program
KEPHIS	Kenya Plant Health Inspectorate Service
KFA	Kenya Farmers Association
KNBS	Kenya National Bureau of Statistics
NAAIAP	National Accelerated Agricultural Inputs Access Program
OLS	Ordinary Least Square
RBV	Resource-Based View
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
SRA	Strategy for Revitalizing Agriculture

CHAPTER ONE
INTRODUCTION

1.1 Background to the study

Agribusiness is a set of collective business activities ranging from production, processing, marketing to retailing agricultural products. Agribusiness creates employment and generates income for millions of people worldwide contributing to its significant growth. It further contributes to approximately 20% of Africa's Gross Domestic Product (GDP) (World Bank, 2013). Besides, it is a key driver to agricultural transformation geared towards delivering a 10% annual growth rate entrenched in Vision 2030 in Kenya (Government of Kenya [GOK], 2012). Three crucial agribusiness systems must work together to achieve this transformation and have been identified as; input, production, and processing systems.

According to a report from the Economic Commission of Africa (ECA, 2012), the input system has undergone tremendous changes in the world over the past 40 years accounting for an increase in agricultural growth in other regions except for Africa. This is because most African countries are yet to establish and implement a systematic focus on the system. Moreover, the existence of segmented input markets do not maximize profitability to most investors. Agrodealers form part of this input system and play a crucial role in the provision and distribution of farm inputs to farmers. They are recognized as distribution channels in a liberalized economy for improved promotion, generation, and continuous use of modern farm input technologies in the Strategy for Revitalizing Agriculture (SRA) in Kenya (GOK, 2004).

Historically, the farm input sector in Kenya was dominated by the government through the Kenya Farmers Association (KFA) which had a chain of stores countrywide with standard branding and explicit structures (Sheahan *et al.*, 2016; Soi, 2016). Its dominance caused most private investors to exit the market and some to fall under receivership while at the same time, it did not reach out to the rural small-holder farmers. As a result, the government initiated plans in 1990 to reform the africultural input market through abolishment of import quotas, relaxation of import licenses, and decontrolling prices to encourage private investment. However, since its full liberalization in 1996, significant reorganization took place bringing in more investors which redefined input mandates and influenced the role of agrodealers in Kenya (Odame & Muange, 2011a).

Following its liberalization, the number of agrodealer businesses in the country has been increasing making the market competitive. Kenya Plant Health Inspectorate Services (KEPHIS) estimates 3,500 licensed agrodealer businesses while the National Accelerated

Agricultural Inputs Access Program (NAAIAP) estimates a total of 9,000 businesses in Kenya (Korir, 2016). Given the agricultural orientation of Nakuru County, agriculture accounts for 70% of its arable land Kenya National Bureau of Statistics (KNBS, 2015) leading to a rise in demand for farm inputs hence an increase in the number of businesses. A report from the County Government of Nakuru (CGN, 2018), indicated there being at least 192 registered agrodealer businesses in Nakuru East Sub-County with some having more than one branch. The agricultural endowment and increase in demand for farm inputs have presented agrodealer businesses with both opportunities and threats. Annually, the industry has seen businesses enter and exit the agricultural input market (CGN, 2018).

With rapid and extensive changes in the socio-cultural, economic, political, and technological environments (Tucker & Miles, 2004), the agrodealer business environment is increasingly competitive and uncertain. Several changes have taken place including customer preferences, government policies, improved technologies, and increased focus on customer satisfaction. Intensified competitive pressure has further necessitated the businesses to design plans on how best to sustain their survival and overall performance. Dälken (2014) argued that factors leading to competition are various and it is, therefore, wise to only consider factors that affect businesses within a specific industry. These forces are identified by Porter (1980) as; buyer bargaining power, competitive rivalry, the threat of substitutes, supplier bargaining power, and threat of entrants.

According to Eskandari *et al.* (2015), intensive competition from the forces highly indicates the industry structure, nature of competitive relationships among businesses, and the overall profit potential of the industry. Agrodealers intending to grow their businesses need to understand the underlying competitive forces for them to effectively formulate strategies that will lead to their success. Arasa and Gathinji (2014) further noted that, for a business to be sustainable and increase its performance, it has to identify its sources of competition in the dynamic environment then develop strategies that match the organization's capabilities to cope with the environmental changes. Through strategies, businesses can create a competitive advantage by linking their resources, competencies, and skills.

Different competitive strategies have been implemented by various businesses to sustain their competitiveness. Most importantly, business long-term goals can be achieved through effective adoption of the following strategies; cost leadership, differentiation, diversification, promotions, and focus. These strategies have been proven to help businesses compete favorably in the market. According to Sifuna (2014), for a business to remain competitive, it has to at least implement one competitive strategy otherwise it cannot easily

take advantage of available market opportunities leading to its failure. Thus, there is a need to ensure that the strategies the businesses adopt are strategically aligned to their overall goal for them to remain competitive. They also need to consider the available business resources and ensure their maximum utilization for competitive advantage. The strategies will further enable them to respond positively to both internal and external environmental changes.

With modernization and changes in farming technologies becoming more appealing against the shrinking arable land, the industry is a lucrative area to venture into. Tucker & Miles (2004) posit that, with the dynamic changes in the business environment; the growth and development, survival, and sustainability of businesses will depend on how well they respond to changes. Therefore, agrodealers need a comprehensive analysis to understand the main competitive forces which will further provide a suitable foundation for strategic choices. However, there have been minimal substantial efforts that have been made to look into the main forces bringing about competition and to what extent they affect strategic choices and market share of agrodealer businesses yet they are an important segment in the agribusiness input sector.

1.2 Statement of the problem

Given the agricultural orientation of Nakuru County, there has been increased demand for farm inputs providing a great opportunity for agrodealer businesses to serve farmers and achieve greater returns. However, interaction of various forces in the market has resulted in a competitive environment for them with changes in the business environment requiring constant strategic adjustments and alignment of the same to ensure their sustainability. This has affected majority of the business leading to business failures with others exiting the market. Hence, in an attempt to remain competitive, the businesses are at task to come up with strategies that will ensure they achieve greater performance and survival. Basic foundational knowledge of Porter's five forces in the industry is key to business strategic formulations. However, there is limited evidence to show whether or not these forces contribute to strategic choices and affect agrodealer business market share which formed the basis of this study in a modest attempt to fill this gap.

1.3 Objectives

1.3.1 General objective

To contribute towards improved agrodealer business competitiveness through identification of the main underlying competitive forces in the industry.

1.3.2 Specific objectives

i. To assess agrodealers' perception of the main competitive forces in the industry in Nakuru East Sub-County.

ii. To determine the influence of Porter's five forces on the choice of competitive strategies among agrodealer businesses in Nakuru East Sub-County.

iii. To determine the effect of Porter's five forces and strategies on the market share of agrodealer businesses in Nakuru East Sub-County.

1.4 Research questions

i. What do agrodealers perceive as their main competitive forces in the industry in Nakuru East Sub-County?

ii. How does Porter's five forces influence on the choice of competitive strategies among agrodealer businesses in Nakuru East Sub-County?

iii. How does Porter's five forces and competitive strategies affect the market share of agrodealer businesses in Nakuru East Sub-County?

1.5 Justification of the study

The agribusiness sector plays an important role in the transformation of the agricultural sector in Kenya. This largely contributes to the economic growth of the country's Gross Domestic Product (GDP). With three crucial agribusiness systems in the country working together to achieve this, the input sector has continuously performed poorly. Therefore, the focus on the agricultural input sector is an important factor due to its importance in improving agrodealers' livelihoods, income, and creation of employment. Moreover, various interventions have come up to ensure that the agricultural input sector performs well through establishing strategies such as reducing the prevalence of counterfeit input products, disoriented relationships along the chain, and improving seed industry governance and regulations to enhance its sustainability. Also, among the interventions are policy discussions surrounding how well to improve the agrodealer sector through the provision of government support services in Kenya.

The agrodealer industry continues to struggle with peak and off-peak seasonal imbalances and competition. This has heightened competition in the market which has seen some businesses struggle to survive, some to fail while others exit the market. As a result, by exploring the influence of Porter's five forces on the competitiveness of agrodealer businesses in Nakuru East Sub-County, Kenya, the results of the study are expected to better

inform research, development, and policy decisions and further aid to prioritize key interventions in the agrodealer business sector.

The results detailed the role of Porter's five forces on the competitiveness of agrodealer businesses. As such, it outlined the main competitive forces influencing the performance of the businesses and their strategic choices. Further, it pinpointed strategic management practices concerning generic strategies that agrodealers have not put into consideration and provided measures of improving on them. The study findings will be useful to the input sector players, more especially agrodealers in understanding their market and devising strategies to remain resilient and competitive in the wake of dynamic and competitive business environments.

Finally, the results of the study will provide valuable information to policymakers since the findings will provide information on the influence of competitive forces on the competitiveness of agrodealer businesses and make recommendations on the possible measures to be pursued and the implications of those measures. The findings will further contribute to the body of knowledge on the competitiveness of agrodealer businesses which will make them have informed decisions on the usage of competitive strategies to improve their performance and sustainability.

1.6 Scope and limitation of the study

This study was confined to Nakuru East Sub-County within Nakuru County, Kenya with agrodealer businesses as the target population. It mainly focused on the influence of Porter's five forces on the competitiveness of agrodealer businesses. Specifically, the study looked into the agrodealers perception of their main competitive forces, the influence of Porter's five forces on the choice of competitive strategies used by agrodealer businesses, and the effect of Porter's five forces on the market share of agrodealer businesses in Nakuru East Sub-County. The data collected was for the 2018-2019 financial year. The majority of the agrodealer businesses were reluctant to give out their financial information which was crucial in calculating their profitability ratios. However, this limitation was addressed through probing of the respondents to give out information related to their sales on an average monthly basis. Offpeak and peak seasons were also used as a way of eliciting sales information from them where they were required to provide an overall estimate of their sales on peak and off-peak seasons. The study opted to use market share as a measure of competitiveness instead of profitability.

1.7 Operational definition of terms

Agrodealers - Stockists who supply and sell a wide variety of farm inputs including crop seeds, fertilizers, animal feeds, veterinary products and crop and animal protection chemicals. This study operationalizes the term agrodealer to refer to agrovets.

Buyers - These come in two variations; the first buyers are farmers who purchase farm inputs for end consumption while the second buyers are agrodealers who purchase farm inputs from other agrodealers for retail purposes.

Competitive strategies - These are long-term goals and actions designed to ensure survival in the market by establishing a sustainable competitive position and profitability level in the industry.

Competitiveness - This is the ability of agrodealer businesses to sell their products in the market at a price that will ensure they maximize their market share while increasing their market share, sales growth and customer retention.

Entrants - These are new entrants into the market or already existing players who want to diversify into other products within the same industry.

Market share - This is the percentage of the market controlled by a specific business. Market share is achieved by comparing a business's sales over the total industry sales in a given market over a given period of time.

Porter's five forces - These are competitive forces that determine survival, strategic choices and business profitability. They include competitive rivalry, bargaining power of buyers, the threat of entrants, supplier bargaining power and threat of substitutes.

S**ubstitutes** - These are products in the market which offer the same value. Agrodealers stock different products from different manufacturers while in other cases an agrodealer maybe a stockist of only one manufacturer.

Suppliers - Suppliers in this study come in two variations; manufacturers of the agricultural inputs in the market and agrodealers who purchase and sell the inputs to other agrodealers.

CHAPTER TWO
LITERATURE REVIEW

2.1 The agrodealer industry in Kenya

Agrodealers are small-scale independent input dealers who play a significant role in the distribution of farm inputs (Odame & Muange, 2011a). They sell and supply a wide variety of agricultural inputs including seeds, fertilizers, animal feeds, crop and animal protection chemicals, farm equipment and machinery, and veterinary products. Despite this, their contribution to the agribusiness value chain sector has been largely ignored.

Africa remains the only region in the developing world where the agricultural input market is yet to develop despite its rich agricultural resource endowment (Economic Commission of Africa [ECA], 2012). The report further states that most African countries are yet to establish a systematic focus on the development of the agricultural input business. According to Bayesian Consulting Group (BCG, 2016), the Kenyan input market is dominated by both formal and informal delivery systems each accounting for 22% and 78% distribution in the country respectively. The informal input system is characterized by the use of uncertified seeds, traditional farming technologies, and low rates of fertilizer application translating to poor yields. On the other hand, a formal input system supplies quality seeds, improved crop and animal chemicals, training on the use of farm inputs, modern farming technologies, and fertilizers distributed by agrodealers leading to high production yields.

Efforts to tap agrodealers' potential in the country have been spearheaded by Alliance for a Green Revolution in Africa (AGRA) and Kenya Agrodealers Strengthening Program (KASP). These efforts have been proven to provide training in business management skills and improved farming methods. The BCG (2016) report further shows that partnerships have been formed to address challenges faced by agrodealers. These partnerships focus on increasing and expanding the supply and information on certified seeds to increase access to and correct use of quality seeds by farmers.

Currently, efforts by GOK to take the country back to food self-sufficiency have been spearheaded through initiating strategies for a green revolution in the food-producing sectors which are outlined in SRA. Through this initiative, agrodealers are perceived to hold a central role in the distribution of farm inputs in a liberalized economy thus centrally placing them in current policy discussions concerning the future of Kenya's input sector (GOK, 2004). Agrodealers have continuously offered a unique business model combining business activities with those in other agribusiness systems. These models, aim to achieve dual income strategies for both agrodealers and small-scale farmers through the sale of farm inputs and

improved agricultural productivity respectively. Additionally, it offers a means of filling untapped gaps by the weak-functioning public extension services. The businesses, therefore, have a great potential of becoming viable businesses for entrepreneurs and sustainable business models for agricultural development in Kenya (Okello *et al.*, 2012).

Odame and Muange (2011a) noted that most agrodealer businesses are fairly young with 60% having been in operation for less than 5 years. The industry is largely dominated by men (70%), with most owners being fairly educated, with an average of 58% having a college/university degree. Also, most owners do not take charge of their businesses on a full-time basis and had employed staff to manage them raising a crucial question as to who should be targeted by agrodealer training organizations. They further noted that most agrodealers stocked several commodities other than the required agricultural inputs including human drugs, general merchandise, and building material to cater for their income during off-peak seasons.

A study by Odame and Muange (2011b), on agrodealers and the political economy of agricultural biotechnology policy in Kenya, found out that the current agrodealer business model is faced with several challenges which have continuously raised concerns over its ability to deliver modern technologies. Agrodealers lack knowledge and necessary information on current seed varieties, thus, do not offer much help to farmers. Moreover, most agrodealers operate in small capital bases limiting their meaningful procurement of stock for technological improvements. With the poor regulatory frameworks, loopholes have been created leading to the entry of several fake and poor quality seeds and unlicensed agrodealers in the market. These challenges negatively affect their business performance forcing some to edge out of business or grow at a stagnant rate.

2.2 Porter's five forces

Porter's five force model (Porter, 1985), is based on a microeconomic environment and has continuously shaped strategic management practices of various businesses in the corporate world. He further found out that, the external environment significantly influences the strategic management of businesses through these forces: the threat of new entrants, competitive rivalry, bargaining power of buyers, the threat of substitutes, and bargaining power of suppliers. Porter (1980) states that an industry's competitive state is brought about by the collective strength of the five forces which interact and determine its ultimate attractiveness and profit potential. Also, the model focused on the challenges affecting the

existence of businesses after their notable growth and the strategies adopted to address the challenges (Dulčić *et al.*, 2012).

Dälken (2014) in his effort to establish whether or not Porter's five forces are still applicable, found out that the model is a strong management tool for analyzing the current industry's profitability and attractiveness by use of the outside-in perspective. He pointed out that the model had received several criticisms due to the significance of three new forces; digitalization, globalization, and deregulation. However, the study proved that the three new forces only changed the structure of industries but did not restructure the model, thus the five-force model cannot be considered outdated. The three forces only influenced the five forces since businesses operate in a network of suppliers, substitutes, new entrants, buyers, and competitors making Porter's five force model valid.

Chege and Bula (2015) conducted a study on the effect of market forces on the performance of dairy industries in Kenya and found out that various market forces affect the performance of the industry but it is vital that a business understands the main determinants of competition in its industry to adopt appropriate strategies to counter them. The type of market strategies adopted by companies affected their performance in the long run. Companies need to adopt a strategy that makes a turnaround from the former monopoly embeddedness to a competitive approach.

2.2.1 Indicators of Porter's five forces in an industry

Porter's five forces have a great impact on an industry's competitiveness. The knowledge of these forces highlights its strengths, opportunities, threats, and weaknesses determines it's positioning and indicates areas of strategic adjustments that eventually yield higher returns (Porter, 1980). Interaction of the forces further determines the competitive intensity in an industry and its profitability, however, the strongest force among them becomes vital during strategic formulation.

Buyer bargaining power is the capability to push down prices of a given product usually below a supplier's normal selling price. The main indicators of the buyer power are the availability of substitutes, well-informed buyers, the concentration of buyers in the market, buyer switching costs, price sensitivity of buyers and threat of backward integration (Porter, 2008). Chege and Bula (2015) highlighted that customers are price sensitive and buyer bargaining power is generally high if they have several products to buy and generally low if they act independently. From the study, the main potential indicators of buyer power include the number of buyers in the market, the degree of dependency on available

distribution channels, product differential advantage, bargaining leverage, price-sensitive buyers, buyer switching costs, information availability, availability of substitutes and customer value analysis.

Supplier bargaining power is the risk of suppliers threatening companies with rising prices for products (Dälken, 2014). According to Porter (1980), if suppliers are powerful, they can easily squeeze profitability out of an industry. There are different indicators which determine the relative strength of suppliers bargaining power; industry supplier concentration, supplier switching costs, threat of forward integration and the industry is not the most important customer of the supplier. Powerful suppliers have the ability to create and add value for themselves by charging high prices, limiting the quality of services and shifting costs to industry participants (Porter, 2008).

The threat of new entrants poses competition in the sense that existing firms face a threat from the new businesses that enter into the same market they are operating in. In the five-force model, it examines how difficult or easy it is for new firms to enter into or exit the industry. Indicators of this force include entry barriers, switching costs, access to raw materials, technical standards, economies of scale, loyal customers, expected retaliation from existing firms and capital investment (Porter, 1980). New entrants into the market can either be new companies or existing companies that want to diversify their product base (Odame-Koranteng, 2014). Businesses need to create barriers to prevent new players from venturing into the market. A profitable industry will attract new entrants into the market that would only want to benefit from the profits and once the profits are gone, they exit the market.

The threat of substitutes is the availability of an alternative product that can serve the same purpose as the firm's products. Kulmia (2014) defines a substitute product as that which is supplied by different business in the market and gives similar advantages to buyers as the products offered in that sector. Several indicators determine the level of threat of substitutes in an industry; buyers switching costs, the relative price performance of the substitutes, quality of the substitute products and product differentiation. Kulmia further stated that substitute products may limit an industry's possible profits by setting an upper price limit that businesses can set to realize profits. Dobbs (2014), ascertains that, as relative price performance brought forth by alternative products becomes more appealing, it becomes hard for existing firms to realize profits.

Rivalry among competitors is a major determinant of competitiveness in an industry although not all industries report the same case. Existing rivalry in an industry is recognized through tactics such as price competition, promotional battles like advertising, product

differentiation and innovation and increased customer service (Porter, 1980). According to Dälken (2014), a high level of rivalry between existing competitors has a great influence on the profitability and attractiveness of an industry. This force is potentially indicated by various factors such as exit barrier, the number of firms in the industry, switching costs between competitors, product differentiation, industry growth rate and fixed costs (Hubbard & Beamish, 2011).

2.3 Competitive strategies

Different strategies have been implemented by businesses to ensure their competitive enhancement in the industry. Long-term strategies are expected to be derived from an attempt by businesses' to seek competitive advantage on one or more competitive strategies (Mwangi & Ombui, 2013). Businesses need to apply at least one strategy; differentiation, cost leadership, diversification, promotions, and focus in their bid to gain a competitive advantage.

Cost leadership strategy allows businesses to be low-cost producers enabling them to make more returns than their competitors. This is brought about by economies of scale, low production costs, technology, and preferential access to raw materials (Shao, 2015). If a business achieves and sustains cost leadership as a strategy, it performs above average in the industry in as long as it can be able to direct its product prices at or near the market average price (Porter, 1985). This strategy is efficient especially during price wars as businesses can be able to maintain their overall profitability and improve on their market share amidst losses suffered by their competitors. By directing their prices at or near the market price, agrodealers are assured of acquiring customers thereby improving their profitability and market share. Achieving a cost advantage, therefore, necessitates the business to continuously improve its operational processes, increase production efficiency and gain access to lower production costs. In their bid to achieve this, agrodealers try to keep their prices low. It is worth mentioning that most studies have found a positive relationship between low-cost leadership and business performance.

Differentiation strategy aims at creating a unique product for the market. The products should be unique in such a way that a business's rivals cannot be able to imitate them. This strategy is effectively achieved when the business strives to provide a unique value to its buyers through the quality of products, product features, after-sales support, branding, and customer service (Arasa & Gathinji, 2014). It is possible for firms using differentiation to charge higher product prices based on features, quality, delivery systems, and distribution

channels. This means that customers need to perceive the product as being unique in the industry, create loyalty and be willing to purchase the product at a higher price which is a rare case with most buyers. However, if achieved, differentiation is a viable strategy for generating above-average returns since it creates a defendable position in the industry for countering the competitive forces (Porter, 2008).

A successful differentiation strategy ensures low product costs, improved services, more product features, and flexibility. Additionally, high differentiation features enable a business to create a defendable position in the industry (Porter, 2008). With the industry being highly homogenous in nature, agrodealer businesses have a high task of ensuring their businesses stand out from competitors. Logically, if customers are satisfied with a brand, they are able to remain loyal to a business in the event that the business rises its product prices. However, this may not be the case for the agrodealer industry as most farmers would prefer sourcing a quality product from a lower price bidder. Nevertheless, agrodealers have mastered the art of differentiating themselves through repackaging products such as seeds and fertilizers according to the needs of the customers. The strategy reduces the bargaining power of buyers as they lack a comparable alternative thereby making them less price sensitive.

Focus strategy aims at concentrating on a specific buyer group, product line segment, specific products, and market (Porter, 2008). It focuses on a narrow competitive scope of choice within an industry and combines both differentiation and cost-leadership strategies. In focused differentiation, a business strives to outdo rivals by offering its niche customers product attributes that will meet their tastes and preferences. Focused low-cost leadership aims at outcompeting business competitors by offering low-cost prices for its products compared to its competitors. According to Mumbua (2013), the strategy is based on the assumption that the needs of a particular segment of customer/s can be best met by entirely focusing on them. He further stated that businesses that adopted this strategy gained a high degree of customer loyalty and higher product differentiation which greatly discouraged competitors from competing directly with them.

Kenya at large has different areas in which different agricultural products do well hence it is common for agrodealers to focus on stocking inputs that are considered to be in high demand in that particular region. Additionally, farmers have different tastes and preferences hence most of these businesses take into consideration this important approach by stocking brands that farmers familiarize themselves with. Studies done in the industry have shown that as much as agrodealers may want to deal in a variety of input products, they are compelled to only stock products that are in high demand in their region of operation and also

according to the prevailing season. Odame and Muange (2011a), found out that, crop seed focus by agrodealer businesses was also evident from the study with most businesses stocking seeds whose crop was likely to grow in the region in which they operate.

A diversification strategy is the ability of a business to enter into a new market that is different from its existing market and product line. Unexpected changes in the business environment have resulted in most businesses trying to look for various ways of coping with the pressure and enhancing their performance. Diversification has taken a new shape in businesses with the strategy being a critical element in the survival and growth of companies (Chirani & Effatdoost, 2013). The strategy aims at increasing sales, expanding the market, increasing profits, and reducing risks in businesses. According to Wan *et al.* (2011), a business that enhances diversification in its daily operations has a high chance of improving its profitability levels in the long run as compared to businesses that do not.

Agrodealer businesses engage in various businesses other than their core business. Agrodealers try as much to develop new products that appeal to their customers such as offering product training and extension services to their customers. However, some of them decide on vertical diversification whereby they opt to sell farming equipment to their customers while yet others engage in businesses that are totally unrelated to the agrodealer industry such as selling of human drugs, cereals, financial agencies, and general shops. Nonetheless, all these approaches are a major motive for encouraging high sales and risk coping measures, especially during low seasons. More than half of the stock value held by agrodealer businesses constituted of non-agricultural inputs which they claimed was a risk mitigation measure to ensure that they were able to get some income during off-peak planting seasons when demand for agricultural input was generally low (Odame & Muange, 2011a).

The need for a business to effectively communicate and ensure that customers get the message appropriately is an attribute of a promotions strategy. The strategy enables businesses to facilitate the communication of their services and products to customers. Promotions strategy is part of the larger marketing mix tools that ensures a business competes favorably in its environment. The strategies come in various variations such as direct and personal selling, advertising, trade fairs, and sales promotions. According to Adefulu (2015), three primary tools; consumer, advertising, and trade promotions are commonly used by businesses to compete for market share in an industry. Promotion strategies work well in new markets, customer retention, and acquisition as well as the introduction of new products. These strategies enable businesses to reach out to their target customers, launch new products which in the long run helps them remain competitive and increase their sales. Most

importantly, customers are always sensitive to information concerning their products and they need to be constantly reminded about their value hence these strategies help increase product awareness and remind customers of its products' existence.

Kenyan agrodealers engage in the sale of various commodities which they claim is a risk coping strategy for their survival (Odame & Muange, 2011a). From this study, more than half of the stock value held by agrodealer businesses constituted of non-agricultural inputs which they claimed was a risk mitigation measure to ensure that they were able to get some income during off-peak planting seasons when demand for agricultural input was generally low. Crop seed focus by agrodealer businesses was also evident from the study with most businesses stocking seeds whose crop was likely to grow in the region in which they operate.

2.4 The concept of competitiveness

The concept of competitiveness has evolved over the past years with changes in economic development and the formulation of different development theories. Competitiveness is the ability of a company to provide products that are more efficient and effective than those of its competitors within an industry. According to Keter (2012), classical economists perceived competitiveness as a condition that arose from market mechanisms which forced businesses to compare their production and distribution of goods and services at best possible prices and quality with that of their competitors. He further states that these mechanisms foster how well businesses operate by promoting survival, increase in profitability and elimination of less efficient firms in an industry.

Different levels of competitiveness exist in the market; firm-level competitiveness is the ability of a business to produce and sell products that are of superior quality and lower costs than those of its rivals. Additionally, the competitiveness of the firm can be measured using its market share and profitability. Deniz *et al.* (2013) argue that firms competing in an open market are subjected to pressure to adjust their product prices to meet the needs and expectations of their customers as well as enhance their market share. Industry competitiveness is based on the criterion of maintaining and improving an industry's position in both local and global market. An industry is seen to be competitive if it maintains a sustainable and growing market share and profits for all the firms in the industry (Deniz *et al.*, 2013). Its indicators range from its profitability, local or global market share, sales growth, industry attractiveness, and firm export quotient.

2.4.1 Market share as a measure of competitiveness

Kiel *et al.* (2014) asserts that the concept of competitiveness has globally developed and thus there are rich foundational competitiveness measurements in relation to various sectors. Some notable measurements identified include total factor productivity, market share, product cost, profitability, net income, sales growth and customer and employee growth (Malackanicova, 2016; Sachitra, 2017; Voulgaris *et al.,* 2013). However, profitability and productivity have had drawbacks when used as measurements due to difficulty in comparison among firms within an industry, lack of reliability and availability of data and failure of businesses to measure their quality level and innovation (Voulgaris *et al.,* 2013) as well as untruthfulness in figures. Following this, there has been an increased growth in using market share as an index for competitiveness.

Market share has been used by several studies as an index in measuring the competitive position of a business in a specific industry (Chikan, 2008). Deniz *et al.* (2013) argue that firms competing in an open market are subjected to pressure to adjust their product prices to meet the needs and expectations of their customers as well as enhance their market share. Competitiveness can further be viewed as a zero-sum game (Porter *et al.,* 2007), where businesses engage in direct competition hence for a business to sell its products and expand its market share, the other business must contract its share. According to Nazarpoori *et al.* (2014), market share is the percentage of overall total volume of a specific market where a business sells its products. The possible reason why most businesses use market share as a metric of competitiveness is to establish their relative position within the industry.

In view of this, the growth of a firm's market share is relative to its ability to attain a competitive advantage. Sachitra (2017) argues that, as much as the market share is used as a competitiveness indicator in various industries, it can also be applied in the agribusiness sector in line with other indicators such as profitability and revealed comparative advantage. Studies by Ketels (2016) and Kilonzo (2016) found out that industry attractiveness, profitability and market share are greatly influenced by the environment (technological, legal, economical and socio-cultural) in which the businesses operate.

Following this, agrodealers have been more concerned with what figures they achieve from the market place. These figures measured in terms of market share, has been a key interest for the businesses to measure how well they perform relative to their rivals in the industry (Cooper & Nakanishi, 1989). The gains and losses derived from market shares are key as they powerfully determine the kind of moves the businesses are likely to adopt to retain their competitive advantage. Nonetheless, in as much as the businesses are at task to

ensure they remain competitive, the crucial challenge they face is not only how competitive they are but as to what drives their competitiveness. With entrepreneurship becoming more enticing, agrodealers need to ensure their businesses achieve success in the ever dynamic competitive environment. Some of the notable determinants of market share include; investment factors, work experience, entrepreneurial experience and skills, education levels and business culture (Saleem, 2017). Additionally, factors such as investment rates, research and development expenditures, productivity costs and sales (Ketels, 2016) are some of the immediate drivers of competitiveness of businesses' prosperity.

2.5 Empirical review

In determining the competitive strategies applied by small and medium-sized enterprises, Mumbua (2013) found out that cost-leadership and differentiation strategies were widely used to create efficiency and overcome operational challenges. The study further established that lack of access to financial support, credit, and capital influenced the choice of the strategy adopted due to the financial capabilities and economic factors of the businesses. Waema (2013) conducted a study on the effects of competitive strategies on the performance of dairy farms in Kenya. The study explored the relationship that existed between cost leadership, focus and differentiation strategies and performance. The study findings indicated that all three strategies had a significant and positive relationship to dairy firms' performance. The study further recommended dairy firms to adopt focus strategies to cost leadership and differentiation strategies since it greatly affects their performance.

Sifuna (2014) investigated the effect of competitive strategies on the performance of public universities in Kenya, found out that maximum utilization of universities' resources greatly determined their overall performance. Product differentiation, promotional differentiation, operational cost reduction, personnel differentiation, economies of scale and market focus strategies affected public university performance in Kenya. The study further concluded that cost leadership affected performance through cost control, operational efficiency, and production in large quantities, reduction of operational time and formation of linkages with both suppliers and supplementary institutions. The study recommended public universities in Kenya to invest more in cost leadership strategy for sustainability achievement.

Porter's five forces have been widely used as one of the many factors that influence the choice of competitive strategies among small-scale businesses. Businesses interact daily with their customers, suppliers and rivals hence the forces are seen as great determinants of

strategic choices. Indiatsy *et al.* (2014) investigated the application of Porter's five forces model on organization performance of Cooperative Bank Kenya Limited and found out that a strong relationship existed between the performance of Cooperative Bank and Porter's five force model. Further, the study revealed that buyer bargaining power is important especially when it comes to understanding the attributes, tastes, and preference of customers; supplier bargaining power is critical since an increase in their costs leads to an increase in the banks' operational costs; threat of substitutes largely interfered with the bank's performance while competitive rivalry increased its effectiveness and operational efficiency. Threat of new entrants did not influence the bank's performance due to their already established brand in the industry.

While doing a competitive analysis, most businesses place Porter's forces as the basis for their strategic implementation. As such, it is important that a business understands how the forces lead to competition and how they can effectively design strategies to overcome them. Shao (2015) investigated the effect of competitive strategies and Porter's five forces model by the insurance companies in Kenya. Findings from the study indicated that companies greatly applied Porter's five forces model when trying to implement competitive strategies. Insurance companies using the threat of substitutes were well knowledgeable of the kind of threat the substitutes pose and strategically aligned themselves to counter it. The threat of entry was applied to discourage entrants into the industry while supplier force greatly enabled them to provide buyers with relatively high priced services. Moreover, there is a great need for companies to do product differentiation to be unique.

Agrodealer businesses play a vital role in the development of the agricultural sector in Kenya. Through acting as a link between input manufactures and suppliers, the businesses create an efficient value chain network in the agribusiness system in the country. Their competitiveness has been compromised due to intense competition in their industry which has proven to disrupt their sales performance. Following this, their market share performance has been on the cutting edge with entry of new businesses into the industry driving down their market share margins. Several factors have contributed to market share performance of businesses including socio-economic factors, political and technological factors (Tucker & Miles, 2004).

With entrepreneurship becoming more enticing, entrepreneurs need to ensure their businesses achieve success in the ever dynamic business environment. Some of the notable determinants of market share include; investment factors, wok experience, entrepreneurial experience, education levels and business culture (Saleem, 2017). Buyer bargaining power,

strongly affected the competitiveness of organizations and had a strong influence on purchasing decisions hence affected business profitability (Kung'u, 2017). Additionally, the intensity of rivalry affected competitive advantage, differentiation of products created value for consumers while the entrance of new investors in the industry affected pricing strategies.

2.6 Theoretical framework

2.6.1 Resource-based view theory

Resource-based view (RBV) analyses and interprets the resources of a business for a better understanding of how businesses achieve an overall sustainable competitive advantage by taking an inside-out view. It was developed by Bierger Wernerfelt in 1984 and Barney in 1986 making it a dominant approach to the analysis of competitive advantage. Wernerfelt argued that RBV had an intra-organizational focus and that business performance was as a result of the firm-specific resources (Wernerfelt, 1984). According to Barney (1991), resources include all abilities, organizational processes, assets, firm attributes, knowledge, skills and information.

The theory emphasizes that the resources a firm holds are the basic determinants of its performance and overall competitive advantage. It is based on assumptions that firms are heterogeneous with respect to resources they control in the industry and heterogeneity of resources may persist over time since resources used during strategic implementation in agrodealer businesses may not be perfectly mobile across firms. Agrodealer business resources need to be heterogeneous in nature and immobile for them to transform from short-term to sustained competitive advantage. However, these two assumptions are necessary conditions for RBV but not sufficient enough for a competitive advantage. For agrodealer businesses to be sustainable, Barney (1991), the resources should be non-substitutable, valuable, imperfectly imitable and rare. These resources must provide value by exploiting market opportunities, be rare to find/ unique, be non-feasible to copy or imitate and be non-substitutable or replaced by another alternative resource (Madhani, 2010).

Maikah (2015) stated that the theory maintains that businesses are well endowed with adequate resources in the form of assets, competencies, structure, and substitutes that ensure it gains a competitive advantage. The theory outlines three types of resources; tangible, intangible and organizational capabilities. Financial, technological, business assets and physical are tangible resources, intangible resources are difficult to identify include; strategies adopted by a business over time, innovation, research and human resources while organizational capabilities are business skills and competencies. Agrodealer businesses

operate in an environment controlled by the resources they have including human, financial, physical and technological. However, for them to stand out and gain a competitive advantage, they need to ensure that these resources are valuable, rare to find, hard to imitate and non-substitutable. The theory is relevant to this study as it helps in addressing questions as to why businesses differ within an industry and how they efficiently achieve and sustain competitive advantage by use of their resources.

2.7 Conceptual framework

Competition is brought about by the interaction of Porter's five forces: bargaining power of buyers, the threat of entrants, bargaining power of suppliers, threat of substitutes and competitive rivalry (Porter, 1980). Each of these forces has different indicators which determine the level of competition in the industry and contribute towards its strategic choice and market share. Knowledge of the main competitive forces is important as they influence the overall business competitiveness. Through this, businesses can design their strategies for them to secure survival and competitive advantage.

Competitive strategic choices a business adopts can either lead to its success or failure and they include cost leadership, differentiation, diversification, promotions and focus. These strategies further influence business market share. Business characteristics; business age, location, employee size, and branches have a direct influence on market share. All these factors put together will determine how competitive agrodealer businesses are in the industry. Figure 1 shows the interaction of variables under study.

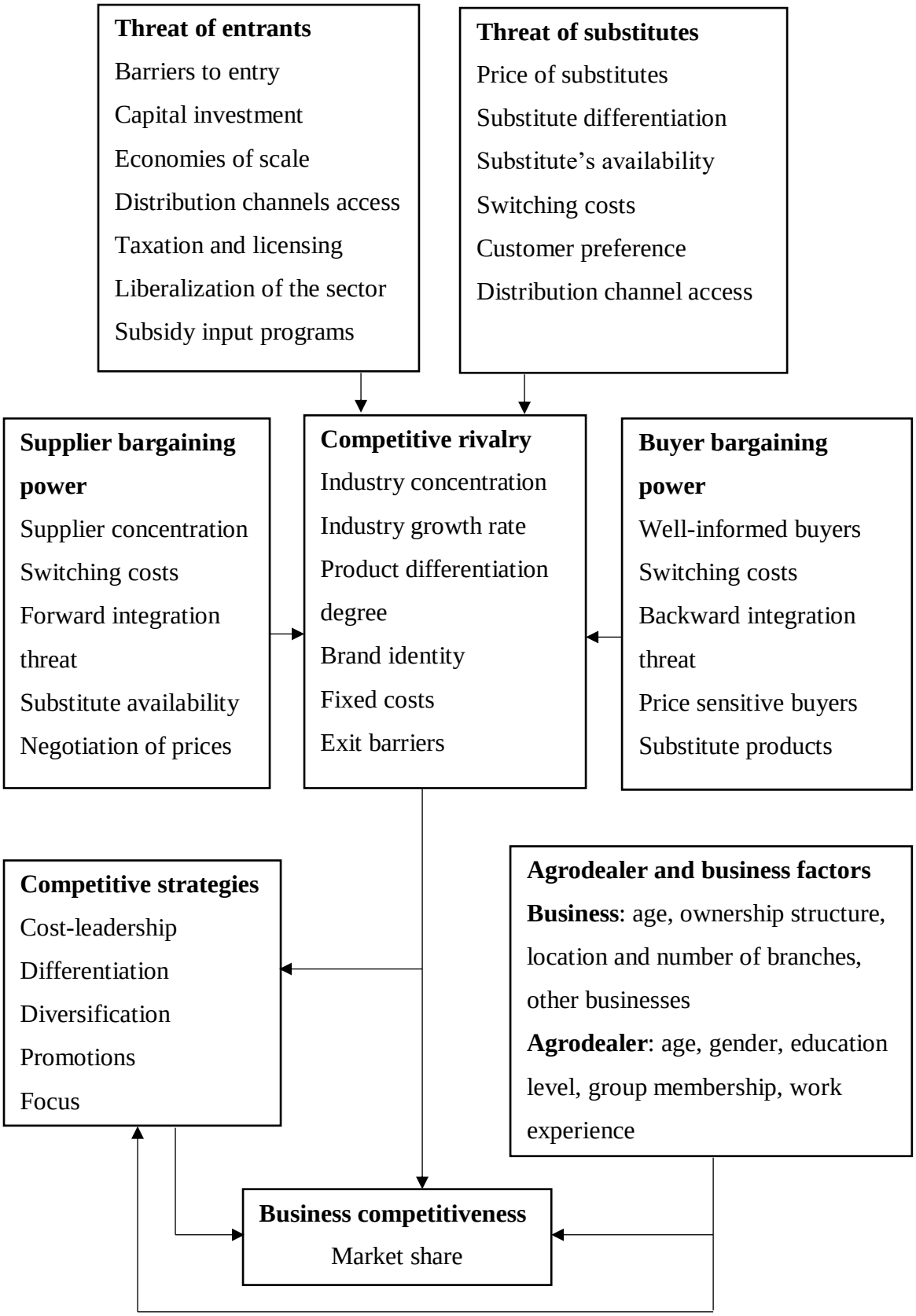

Figure 2.1: Conceptual framework

Source: Porter (1980)

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Study area

The study was conducted in Nakuru East Sub-County located in Nakuru County, Kenya. The Sub-County is divided into 5 wards namely; Kivumbini, Flamingo, Nakuru East, Menengai and Biashara and covers a total surface area of 74.3 KM^2, hence the smallest sub-county in area coverage in Nakuru County (KNBS, 2013). The sub-county lies between longitude 36° 4' and 36° 8′ East and latitude 0° 18'0" and 0° 24'30" South of the equator. The population of Nakuru East Sub-County stands at 157,167 persons with 2017 population projections being 200,599 persons (KNBS, 2013). The main economic activities in the sub-county include agriculture, tourism, and manufacturing. The sub-county is largely agricultural with large-scale and small-scale farming of Irish potatoes, maize, beans, green peas, varieties of fruits, spices, dairy and fish farming. It receives an annual rainfall of averagely 895 mm/year. The long rains fall in between May and August while short rains are received in October and December. Precipitation in the sub-county is lowest in January with an average of 23mm and highest in April with an average of 133mm. Nakuru East Sub-County experiences an average temperature of 17.5°C with March being the hottest month of the year at a temperature of 18.8°C and July being the coldest month at a temperature of 16.8°C.

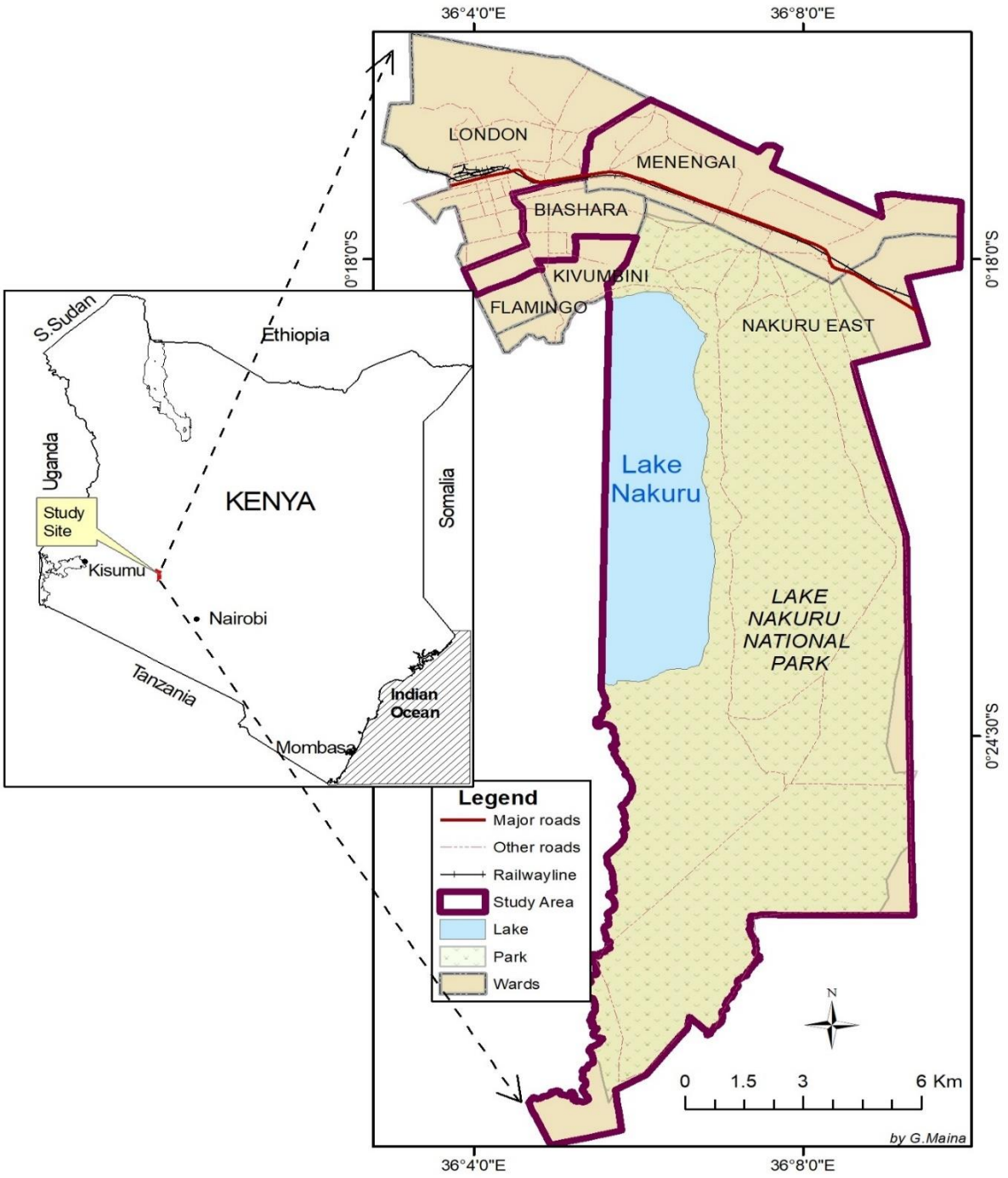

Figure 3.1: Map of study area, Nakuru East Sub-County

Source: Geography Department, Egerton University (2019)

3.2 Research design

The study used both qualitative and quantitative research designs through a cross-sectional survey. The research design used was guided by the research questions and objectives of the study.

3.3 Data and sampling approach

3.3.1 Target population for the study

The target population for the study were registered agrodealer businesses located within Nakuru East, Biashara and Menengai wards in Nakuru East Sub-County.

3.3.2 Sampling procedure

Multistage sampling procedures were used to get the study sample units who were agrodealer businesses. Purposive selection of Nakuru East Sub-County was the first stage since its main economic activities are business and agriculture. Moreover, due to its centrality in the County, it has the highest number of agrodealer businesses in the County. The second stage was a purposive selection of the three wards in the Sub-County; Menengai, Biashara and Nakuru East. The choice of the wards was justified since the majority of the farming communities are found towards the east side of the Sub-County explaining the high number of agrodealer businesses. A census study targeting all the 138 agrodealer businesses in the three sampling wards; Nakuru East, Menengai and Biashara wards located within Nakuru East Sub-County was carried out. The study achieved a 79% response rate with 110 questionnaires having been returned answered.

Table 3.1: Total number of agrodealer businesses per sampling ward

Nakuru East Sub-County sampling wards	**Agrodealer businesses per ward**	**Sampled businesses per ward**
Biashara	63	51
Nakuru east	51	43
Menengai	24	16
Total	**138**	**110**

Source: Business licensing office, County Government of Nakuru, 2018

3.4 Data collection procedures and data sources

The study mainly focused on primary data which was collected using semi-structured questionnaires to allow for both qualitative and quantitative data. The questionnaire included socio-economic factors, Porter's five forces, competitive strategies, sales and performance content. Secondary information was further used for boosting the discussion of results and was obtained from government publications, research institutions and journals.

3.5 Pilot study

A pilot study was conducted to pretest the data collection instruments for their validity and reliability before the actual data collection took place. The pilot study was conducted in Kivumbini and Flamingo wards where 12 agrodealer businesses; 6 from each ward, were selected for the study. Mugenda and Mugenda (2013) recommends that for a pilot study to be effective, 10% of the sample size should be used in the pilot study. In total, the researcher administered 12 questionnaires which was approximately 10% of the target population. Selection of the two wards was justified since they are part of the larger Nakuru East Sub-County and they were left out after sampling Menengai, Biashara and Nakuru East wards. The results obtained from the pilot study were used to adjust and reframe the questionnaire for the actual data collection process.

3.6 Data analysis

STATA version 15.0 data management tool was used to facilitate data analysis.

3.7 Analytical framework

Objective One: To examine agrodealers perception of the main competitive forces in the industry in Nakuru East Sub-County.

In analyzing objective one, factor analysis was used. The model aims at describing the covariance relationships that exist among variables in terms of a few underlying, but unobservable, random quantities known as factors which are interpreted through factor loadings (Johnson & Wichern, 2007; Ripley, 2002). The correlations between a set of observed variables are explained in smaller numbers of unobservable constructs known as common factors.

Multiple predictor variables made up most of the dataset and hence there was a need to dimensionally reduce them and only include important variables in the analysis. This model was used to identify dimensions in which Porter's five forces (bargaining power of suppliers, competitive rivalry, the threat of entrants, the bargaining power of buyers and threat of substitutes) were distributed. The perception of the main competitive forces were in the form of statements measured using a 5-point Likert scale. The 5-point Likert scale was justified for analysing this objective since it provided an easy response selection for the respondents. Moreover, the 5-point Likert Scale has been widely used in past studies (Ahsan, 2011; Gebreegziabher & Tadesse, 2014) hence it was found useful to appropriate to help in results comparability.

Agrodealers were required to rank the statements according to what they perceived to be the main competitive forces in the industry with 1 being strongly disagree and 5 being strongly agree. From the responses, factor analysis for all the five forces was done to determine the main indicators. Landau and Everitt (2004) express the factor model in matrix form as below;

$$x = \Lambda f + u \quad \text{.....(1)}$$

Where; x is the vector of n observable variables, Λ is the factor loading, f is the factor score and u is the vector of unique/specific factors.

The principal component extraction method involving no assumptions on the error variance in the data was used. Mulaik (2009) states that, the method is appropriate where the objective aims at ensuring maximum ability to explaining the variance of the observed variables. The number of factors that were retained were further determined by the Guttmann- Kaiser rule which requires that only factors with an eigenvalue greater than one (>1) be retained (Field, 2000). Factor scores were generated for each of the retained variables to measure the agrodealer's score on each of the indicators. The factor score computation is given as;

$$d_1 = \beta_{1,1}(x_1) + \beta_{1,2}(x_2) + ... + \beta_{1,p}(x_p) \quad \text{.....(2)}$$

Where; d_1 is an agrodealer's score on each variable indicator, $\beta_{1,p}$ is the optimal weight of the observed parameter x_p of the indicators while x_p is the agrodealer's score on that parameter.

After attainment of scores on the indicators, the ranking of the main indicators were done. The scores were further used in subsequent models as independent variables.

Table 3.2: Variables used in factor analysis

Variable		Measurement	Expected sign
	Bargaining power of buyers		
Bbyr1	Well-informed buyer	5-point Likert scale	+/-
Bbyr2	Buyer switching costs	5-point Likert scale	+/-
Bbyr3	Backward integration threat	5-point Likert scale	+/-
Bbyr4	Price sensitive buyers	5-point Likert scale	+/-
Bbyr5	Substitute products	5-point Likert scale	+/-
Bbyr6	Buyer concentration	5-point Likert scale	+/-
Bbyr7	Buyer volume	5-point Likert scale	+/-
	Threat of substitutes		
Tsub1	Price of substitutes	5-point Likert scale	+/-
Tsub2	Distribution channels of substitutes	5-point Likert scale	+/-
Tsub3	Substitute differentiation	5-point Likert scale	+/-
Tsub4	Availability of substitutes	5-point Likert scale	+/-
Tsub5	Switching costs	5-point Likert scale	+/-
Tsub6	Customer preference	5-point Likert scale	+/-
	Bargaining power of suppliers		
Bsup1	Supplier concentration	5-point Likert scale	+/-
Bsup2	Supplier switching costs	5-point Likert scale	+/-
Bsup3	Forward integration threat	5-point Likert scale	+/-
Bsup4	Supplier product differentiation	5-point Likert scale	+/-
Bsup5	Availability of substitute products	5-point Likert scale	+/-
Bsup6	Negotiation of product prices	5-point Likert scale	+/-
Bsup7	Business volume importance to supplier	5-point Likert scale	+/-
	Threat of entrants		
Tent1	Barriers to entry	5-point Likert scale	+/-
Tent2	Liberalization of the input sector	5-point Likert scale	+/-
Tent3	Capital investment	5-point Likert scale	+/-
Tent4	Economies of scale	5-point Likert scale	+/-
Tent5	Access to distribution channels	5-point Likert scale	+/-
Tent6	Retaliation from existing businesses	5-point Likert scale	+/-

Tent7	Taxation and licensing	5-point Likert scale	+/-
Tent8	Government subsidy programs	5-point Likert scale	+/-
	Competitive rivalry		
Criv1	Industry concentration	5-point Likert scale	+/-
Criv2	Industry growth rate	5-point Likert scale	+/-
Criv3	Degree of product differentiation	5-point Likert scale	+/-
Criv4	Brand identity	5-point Likert scale	+/-
Criv5	Fixed costs	5-point Likert scale	+/-
Criv6	Exit barriers	5-point Likert scale	+/-

Objective Two: To determine the influence of Porter's five forces on the choice of competitive strategies among agrodealer businesses in Nakuru East Sub-County.

Multivariate probit model, a form of a binary response regression that estimates simultaneously the influence of the explanatory variables on more than one dependent variable and allows for the error term to be freely correlated was used for analysis. The dependent variable was a form of binary choice responses to the inquiry concerning the influence of Porter's five forces on strategic choice. Most studies prefer the normality assumption of the error term making the probit model most commonly used than the logit model (Wooldridge, 2004). The model, according to Greene (2003), is based on a multivariate normal distribution and is recommended in cases where there is independence among dependent variables.

An agrodealer business, *i*, makes a decision on whether or not to use a specific strategy (*m*) if the decision associated with its usage (μ_{1im}) is greater than the utility associated with the decision not to use it (μ_{0im}). Wooldridge (2004) gives the utility index function as;

$$y_{im}^{*} = \mu_{1im} - \mu_{0im} \quad \text{.....(3)}$$

Where; y_{im}^{*} is the unobserved latent variable

The choice to use a specific competitive strategy depends on an unobserved latent variable y_{im}^{*} which is determined by several independent variables (Cappellari & Jenkins, 2003) as below;

$$y_{im}^{*} = \beta_{im} X_{im} + e_{im} \quad \text{.....(4)}$$

Where; X_{im} is a set of independent variables influencing the choice of the agrodealer to adopt or not to adopt a specific competitive strategy, β_{im} is the parameter estimate and e_{im} is the error term assumed to have a normal distribution.

The relationship between the unobserved $\left(y_{im}^{*}\right)$ and observed variable $\left(y_{im}\right)$ is given by;

$$y_{im} = \begin{cases} 1; y_{im}^{*} \geq 0 \\ 0; y_{im}^{*} \leq 0 \end{cases} \quad \text{.....(5)}$$

Where y_{im} is the usage of a specific competitive strategy; 1 if yes and 0 if otherwise.

The i^{th} business will use an alternative strategy if $\mu_{1im} \geq \mu_{0im}$ bringing in the probability concept of using a competitive strategy estimated in the equation below (Greene, 2003);

$$\Pr ob = P\left(y_1 = 1, y_2 = 1, y_3 = 1, y_4 = 1, y_5 = 1 \middle| X_{im}\right) = P\left(y_{im}^{*} \leq y_{im}\right) = \Phi_5\left(\beta_1 X_1^{'}, ..., \beta_{im} X_{im}^{'}, \rho\right) \text{..(9)}$$

Where: $P\left(y_1 = 1, y_2 = 1, y_3 = 1, y_4 = 1, y_5 = 1 \middle| X_{im}\right)$ is the probability that a business, *i*, will use a specific competitive strategy given the values of independent variables $\left(X_{im}\right)$, Φ_5 denotes the multivariate standard normal cumulative distribution function while ρ is the covariance matrix.

The basic form of multivariate probit model of an agrodealer's decision is given by;

$$COMPSTRA_{im} = \beta_o + \sum \beta_{im} X_{im} + e_{im} \quad \text{.....(6)}$$

Where; $COMPSTRA_{im}$ is the decision made by a business, *i*, whether to adopt a specific competitive strategy or not, β_o represents the constant term, β_{im} are the coefficients to be estimated, X_{im} represents the independent variables and e_{im} is the error term.

Table 3.3: Variables used in the multivariate probit model

Variables	Descriptions	Variable measurements	Expected sign
Dependent variables			
Cstrachoice	Choice of a competitive strategy	1 = adoption 0 = otherwise	
Independent Variables			
Businesssage	Operation years of the business	Continuous	+/-
Work_exp	Agrodealer years of experience	Continuous	+/-
Bs_branch	Number of business branches	Continuous	+/-
Educ_years	Agrodealer's level of education	0= no-schooling, 1=primary, 2=secondary, 3=certificate/diploma, 4=graduate, 5=postgraduate	+/-
Ownstructure	Ownership structure of the business	1=sole proprietorship, 2=partnership, 3=company	+/-
Agdlrtraining	Access to agrodealer trainings	1= yes. 0= no	+/-
Grp_mbrshp	Membership to agrodealer groups	1=yes, 0= no	+/-
Age		Continuous	+/-
Criv	Age of the agrodealer	Continuous	+/-
Bbyrcsts	Competitive rivalry	Continuous	+/-
Branding	Buyer switching costs	Continuous	+/-
Prdctsub	Branding	Continuous	+/-
Oprtnlcsts	Product substitution Operational costs	Continuous	+/-

Objective Three: To determine the influence of Porter's five forces and strategies on the market share of agrodealer businesses in Nakuru East Sub-County.

Given the limited nature of the dependent variable, Tobit model was found appropriate for analysis. The dependent variable, market share, is a continuous variable thus logit and probit models were not appropriate for analysis as they require the dependent variable be a binary choice (Gujarati, 2004). The ordinary least square method was considered for analysis but due to its biases in parameter estimates (Wooldridge, 2004) and taking into consideration, that market share could either be zero, it was not sufficient enough for analysis. Due to this, the study considered the use of Tobit model for analysis. The first step was the calculation of market share;

$$Market\ share = \frac{Bu\sin ess\ sales}{Total\ industry\ sales} \times 100\% \quad \text{.....(7)}$$

Market share was then regressed against the business and agrodealer characteristics, competitive forces and strategies to determine their influence on it;

$$y_i^* = \beta_0 + \sum_{n=1}^{k} \beta_n x_{in} + e_i \quad \text{.....(8)}$$

$$y_i = \begin{cases} 1\ if\ \ y_i^*\ is \geq 1 \\ 0\ if\ \ y_i^*\ is \leq 1 \end{cases} \quad \text{.....(9)}$$

Where; y^* is the latent market share margin, y_i is the market share margin of the i^{th} business, i is the i^{th} agrodealer business, β_0 is the population intercept, β_n are parameters to be estimated, x_{in} are the independent variables (competitive forces and strategies and socio-economic factors) while e_i is the error term which is normally distributed.

The empirical Tobit model for objective three is given as;

$$\begin{aligned} Mrkt\ share = {} & \beta_0 + \beta_1 Bbyrcsts + \beta_2 \Pr dctsub + \beta_3 Oprtnlcsts + \beta_4 Brndng + \beta_5 Criv + \beta_6 Age \\ & + \beta_7 Bslocation + \beta_8 Bu\sin esssage + \beta_9 Gender + \beta_{10} Grp\_mbrshp + \beta_{11} Educ\_years + \\ & \beta_{12} Bs\_brnchs + \beta_{13} Ownstructure + \beta_{14} Other\_bs + \beta_{15} Work\_\exp + \beta_{16} CLS + \beta_{17} FS + \\ & \beta_{18} DIFFS + \beta_{19} \Pr mtns + \beta_{20} DIVS \end{aligned} \quad \text{.....(10)}$$

Table 3.4: Variables used in the Tobit model

Variables	Descriptions	Variable measurement	Expected sign
Market_share	Market share percentage	Continuous	
Independent variables			
Age	Age of the agrodealer	Continuous	+/-
Gender	Gender of the agrodealer	1= male, 2= female	+/-
Grp_mbrshp	Membership to agrodealer groups	1= yes, 0= no	+/-
Educ_years	Agrodealer's level of education	0= no schooling, 1=primary, 2= secondary, 3=tertiary, 4= graduate, 5= postgraduate	+/-
Work_exp	Agrodealer years of experience	Continuous	+/-
Businessage	Operation years of the business	Continuous	+/-
Bs_branch	Number of business branches	Continuous	+/-
Ownstructure	Business ownership structure	1= sole proprietorship, 2= partnerships, 3= company	+/-
Other_bs	Engagement in other businesses	1= yes, 0= no	+/-
Emlytraining	Trainings of employees by the business	1= yes, 0= no	+
Criv	Competitive rivalry	Continuous	+/-
Bbyrcsts	Buyer switching costs	Continuous	+/-
Branding	Branding	Continuous	+/-
Prdctsub	Product substitution	Continuous	+/-
Oprtnlcsts	Operational costs	Continuous	+/-
CLS	Cost leadership strategy	1= yes, 0= no	+
DIVS	Diversification strategy	1= yes, 0= no	+/-
DIFFS	Differentiation strategy	1= yes, 0= no	+/-
FS	Focus strategy	1= yes, 0= no	+/-
Prmtns	Promotions strategy	1= yes, 0= no	+/-
Bs_expenditures	Overall business expenditure	Continuous	+
Entre_skills	Entrepreneurial skills	1=, 2= , 3= , 4	+

CHAPTER FOUR
RESULTS AND DISCUSSION

4.0 Introduction

This chapter presents the study findings. The statistical summary of the variables used in the study is presented in the first part followed by results from factor analysis, where the main competitive forces in the agrodealer industry are presented. Thereafter, results from the multivariate probit model where the influence of retained forces and socio-economic factors on utilization of competitive strategies are presented. Finally, results from the Tobit model are presented in which the influence of competitive forces and strategies on the market share of agrodealer businesses are captured. The estimate for all the parameters was obtained through statistical analysis under the facilitation of STATA 15 data management tool.

4.1 Descriptive statistics

4.1.1 Socio-economic characteristics of agrodealers

The results of the socio-economic characteristics of the agrodealers are presented in Table 4.1. Study findings indicated a large number of respondents were from Biashara ward (46.36) followed closely by Nakuru East ward (39.09%) and Menengai ward had the least number of respondents (14.55%). A large proportion of agrodealers were business managers (67.3%) while business owners only constituted of 32.7%. This meant that most of the agrodealer businesses in Nakuru East Sub-County were run by the business managers. Male respondents accounted for 64% while the remaining portion (46%) were female. These findings corroborate BCG (2016) observations which indicated that there were more male respondents (56%) compared to females (44%) implying a case of low participation of women in management and ownership of the businesses. Gender disparity (technology, access to credit, trust from farmers and access to information) could be one of the main reasons contributing to low women participation in the business. Similar results by Misiko (2012) found out that male gender dominated the agrodealer industryas opposed to females.

The age of the agrodealers revealed the mean age to be 35.14 approximately 35 years of age with the minimum age being 23 years and the maximum age being 70 years. A greater percentage of the agrodealer respondents were in their youthful stages accounting for 77.3% (40 years and below) explaining why majority of the agrodealer industry is enterprising and a lucrative business among the youth in Kenya. The results further revealed that a high percentage of agrodealers were graduates (46.4%), followed closely by certificate and diploma holders at 39.6%, postgraduate 11% and only 4.5 % had managed to complete

secondary education. Agrodealers with a higher level of education are more knowledgeable about the industry compared to their colleagues.

Table 4.1: Socio-economic characteristics of agrodealers

Variables		Freq.	Percent
Ward	Biashara	51	46.36
	Nakuru East	43	39.09
	Menegai	16	14.55
Position in the business	manager	74	67.27
	business owner	36	32.73
Gender of the agrodealer	male	64	58.18
	female	46	41.82
Age of the agrodealer in years	21-30 years	45	40.91
	31-40 years	40	36.36
	41-50 years	19	17.27
	above 50 years	6	5.46
Level of education	secondary	5	4.55
	certificate/diploma	43	39.09
	graduate	51	46.36
	postgraduate	11	10.00
Membership to agrodealer groups	no	60	54.55
	yes	50	45.45
Main reason for joining the group	share information	12	10.91
	access products	10	9.09
	access credit	2	1.82
	marketing	5	4.55
	receive training	20	18.18
	not applicable	61	55.45

The mean working experience years for agrodealers was 9 years implying that with more years of experience, agrodealers gain adequate knowledge of how the industry operates and therefore make informed decisions. As concerns membership to agrodealer groups, majority of the agrodealers did not belong to any group (54.5%) while the remaining 45.5% were members of groups. Of those (45.5%) who belonged to groups, a great percentage

claimed they joined the groups mainly to receive training (18.2%), 10.9 % joined for purposes of sharing information, 9.1% for accessing products, 4.5% for marketing while only 1.8% joined for sharing credit.

4.1.2 Trainings received by agrodealers

A large proportion of the respondents (73.64%) further revealed that their main occupation was related to the agrodealer industry with only 26.36% not having their formal career related it. Agrodealers with careers related to the industry have a high affinity of performing better and being knowledgeable about the industry compared to their counterparts. The results indicated that out of those whose career was unrelated to the industry, 15.45% had gone ahead and received training in the industry while 9.09% had not.

Table 4.2: Trainings received by agrodealers

Variables		Freq.	Percent
If the main career is related to the agrodealer /agrovet industry	no	29	26.36
	yes	81	73.64
The type of formal training received related to the agrodealer industry	noyes	10	9.09
	not applicable	17	15.45
		83	75.45
Type of training received	agribusiness management	18	16.37
	animal health and production	32	29.09
	animal nutrition	9	8.18
	crops & horticulture	22	20.00
	agricultural extension	13	11.82
	veterinary science	7	6.36
	other (specify)	9	8.18
Other training forms if not related to the agricultural industry	business management and IT	21	19.1
	beauty and therapy	4	3.64
	education	10	9.09
	not applicable	74	67.27

On type of training received related to the industry, a large proportion revealed that they had formal training in animal health and production (29.09%), 20% had training in crops and horticulture, 16.37% in agribusiness management, 11.82% in agricultural extension

while 8.18%, 6.36% had training in animal nutrition and veterinary science respectively. On the hand, for those who had no training related to the agrodealer industry, a high percentage (19.1%) trained in business management and IT, 9.1% had trained in education, and 3.6% in beauty and therapy.

4.1.3 Business characteristics

From the results in Table 4.3, it is clear that the majority of the agrodealer businesses (73.6%) are sole proprietorships, 13.6% are partnerships while 12.7% are companies. These results indicate that the industry is mostly dominated by sole proprietorships. These results are consistent with Misiko (2012) who found out that most of the agrodealer businesses in Kakamega County were sole proprietorships. Moreover, the mean operation years of the businesses was approximately 10 years (11.8%) with the least having been in operation for 1 year (0.9%) and the highest for 30 years (1.9%). The more operation years the business has, the more its chances of survival and greater performance. Past studies, Misiko (2012) and Odame and Muange (2011a) found out that most of the businesses were fairly young having been in operation for less than 5 years.

In relation to business branches, a great percentage of the businesses have 0-1 branch (79.1%), 2-3 branches was at 18.2% while only 2.7% had above 4 branches. Results further indicated that 32.7% of the businesses engaged in crop inputs, 29.1% engaged in animal feeds, animal health and crop inputs, 20% in animal health services, 11.8% in animal feeds only while 6.4% being engaged in both animal feeds and health services. Engagement in other businesses increased income generation of most businesses. In this case, a great proportion of the agrodealer businesses (64.5%) did not engage in other businesses. However, 35.5% carried out other businesses in the same premise with majority of them (16.4%) claiming it was for income generation, 10.9%, 8.19% and 3.6% claimed it was for survival/risk coping strategy and customer demands respectively. Of the other businesses carried out, 12.7% was agency banking and Mpesa, 7.3% pharmacy/chemist, 6.4% general, cereals and grocery shops, 5.5% farm machinery, 1.8% manufacturing business and the remaining 0.9% was consultancy and photocopy business. These findings concur with Odame and Muange (2011a) who found out that most agrodealers diversified into other agricultural and non-agricultural items with the aim of risk coping for survival during low seasons.

When asked whether the businesses trained their employees, most of the respondents disagreed (59.1%) while 40.9% agreed the business provided training to them. Out of the

40.9%, majority claimed they received on the job training (22.73%), 10.9% claimed they received training through internships and 5.5% through seminars and conferences.

Table 4.3 Business characteristics

Variables		Freq.	Percent
Ownership structure of the business	sole proprietorship	81	73.64
	partnershipcompany	15	13.64
		14	12.73
Years of business operations	1-10 years	73	66.36
	11-20 years	31	28.18
	above 21 years	6	5.45
The main agrodealer business carried out	crop inputs	36	32.73
	animal feeds	13	11.82
	animal health services	22	20.00
	animal feeds & health & crop inputs	32	29.09
	animal health and feeds	7	6.36
Carrying out of other businesses other than the agrodealer business	No	71	64.55
	Yes	39	35.45
Other business type	agency banking and Mpesa	14	12.73
	pharmacy/chemist	8	7.27
	grocery, cereals & general shop	7	6.36
	farm machinery	6	5.45
	manufacturing business	2	1.82
	consultancy and photocopying	2	1.82
	not applicable	71	64.55
Reason for engaging in other Businesses	survival/risk coping strategy	9	8.19
	income generation	18	16.36
	customer demands	12	10.91
	not applicable	71	64.55
Training of employees	No	65	59.09
	Yes	45	40.91
Training forms	Internships	14	12.73
	seminars and conferences	6	5.45
	on the job	25	22.73
	not applicable	65	59.09

4.1.4 Porter's five forces

4.1.4.1 Bargaining power of buyers

The results in Table 4.4 indicate that majority of the respondents (64.55%) agreed that they negotiate product prices with their customers. Moreover, 60% of the respondents also agreed that if substitute products were sold at a better price, buyers would easily shift towards it while 47.27% agreed that their customers are well informed about the market. Important to note was the fact that 36.36% agreed while at the same time were neutral that their buyers purchased a large volume of their products. However, 49.09% of the respondents disagreed that buyer concentration was low in the market with 37.27% further disagreeing that it was difficult for buyers to switch from their services to that of their rivals.

Table 4.4: Bargaining power of buyers

Opinion statements	SD%	D%	N%	A%	SA%	Std. Dev.
My customers are well-informed	8.18	13.64	30.91	31.82	15.45	1.142
It is difficult for my buyers to switch from my services to those my rivals'	17.27	20.00	28.18	19.09	15.45	1.309
I negotiate product prices with my customers	4.55	20.91	10.00	32.73	31.82	1.251
Buyer concentration is low	29.09	20.00	38.18	7.27	5.45	1.142
If substitute products are sold at a better price, buyers shift towards it	12.73	7.27	20.00	30.91	29.09	1.324
My buyers purchase a large volume of my products	19.09	8.18	36.36	18.18	18.18	1.328

SD, D, N, A and SA represent strongly disagree, disagree, neutral, agree and strongly agree respectively

4.1.4.2 Bargaining power of suppliers

Table 4.5 highlights descriptive statistics from the bargaining power of the supplier in the agrodealer industry. The results indicate that a large proportion (85.45%) of the respondents agreed that there are numerous suppliers in the agrodealer market. An addition of 75.42% further agreed that they are well informed about their suppliers' services in the market. On the contrary, 67.28% of the respondents disagreed that their suppliers sold farm inputs directly to their customers meaning they did not face any backward threat. A further 51.82% disagreed that switching costs from one supplier to another was high in the industry

with 43.54% and 40.91% willingly agreed that they negotiated product prices with suppliers and they bought large volumes of their suppliers' products respectively.

Table 4.5: Bargaining power of suppliers

Opinion statements	SD%	D%	N%	A%	SA%	Std. Dev.
There are numerous suppliers in the market	4.5	0.00	10.00	30.00	55.45	0.986
At times my suppliers sell farm inputs directly to my customers	34.55	22.73	14.55	14.55	14.55	1.438
I am well-informed about my suppliers' services and market	2.73	7.27	14.55	49.09	26.36	0.971
I negotiate product prices with my suppliers	11.82	24.55	20.00	20.91	22.73	1.349
Switching costs from one supplier to another is high	29.09	22.73	20.91	19.09	8.18	1.311
I buy a large volume of my suppliers' products	6.36	15.45	37.27	24.55	16.36	1.111

SD, D, N, A and SA represent strongly disagree, disagree, neutral, agree and strongly agree respectively

4.1.4.3 Threat of substitutes

The research findings as shown in Table 4.6 indicate 87.27% of the respondents agreed that other than the products they offered, there were more substitutes available in the market. An addition of 61.82%, 60% and 48.18% agreed that customers preferred products from a specific company, there was no much product difference between their products and their rivals and prices for substitute products fairly competed with each other in the market respectively. However, 70% disagreed that they only stocked products from a specific company with 55.46% further disagreeing that it was costly for their customers to switch to other businesses.

Table 4.6: Threat of substitute products

Opinion statements	SD%	D%	N%	A%	SA%	Std. Dev.
Other than the products I offer, more substitutes are available	4.55	0.91	7.27	50.00	37.27	0.937
I only stock products from a specific company	52.73	17.27	7.27	11.82	10.91	1.436
It is costly for my customers to switch to other businesses	21.82	23.64	35.45	13.64	5.45	1.137
There is no much product difference between my products and my rivals'	6.36	11.82	21.82	34.55	25.45	1.174
Prices for substitute products fairly compete with each other	8.18	19.09	24.55	29.09	19.09	1.219
Customers prefer products from a specific company	11.82	6.36	20.00	32.73	29.09	1.293

SD, D, N, A and SA represent strongly disagree, disagree, neutral, agree and strongly agree respectively

4.1.4.4 Threat of new entrants

Table 4.7 shows descriptive results for threat of new entrants in the agrodealer industry. A great percentage of the respondents (80.91% and 80%) agreed that the businesses required a high initial capital investment and licensing requirements/taxation for the businesses was too high respectively. An addition of 59.09% and 55.45% agreed that their customers were loyal to their brand and new agrodealers advertised their business to overcome existing brands respectively. Moreover, it was also observed that 37.54% agreed that the government subsidized input programs negatively affected their business performance. As concerns new businesses having difficulty in acquiring customers, 41.91% disagreed to the statement with a further, 47.27% disagreeing to the fact that existing businesses created high retaliation to new entrants. Only 40% of the respondents were neutral on buyer switching costs being high.

Table 4.7: Threat of new entrants

Opinion statements	SD%	D%	N%	A%	SA%	Std. Dev.
New agrodealers advertise to overcome existing brand preferences	10.91	10.00	23.64	29.09	26.36	1.283
My customers are loyal to my brand	1.82	15.45	23.64	32.73	26.36	1.086
The business requires a high initial capital investment	6.36	2.73	10.00	34.55	46.36	1.114
New businesses have difficulty in acquiring customers	24.55	17.27	17.27	28.18	12.73	1.395
Buyer switching costs are high	8.18	20.91	40.00	20.00	10.91	1.087
Retaliation from existing firms is high towards new entrants	30.0	17.27	27.27	19.09	6.36	1.275
Licensing requirements and taxation are too high	2.73	2.73	14.55	32.73	47.27	0.972
Subsidized inputs have negatively affected business performance	30.0	7.27	25.45	17.27	20.27	1.502

SD, D, N, A and SA represent strongly disagree, disagree, neutral, agree and strongly agree respectively

4.1.4.5 Competitive rivalry

The results as shown in Table 4.8 indicate that a great proportion of the respondents (90%) agreed on there being numerous agrodealer businesses in the Sub-County while the least proportion (40%) disagreed on their businesses growing at a fast rate. 56.36% agreed on storage costs of the product being too high, 50% agreed that their pricing strategy had been affected largely by entry of new players, 46.36% further agreed on the industry having high fixed costs with only 45.45% agreeing on their being a clear brand identity of businesses in the market.

Table 4.8: Competitive rivalry

Opinion statements	SD%	D%	N%	A%	SA%	Std. Dev.
There are numerous agrodealer businesses in the Sub-County	4.55	0.00	5.45	30.91	59.09	0.950
Entry of new players affects my product pricing strategy	14.55	12.73	22.73	28.18	21.82	1.338
Industry has high fixed costs	10.00	10.00	33.64	25.45	20.91	1.210
Storage costs are too high	4.55	14.55	24.55	27.27	29.09	1.181
My business grows at a fast rate	15.45	24.55	36.36	19.09	4.55	1.083
There is a clear brand identity of businesses in the market	20.00	14.55	20.00	29.09	16.36	1.379

SD, D, N, A and SA represent strongly disagree, disagree, neutral, agree and strongly agree respectively

4.1.5 Competitive strategies

4.1.5.1 Cost leadership strategy

Results in Table 4.9 indicates that a greater proportion of the respondents (56.4%) stated that they often offered price discounts on products to their customers. 46.4% of the businesses often improved their efficiency through cost controls along the existing activity cost chains, 39.1% always strived to supply a standard of high volume services at the most competitive prices to their buyers while 38.2% always benchmarked themselves against their rivals to access their relative cost. Only 35.5% stated that they did not often offer low priced products.

Table 4.9: Cost leadership strategies

Opinion statements	N%	NO%	O%	A%	Std. dev.
Offering low priced products	19.09	34.55	33.64	12.73	0.940
Offering price discounts on products	4.55	24.55	56.36	14.55	0.736
Improving efficiency through cost controls along the existing cost chains	1.82	30.0	46.36	21.82	0.763
Supplying a high volume services at the most competitive prices to buyers	5.45	19.09	36.36	39.09	0.894
Benchmarking to access relative costs	11.82	22.73	27.27	38.18	1.042

N, NO, O and A represent never, not often, often and always respectively

4.1.5.2 Differentiation strategies

As indicated in Table 4.10, 54.55% of the businesses always built customer values by creating product attributes at affordable costs, 51.82% always sold high quality products from well-known suppliers and 50.91% always offered training of product use and after sale support to their customers. Also, 46.36% always offered unique products for various buyer groups in the market. On the other hand, 36.36% of the businesses often sourced for uniqueness that their rivals would not easily imitate. As concerns technology usage in order to remain on the cutting edge of innovation, 29.09% always embraced it.

Table 4.10: Differentiation strategies

Opinion statements	N%	NO%	O%	A%	Std. dev.
Selling of high-quality products from well-known suppliers	4.55	5.45	38.18	51.82	0.788
The business sources for uniqueness that cannot be easily imitated	0.91	33.64	36.36	29.09	0.816
Building customer values by creating product attributes at affordable costs	2.73	15.45	27.27	54.55	0.838
Using technology to remain on the cutting edge of innovation	25.45	19.09	26.36	29.09	1.160
Offering training of product use and after-sale support to customers	2.73	12.73	33.64	50.91	0.803
The business offers unique products for various buyer groups	10.0	29.09	14.55	46.36	1.079

N, NO, O and A represent never, not often, often and always respectively

4.1.5.3 Focus strategies

The research findings in Table 4.11 indicate that a great percentage of businesses (50.0%) often focused on low-cost strategies in their markets to avoid rivalry. An additional 35.45% often devoted resources to maintain market leadership in the niche they were serving. 30.0% did not often focus on selling products to a particular market niche. However, only 29.09% of the businesses never innovated products/services for the market niche they served.

Table 4.11: Focus strategies

Opinion statements	N%	NO%	O%	A%	Mean	Std. dev.
We focus on selling products to a particular market niche	23.64	30.0	19.09	27.27	2.50	1.131
We devote resources to maintain market leadership in this niche	20.91	20.91	35.45	22.73	2.60	1.060
We innovate products/services for this market niche	29.09	29.09	28.18	13.64	2.26	1.029
We focus on low-cost strategy in our markets to avoid rivalry	10.0	15.45	50.0	24.55	2.89	0.892

N, NO, O and A represent never, not often, often and always respectively

4.1.5.4 Diversification strategies

Based on the results in Table 4.12, 59.09% of the businesses never carried out other businesses alongside the agrodealer business. Most of the businesses (58.18%) never added new products unrelated to the agrodealer business. Nonetheless, 47.27% and 39.09% of the businesses often substituted products to reduce demand for a particular class of products and added new products that are related to the agrodealer business respectively.

Table 4.12: Diversification strategies

Opinion statements	N%	NO%	O%	A%	Std. dev.
Carrying out other businesses alongside the agrodealer business	59.09	13.64	12.73	14.55	1.132
Substituting products to reduce demand for a particular class of products	16.36	16.36	47.27	20.00	0.971
Addition of new products unrelated to the agrodealer business	58.18	14.55	18.18	9.09	1.044
Addition of new products related to the agrodealer business	7.27	19.09	39.09	34.55	0.914

N, NO, O and A represent never, not often, often and always respectively

4.1.6 Performance measures

A great percentage of the businesses (59.09%) maintained their former/old customers. 50.0% managed to maintain their employee satisfaction and retention while 34.5% had their profitmargins improve. The results (Table 4.13) further indicates that 30% of the businesses improved on their acquisition of new customers with 34.5% improved in their business sales.

Table 4.13: Performance measures

Performance Measures	GD%	D%	M%	I%	GI%	Std. dev.
Business sales	10.9	30.0	20.00	34.50	4.50	1.126
Acquisition of new customers	1.80	27.30	30.00	33.60	7.30	0.975
Retention of old customers	2.70	14.50	59.10	20.00	3.60	0.775
Employee satisfaction and retention	5.50	17.30	50.00	20.90	6.40	0.927
Net profit margins	17.30	16.40	20.90	34.50	10.90	1.284

GD, D, M, I and GI represent greatly dropped, dropped, maintained, improved and greatly improved respectively

4.2 Agrodealers perception of the main competitive forces in the industry

4.2.1 Validity

Data was first subjected to a validity test to assess its accuracy in the representation of the study variables. Principal Component Analysis (PCA) was used to conduct the construct validity test through factor extractions. This criteria of validity test was suggested by Hair *et al.* (2010), who argued that, for factor analysis to be valid, factor loadings greater than 0.40 were considered statistically significant for studies that had sample sizes less than 200.

4.2.2 Sampling adequacy

The extracted items were further subjected to a sampling adequacy test to ascertain the appropriateness of the data for factor analysis. A Bartlett's test of sphericity which tests inter-correlation between variables (Bartlett, 1954; Hair *et. al.*, 2010) was conducted. The results indicated that the test was significant since all the factors' p-values were less than 0.05 as shown in Table 4.14. This indicated that the correlation matrix was significantly different from the identity matrix, in which correlations between variables were all zero demonstrating a strong relationship among the variables hence factor analysis was appropriate.

Kaiser Meyer Olkin (KMO) test was also done to determine the sampling adequacy of the data. According to Kaiser (2010), a KMO of 0.5 is the minimum required value for carrying out factor analysis. Results in Table 4.14 showed the KMO for the 32 item variables extracted to be 0.5685 indicating that the Pearson correlation matrices was appropriate for factor analysis.

Table 4.14: Sample size adequacy test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.5685
Bartlett's Test of Sphericity	Approx. Chi-Square	435
	Df.	797.63
	P-value	0.000

H0: variables are not intercorrelated

4.2.3 Factor extraction

Pearson correlation matrix was used to run the factor analysis model. The number of factors to be extracted from the model was based on Kaiser's criterion which states that factors with an eigenvalue greater than 1 to be retained (Kaiser, 1960). Using this criterion, five factors which had an eigenvalue greater than one were retained. The five factors represented a total variance of 76.10% among the 32 items as shown in Table 4.15.

Table 4.15: Eigenvalues and their cumulative proportion of total sample variance

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	3.152	1.011	0.265	0.265
Factor2	2.140	0.726	0.180	0.444
Factor3	1.415	0.187	0.119	0.564
Factor4	1.228	0.095	0.103	0.666
Factor5	1.133	0.146	0.095	0.761

Orthogonal Varimax rotation with Kaiser Normalization was run to make the factor solution unique. Table 4.16 presents the results showing the extent to which each item loaded on a specific factor. Some items loaded highly on some factors while others loaded lowly. Items with a loading greater than 0.40 (>0.4) were viewed to have loaded sufficiently on a factor, therefore, were used to explain the factor. Variables excluded from the model failed to attain a factor loading of 0.4 implying that they did not load highly on any factor.

Retained factors were further assigned names according to factors that loaded highly on them. Factor1 was interpreted as competitive rivalry based on the following factors; numerous suppliers in the market, new agrodealers advertise to overcome existing brands, well-informed customers, and the presence of numerous agrodealers in the market in the market. Competitive rivalry accounted for 26.45% of the total variance. A probable validation for this is that there are numerous agrodealer businesses due to its centrality in the county with local agrodealers and farmers from neighboring sub-counties sourcing their inputs from it. Besides, due to its lucrative nature (Soi, 2016), more investors venture into the business annually making the market more competitive and consequently increasing rivalry. Also, the rise of a well-knowledgeable customer has seen most businesses struggle to advertise themselves to lure more buyers to their premises. Unlike in the past where agrodealers would sell their inputs to oblivious customers, nowadays, customers have their demands, tastes, and preferences.

Based on the items that loaded highly on Factor2, it was interpreted as product substitution and contributed 17.96% to the total variance. The items included; low buyer concentration in the market, if substitute products are sold at better prices buyers easily shift towards it, suppliers at times sell farm inputs directly to agrodealer customers, low product differentiation between the businesses, and supplier switching costs are high. The market is characterized by high degrees of substitutes that competing in the industry. Given the nature of inputs, it is difficult for the businesses to differentiate products as customers always have pre-established notions on a particular brand. Also, agrodealers face stiff competition from input suppliers who at times forward integrate and sell inputs directly to their customers.

Factor3 was termed as branding based on the following indicators; there is a clear brand identity of the businesses in the market and businesses grow at a fast rate hence contributing 11.87% to the total variance. Results further indicated that branding was a force to reckon with in the agrodealer industry. With the high number of businesses in the sub-county, there are already established businesses that most customers identify with. These businesses, have been in the market for a long period of time and have established a wider customer base hence competing with them proves difficult and challenging for new entrants. As a result, businesses are devising ways such as vigorous advertising and linking up with the county government for them to get known and capture the market from the already established businesses.

Table 4.16: Factors and their loadings using Pearson correlation matrix

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Uniqueness
Bsup1	0.708					0.466
Criv1	0.690					0.499
Bsup3	0.513					0.694
Tent1	0.444					0.656
Bbyr1	0.443					0.746
Bbyr5		0.646				0.549
Bbyr4		0.628				0.572
Bsup2		0.600				0.554
Tsub4		0.461				0.731
Bsup5		0.436				0.573
Criv5			0.533			0.699
Criv6			0.429			0.682
Tent5				0.529		0.647
Tent4				0.460		0.711
Bbyr2				0.453		0.729
Tsub3					-0.591	0.622
Tent3					0.513	0.687

Extraction Method: Principal Axis Factoring;

Rotation Method: Varimax with Kaiser Normalization

Blanks represent abs (loading) <.4

Factor4 was interpreted as buyer switching costs contributing 10.31% to the total variance. The factors that highly loaded on this factor were; buyer switching costs, the difficulty of new businesses in acquiring customers, and difficulty in buyer switching costs from one business to another. Agrodealers noted that buyer switching costs were one of the main competitive forces in the industry. New entrants argued that it was difficult to convince a buyer to shift from one business to another hence they had a rough time in acquiring customers. Businesses that have been in the market for a long time were at an advantage. However, they too were struggling hard to retain there market share due to the competing nature of the farm input products. Notably, buyers preferred buying their input products from

a store they were familiar with and a majority of them argued that most of the inputs were within the same price range hence saw no need of switching businesses.

Lastly, Factor5 was interpreted as operational costs with two factors; high initial capital investment and costly for customers to switch to other businesses loaded highly on it. Operational costs loaded 9.51% to the total variance. A plausible reason for this is that the industry is coupled with high operational costs that range from storage costs, marketing costs, research and development into new technologies in the agricultural sector, and payment of employees. Also, most of the agrodealer businesses have rented out premises which they are required to remit taxes and county operational permit licenses. These results conform to those of BCG (2016) and Odame and Muange (2011b) who found out that agrodealers are faced with several challenges which includes high operational costs that emanate from salaries, storage, research and development, licensing, taxation, marketing and transportation costs.

Cronbach's alpha reliability test was used to measure how well the variables measure a single latent variable (Hair *et al.,* 2010). The closer the alpha is to 1, the more the variables measure the factor. According to the test, the Cronbach's values were found to be 0.7, 0.7, 0.5, 0.5 and 0.4 for factors 1, 2, 3, 4 and 5 respectively demonstrating their reliability adequacy. The retained factors were further used as independent variables in subsequent models.

4.3 Influence of Porter's five forces on the choice of competitive strategies among agrodealer businesses in Nakuru East Sub-County

To determine the influence of Porter's five forces on the choice of competitive strategies adopted by agrodealer businesses, multivariate probit model was used. The study had five dependent variable and multivariate probit was considered as appropriate for analysis due to independence of the dependent variables. Fourteen variables were used to determine the influence on the five competitive strategies adopted by agrodealer businesses.

Diagnostic tests were carried out before running the probit models. Multicollinearity was tested using the Variance Inflation Factor (VIF) for all the independent variables. All variables had a VIF of less than 10 with the overall VIF being 1.99 (Appendix v) hence there was no multicollinearity between the variables. Heteroskedasticity (table 4.17) was tested by use of the Breusch Pagan test. The null hypothesis for all the five strategies were rejected as they all had high p-values indicating absence of heteroskedasticity.

Table 4.17: Heteroskedasticity test on competitive strategies

Strategy	Chi2(1)	Prob>Chi2
Cost leadership strategy	1.39	0.238
Differentiation strategy	2.06	0.152
Diversification strategy	2.43	0.119
Promotions strategy	0.05	0.819
Focus strategy	1.66	0.198

4.3.1 Pairwise correlations of competitive strategies

From the study findings, agrodealer businesses are simultaneously using competitive strategies implying that there is a likelihood of correlation between strategic choices. As such, correlation between the competitive strategies was tested using pair-wise correlations across the multivariate probit residuals as in Table 4.18. The correlation coefficients of all the five dependent variables were statistically significant from zero indicating a strong interdependence among dependent variables in competitive strategy usage. The Wald test $\chi^2(70) = 88.31, p \prec 0.0687$ indicated that the data fairly fit the multivariate probit model with the likelihood ratio test $\chi^2(10) = 23.811, p \prec 0.008$ of independence among the competitive strategies was rejected meaning that their existed no mutual independence among the five strategies. Out of the 10 pairs of competitive strategies, two pair-wise correlations coefficients across the residuals were found to be statistically significant.

Cost leadership strategy and focus strategy were found to be positively and significantly associated implying that agrodealer businesses used the strategies as compliments. This implies that agrodealer businesses can opt to combine the two strategies to gain a competitive edge in the industry. The businesses do not necessarily have to charge low prices in the industry but can instead charge low input prices relative to their rivals in their target market. Combination of the two strategies enables a business limit its customer base to a more defined market and drive all its resources through effective cost controls to the target customer thus achieving a cost advantage over its competitors in the market (Porter, 1980).

On the other hand, diversification strategy and differentiation strategies were significant and negatively associated indicating that the strategies were used as substitutes by the businesses. Agrodealer businesses in Nakuru East Sub-County opt to use the two strategies interchangeably. From the study findings, most of the agrodealer businesses in the county use differentiation strategies more as opposed to diversification strategies.

Table 4.18: Pair-wise correlations of competitive strategies

Strategies	CLS	DIVS	DIFFS	FS	Prmtns
CLS	1.000				
DIVS	0.020	1.000			
DIFFS	0.066	-0.187*	1.000		
FS	0.207*	-0.080	-0.117	1.000	
Prmtns	0.010	-0.044	0.157	-0.107	1.000

* indicates significance at 5% significance level

CLS= Cost leadership strategies; DIVS= diversification strategies; DIFFS= differentiation strategies; FS= focus strategies; Prmtns= promotions strategies

4.3.2 Strategic usage among agrodealer businesses

Study findings (Figure 4.1) revealed that majority of the businesses (30.71%) used differentiation strategies compared to other strategies. Product packaging according to buyer preference was the widely used differentiation strategic approach among the businesses. Majority of the businesses argued that since the industry is highly homogeneous, they had to actively differentiate themselves in order to appeal to their customers as well as attract new ones. By differentiating themselves, agrodealer businesses are able to gain a larger customer base. Cost leadership strategies followed closely at 21.16% as the second most widely used strategy. However, the strategy did not seem viable for competing in the industry. This is due to the fact that, most of the products are within the same price range thus lowering their prices does not impact much as customers always bought inputs from an agrodealer business they found easier to locate.

Promotions strategies 20.33% and focus strategies 16.6%. Focus strategies was widely used in Nakuru East ward with a focus on animal feeds as opposed to Menengai and Flamingo wards. A likely justification for this is that, most of the farmers in Nakuru East ward engage in livestock keeping hence animal feed products were widely consumed and sold in the region. Diversification strategies was the least used strategy among agrodealer businesses with only 27 businesses diversifying to either related or unrelated businesses.

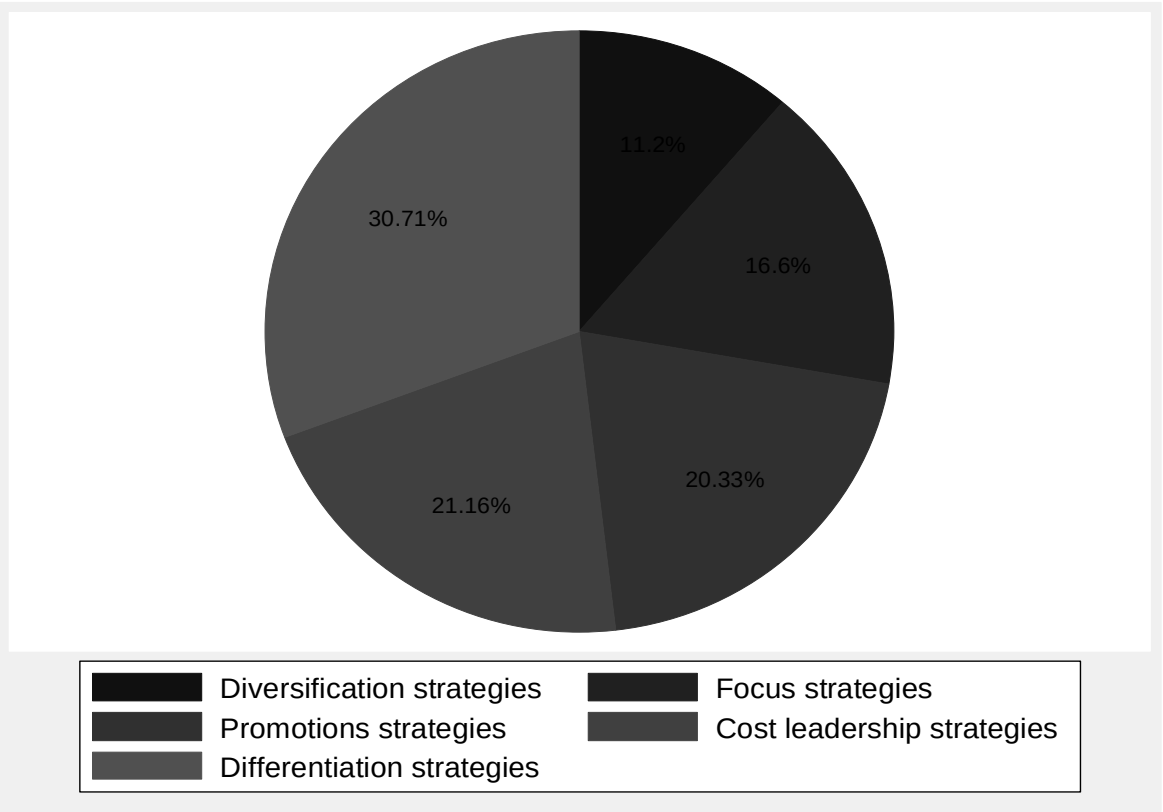

Figure 4.1: Usage of competitive strategies among agrodealer businesses in Kenya

4.3.3 Determinants of competitive strategic choices among agrodealer businesses

The results of the multivariate probit model involving identification of determinants of competitive strategic choices among agrodealer businesses is presented in Table 4.19 below.

Table 4.19: Multivariate probit regression for determinants of competitive strategic choices among agrodealer businesses

Variables	Cost leadership (n=51)		Differentiation(n= 74)		Diversification(n= 27)		Promotions (n= 49)		Focus (n= 40)	
	Coef.	Std.Err	Coef.	Std.Err	Coef.	Std.Err	Coef.	Std.Err	Coef.	Std.Err
Age	-0.074	0.045	-0.055	0.041	0.024	0.045	-0.035	0.042	-0.088**	0.045
Educ_years	0.116	0.202	0.038	0.192	0.204	0.209	-0.468**	0.222	-0.072	0.189
Group_mbrshp	-0.302	0.300	-0.352	0.306	0.074	0.322	0.707**	0.315	0.058	0.298
Ownstructure	0.185	0.191	-0.249	0.199	0.020	0.208	0.279	0.208	0.341*	0.185
Businessage	-0.009	0.023	-0.012	0.023	0.011	0.026	-0.026	0.025	0.027	0.024
Work_exp	0.122**	0.052	0.051	0.048	-0.041	0.052	0.038	0.047	0.109**	0.052
Bs_branch	-0.007	0.289	-0.205	0.298	-0.330	0.355	0.583**	0.295	-0.502	0.345
Bslocation	-0.138	0.113	-0.122	0.112	0.081	0.113	0.100	0.110	0.094	0.111
Other_bs	0.401	0.293	0.015	0.289	0.752***	0.293	-0.344	0.294	-0.163	0.290
Competitive rivalry	-0.052	0.148	-0.033	0.163	-0.290*	0.157	0.223	0.152	0.079	0.167
Product substitution	-0.100	0.157	-0.126	0.162	0.092	0.166	0.493***	0.165	-0.125	0.154
Branding	0.399**	0.177	0.242	0.157	-0.004	0.181	0.035	0.159	-0.195	0.153
Buyer switching costs	0.533***	0.181	-0.173	0.171	0.105	0.181	0.094	0.165	0.040	0.163
Operational costs	-0.057	0.170	-0.313*	0.186	-0.011	0.186	-0.182	0.181	-0.112	0.171
Constant	1.238	1.484	3.116	1.435	-2.293	1.537	0.939	1.408	1.534	1.446
Log likelihood = -296.144				Wald Chi2(70) = 88.31			Prob>Chi2 = 0.0687			
Lr. Test rho21 = rho31 = rho41 = rho51 = rho32 = rho42 = rho52 = rho43 = rho53 = rho54 = 0							chi2(10) = 23.811		Prob > chi2 = 0.008	

***, **, *** indicates significance at 10%, 5% and 1% levels respectively**

On the influence of Porter's five forces on choice of cost leadership strategies, three variables were found to be statistically significant including; work experience, branding and buyer switching costs. One factor, operational costs, was found to be statistically significant on choice of differentiation strategy. On the influence of porter's five forces on choice of promotions strategies, five variables were found to be statistically significant including; agrodealer's years of education, group membership, number of business branches, competitive rivalry and product substitution. Engaging in other businesses and competitive rivalry were found to be statistically significant with choice of diversification strategies. Finally, three variables; agrodealer's age, work experience and business ownership structure were found to be statistically significant with choice of focus strategy.

An increase in age decreases the probability of using focus strategy. The plausible reason could be because as one becomes older, he gains experience and exposure to the use of new and innovative strategies hence the low preference for focus strategy. Moreover, increase in age brings about changes in goal orientation making agrodealers more unadventurous and less preoccupied with focusing on new product lines and markets. This conforms to a study by Gielnik *et al.* (2017) who found out that, as age progresses, business managers are less oriented towards new opportunities as they have literally attained their goals and are left with little energy to focus on new opportunities.

As an agrodealer advances in his education, his probability of choosing promotions strategy decreases. Advancement in education enables an agrodealer to gain more knowledge and becomes more enlightened on various strategies that can be used to improve performance hence low preference for promotions strategies. Education provides a wider scope of exposure positively contributing to strategic choices made by businesses. These findings concur with Githige (2011) who found out that through education, people are empowered with knowledge and skills that hastens their will to choose on usage of different strategies.

Agrodealers who belong to a group have a high probability of using promotions strategy as opposed to their counterparts. A likely justification is that being a member of a group places an agrodealer at an advantage through access to market information and promotional avenues for selling their products. These findings corroborate those of Fischer and Qaim (2012) and Owuor *et al.* (2006) who found out that information access is greatly beneficial to group members as they are able to gain access to information, markets, credit access, and new products in their industry.

Ownership structure positively and significantly influenced the choice of focus strategy. The plausible justification is that expansion of ownership structures brings about

different players in the management hence varied decisions on trading such as concentrating on one product line in order to satisfy each players' interests. These results, however, are inconsistent with those of Faizal *et al.* (2016) who found out that concentrated ownership structures (expanded structures) prioritize differentiation strategies over other strategies claiming that for effective achievement of a larger customer base, businesses need to vary their products.

Agrodealers with many years of experience have a high probability on adopting the use of focus and cost leadership strategies. The plausible reason is that due to accrued knowledge and experience, they are knowledgeable of the business environment thus being aware of which input sectors have been performing well in the industry. As such, they divert all their resources to focus on that niche and further engage in cost effective measures, providing discounts and charging low product prices to retain customers and remain competitive. These findings are consistent with a study by Wabwile (2016) who found out that farmers with many years of experience have knowledge of their industry hence it is hard to make them change their view to take up a different strategy.

Having several branches increases the probability of using promotions strategies by agrodealers as opposed to having one branch. As agrodealer businesses open more branches and move into new markets, they have to continuously promote their businesses through adverts and sales promotions in order to lure customers into their business. These findings concur with those of Cheruon *et al.* (2015) who found out that, through various forms of promotions strategies such as advertising, sales promotions and personal selling, businesses are able to reach out to more customers.

Engagement in other businesses significantly influenced the usage of diversification strategies implying that engaging in other businesses necessitates agrodealers to use diversification strategies in order to sustain their competitiveness. As such, the strategies provide a wide selling scope for agrodealer businesses which in turn helps cushion them against off peak seasons and provides an extra income generation to them. Half of the stock held by agrodealer agripreneurs constitutes of non-agricultural inputs which is a risk mitigation measure and an income generation strategy during off-peak season (Odame & Muange, 2011a).

Competitive rivalry had a negative association with diversification strategy. A likely justification is that intense competition is occasionally accompanied by high trade risks, hence agrodealers are left with minimal resources to fight for in the market such as customers thus they wholly concentrate on ensuring they reach out to them. Thus, agrodealers prefer to

focus on evading risks associated with rivalry and pay less attention to diversification strategies. These results are however, inconsistent with Achiro (2016) who found out that, due to intense rivalry, businesses are actively engaging in diversification strategies to gain access to new markets and heighten their competitiveness.

Product substitution increased the probability of choosing promotions strategies by 0.493 units. Substitutes create rivalry between products in the market, thus, agrodealers need to invest highly on promotions strategies to ensure their stock sell otherwise they would only sell one product line. This, therefore calls for adoption of various promotional strategies such as advertising, offering price discounts and sales promotions in order to sell all their available stock. However, Gümüş *et al.* (2016) argues that, product substitution comes in various degrees and it does not mean that it will increase the likelihood of using promotions strategies. The higher the degree of product substitution the higher the chance of utilizing promotions strategy otherwise businesses rarely use it if the degree is low.

Agrodealers who embrace branding had a high chance of using cost leadership strategies as opposed to those who do not. A likely justification for this is that branding enables businesses to stand out amongst competitors. Visual branding such as logos, staff uniformity and premise branding enables a business attract farmers (Soi, 2016) and once customer acquisition is done, they can effectively adopt usage of cost leadership strategies by providing them with the best prices for the quality of their products. Similar results were established by Erdil *et al.* (2017) who found out that for Turkish brands, branding is positively associated with low price sensitivity, customer satisfaction and profitability.

Buyer switching costs was found to have a positive association with usage of cost leadership strategy. A likely justification for this is that customers are likely to switch to input products that are less costly, quality and satisfy their needs hence agrodealers need to ensure they effectively adopt the strategy in order to maintain their customer base. According to Bhattacharya (2013), if a business wants to remain competitive and maintain its customer base amidst high buyer switching costs, then it has to ensure it gains a cost leadership position in the market. Studies by Bhattacharya (2013) and Chen (2016) concur with these findings arguing that high buyer switching costs helps counterbalance high market focus compelling businesses to lower their prices in order to remain competitive.

Smallscale agrodealers intending to use differentiation strategy have to aim at reducing their operational costs as it was found to have a negative impact on the strategy. High operational costs leave businesses with minimal resources to use on strategic adoption as majority of the resources are diverted towards operational production. Therefore, costs

associated with the strategy such as branding, product packaging and new designs will be left out as the businesses concentrate more on their operational efficiency. These findings are consistent with Majukwa and Haddud (2016) who found out that alignment of operational costs such as business expenses, pricing strategies and ensuring that market demands are offered at low operational management costs can help cut down on cost usage.

4.4 Effects of Porter's five forces and strategies on the market share of agrodealer businesses in Nakuru East Sub-County

4.4.1 Diagnostic tests

Prior to estimation of the Tobit model, two diagnostic tests; multicollinearity and heteroskedasticity tests. Multicollinearity between the independent variables was tested using the variance inflation factor (VIF). According to Gujarati (2004), if the VIF is greater than 10 then there is presence of multicollinearity. All the independent variables had a VIF of less than 10 with a mean of 1.98 hence the presence of multicollinearity was ruled out. To test for the presence of heteroskedasticity among the variables, the Tobit multiplicative heteroskedasticity test was used. The results indicated a high p-value of 1.000 hence the null hypotheses for the variables was rejected indicating absence of heteroskedasticity. The results were further subjected to a post estimation test using the marginal effect in order to estimate the trivial change from each of the selected independent variables influencing market share.

4.2.3 Factors influencing market share of agrodealer businesses

For appropriate policy review analysis, competitiveness was measured using the market share metric. In the first step, average sales of individual businesses were calculated by getting the average of peak and off-peak season sales for the year of 2019. Total industry sales were then summed up from the average sales of the 110 agrodealer businesses in Nakuru East Sub-County. Market share values fell between 0 and 100% hence making it a limited dependent variable hence, Tobit model, a form of censored regression model was applied. Study findings indicated that the business market share mean business market share percentage was 0.91; the minimum market share value was 0.01 percent while the maximum was 21.91 percent.

Competitive forces and strategies and selected agrodealer and business specific characteristics were then regressed against market share of the businesses using the Tobit model. Left censoring was done at 0 while right censoring was done at less than or equal to

100. The results were further subjected to a post estimation test using the marginal effect in order to estimate the trivial change from each of the selected independent variables influencing market share and are presented in Table 4.20.

Table 4.20: Tobit model on factors influencing market share

Variables	**dy/dx**	**Std. Err.**	**P>z**
Age	-0.009	0.050	0.853
Gender	-.0330	0.352	0.348
Educ_years	0.171	0.246	0.487
Work_exp	-0.052	0.059	0.373
Group_mbrshp	-0.345	0.369	0.349
Ownstructure	-0.024	0.259	0.928
Businessage	0.063	0.028	0.027**
Bs_branch	0.323	0.362	0.373
Other_bs	-0.498	0.353	0.158
Emplytraining	-0.320	0.338	0.343
CLS	0.281	0.355	0.429
DIFFS	-0.239	0.371	0.519
Prmtns	0.893	0.354	0.012**
FS	0.003	0.355	0.993
DIVS	0.092	0.391	0.814
Competitive rivalry	-0.427	0.184	0.021**
Product substitution	0.018	0.189	0.924
Branding	-0.435	0.195	0.026**
Buyer switching costs	-0.295	0.200	0.139
Operational costs	-0.232	0.207	0.261
Bs_expenditures	0.804	0.063	0.000***
Entre_skills	0.102	0.062	0.096*

***, **, *** indicates significance at 10%, 5% and 1% levels respectively**

n = 110; LR chi2(22) = 140.23; Pseudo R2 = 0.2544; Prob > chi2 = 0.0000

Log likelihood = -205.44458

Based on the model, six variables were found to be statistically significant at different significance levels. Significant variables that yielded positive coefficients included; ownership structure, business age, focus strategies, business expenditures and entrepreneurial skills. Contrary, competitive rivalry and branding yielded negative coefficients on the business market share. This indicates that, independent variables with positive coefficients

improved market share while those with negative coefficients decreased market share of the businesses.

Age of the business had a positive influence on market share implying that an increase in business age by a unit increases their market share by one unit. Businesses that have stayed long in the industry and are relatively more proactive to both new and old trends in the industry and have managed to gain a larger customer base compared to young businesses hence have a wider market scope. These findings are in line with Abuor (2014) and Kotey *et al.* (2020) who found out that business age is a clear indicator of its status in the market with those that have operated for many years having accumulated economies of scale implying that younger firms had low market shares while older firms had a high market share. However, Voulgaris *et al.* (2013) dismisses this by arguing that young businesses are more aggressive in using modern promotional tools and technology to gain a larger market share as opposed to older businesses.

The use of promotional strategies was found to have a positive association with market share performance of businesses. The plausible reason is that promotions strategies enable a business reach out to more customers, venture into new markets thus expanding their operational base. Furthermore, through promotions, agrodealers are able to pass information to their customers, stimulate product demand, stress on their product value which will enable them maintain a stable and consistent markets sales which subsequently leads to market share increase. These results conform to those of Adefulu (2015); Erdil *et al.* (2017) and Kilonzo (2012) who found out that through promotions strategies such as branding, sales promotions and personal selling, businesses are able to expand their market shares.

Competitive rivalry had a negative effect on market share. The likely justification for this is that, as more and more businesses venture into the industry, existing firms feel the pressure emanating from competition hence try to find ways to maintain their survival and competitive edge. However, due to an upsurge in the businesses, the market has become saturated necessitating them into forced product/ price discounts and sales offers inorder to keep their stock moving. Additionaly, with increased rivalry, market share of existing businesses has decreased drastically as they now have to divide the market amongst several agrodealer businesses. The above findings are in line with those of Chesula and Kiriinya (2018); Mburu (2015) and Mugo (2020) who found out that competitive rivalry greatly affects performance of businesses hence they need to establish ways of overcoming it in order to remain competitive. However, findings by Boafo *et al.* (2018) and Kulmia (2014) contrast to the above as they established that intense rivalry had a positive association with

business market performance through creating value for their customers hence propelling them to increase their market share.

Surprisingly, branding was found to be statistically significant at 1% and had a negative association with market share. A likely justification for this is that, since the agrodealer business is highly homogeneous, branding does not increase the performance of businesses. Besides, agrodealers are in the same product line with similar price ranges and therefore it is presumed that all the businesses appeal equally to customers. Spreading of sales and profit margins across the industry only makes business achieve low performance in the industry. Nonetheless, the study noted that most of the agrodealer businesses do not engage in branding activities citing that they sell products from different manufacturers and sectors. Interesting enough, most of these businesses premises are branded by their supplies such as Baraka, MEA Fertilizers and Kenya Seed Company. Hence, it is not surprising that walking through town, one easily identifies the businesses through their supplier brands. This is however in contrast with findings of Erdil *et al.* (2017) and Kilonzo (2012) who established that branding by businesses goes a long way in helping them increase their market share and profitability levels.

Entrepreneurial skills if well-articulated enhances the competitiveness of the businesses through improvement in market share. Through skills development such as through formal education and on the job trainings, businesses are able to equip its personnel with skills to specific business activities that enhance their competitiveness through productivity. With the new trends in agricultural technology, agrodealers need to have high level skilled personnel and improvement in their skills for them to maintain a competitive edge in the market otherwise they will be phased out. These findings are consistent with those of International Tarde Center (ITC), 2019); Onsomu *et al.* (2010) and Porter (1990) who noted that skills generally contribute positively towards the competitive growth of businesses both locally and internationally by incorporating them into their production processes.

Business expenditure had a positive influence on business market share. Market share improvement entails a whole lot of activities such as continuous marketing to reach out to a wider range of customers. Increasing expenditures through promotional activities, research and development, employee training and marketing activities targets a wider base of customers. As such, the businesses are able to sell their products to new markets, retain and acquire new customers thus increasing their market share relative to their rival. These results concurs to findings by Konak (2015) who found out that increasing marketing, employee

training and research expenses enhance business competitiveness to a great extent. However, Asogwa *et al.* (2012) and Kiaritha *et al.* (2014) found out that reduction in business operational costs enables a business achieve maximum productivity as opposed to increasing its costs.

CHAPTER FIVE
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

This study aimed at analysing the influence of Porter's five forces on the competitiveness of agrodealer businesses in Nakuru East Sub-County. As such, the study sort to assess the main competitive forces in the agrodealer industry, determine the influence of Porter's five forces on choice of competitive strategies and to determine the effects of Porter's five forces and strategies on the market share performance of agrodealer businesses. The study further sort to establish the type of strategy that is commonly used by agrodealer businesses.

In conclusion therefore, business environments keep chsnging with time. With each passing day, busineses interact with other businesses in the same market, buyers, suppliers and government policy makers. Arguably, Porter's five forces is till important in the day to day running of business ebnterpriese. It cannot be ruled out but rather it should be incorporatedinto strategic management of businesses when analysing their competitive environment. From the study findings, agrodealers noted five important factors from the various indicators of Porter's five forces as a force to reckon with in the market. These were; competitive rivalry, product substitution, branding, buyer switching costs and operational costs.

The study further sought to determine the influence of Porter's five forces on utilization of competitive strategies by agrodealer businesses. Due to the competitive nature of the agrodealer business, agrodealers need to devise startegies that will make them competitive and maintain their survival. However, knowledge of competitive forces is paramount as this will enable agrodelaers make informed decisions on the type of strategies to use. Study findings indicated that for each competitive strategy adopted by the businesses, the choice was informed by different factors. Cost leadership strategies were considered important in making the businesses maintain their customers as well as for new businesses to acquire customers. This was affected by work experience in the industry, branding and buyer switching costs. For differentiation strategy, operational costs was found to have a negative correlation with it. Engagement in other businesses and competitive rivalry were found to be statistically significant with diversification strategy. Finally, education, group membership, business branches and product substitution were found to be statistically significant with choice of promotions strategy. Utilization of focus strategy was found to be while agrodealer's age, work experience and ownership structure were found to be significant with

choice of focus strategy.

Study findings further indicated that agrodealer businesses need to take into consideration various factors when trying to remain competitive. Gaining a competitive edge and a larger market share calls for the businesses to ensure maximum utilization of the resources that they hold. As much as business expenditure had a positive influence on market share and a policy for strengthening agro-dealer businesses' financial systems is an important measure to promote adoption of new technology that will help cut on their operational costs while at the same time increase their revenues. The constraining factors in improvement of performance through market share were found to be competitive rivalry and branding. Competitive rivalry had a negative correlation with market share in that with mny businessesin the market, the share margins have to be divided down among the businesses. This results to lower market share margins for the businesses as more and more businesses enter the market. The negative effect of branding is justified by the fact that the industry is highly homogeneous, hence it is presumed that, all businesses equally appeal to buyers.

5.2 Recommendations

Following the rise in demand for agricultural inputs, agrodealer businesses are an important link between farmers and input manufacturers. As part of their increasing importance, the study recommends that both the national and county governments to create an enabling environment by devising strategies that will help curb counterfeit inputs from accessing the market and selling input subsidies through them in order to minimize competition.

Efforts geared towards improvement of business competitiveness through effective adoption of competitive strategies should be reinforced. Encouraging agrodealers to join groups, engage in other businesses and stocking of different brands will enable them choose on the right strategy. This study recommends that the businesses should incorporate usage of more than one strategy in order to improve their efficiency. As such, proper policies are needed to educateagrodealers on benefits of utilization of competitive strategies.

There is also a need for agrodealer businesses to increase the use of cost leadership strategies since it was found to have an impact on their market share. Even though the businesses commonly used differentiation strategy, cost leadership strategies were better due to their positive impact on market share.

5.3 Suggestions for further studies

While this study mainly focused on determining the influence of Porter's five forces on competitiveness of agrodealer businesses, other studies can be carried out on the effect of the three new forces; digitalization, globalization and deregulation on competitiveness following the increased improvement in technology, communication and globalization. This will help to gain more knowledge on how competition affects the businesses' performance not only locally but also globally. There is also need to undertake further studies on the agrodealer industry in the wake of new improved genetically modified seeds, new crop diseases and growing rate ofthe knowledgeable customer.

This study used multivariate probit model to measure the influence of Porter's five forces on choice of competitive strategies among agrodealer businesses. Given the importance of the forces in influencing competition, an extension of this study can be conducted using structural equation modelling to measure the visual effect of each of the forces on competitive strategiesby the businesses. Due to study constraints, the study did not capture profitability of the agrodealer businesses yet it is an important competitive indicator. Therefore, further studies can be done in the area focusing on how competition affects competitiveness of the businesseswith profitability being a measure of competitiveness.

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APPENDICES

Appendix i: NACOSTI research permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **937859**

Date of Issue: **15/May/2020**

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This is to Certify that Ms.. Eileen Inyanji Wanyonyi of Egerton University, has been licensed to conduct research in Nakuru on the topic: Influence of Porter's Five Forces on The Competitiveness of Agro-dealer Businesses in Nakuru East Sub-County, Kenya for the period ending : 15/May/2021.

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Appendix ii: Questionnaire

My name is Eileen Inyanji, a student at Egerton University currently pursuing a Master of Science degree in Agribusiness Management at Egerton University. This questionnaire is developed and issued to you with the aim of collecting information on ***"The Influence of Porter's Five Forces on Competitiveness of Agrodealers Businesses in Nakuru East Sub-County, Kenya"***. The information provided will assist in the formulation of policies that will contribute towards improving business competitiveness for agrodealers through identification of the main competitive forces in the industry. Your voluntary participation in this survey will be appreciated and all the information you provide will be secure, confidential and will only be used for academic purposes.

		Questionnaire No.	
Enumerator's name		**Date.**	
Respondents name		**Phone no.**	
Business name		**Business contacts.**	

Section A:

i) Respondent's profile

Codes for question 1.1 to 1.7

	Code A			**Code C**			**Code D**			**Code E**
1	Owner		1	Male		0	No schooling		1	Share information
0	Manager		0	Female		1	Primary		2	Access products
						2	Secondary		3	Access credit
	Code B					4	Certificate/Diploma		4	Marketing
1	Yes					5	Undergraduate,		5	Income generation
0	No					6	Postgraduate, Masters		6	Receive training
						7	Postgraduate, PhD		7	Other (specify)

This section contains questions regardingjhkgjjh the respondent; kindly respond to each with an appropriate answer.

1.1 Position in the business	1.2 Gender	1.3 Age **(Years)**	1.4 Highest education level
Code A	**Code C**		**Code D**
1.5 Years of experience in the industry **(Years)**	1.6 Are you a member of any agrodealer association group?	1.7 Main reason/s for joining the group?	
	Code B (If 0, skip to section B)	**Code E**	

ii) Business description

Codes for questions 1.8 to 1.17

	Code F			**Code G**			**Code H**
1	Sole proprietorship		1	Survival		1.	Fertilizers
2	Partnership		2	Income generation		2.	Crop seeds
3	Company		3	Customer demand		3.	Animal chemicals
4	Joint venture		4	Risk coping strategy		4.	Crop chemicals
5	Cooperative		5	Other (specify)		5	Animal feeds
						6	Veterinary products

This section contains items regarding information of your business. Please respond with an appropriate answer.

1.8 What is the ownership structure of the business?	1.9 How many years has the business been in operation? **(Years)**	1.10 Number of branches
Code F		
1.11 Core business activity	1.12 Other businesses in the same premise other than the agrodealer business?	1.13 Which other business do you engage in? **State**
Code H	**Code B** (If 0, skip to 2.9)	
1.14 Main reason for carrying out other businesses	1.15 Do you usually train your employees?	1.16 Type of training mode used. **State**
Code G	**Code B** (If 0, skip to next section)	

Section B: Porter's five forces and competitive strategies

Codes for Question 2.1 to 2.9

	Code J			**Code K**			**Code L**			**Code P**
1	Strongly disagree		1	Not at all		1	Lower than competitors		1	Marketing
2	Disagree		2	Less extent		2	Equal to competitors		2	Customer relations
3	Neutral		3	Moderate extent		3	Higher than competitors		3	Record keeping
4	Agree		4	Large extent					4	Financial
5	Strongly agree		5	Very large extent			**Code O**		5	ICT
						1	Crop farmers		6	Technical
	Code M			**Code N**		2	Livestock farmers		7	Communication
1	Different sizes to cater for all customers		1	Advertisements		3	Both		8	Managerial
2	Standard pack sizes		2	Sales promotion						
3	As per the buyer's request		3	Direct sales						
			4	Public relations						

This section seeks your response to competitive forces and strategies; please respond to them with an appropriate answer.

a) Porter's five forces

	Statement	**Code J**
2.1 Bargaining power of buyers	My customers are well-informed	
	It is difficult for my buyers to switch from my services to those of my rivals	
	I negotiate product prices with my customers	
	My customers are price sensitive	
	Buyer concentration in the market is low	
	If substitute products are sold at a better price, buyers easily shift towards it	
	My products are an important input to my customers' activities	
	My buyers purchase a large volume of my products	
2.2 Bargaining power of suppliers	There are numerous suppliers in the market	
	At times my suppliers sell farm inputs directly to my customers	
	I am well-informed about my suppliers' services and market	
	I negotiate product prices with my suppliers	
	Suppliers' products are highly differentiated	
	Switching costs from one supplier to another is high	
	I buy a large volume of my suppliers' products	
	There are numerous suppliers in the market	
	At times my suppliers sell farm inputs directly to my customers	
2.3 Threat of	Other than the products I offer, there are more	

substitutes	substitutes available	
	I only stock products from a specific company	
	It is costly for my customers to switch to other businesses	
	Products are branded by their companies hence compete favorably	
	There is no much product difference between my products and my rivals'	
	Prices for substitute products fairly compete with each other	
	Customers prefer products from a specific company	
	Other than the products I offer, there are more substitutes available	
	I only stock products from a specific company	
23.4 Threat of new entrants	It is difficult for new agrodealers to enter the market	
	New agrodealers advertise to overcome existing brand preferences	
	My customers are loyal to my brand	
	The business requires a high initial capital investment	
	New businesses in the market have difficulty in acquiring customers	
	Products are highly differentiated	
	Buyer switching costs are high	
	Retaliation from existing firms is high towards new entrants	
	Licensing requirements and taxation for the business is too high	
	Subsidized fertilizer programs have negatively affected my business	
2.5 Competitive	There is a large number of agrodealer businesses in the	

rivalry	Sub-County	
	Entry of new players affects my product pricing strategy	
	The industry has high fixed costs	
	Storage costs of products are too high	
	My business is growing at a fast rate	
	It is easy for competitors to leave the market	
	Products are highly differentiated	
	There is a clear brand identity of businesses in the market	

b) Competitive Strategies

	Statements	**Code K**
	Offering low priced products	
	Offering price discounts on products	
	Improving efficiency through cost controls along the existing activity cost chain	
	We strive to supply a standard of high volume services at the most competitive prices to our buyers	
	Benchmarking ourselves against our rivals to access their relative cost	
2.6.1 How do you set your product prices?	2.6.2 Is your business actively involved in cost leadership strategy?	
Code L	**Code B**	

	Statements	**Code K**
2.7 Differentiation strategy	Selling of high-quality products from well-known suppliers	
	The business sources for uniqueness that cannot be easily imitated	
	Building customer values by creating product attributes at affordable costs	

	The business uses technology to remain on the cutting edge of innovation	
	Offering training of product use and after-sale support to customers	
	The business offers unique products for various buyer groups	
2.7.1 Product packaging by business	2.7.2 Is your business actively involved in differentiation strategy?	
Code M	**Code B**	

	Statements	**Code K**
2.8 Promotions strategy	Direct selling to customers through messages	
	Personal selling to customers	
	Adverstising of the business through flyers, branding, social media platforms etc	
	Engagement in public realtions through giving back to the society	
2.8.1 Is your business actively involved in promotions strategy?		**Code B**
	Statements	**Code K**
2.9 Focus strategy	We focus on selling products to a particular market niche	
	We devote resources to maintain market leadership in this niche	
	We innovate products/services for this market niche	
	We focus on low-cost strategy in our markets to avoid rivalry	

2.9.1 Major customers	2.9.2 Is your business actively involved in focus strategy?	
Code O	**Code B**	

	Statements	**Code K**
2.10 Diversification strategy	Carrying out other businesses alongside the agrodealer business	
	Substituting products to reduce demand for a particular class of products	
	Addition of new products unrelated to the agrodealer business	
	Addition of new products related to the agrodealer business	
2.10.1 Is your business actively involved in diversification strategy?		
Code B		

Section D: Competitiveness

This section contains items regarding the business competitiveness; please respond to each to the best of your knowledge.

3.1 Do you have a clear market leader in the industry?	3.2 How much do you generate approximately from your monthly sales?		3.3 Rough estimate of your monthly business expenditure
Code B	During high seasons (Peak)	During low seasons (Off-peak)	Kshs.
	Kshs.	Kshs.	

3.4 Has the business achieved the following performance indicators in the last one year?	**Code J**
Business sales have grown in the last one year	
The business has increased its customer growth and retention	
The business has achieved an increase in its profitability level	
Market share of the business has greatly increased in the past one year	

3.5 To what extent have the following factors affected your competitive performance?	**Code K**
Business location	
Number of business branches	
Agrodealer training	
Agrodealer experience in the industry	
Business age	
3.6 To what extent have the following forces influenced your competitive performance?	**Code K**
Bargaining power of buyers	
Bargaining power of suppliers	
New entrants	
Threat of substitute products	
Internal rivalry among agrodealers	
3.7 Which types of skills do you think you require to improve on your competitiveness as a business?	
Code Q	

Thank You!

Appendix iii: Factor analysis

Factor analysis/correlation — Number of obs = 110
Method: principal factors — Retained factors = 5
Rotation: (unrotated) — Number of params = 140

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	3.15162	1.01132	0.2645	0.2645
Factor2	2.14030	0.72558	0.1796	0.4441
Factor3	1.41473	0.18654	0.1187	0.5628
Factor4	1.22819	0.09500	0.1031	0.6659
Factor5	1.13319	0.14614	0.0951	0.7610
Factor6	0.98705	0.22622	0.0828	0.8439
Factor7	0.76083	0.02978	0.0639	0.9077
Factor8	0.73105	0.10086	0.0614	0.9691
Factor9	0.63019	0.02691	0.0529	1.0219
Factor10	0.60328	0.08218	0.0506	1.0726
Factor11	0.52110	0.09296	0.0437	1.1163
Factor12	0.42814	0.19262	0.0359	1.1522
Factor13	0.23552	0.05802	0.0198	1.1720
Factor14	0.17750	0.05835	0.0149	1.1869
Factor15	0.11915	0.03489	0.0100	1.1969
Factor16	0.08426	0.05380	0.0071	1.2040
Factor17	0.03046	0.01694	0.0026	1.2065
Factor18	0.01352	0.05477	0.0011	1.2077
Factor19	-0.04126	0.02024	-0.0035	1.2042
Factor20	-0.06150	0.03213	-0.0052	1.1990
Factor21	-0.09363	0.03481	-0.0079	1.1912
Factor22	-0.12844	0.03485	-0.0108	1.1804
Factor23	-0.16330	0.02706	-0.0137	1.1667
Factor24	-0.19035	0.04199	-0.0160	1.1507
Factor25	-0.23234	0.01666	-0.0195	1.1312
Factor26	-0.24900	0.03796	-0.0209	1.1103
Factor27	-0.28696	0.02047	-0.0241	1.0862
Factor28	-0.30744	0.03783	-0.0258	1.0604
Factor29	-0.34527	0.02969	-0.0290	1.0315
Factor30	-0.37495	.	-0.0315	1.0000

LR test: independent vs. saturated: chi2(435) = 797.63 Prob>chi2 = 0.0000

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Uniqueness
Bbyr1	0.3673	-0.3042	-0.1024	-0.0909	0.0910	0.7456
Bbyr2	0.1745	-0.1729	0.1167	0.4292	-0.1121	0.7293
Bbyr4	0.2154	0.4883	0.1947	-0.0746	-0.3166	0.5715
Bbyr5	0.2366	0.5351	0.0364	-0.2979	-0.1353	0.5493
Bbyr6	0.0931	0.1082	-0.4597	0.0264	-0.0921	0.7591
Bsup1	0.4313	-0.4214	-0.0548	-0.3864	-0.1363	0.4656
Bsup2	0.5072	0.3999	-0.0318	-0.0748	-0.1508	0.5535
Bsup3	0.4003	-0.3397	-0.1409	-0.0845	-0.0593	0.6938
Bsup5	0.4257	0.4047	-0.2490	0.1395	-0.0221	0.5731
Bsup6	0.5236	0.0097	-0.0394	-0.0195	0.1138	0.7109
Tsub1	0.0993	-0.2098	0.1783	-0.0013	0.1061	0.9031
Tsub2	-0.1107	-0.0944	-0.2561	0.0470	0.3775	0.7685
Tsub3	-0.0281	-0.1779	-0.2960	0.2526	-0.4408	0.6218
Tsub4	0.1556	0.4031	0.0793	-0.2749	-0.0103	0.7313
Tsub5	0.3306	0.0501	0.0098	-0.0413	0.3568	0.7591
Tsub6	0.2589	-0.0754	-0.2495	-0.1529	0.1125	0.8290
Tent1	0.5469	-0.0407	0.1733	-0.1132	-0.0072	0.6564
Tent2	0.3286	-0.1496	-0.0338	0.2261	0.2056	0.7751
Tent3	0.0966	-0.0455	0.4583	-0.2271	0.1995	0.6872
Tent4	0.2246	0.2541	0.2744	0.3115	-0.0412	0.7110
Tent5	0.1930	0.2206	0.1581	0.4435	0.2139	0.6467
Tent6	0.3897	-0.0587	0.0113	0.1778	-0.2344	0.7581
Tent7	0.2664	-0.2174	0.2725	0.1275	0.1857	0.7568
Tent8	0.4790	-0.0804	-0.1553	0.2940	-0.0955	0.6444
Criv1	0.4408	-0.4692	0.1827	-0.1662	-0.1668	0.4968
Criv2	0.2693	0.2010	0.3564	0.1157	0.0847	0.7395
Criv3	0.2596	-0.2945	0.1225	0.0558	-0.1261	0.8119
Criv4	-0.1905	-0.0934	0.1314	0.0641	-0.1769	0.9023
Criv5	0.1758	0.2123	-0.3201	-0.0044	0.3501	0.6990
Criv6	0.4851	0.1088	-0.2527	-0.0191	0.0783	0.6824

Factor analysis/correlation — Number of obs = 110
Method: principal factors — Retained factors = 5
Rotation: orthogonal varimax (Kaiser off) — Number of params = 140

Factor	Variance	Difference	Proportion	Cumulative
Factor1	2.45049	0.34272	0.2057	0.2057
Factor2	2.10776	0.48615	0.1769	0.3825
Factor3	1.62161	0.00811	0.1361	0.5186
Factor4	1.61350	0.33884	0.1354	0.6540
Factor5	1.27467	.	0.1070	0.7610

LR test: independent vs. saturated: chi2(435) = 797.63 Prob>chi2 = 0.0000

Rotated factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Uniqueness
Bbyr1	0.4434					0.7456
Bbyr2				0.4533		0.7293
Bbyr4		0.6275				0.5715
Bbyr5		0.6463				0.5493
Bbyr6						0.7591
Bsup1	0.7082					0.4656
Bsup2		0.5999				0.5535
Bsup3	0.5132					0.6938
Bsup5		0.4359				0.5731
Bsup6						0.7109
Tsub1						0.9031
Tsub2						0.7685
Tsub3					-0.5914	0.6218
Tsub4		0.4612				0.7313
Tsub5						0.7591
Tsub6						0.8290
Tent1	0.4439					0.6564
Tent2						0.7751
Tent3					0.5131	0.6872
Tent4				0.4596		0.7110
Tent5				0.5289		0.6467
Tent6						0.7581
Tent7						0.7568
Tent8						0.6444
Criv1	0.6895					0.4968
Criv2						0.7395
Criv3						0.8119
Criv4						0.9023
Criv5			0.5331			0.6990
Criv6			0.4294			0.6824

(blanks represent abs(loading)<.4)

Appendix iv: Pair-wise correlation of competitive strategies

```
. pwcorr CLS DIVS DIFFS FS Prmtns, sig star(5)
```

	CLS	DIVS	DIFFS	FS	Prmtns
CLS	1.0000				
DIVS	0.0204 0.8324	1.0000			
DIFFS	0.0657 0.4953	-0.1874* 0.0499	1.0000		
FS	0.2067* 0.0303	-0.0798 0.4070	-0.1172 0.2228	1.0000	
Prmtns	0.0103 0.9146	-0.0437 0.6506	0.1573 0.1007	-0.1072 0.2652	1.0000

```
. vif
```

Variable	VIF	1/VIF
Work_exp	6.84	0.146183
Age	6.79	0.147225
Group_mbrshp	1.36	0.735148
Businessage	1.34	0.745636
Educ_years	1.34	0.747130
Bs_branch	1.21	0.826732
Factor5	1.17	0.851843
Bslocation	1.17	0.852419
Other_bs	1.14	0.874785
Factor4	1.13	0.883520
Factor1	1.12	0.890503
Ownstructure	1.11	0.897321
Factor2	1.11	0.897888
Factor3	1.07	0.933920
Mean VIF	1.99	

Appendix v: Multivariate regression for determinants of competitive strategic choices

Multivariate probit (MSL, # draws = 5) — Number of obs = 110
Wald chi2(70) = 88.31
Log likelihood = -296.14442 — Prob > chi2 = 0.0687

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
CLS						
Age	-.0735097	.0449437	-1.64	0.102	-.1615977	.0145783
Educ_years	.1158236	.2015676	0.57	0.566	-.2792416	.5108888
Group_mbrshp	-.3022061	.2998991	-1.01	0.314	-.8899976	.2855853
Ownstructure	.1845479	.1905024	0.97	0.333	-.1888299	.5579256
Businessage	-.0092146	.0226009	-0.41	0.683	-.0535115	.0350824
Work_exp	.1222769	.0524852	2.33	0.020	.0194078	.2251459
Bs_branch	-.0069819	.2888807	-0.02	0.981	-.5731776	.5592138
Bslocation	-.1378629	.1127283	-1.22	0.221	-.3588062	.0830804
Other_bs	.4011546	.2933429	1.37	0.171	-.1737869	.9760962
Factor1	-.0524086	.1479331	-0.35	0.723	-.3423521	.2375349
Factor2	-.1004839	.1573565	-0.64	0.523	-.4088971	.2079292
Factor3	.3992039	.1765852	2.26	0.024	.0531033	.7453044
Factor4	.5325192	.181089	2.94	0.003	.1775913	.8874472
Factor5	-.0570009	.1695079	-0.34	0.737	-.3892302	.2752283
_cons	1.23831	1.484488	0.83	0.404	-1.671234	4.147853
DIFFS						
Age	-.0552975	.041325	-1.34	0.181	-.136293	.0256981
Educ_years	.0378358	.1918725	0.20	0.844	-.3382273	.413899
Group_mbrshp	-.3517991	.3060717	-1.15	0.250	-.9516886	.2480905
Ownstructure	-.2493482	.1989259	-1.25	0.210	-.6392358	.1405394
Businessage	-.0121176	.0229214	-0.53	0.597	-.0570426	.0328075
Work_exp	.0514372	.0483412	1.06	0.287	-.0433099	.1461843
Bs_branch	-.2046143	.2977304	-0.69	0.492	-.7881552	.3789267
Bslocation	-.1215505	.1121637	-1.08	0.279	-.3413873	.0982862
Other_bs	.0145681	.2888481	0.05	0.960	-.5515637	.5806999
Factor1	-.0330784	.1632994	-0.20	0.839	-.3531394	.2869826
Factor2	-.1262129	.1620722	-0.78	0.436	-.4438685	.1914427
Factor3	.2424127	.157293	1.54	0.123	-.0658759	.5507013
Factor4	-.1730372	.1711136	-1.01	0.312	-.5084137	.1623393
Factor5	-.3127766	.1860861	-1.68	0.093	-.6774987	.0519455
_cons	3.1158	1.434591	2.17	0.030	.3040537	5.927546
FS						
Age	-.088229	.0452979	-1.95	0.051	-.1770112	.0005532
Educ_years	-.0720891	.188791	-0.38	0.703	-.4421128	.2979345
Group_mbrshp	.0582446	.297616	0.20	0.845	-.5250721	.6415613
Ownstructure	.3409961	.1854427	1.84	0.066	-.0224649	.7044571
Businessage	.0265557	.0244501	1.09	0.277	-.0213656	.0744769
Work_exp	.109248	.0519493	2.10	0.035	.0074293	.2110667
Bs_branch	-.5020885	.3445533	-1.46	0.145	-1.177401	.1732237
Bslocation	.0937702	.1110492	0.84	0.398	-.1238823	.3114227
Other_bs	-.163026	.2895285	-0.56	0.573	-.7304915	.4044395
Factor1	.078712	.1673969	0.47	0.638	-.24938	.4068039
Factor2	-.1246466	.1541054	-0.81	0.419	-.4266878	.1773945
Factor3	-.1947306	.1547416	-1.26	0.208	-.4980184	.1085573
Factor4	.0399554	.1629765	0.25	0.806	-.2794726	.3593834
Factor5	-.1120378	.1707131	-0.66	0.512	-.4466293	.2225537
_cons	1.533963	1.445602	1.06	0.289	-1.299365	4.367291
DIVS						
Age	.0241268	.0449331	0.54	0.591	-.0639405	.1121941
Educ_years	.2037939	.2090701	0.97	0.330	-.205976	.6135639
Group_mbrshp	.0744256	.3222209	0.23	0.817	-.5571157	.7059669
Ownstructure	.0195638	.2084185	0.09	0.925	-.388929	.4280567
Businessage	.0111978	.0258255	0.43	0.665	-.0394193	.0618149
Work_exp	-.0411152	.0516842	-0.80	0.426	-.1424143	.0601839
Bs_branch	-.3300793	.3545055	-0.93	0.352	-1.024897	.3647387
Bslocation	.0812307	.1132273	0.72	0.473	-.1406908	.3031521
Other_bs	.7519784	.293243	2.56	0.010	.1772327	1.326724
Factor1	-.2899015	.1571052	-1.85	0.065	-.5978222	.0180191
Factor2	.0916348	.1663391	0.55	0.582	-.2343837	.4176534
Factor3	-.0041933	.1814858	-0.02	0.982	-.359899	.3515124
Factor4	.1047955	.1806311	0.58	0.562	-.2492349	.4588259
Factor5	-.0114849	.1857874	-0.06	0.951	-.3756214	.3526516
_cons	-2.293016	1.537072	-1.49	0.136	-5.305622	.7195901
Prmtns						
Age	-.0348966	.0419689	-0.83	0.406	-.1171542	.0473611
Educ_years	-.4678026	.2215442	-2.11	0.035	-.9020212	-.0335839
Group_mbrshp	.7073063	.3147485	2.25	0.025	.0904105	1.324202
Ownstructure	.279173	.2077805	1.34	0.179	-.1280694	.6864153
Businessage	-.0258356	.0253585	-1.02	0.308	-.0755373	.0238662
Work_exp	.0381795	.0473709	0.81	0.420	-.0546657	.1310248
Bs_branch	.5832703	.2954325	1.97	0.048	.0042333	1.162307
Bslocation	.0999669	.1101894	0.91	0.364	-.1160003	.3159341
Other_bs	-.3436808	.2937254	-1.17	0.242	-.9193719	.2320103
Factor1	.2232519	.1522748	1.47	0.143	-.0752013	.521705
Factor2	.4930573	.1647571	2.99	0.003	.1701393	.8159754
Factor3	.0345123	.158683	0.22	0.828	-.2765007	.3455253
Factor4	.0935	.1648858	0.57	0.571	-.2296702	.4166703
Factor5	-.1815979	.1812701	-1.00	0.316	-.5368807	.1736849
_cons	.9394161	1.407769	0.67	0.505	-1.819761	3.698593

Appendix vi: Tobit regression for factors influencing the market share of agrodealer businesses

```
Tobit regression                                  Number of obs      =        110
                                                  LR chi2(22)        =     140.23
                                                  Prob > chi2        =     0.0000
Log likelihood = -205.44458                       Pseudo R2          =     0.2544
```

Bs_Marketshare	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Age	-0.009	0.050	-0.186	0.853	-0.109	0.091
Gender	-0.330	0.352	-0.939	0.350	-1.029	0.369
Educ_years	0.171	0.246	0.695	0.489	-0.317	0.659
Work_exp	-0.052	0.059	-0.890	0.376	-0.169	0.064
Group_mbrshp	-0.345	0.369	-0.936	0.352	-1.078	0.388
Ownstructure	-0.024	0.259	-0.091	0.928	-0.538	0.491
Businessage	0.063	0.028	2.208	0.030	0.006	0.119
Bs_branch	0.323	0.362	0.890	0.376	-0.398	1.043
Other_bs	-0.498	0.353	-1.412	0.161	-1.199	0.203
Emplytraining	-0.320	0.338	-0.948	0.346	-0.992	0.351
CLS	0.281	0.355	0.791	0.431	-0.425	0.986
DIFFS	-0.239	0.371	-0.644	0.521	-0.976	0.498
Prmtns	0.893	0.354	2.522	0.013	0.189	1.597
FS	0.003	0.355	0.009	0.993	-0.703	0.709
DIVS	0.092	0.391	0.235	0.815	-0.684	0.868
Factor1	-0.427	0.184	-2.316	0.023	-0.793	-0.061
Factor2	0.018	0.189	0.095	0.925	-0.358	0.394
Factor3	-0.435	0.195	-2.227	0.029	-0.823	-0.047
Factor4	-0.295	0.200	-1.479	0.143	-0.692	0.101
Factor5	-0.232	0.207	-1.123	0.264	-0.643	0.179
Bs_expenditures	0.804	0.063	12.739	0.000	0.679	0.930
Entre_skills	0.102	0.062	1.665	0.099	-0.020	0.225
_cons	-0.719	1.779	-0.404	0.687	-4.254	2.817
/sigma	1.566	0.106			1.356	1.776

```
      0  left-censored observations
    110     uncensored observations
      0 right-censored observations
```

```
. vif
```

Variable	VIF	1/VIF
Work_exp	8.13	0.122929
Age	7.55	0.132469
Group_mbrshp	1.48	0.674054
Educ_years	1.42	0.706048
Prmtns	1.32	0.756152
CLS	1.32	0.756247
Factor4	1.27	0.787656
Businessage	1.27	0.789373
DIFFS	1.25	0.801990
Factor2	1.24	0.803852
Other_bs	1.24	0.804992
Factor5	1.24	0.805718
Gender	1.24	0.805945
Bslocation	1.22	0.821628
FS	1.21	0.824199
DIVS	1.21	0.828001
Ownstructure	1.21	0.829117
Factor1	1.20	0.835169
Factor3	1.18	0.850580
Mean VIF	1.96	

```
.
```

Appendix vii: Marginal effects of the Tobit regression model

```
Average marginal effects                        Number of obs     =        110
Model VCE    : OIM

Expression   : Linear prediction, predict()
dy/dx w.r.t. : Age Gender Educ_years Work_exp Group_mbrshp Ownstructure Businessage Bs_branch Other_bs Emplytrain
               Factor2 Factor3 Factor4 Factor5 Bs_expenditures Entre_skills
```

	Delta-method					
	dy/dx	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Age	-.0093555	.0503255	-0.19	0.853	-.1079917	.0892808
Gender	-.3303014	.3518341	-0.94	0.348	-1.019884	.3592809
Educ_years	.1705851	.2455948	0.69	0.487	-.3107719	.651942
Work_exp	-.0521608	.058595	-0.89	0.373	-.1670049	.0626833
Group_mbrshp	-.3452934	.3688263	-0.94	0.349	-1.06818	.3775929
Ownstructure	-.0235017	.258954	-0.09	0.928	-.5310423	.4840389
Businessage	.0626306	.0283623	2.21	0.027	.0070415	.1182196
Bs_branch	.3226645	.3624794	0.89	0.373	-.387782	1.033111
Other_bs	-.4981858	.3528178	-1.41	0.158	-1.189696	.1933243
Emplytraining	-.3203265	.3377983	-0.95	0.343	-.982399	.3417459
CLS	.280831	.3550513	0.79	0.429	-.4150568	.9767188
DIFFS	-.2388904	.3707019	-0.64	0.519	-.9654528	.487672
Prmtns	.8931574	.35415	2.52	0.012	.1990361	1.587279
FS	.0031566	.3551447	0.01	0.993	-.6929142	.6992273
DIVS	.0918876	.3905906	0.24	0.814	-.673656	.8574311
Factor1	-.4269596	.1843726	-2.32	0.021	-.7883233	-.0655959
Factor2	.0179655	.1893279	0.09	0.924	-.3531104	.3890413
Factor3	-.4346772	.1951975	-2.23	0.026	-.8172572	-.0520972
Factor4	-.295143	.1995292	-1.48	0.139	-.686213	.095927
Factor5	-.2321158	.2066727	-1.12	0.261	-.6371869	.1729552
Bs_expenditures	.804155	.0631272	12.74	0.000	.680428	.927882
Entre_skills	.1024718	.0615454	1.66	0.096	-.0181549	.2230986

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Appendix viii: Publication

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Determinants of Porter's competitive strategy utilization among agro-dealers in Kenya

E. I. Wanyonyi[1]*, E. W. Gathungu[1], H. K. Bett[1] and D. O. Okello[1]

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*Corresponding author:
E. I. Wanyonyi, Department of Agricultural Economics and Agribusiness Management, Faculty of Agriculture, Egerton University, Njoro, Kenya
E-mail: einyanji261@gmail.com

Reviewing editor:
Fatih Yildiz, Food Engineering and Biotechnology, Middle East Technical University, Ankara, Turkey

Additional information is available at the end of the article

Abstract: Utilization of Porter's competitive strategies is considered a crucial tactic in enhancing the competitiveness of small-scale agro-dealers in developing countries. The dynamic nature of the agro-dealer business environment further necessitates the businesses to strategically align themselves for survival sustainability. Despite the many benefits attributed to the utilization of Porter's competitive strategies, there is limited empirical literature on the utilization of these strategies in agro-dealer enterprises in emerging economies. This study sought to analyze determinants of utilization of Porter's competitive strategies using multivariate probit regression model among agro-dealers in Nakuru County, Kenya. Data were collected from 110 businesses using semi-structured questionnaires. Results indicated that age, experience, group membership, education, ownership structure, engagement in other businesses, business age, competitive rivalry, product substitution, operational costs and branding statistically influenced the choice of competitive strategies. Proper policy frameworks geared towards operational costs reduction, educating and training agro-dealers on the maximum utilization of competitive strategies should be implemented.

E. I. Wanyonyi

ABOUT THE AUTHOR

Eileen Inyanji Wanyonyi is a MSc Candidate in Agribusiness Management, Egerton University, Kenya. Her key research areas include strategic management, agricultural marketing and value chain and agribusiness management. She is a MasterCard foundation scholar under the Regional Forum for Capacity Building in Agriculture (RUFORUM) through the TAGDev Program at Egerton University.

PUBLIC INTEREST STATEMENT

The Kenyan agricultural input sector is becoming increasingly competitive following the opening up of markets to private investors. With agro-dealers being the centre of the Kenyan input sector by linking farmers to input manufacturers, they are at task to ensure they meet both farmers' and suppliers' needs. The gradual increase in competition has necessitated agro-dealers to strategically align themselves to remain competitive otherwise they will be phased out of the market. However, despite the many benefits of strategic alignment, businesses need to be knowledgeable of factors contributing to competition in their industry so that they can work towards devising strategies to cope with them. Hence, knowledge of factors leading to the utilization of Porters' competitive strategies is useful for agro-dealer organizations, agro-dealers and national and county governments for effective policy initiatives. The empirical findings of this study puts emphasis on the importance of considering such factors when implementing effective competitive strategies.