CONSUMER ATTITUDES AND CHOICE OF AGROCHEMICALS AMONG SMALLHOLDER FARMERS IN MACHAKOS COUNTY

ISABELLAH NYANGARA NYANDIEKA

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN MARKETING, FACULTY OF BUSINESS AND MANAGEMENT SCIENCES, UNIVERSITY OF NAIROBI

2023

DECLARATION

I hereby attest that the work presented in this study is my own and has not been previously published or used to earn credit toward a degree at any other institution.

Signature: Date: ----2nd December 2023----------------------

Isabellah Nyangara Nyandieka

D65/6396/2017

I therefore endorse the submission of this research project for examination, as the supervisor from the University of Nairobi.

Signature: ----   --------- Date: ----5th Dec 2023--------------------
----

Professor Justus Munyoki

Professor of Marketing

Department of Business Administration

Faculty of Business and Management Sciences

University of Nairobi

DEDICATION

This research project is dedicated to everyone who has supported the research endeavour at any of its many phases. This research is fully devoted to my children Tugi and Maya, you can be all you want to be, when you put your mind to it.

In a special way, I want to appreciate my dear husband, Eric Magale, for his encouragement, daily cheering, and unwavering support in this academic journey. To my parents, Dunstan and Norah Nyandieka, parents in laws, Andrew and Phanice Magale and siblings, Euniah, Christine, Felix, Janice and Dan for their encouragement and prayers.

ACKNOWLEDGEMENT

I would want to begin by expressing my thanks to the Supreme Being for blessing me with the gift of life and allowing me to continue my academic path to this current moment. I attribute all praise and glory only to God.

It is also important to recognize and thank my great supervisor, Prof: Munyoki Justus, who was instrumental in the success of this research project by his insightful guidance, boundless patience, and keen understanding. His analysis and suggestions were useful. Indeed, he acted as an avenue of inspiration for me to persist in my academic pursuits.

TABLE OF CONTENTS

LIST OF TABLES

ABBREVIATIONS AND ACRONYMS

SPSS   : Statistical Package for Social Sciences

UN   : United Nations

CEOs   Chief Executive Officer

ABSTRACT

Consumer attitudes are learned through various channels such as personal experience, exposure to mass media, increase of knowledge, influence of family and friends and so on. Consumer attitudes are believed to ultimately influence buying decisions, also referred to as consumer choice. The objective of this study was to determine the influence of consumer attitudes on choice of agrochemicals among smallholder farmers in Machakos county. The study was guided by Tri component attitude theory Nudge theory and Howard-Sheth Model. This study used a cross-sectional, descriptive research design. The population of interest for this study was Machakos county's small-scale farmers who have less than an acre of farmland. There are about 15,000 registered small-scale farmers in Mwala, Kathiani, Yatta and Mavoko which are sub counties in Machakos where farming mostly take place for small scale. The sample size was 389.The study used descriptive analysis and inferential statistics. The study found smallholder farmers in Machakos County consider affective information on agrochemicals at great extent with a mean of 4.35. The study also found smallholder farmers in Machakos County consider behavioral Information had a mean of 4.35 and cognitive information which had a mean of 3.57 on agrochemicals at moderate extent. The correlation results revealed that the link between affective information, cognitive information and consumer choice is statistically significant and moderately positive. The research also demonstrated a positive relationship between consumer attitudes and choice of agrochemicals among smallholder farmers. The study recommends that Agrovets in Machakos should put mechanisms in place to guarantee the quality of their agrochemicals and create avenues of settling disputes while making exchanges of products. Also, safe and reliable delivery services should be used to ensure that agrochemicals ordered are received by the farmers in time.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

To have a handle on what motivates consumers to make certain purchases, it is crucial to understand the relationship between consumer attitudes and choice. Eagly and Chaiken (2016) describe consumer attitudes as favorable or unfavourable predispositions associated with a product or service. Shiv and Huber (2015) argue that it is important to appreciate the fluidity of consumer attitudes. The researchers posit that consumer perceptions are shaped by experiences and changing circumstances and are therefore bound to change over time. Consumer attitudes are believed to ultimately influence buying decisions, also referred to as consumer choice.

The study was guided by Tri component attitude theory (Howard and Sheth 1990), Nudge theory (Thaler & Sunstein 1977) and Howard-Sheth Model (Howard-Sheth 1968). The tri-component theory of consumer attitudes argues that the argument that there is a relationship between consumer attitudes and choice. The nudge hypothesis maintains the concept that farmers make choices based on their own personal preferences. With nudge theory, there is therefore a presumption of nurturing for interests, politics, and house trading (Sunstein & Reisch, 2017). The Howard-Sheth model represents the many options available to customers in the market.

The hot and humid tropical climate in Kenya, which is favorable to the growth of pests, weeds, and disease vectors (Jeschke, 2016), makes the usage of agrochemicals such as chemical pesticides still an absolute need in the country. Smallholder farmers are often

impoverished and participate in agriculture for both subsistence and, to a lesser degree, economic interests. As a result, agrochemicals carry a dual level of significance for these farmers. In recent years, Kenya's market has seen a rise in the number and diversity of agrochemicals on offer. In addition, there is a growing presence of international companies in the agrochemical market (Montgomery, 2020).

1.1.1 Consumer Attitudes

According to Duffett (2017), an individual's attitude may be defined as a combination of cognitive, motivational, and emotional processes that are related to their surroundings. The inference here is that external stimuli, such as items delivered to customers as well as the method in which the products are conveyed to them, have a significant role in the formation of consumer attitudes. Schiffman and Kanuk (2007) define attitudes as the expression of favorable or unfavorable feelings that a consumer holds toward some object such as product or service. They assert that attitudes are a learned predisposition and are consequence of behavior but not always synonymous with behavior. Secondly, attitudes may be consistent with the behavior, but not necessarily permanent (Samarasinghe, 2012). Thirdly, attitudes exist under a certain context. An unforeseen circumstance may change a person's previous attitudes towards a product or service. A slight change of situation may greatly influence or even reverse consumer attitudes and behavior.

To shed light on the causal relationships between beliefs and behaviors in social contexts, Erasmus, Boshoff, and Rousseau (2011) developed the functional theory. The four purposes of attitudes defined by Berkiwertz (2015) are the acquisition of knowledge, the expression of values, the protection of the self, and the promotion of social welfare. Sanchez-Sabate and Sabaté, (2019), concluded that there is always one dominant function

the attitude plays while it may serve more than one functions. The advantage of holding certain attitudes is that it will unconsciously guide consumers to behave in a consistent manner when they deal with the same or similar products or services and thereby avoid expending more energy purchasing object for a second time. Because of this advantage, consumers prefer to maintain consistent attitudes and behavior pattern to save their time.

Closely linked to the notion of consumer attitude is the idea of consumer beliefs (Verma, Chandra and Kumar, 2019) describes beliefs as subjectively held information upon which attitudes are based. Beliefs, therefore, underlie consumer choice. Woo and Kim, (2019) however, sees beliefs and attitudes in the same light. He proposes that the key idea is to appreciate that the interaction among any number of variables, perceptions, values, or beliefs, are "automatically activated" when a consumer is faced with a choice situation and that only those activated or salient will influence the buying decision.

1.1.2 Consumer Choice

Consolidating preferences prior to making a decision on a product is an important step in the decision-making process (Beach, 2013). The choosing and use of a product by a consumer is a source of anxiety (Bettmanet, 2008). Brand loyalty may be traced back to consumer preference for a certain product. Consumers make decisions based on clearly articulated preferences, which allow the purchaser to confidently evaluate available alternatives. In contrast to shoppers' states of mind, consumers' shopping preferences and choices tend to be more consistent with the results of surveys measuring consumer propensity. Berkiwertz, (2015). argue that even though some mental calculations still go on while making choices based on memory, the choices are informed by the consumer's previous experiences and prior knowledge. This view is resounded by (Aaker, 2014) who

posits that previously formed judgments are retrieved relatively quickly regardless of cognitive processes that eventually inform the choice as compared to constructed judgments which often require robust cognitive activity.

Other consumer theorists also suggest that consumer choice can also be situational. In addition, Bordalo, Gennaioli, and Shleifer (2013) highlight the idea of context-dependent choice, wherein buyers are attracted to products' most prominent features, whether those features be quality or cost. They imply that customers place an abnormally high value on these characteristics, leading them to choose products that provide a better quality-to-price ratio. Dharet, (2014) further suggests that an object's functional value, stability, and effects on later behavior, also significantly influence their buying decisions.

According to Sagoff (2013), there is a relationship between selecting a product and having a preference for that product, and this connection is subject to economic conditions. When there are no flaws in the market conditions, the customer will choose from among the options that they find most appealing. During the time when the market is faulty, decisions are subject to being influenced by situational circumstances such as accessibility. As a result, customers' product selections may be in direct opposition to their preferences. The power of the product is proof of its success; it demonstrates the product's capacity to gain the preferences of a customer and to develop a connection that is stable over time (Kay, 2016).

1.1.3 Agricultural Activities in Machakos

Machakos is a relatively vast county administratively divided into eight sub-counties namely Machakos Town, Kathiani, Mavoko, Kangundo, Matungulu, Masinga, Yatta, and Mwala. The raising of animals and fruit, the mining of sand, and the business of trading are the primary contributors to the economy of Machakos County. Cereals are one kind of crop that is cultivated. Agriculture is the primary means through which people in Machakos County make their living, according to the MoALF (2017). Approximately 73% of the population is employed by the sector, and it provides approximately 70% of the total income to households (ibid). Crops farmed in Machakos include fruit farming, in particular mangoes, pineapples, and oranges, and cereal grains such as sorghum, green grams and pigeon peas, cassava, sweet potatoes, and maize and beans. Agriculture in the county is practiced by smallholder farmers who are often resource poor (MoALF, 2017). Farmers in the county also engage in livestock and poultry and pig farming to a lesser extent. Farming of mangoes, pigeon peas, and green grams is considered are considered strategic to the County (ibid).

However, (MoALF, 2017) points out that agricultural productivity in the county is significantly hampered by water scarcity, variations in temperature, intense rain, and moisture stress alongside other issues such as soil degradation due to poor agricultural practices. Farmers have also sought to engage in value addition, group marketing mechanisms, and reduced reliance on purchasing inputs (ibid). In this view, the use of agrochemicals is considered one of the ways to boost agricultural productivity by smallholder farmers in the County.

1.2 Research Problem

Consumer attitudes are learned through various channels such as personal experience, exposure to mass media, increase of knowledge, influence of family and friends and so on (Bhuvaneswari, & Krishnan, 2015). Although consumer attitudes are psychological expressions of consumers and cannot be observed directly, various models of consumer attitudes and scale rating methods have enabled marketers to assess consumer attitudes towards their products and therefore pursue appropriate strategies. Consumer attitudes are believed to ultimately influence buying decisions, also referred to as consumer choice (Ozer, & Gultekin, 2015). Consumer choice is so important that even trivial decisions can be impactful. In consumer research, consumer behavior refers to the act of buying a certain product or service. Cai, (2020), describes consumer choice as a situation a consumer's decision-making is characterized by conflict, uncertainty, and some level of psychological processes.

The proliferation of agrochemicals in the Kenyan market in recent years has been an important driver in the relatively recent popularization of agriculture as a business, or simply agribusiness. The use of agrochemicals and other modern farming techniques highlighted above are seen to be a key ingredient in boosting productivity for smallholder farmers among other benefits. Agrochemical companies have invested in massive advertisement campaigns and reward schemes targeted at farmers and other users to tap into this burgeoning market (MoALF, 2017). These developments have not only heightened consumer awareness but have also contributed to diverse consumer attitudes which have influenced buying behavior. According to Jeschke, (2016), small scale farmers in Machakos county engage in value addition, group marketing mechanisms, and

reduced reliance on purchasing inputs (ibid) in which use of agrochemicals is considered one of the ways to boost agricultural productivity.

Various global, regional, and local studies have been carried out in relation to consumer attitudes and choice. A survey of customers in France was conducted out by Prabha (2017) as part of a global research project to investigate their perspectives on couponing. According to the findings of the research, neither merchants nor customers had a negative response to couponing in any way. [C]oupons were well received by both groups. Having said that, the research was conducted at businesses in France, which reveals a contextual disconnect. Akinci et al. (2004) conducted this study to learn more about high-income consumers' perceptions of and comfort with using online banking. The study's results show clear differences in the demographics and worldviews of users and non-users. The mindset of the target market wasn't taken into consideration nearly enough. The present research will fill in the blanks by looking at how the attitudes of consumers impact their purchasing decisions. In Germany, Ramadhani (2002) conducted research to determine how consumers feel about various marketing initiatives. It concluded that consumers' discomfort with advertising is not caused by advertisers' tendency to overstate their products; rather, it is caused by customers' uncertainty as to whether advertising adheres to the value of truth. However, the study was done in Germany and did not examine the relationship between consumer attitude and choices, thus raising a contextual gap.

Ntawuruhunga (2016) conducted research on a regional scale to investigate the knowledge, attitudes, and practices of African Indigenous vegetable growers in Uganda. It was discovered that factors such as a farmer's gender, level of education, occupation, number of years of experience in farming, tenure of land, and total amount of land held

had a substantial impact on the farmer's knowledge, attitudes, and practices. Nevertheless, the emphasis of the research was on African Indigenous vegetable growers, and not on all of the Machakos region's small-scale farmers. During their research on the elements that impact consumers' views toward organic goods, Ranjbar et al. (2016) focused their attention on 124 customers of organic products in the country of Ethiopia. According to the findings of the regression analysis, understanding of the organic product, health awareness, customer motivation, and age all had a significant impact on attitudes toward organic goods. On the other hand, the research focused on the medical field rather than the commercial field.

Kosgei (2018) conducted research in the local area to investigate the attitudes towards opaque beer as well as the aspects that would impact its sales performance. According to the findings of the survey, the public has a negative view of cloudy beer because of the terrible impact it has had on society, such as the loss of life. However, this study did not reveal a conceptual gap as it did not relate consumer attitudes on choice of agrochemicals. In Nairobi, Nyarunda (2016) conducted research to investigate customer preferences and shopping patterns with regard to the purchasing of locally manufactured vs imported clothing. According to the findings of the research, customers do not differentiate between imported and locally manufactured clothes in terms of the features that are important to them when choosing clothing, and both are held to the same standards. However, the survey did not reveal any specifics on the preferences and attitudes of consumers. The purpose of this research was to close this information gap. Obonyo (2019) conducted research on the effect that out-of-home advertising has on the attitudes of consumers who purchase fast-moving consumer items in the Westlands area

of Nairobi County. According to the findings of the research, many aspects of product packaging help convey information about the product's quality and characteristics in a way that influences consumers' decisions to make purchases. The studies were not based on small-scale farmers in Machakos. Further this study did not reveal a conceptual gap as it did not relate consumer attitudes on choice of agrochemicals.

The studies cited have revealed several conceptual and contextual gaps. Most studies have focused on the consumer attitude and branding, whereas just a few studies investigated the consumer choices. Studies have also been done in different contextual setting and their findings cannot be generalized to apply to the small-scale farmers in Machakos in Kenya. To address these gaps, this study seeks to answer the following research question; what is the influence of consumer attitudes on choice of agrochemicals among smallholder farmers in Machakos county?

1.3 Research Objective

The objective of this study was determine the influence of consumer attitudes on choice of agrochemicals among smallholder farmers in Machakos county.

1.4 Value of the Study

A deeper understanding of how consumer choices and attitudes in the agrochemical sector is important for theory, praxis and policy. This study contributed to the literature on consumer research by highlighting how non-observable attributes or consumer attitudes affect consumer choices in the agrochemical industry.

For practice, this study helped in various players in the agrochemicals industry to understand the challenges of farmers, and in particular the majority of these farmers who

farm on small holdings of land. This closer understanding may also be critical in fashioning suitable agrochemical products for smallholder farmers.

This study was useful insights for policymakers in the county and the agricultural sector more broadly into boosting food security, agribusiness, and the empowerment of rural communities. Lessons from farmers in Machakos County may be transferred to other areas with similar characteristics.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this section, a close look is taken at the research and literature connected to consumer attitudes, as well as the connection between those views and consumer decisions. This review analyzes the research's theoretical underpinnings, draws attention to the research's lacunae, and identifies the empirical research's contradictions.

2.2 Theoretical Framework

The study draws its theoretical underpinning from the Tri component attitude theory (Howard and Sheth 1990), Nudge theory (Thaler & Sunstein 1977) and Howard-Sheth Model (Howard-Sheth 1968) as described in the following sections.

2.2.1 Tri component Theory

Individual attitudes, as proposed by Howard and Sheth (1990), consist of three components that maintain a relatively steady and balanced relationship to one another. Howard and Sheth proposed this concept. An individual's perspective on something may be broken down into three parts: how they feel about it (affective component), how they think about it (cognitive component), and what they think about it (conative component) (Barlat, & Richmond, 1987). These three aspects of human disposition tend to be in accord with one another as well. Individual consumers, in accordance with cognitive consistency principles, place a high value on the congruence that occurs between their ideas and emotions, and are therefore driven to maintain their behavior consistent

(Solomon, 2002). That's because people are always modifying their thoughts, feelings, and behaviors so that they're in line with what they've learned. This provides a concept of consistency that may be used to assist individuals remember that their opinions are not created in isolation (Makanyeza, 2014).

Critics of tricomponent theory point out that people's behaviors don't always match their attitudes, thus it's more reasonable to assume that attitudes include both emotional and cognitive components (Cavell, 1990). Some scholars (Wang & Wang, 2018) claim that the corresponding behavioral component is seldom constant. Attitude-object experience and associated information gathered from a variety of sources combine to form an individual's knowledge and perceptions (Cavell, 1990). The cognitive aspect captures customers' prior knowledge of a brand and the characteristics they connect with it, while the emotional aspect collects consumers' overall feelings about the brand.

The tri-component theory is suitable for this study given that it captures a wide range of perceptions of farmers towards agrochemicals. Using the theory, the study will take into account the consumer's knowledge and perceptions, their consumer's feelings concerning agrochemicals and make predictions about their buying behavior. The attitude-toward-object is suitable for the study given that explores attitudes toward agrochemicals that are accessible to farmers in Machakos. Using this model, farmers will justify their choice from attributes they consider favorable or unfavorable about the agrochemicals they use.

2.2.2 Nudge Theory

According to this theory, which was developed by Thaler and Sunstein (1977), positive reinforcement and indirect suggestions, whereby non-forced compliance is achieved, are relatively more effective than direct instructions, enforcements, and legislations in influencing the decision-making processes and motivations of individual persons and groups. In 1977, Thaler and Sunstein proposed this idea. Accordingly, the theory's objective is to promote progress toward a better understanding of and command over the 'heuristic' influences on human behavior that are widely held to be crucial to the process of character development (Arno & Thomas, 2016). The main focus of the nudge theory is on the development of choices that affect the decisions that people make. It also encourages the creation of solutions that are grounded on how people really think and make choices, rather than how those in positions of authority have long mistakenly assumed people do so.

The argument against the theory is that it is not just challenging to put into practice but also that its results are not always simple to anticipate. Even in circumstances in which it seems that an intervention would have the expected consequences on behavior, the theory might nevertheless fail and even result in completely unexpected results. In an ideal world, the practice of nudging would be utilized to push individuals to make decisions that are better for their own well-being as well as the well-being of others around them. However, there are situations when nudging is done in ways that may not be in the best interest of people or customers (Cai, 2020). For instance, when concocting marketing methods that are intended to mislead consumers into purchasing a certain item. The use

of punishment, direct teaching, and enforcement are all examples of traditional approaches to bringing about the intended behavioral change in persons. In contrast, the nudge theory takes a more nuanced and nuanced approach to bringing about the behavioral change in individuals that is sought.

The marketing department of a business may utilize the idea to sell the organization by focusing on the company's values to gain the beliefs of possible investors and promote the organization. (Wildavsky, 1966) The approach advocates discouraging cultural norms that do not contribute to the advancement of the company's vision and objectives. According to Sunstein and Reisch (2017), the idea promotes businesses to provide consumers with several alternatives when selecting services, with the expectation that customers would base their ultimate choice on those possibilities. our theory is pertinent to our investigation since it will aid farmers in making decisions employing cognitive divergence, cognitive risk, and consensus.

2.2.3 Howard-Sheth Model

The Howard-Sheth Model is an idea that was proposed by Howard-Sheth (1968). According to this concept, there are three levels of fundamental leadership: The level of critical analysis shown at the doctoral level is exceptional. The consumer has no preferences for certain products and lacks critical information about the producer. Prior to making a purchase in this scenario, the consumer will do research on all the individual brands that comprise the overall brand. The next thing to do is to perform a continuous response. At this stage, the buyer is quite knowledgeable about the many brands and the

numerous features of each item, and he has finally reached the point where he has decided to purchase a certain item.

The Howard-Sheth model postulates that there are separate variables for inputs and outputs. The customer's surroundings provide three types of jolts data that combine to generate these informational pieces. The advertiser, acting as data for the product or brand, provides both the visual and linguistic characteristics of the brand. The buyer's social status, which is comprised of their family, social circle, and socioeconomic status, is the third category. According to Howard-Sheth (1968), each of the three different types of boosts provides the individual customer with inputs about the product category or specific brands.

The yields are the results of the perceptual and learning variables, as well as the shoppers' reactions to those factors (including their contemplation, admiration of the brand, demeanors, and intentions). Exogenous influences are not generally considered to be a component of the fundamental leadership process. In any case, a few significant external components include the magnitude of the transaction, the client's personality features, the client's religion, and the time pressure. The fundamental administrative procedure, which the Howard-Sheth Model tries to make more transparent. The concept is a useful complement to both substantial and delegated assistance in terms of material considerations such as cost and quality. These shocks don't quite fit in with the broader population in any case. However, the model does not reveal where crucial initiative begins in this tier, such as what factors drive family decision-making (Fitzerpatrik,

Ibrahim, & Rehman, 2011). The colors of a company's brand emblem may be used by marketers as a strategic tool to attract customers. For example, consumers' judgments on the eco-friendliness of merchants and their perspective that the items provided are ecologically friendly are influenced by colors that are beneficial to the environment, such as green and blue.

2.3 Empirical Literature Review and research gaps

There have been several empirical studies done on the consumer attitude in the context of global, regional and local settings. Consumer innovativeness, self-efficacy on the internet, Internet attitudes, and adoption of online banking were all examined by Lassar et al. (2004) in the UK. This was done while controlling for personal variables. Postal questionnaires were used in his study, and the results showed that 25% of banks in the UK and Ireland provide consumers the option of conducting financial transactions from the comfort of their own homes over the internet. Having said that, the research was conducted on internet banking in the UK, which reveals a contextual gap. Akinci et al. (2004) conducted this study to learn more about high-income consumers' perceptions of and comfort with using online banking. The study's results show clear differences in the demographics and worldviews of users and non-users. The mindset of the target market wasn't taken into consideration nearly enough. The present research will fill in the blanks by looking at how the attitudes of consumers impact their purchasing decisions.

Jung and Sung (2008) also carried out research on customer attitudes about instructions in the pharmaceutical sector in Austria. This research was included in their paper. The research revealed the level of interest that patients really have in the instructions they are

given, as well as the challenges they confront when attempting to comprehend the instructions correctly. In the course of this research, a survey was carried out. According to the findings of the research, consumers are often unable to grasp the explanations offered for medicine adequately, which causes them to worry about the potential adverse effects of the prescription. Having said that, the research was conducted in the pharmaceutical business in Austria, which presents a contextual disconnect. In Germany, Ramadhani (2002) conducted research to determine how consumers feel about various marketing initiatives. The purpose of the research was to compile a list of the many ways in which customers perceive and react to contemporary marketing. In addition to exploring whether consumers recognize and use advertising as a source of information, the study also assessed consumers' opinions of advertising as a communication channel and looked into their overall impressions of the advertising industry. The data from the respondents were collected via the use of questionnaires in the research. It concluded that consumers' unease with advertising is not caused by the industry's tendency to overstate its claims; rather, it is caused by customers' uncertainty as to whether advertising adheres to the concept of truth. However, the research was conducted in Germany, and it didn't look at the connection between consumer attitude and decisions, thus it leaves a contextual hole.

Ntawuruhunga (2016) evaluated the knowledge, attitudes, and practices of African Indigenous Vegetable Farmers in Uganda (AIVs) throughout the region. The research focused on 600 different homes that grew African Indigenous Vegetables. The respondents were chosen using a method that included many stages of the sampling

process. The results of a multinomial logit regression analysis led researchers to the conclusion that factors such as farmers' gender, level of education, occupation, number of years of experience in farming, land tenure, and total amount of land possessed had a substantial impact on the farmers' knowledge, attitudes, and practices. The research, on the other hand, zeroed in on African Indigenous vegetable growers rather than all small-scale farmers in Machakos. During their research on the elements that impact consumers' views toward organic goods, Ranjbar et al. (2016) focused their attention on 124 customers of organic products in the country of Ethiopia. According to the findings of the regression analysis, understanding of the organic product, health awareness, customer motivation, and age all had a significant impact on attitudes toward organic goods. On the other hand, the research focused on the medical field rather than the commercial field. In the field of consumer research, Lunn (2005) conducted a study on people's attitudes and behaviors. R=The purpose of the study was to provide an update on the debate between attitude and behavior in consumer attitude research. To get at the results of the study, the researchers utilized a variety of research approaches, including qualitative and quantitative methodologies such as in-depth interviews and factor analysis. On the other hand, the research will exclusively rely on quantitative approaches.

Obonyo (2019) investigated the influence of OOH advertising on consumer perceptions of FMCG in the Westlands area of Nairobi County. This division is in the western part of the county. In order to gather information for the study, researchers sent questionnaires to customers of certain supermarkets. According to the findings of the research, the elements of packaging that were analyzed contribute to conveying product quality and

features in a way that influences consumer decision-making about purchases. In a separate piece of research, Nyarunda (2016) investigated consumer attitudes and patronage in Nairobi over the purchasing of imported vs locally manufactured clothes. The research project included a survey that was carried out in the city of Nairobi. Primary data was used in this study, and questionnaires were used to obtain that data. According to the results, consumers do not differentiate between garments that are made in their country and those that are made elsewhere when it comes to the qualities, they value in their clothing purchases. However, the survey did not reveal any specifics on the preferences and attitudes of consumers. The purpose of this research was to close this information gap. According to the knowledge of the researcher, there have not been any earlier empirical studies undertaken on the consumer attitude and choices of agrochemicals among small-scale farmers in Kenya, and more specifically in Machakos.

Using a descriptive study approach, Paul (2009) conducted an investigation in Kenya to investigate the link between demographics, personal traits, and attitudes regarding internet purchasing. According to the findings of the study, residents of Kenya who have a more wired lifestyle and who are more time constricted tend to make more purchases online. This means that those who use the Internet as a regular tool and individuals who are more time hungry prefer buying on the Internet. However, the survey did not reveal any specifics on the preferences and attitudes of consumers. The purpose of this research was to close this information gap.

Kimenju et al. (2005) investigated Kenyan consumers' levels of knowledge and sentiments towards genetically modified (GM) food. The research focused on 640 customers who were surveyed at various points of sale, including supermarkets, kiosks, and posho mills. According to the results of the research, factors such as income, education level, occupation type, danger to the environment and health, ethics, and equality concerns greatly affected individuals' levels of knowledge and attitudes towards genetically modified (GM) food. A study by Tehrani and Kroner (2014) emphasized the role of cultures and socioecological factors in shaping the attitude, and how attitude plays a key impact in the choice of a meal, so it's not surprising that the researchers concluded that these factors are important in understanding how attitudes develop. However, the studies focused on consumer awareness and attitudes and not consumer attitudes on choices.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section details the methods used over the course of the study's investigation. This chapter will detail the study design, the target population, the research instrument, and the methodologies and procedures for data collecting and analysis.

3.2 Research Design

This study used a descriptive research design. The use of a descriptive research design will be appropriate since it focuses on what, when, who, and where in connection to a certain relevant and the degree within the variables. This kind of survey eliminates the need for any sort of manipulation (Salkind, 2010). Descriptive study provided an explanation of a topic via the creation of an individual, group, or event's profile. Collecting data, tabulating the needs of variables, or integrating the outcomes of these procedures are the three methods that may be used to achieve this goal (Myers, Well, & Lorch, 2010). According to Kothari (2004), a cross-sectional survey gives researchers the opportunity to observe and explain variables of interest to a study project at a particular moment in time without resorting to any type of manipulation.

3.3 Target Population

According to Kothari (2004), to generalize about the variables of interest, a researcher's target population includes everything from individuals to organizations to problems. The population of interest for this study was Machakos county's small-scale farmers who have

less than an acre of farmland. According to Machakos county agriculture report (2021) there are about 15,000 registered small-scale farmers in Mwala, Kathiani, Yatta and Mavoko which are sub counties in Machakos where farming mostly take place for small scale. According to Machakos county agriculture report a small farmer has less than an acre of land. This comprised of 15000 small scale farmers as shown in Table 3.1

Table 3. 1: Target Population

Sub Counties	Small Scale Farmers
Mwala	3878
Kathiani,	5678
Yatta	3755
Mavoko	1689
Total	**15000**

Source: Machakos county agriculture report (2021)

3.4 Sampling Method

The research survey's overarching purpose, as stated by Cooper and Schindler (2014), is to collect information from a cross-section of the target population. Scientists extrapolate survey results to the whole population using a predetermined margin of error. Below is the formula of the Yamane formula.

$$n = \frac{N}{1 + N(e)^2}$$

N = Population

e = Acceptable margin of error

n = Sample

Statistically, the study had a margin of error of 5%, with a 95% confidence range.

Yamane formula required a set (total) sample size of.

$$n = \frac{15000}{1 + 15000(0.05)^2}$$

$$n = \frac{15000}{1 + 15000\,(0.0025)}$$

$$n = 389$$

Sub Counties	Small Scale Farmers	Sample Size (x/15000*389)
Mwala	3878	100
Kathiani,	5678	147
Yatta	3755	97
Mavoko	1689	45
Total	15000	389

The study used strata random sampling to pick respondent form each strata that represents sub countries. The study also used simple random sampling where by Sub county agricultural officer from each subcounty provided the researcher with list of

farmers from each sub county in which they were selected farmers and contact them before pre-visit and Sub county agricultural officers accompanied them to locate the farmers.

3.5 Data Collection

This research made use of the data collected from primary sources. The main data was collected via the use of an organized questionnaire. According to Mugenda and Mugenda (2003), the strategy of using questionnaires is the most ideal tool for obtaining information that is both relevant and comprehensive. The questionnaire had three sections, the first gather information on the bio data of the farmer. Customer attitude of the second section, while choices will constitute the third part. Following the approval of the research proposal by the University of Nairobi, it was possible to undertake data collection. The researcher went further to seek a license from NACOSTI.

Using the authorization letter that was issued by the University of Nairobi, the researcher begun the process of data collection by first seeking permission from County Government of Machakos through the County Secretary. The researcher engaged four research assistants to assist him in the data collection exercise. The researcher together with the four research assistants who distributed the questionnaires to the respondents on one-on-one basis so that, they had ample time to explain to them what would be required of the latter and the relevant information expected. Following the steps outlined above, the researcher would personally hand out questionnaires to the people who participated in the study and then go back to collect the questionnaires once they had been properly filled out at predetermined intervals.

3.6 Data Analysis

In order to find outliers in the replies and extract quantitative information from the answers for further research, the data was cleaned up by editing, tabulating, and coding. This was done with the goal of providing a more accurate representation of the data. Descriptive statistics were used to analyse the data, including measures of central tendency (mean) and dispersion (variance and standard deviation). The multiple linear regressions model that is shown below is going to be utilized to determine how the variables are related to one another:

$$Y = \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \acute{\epsilon}$$

Where:

Y= Consumer Choice

β_1 to β_3 are the regression coefficients.

X₁ = Affective Information

X₂ = Behavioral Information

X₃ = Cognitive Information

E=Error term

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

Data processing, interpretation, and following argument are all discussed in this chapter. In order to determine how the public-private partnership strategy affected the different aspects of service delivery, we analyzed the data by computing the averages and S. Ds of the multi-item scales and by using regression analysis.

4.2 Response Rate

The overall response rate was 71.72percent, based on the fact that 279 out of 389 questionnaires were returned. The findings support Saunders, Thornhill, and Lewis (2016), who are in agreement with the results of this study; a response rate of 70% is representative enough and indicative of an effective data collection process. Therefore, the study's response rate was considered adequate.

Table 4.1: Response Rate

Response Rate	Frequency	Percentage
Returned Questionnaires	279	71.72
Not Returned Questionnaires	10	28.28
Total	389	100.0

4.3 Demographic Characteristics

This section is dedicated to the farmers details. It requested information on the gender, age, level of education and years of farming.

4.3.1 Gender of Respondents

The respondents were asked about their gender as specified in Table 4.2.

Table 4.2: Gender of Respondents

Gender	Frequency	Percent
Male	126	45.2
Female	153	58.8
Total	**279**	**100.0**

Source: Field Data (2023)

As shown in Table 4.2, majority (58.8%) of the respondents were female, while 45.2% were male. was It was found out that the gender ratio was almost the same although most small-scale farmers are female in Machakos.

4.3.1 Age of Respondents

The respondents were asked about their age as specified in Table 4.3.

Table 4.3: Age of Respondents

Age	Frequency	Percent
- 30 Years	45	16.13
31 - 40 Years	63	22.58
41 - 50 years	99	35.48
Over- 51 years	72	25.81
Total	**279**	**100.0**

Source: Field Data (2023)

As shown in Table 4.3, majority 35.48% of the respondents were aged 41 - 50 years, over 51 years 25.81%, between 31 - 40 years at 22.58% and lastly below 30 years at 16.13%. This implies that most farmers in Machakos are old people.

4.3.3 Level of Education

The respondents were asked about their level of education as specified in Table 4.4.

Table 4.4: Level of Education

Education	Frequency	Percent
Certificate	17	6.09
Diploma level	61	21.86
Bachelors Level	178	63.78
Postgraduate Level	23	8.73
Total	**279**	**100.0**

Source: Field Data (2023)

As depicted in Table 4.4, the results indicated that majority 63.78% of the respondents were holders of first degree while 21.86% diploma level, 8.73% and lastly certificate was 6.09%. This shows that majority of the farmers had attained at least university education and thus were educated enough to understand and respond to questionnaire.

4.3.3 Years in Farming

The participants were asked about the number of years they have being farming as specified in Table 4.5.

Table 4.5: Years in Farming

Years in Farming	Frequency	Percent
Less than 5 Years	45	16.13
5-10 Years	63	22.58
11-15 Years	99	35.48
Above 16 Years	72	25.81
Total	**279**	**100.0**

Source: Field Data (2023)

As shown in Table 4.5, majority 35.48% of the farmers have been farming between 11-15 years, above 16 years is 25.81%, 5-10 years at 22.58% and lastly less than 5 years at 16.13%. This implies that farmers in Machakos are well informed about the farming activities in their area.

4.4 Consumer Attitudes

In the present investigation, the approach of consumer attitudes p was used as the independent variable. The study employed use of descriptive statistics measured by use of means and standard deviation. The mean was used as central tendency measure which was utilized to give a description of the most representative value in a set of other values used in estimation. The standard deviation was used to measure how much the items in the set of analysis differ (deviate) from the central tendency (mean).

4.4.1 Affective Information

Respondents were given five statements on the affective information and asked to rate their level of agreement with each. Results are shown in Table 4.6.

Table 4.6: Affective Information

Statement	N	Mean	Std Dev
I purchase pesticide that is well known among the farmer in the region	279	4.11	.504
The pesticide is of good quality	279	4.54	.505
The pesticides are of fair price	279	4.23	.798
I am aware of the various types of pesticides used by farmers.	279	4.63	.547
I am satisfied with the pesticides I use since they are effective	279	4.26	.611
Composite Statistics	**279**	**4.35**	**.652**

Source: Field Data (2023)

In regard to Table 4.6, farmers aware of the various types of pesticides with a mean of 4.63 and S.D 0.547. The pesticide is of good quality with a mean of 4.54 as mean and a 0.505 as S.D. With a mean of 4.26 and S.D of 0.611, farmers are satisfied with the

pesticides to use since they are effective. In addition, with an average of 4.23 and S.D of 0.798, the pesticides are of fair price. Finally, farmers purchase pesticide that is well known among the farmer in the region with a mean of 4.11 and 0.504. The average mean was 4.35, indicating that that smallholder farmers in Machakos County consider affective information on agrochemicals at great extent.

4.4.2 Behavioral Information

Respondents were given five statements on the behavioral information and asked to rate their level of agreement with each. Results are shown in Table 4.7.

Table 4.7: Behavioral Information

Statement	N	Mean	Std. Dev
I will consider buying/trying the pesticides from one of the companies that is well known to me.	279	4.11	1.17
I will continue to buy pesticides from one of the brands that have being using before	279	3.73	0.98
Quality of the pesticides should be improved	279	3.34	1.19
Prices of the pesticides should be reduced	279	3.90	0.89
I prefer to buy similar pesticides from another brand if at same price	279	3.23	1.07
Composite Statistics	**279**	**3.66**	**1.06**

Source: Field Data (2023)

Framers consider buying/trying the pesticides from one of the companies that is well known to them by Mean 4.11 and S.D 1.17. Prices of the pesticides should be reduced with an average of 3.90 and 0.89. Farmers buy pesticides from one of the brands that have being using before with an average of 3.73 and 0.98. In addition, quality of the pesticides should be improved with an average of 3.34 and S.D of 1.19. Finally, farmers prefer to buy similar pesticides from another brand if at same price with an average of 3.23and S.D of 1.07. The overall average score was 3.66 implying that smallholder farmers in Machakos county consider behavioral information on agrochemicals at moderate extent.

4.4.3 Cognitive Information

Respondents were given five statements on the cognitive information and asked to rate their level of agreement with each. Results are shown in Table 4.8.

Table 4.8 : Cognitive Information

Statement	N	Mean	Std. dev
I acquire information about the pesticides from my fellow farmers.	279	4.18	0.95
I get information from promotional media (radio or tv ad, billboards etc)	279	3.73	1.06
The decision to purchase that brand is because it's in line with my social class	279	3.57	0.99

The package of the chemical is well informative on how to use the product.	279	3.00	1.02
The agrochemical is affordable	279	3.40	1.05
Composite mean	**279**	**3.57**	**1.01**

Source: Field Data (2023)

Acquire information about the pesticides from my fellow farmers having 4.18 a mean and 0.95 as S.D as depicted in Table 4.6. Having a mean of 3.73 as average and 1.06 as S.D, get information from promotional media. The decision to purchase that brand is because it's in line with my social class on having 3.57 as average and 0.99 as S.D. The package of the chemical is well informative on how to use the product by an average of 3.40, and S.D of 1.05. In addition, the market already has a number of insurance brands that have a status comparable to that of the bank brand having 3.00 as mean and 1.02 as S.D. The overall mean was 3.57 which imply that smallholder farmers in Machakos county consider cognitive information on agrochemicals at moderate extent.

4.5 Consumer Choices

Several statements on consumer choices of agrochemicals among smallholder farmers in Machakos county, were carefully identified by the researcher. Respondents were then requested to indicate the extent of their agreement with each of these statements. A Likert scale of 1-5, where 1 – No Extent, 2 – Very Small Extent, 3 – Moderate Extent, 4 – Large Extent, 5 – Very Large Extent was used. The findings are indicated in Table 4.9.

Table 4.9: Consumer Choices

Statement	N	Mean	Std. Dev
The availability of a certain agrochemical on the market is a factor that plays a role in the choice to acquire that agrochemical.	279	3.97	0.76
My history of success in applying the agrochemical in question has a role in determining whether or not I will buy it.	279	3.92	0.73
The fact that this brand is immediately distinguishable from its competitors and positioned led to the decision to buy it.	279	3.95	0.68
The reputation of the supplier is a factor that plays into my choice to buy an agrochemical.	279	3.56	0.58
Because I have a long-standing commitment to that agricultural chemical company, I have settled on making this acquisition.	279	3.45	0.78
Composite Statistics	**279**	**3.85**	**0.69**

Source: Field Data (2023)

Table 4.9 shows availability of a certain agrochemical on the market is a factor that plays a role in the choice to acquire that agrochemical with a mean of 3.97 and S.D of 0.76. history of success in applying the agrochemical in question has a role in determining whether or not I will buy it with a mean of a of 3.92 and S. D of 0.73. On the hand, brand is immediately distinguishable from its competitors and positioned led to the decision to buy it with a mean of 3.95 and S.D of 0.68. The reputation of the supplier is a factor that plays into my choice to buy an agrochemical a mean of 3.56 and S.D of 0.58. The overall mean was 3.85 which implies that agrochemicals is moderately influenced the choices of smallholder farmers.

4.6 Correlation Analysis

To ascertain the type and degree of the connection between the studied variables, correlation analysis was conducted. In this research, the correlation between the study variables was determined using the Karl Pearson correlation coefficient. The outcomes are summarized in Table 4.10.

Table 4.10: Correlation Results

		Consumer Choice	Affective Information	Behavioral Information	Cognitive Information
Consumer Choice	Pearson Correlation	1			
	Sig. (2-tailed)				
Affective Information	Pearson Correlation	.483**	1		
	Sig. (2-tailed)	.002			
Behavioral Information	Pearson Correlation	.658**	.766**	1	
	Sig. (2-tailed)	.000	.000		
Cognitive Information	Pearson Correlation	.477**	.541**	.529**	1
	Sig. (2-tailed)	.002	.000	.000	

**Correlation is significant at the 0.01 level (2 - tailed)
* Correlation is significant at the 0.05(1 -tailed)

Source: Field Data (2023)

According to Karl Pearson correlation coefficient, the link between affective information on consumer choice is statistically significant and moderately positive (r=0.483, p<0.05). This implies that affective information and consumer choice move in the same direction. Further, the link between behavioral information and consumer choice is statistically significant and positive (r=0.658, p<0.05). This implies that behavioral information and consumer choice move in the same direction. In addition, the link between cognitive information and consumer choice is statistically significant and moderately positive (r=0.477, p<0.05). This implies that cognitive information and consumer choice move in the same direction.

4.7 Regression Analysis

The study set out to examine the effect of commercial banks in Kenya's corporate brand strategy on their competitive advantage. Independent variables included things like brand familiarity, brand recall, brand perception, and brand loyalty.

4.7.1 Model Summary

Multiple regressions were used to analyse the effect of independent variables on their dependents. Table 4.11 presents a brief overview of the model.

Table 4.11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.867[a]	.752	.735	2.88474

    a. Predictors: (Constant), Affective Information, Behavioral Information and Cognitive Information

Source: Field Data (2023)

As shown in Table 4.11, the coefficient of determination R square is 0.752 and the adjusted R squared is 0.735. This shows that 75.2% variations in choices are explained by their consumer attitudes. Only 24.8% variance is not explained (attributable to other independent variables and chance variation). From this, it indicates it is a good model.

4.7.2 Goodness of Fit of the Model

The researcher carried out an analysis of variance, and the regression model that was adopted was appropriate for the data collection (ANOVA). According to the findings in Table 4.12

Table 4. 12: ANOVA Results

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	267.92	3	66.980	24.102	.000[b]
Residual	72.247	273	2.779		
Total	**340.167**	**276**			

a. Dependent Variable: Consumer Choice

b. Predictors: (Constant), Affective Information, Behavioral Information and Cognitive Information

Source: Field Data (2023)

From Table 4.12, the value of F calculated is 24.102 while F critical is 2.743. The value of F calculated is greater than F critical which is 2.074. Thus, the overall regression model is statistically significant in predicting relationship between consumer attitudes on choice of agrochemicals among smallholder farmers in Machakos county.

4.7.3 Model Regression Coefficients

The presentation may be seen in Table 4.13, and it includes significant values, t-statistics, standardized and unstandardized coefficients.

Table 4.13: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B (β)	**Std. Error**	**Beta (β)**		
(Constant)	.267	.756		.3450	. 001

Affective Information	.236	.259	.165	1.061	.000
Behavioral Information	.152	.139	.244	1.078	.000
Cognitive Information	.150	.127	.375	1.145	.017
a. Dependent Variable: Consumer choice					

The correlation between consumer attitudes on choice of agrochemicals among smallholder farmers in Machakos, is shown by the regression coefficients presented in Table 4.13. Affective Information has p values of $0.000 < 0.05$, Behavioral Information $0.000 < 0.05$ and Cognitive Information has p values of $0.017 < 0.05$. According to the findings, the criteria of consumer attitudes contain a substantial degree of with choices of small-scale farmers.

The linear model then stands to be;

$$Y = 0.267 + 0.236X_1 + 0.152X_2 + 0.150X_3$$

According to the findings, when all other independent factors are held constant, an increase in the consumer attitudes parameter in relation to affective information by a single unit will result in a change of 0.236 in choices of small-scale farmers; an increase in the behavioral information parameter in relation to consumer attitudes by a single unit will result in a change of 0.152 in choices of small-scale farmers. Finally, an increase in cognitive information in relation to consumer attitudes by a single unit will result in a change of 0.150 in choices of small-scale farmers.

4.8 Discussion of Findings

The study found smallholder farmers in Machakos County consider affective information on agrochemicals at great extent. This was supported by farmers aware of the various types of pesticides and the pesticides is of good quality, farmers are satisfied with the pesticides to use since they are effective. The results are in line with that of Jung and Sung (2008) revealed the level of interest that patients really have in the instructions they are given, as well as the challenges they confront when attempting to comprehend the instructions correctly. According to the findings of the research, consumers are often unable to grasp the explanations offered for medicine adequately, which causes them to worry about the potential adverse effects of the prescription.

The study found smallholder farmers in Machakos County consider behavioral Information and cognitive information on agrochemicals at moderate extent. This was supported by the decision to purchase that brand is because it's in line with my social class and the package of the chemical is well informative on how to use the product. The results concur with the findings of Ramadhani (2002) consumers recognize and use advertising as a source of information, the study also assessed consumers' opinions of advertising as a communication channel and looked into their overall impressions of the advertising industry. It also concurs with Ranjbar et al. (2016) understanding of the organic product, health awareness, customer motivation, and age all had a significant impact on attitudes toward organic goods.

The correlation results revealed that the link between affective information, cognitive information and consumer choice is statistically significant and moderately positive. The findings agree with Nyarunda (2016) that affective information is moderately positive

relationship with the choices that customers make when purchasing products. On the other hand, behavioral information and consumer choice is statistically significant and positive. The findings agree with Paul (2009) residents of Kenya who have a more wired lifestyle and who are more time constricted tend to make more purchases online. This means that those who use the Internet as a regular tool and individuals who are more time hungry prefer buying on the Internet.

The research demonstrated a positive relationship between consumer attitudes and choice of agrochemicals among smallholder farmers. The finding of this study is in line with Tehrani and Kroner (2014) emphasized the role of cultures and socioecological factors in shaping the attitude, and how attitude plays a key impact in the choice of a meal, so it's not surprising that the researchers concluded that these factors are important in understanding how attitudes develop. The findings also agree with Ramadhani (2002) consumers' unease with advertising is not caused by the industry's tendency to overstate its claims; rather, it is caused by customers' uncertainty as to whether advertising adheres to the concept of truth.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section summarizes the previous chapters by dividing the material into three parts. Findings from the research are extrapolated upon, and then suggestions are offered. The part also includes a discussion of the study's shortcomings and suggestions for further research.

5.2 Summary

The study found smallholder farmers in Machakos County consider affective information on agrochemicals at great extent. Farmers aware of the various types of pesticides and the pesticides is of good quality, farmers are satisfied with the pesticides to use since they are effective. The study found smallholder farmers in Machakos County consider behavioral Information and cognitive information on agrochemicals at moderate extent. The decision to purchase that brand is because it's in line with my social class and the package of the chemical is well informative on how to use the product.

The correlation results revealed that the link between affective information, cognitive information and consumer choice is statistically significant and moderately positive. The research also demonstrated a positive relationship between consumer attitudes and choice of agrochemicals among smallholder farmers. Farmers buy agrochemicals when they understand the information provided so that they are able to   compare different products in the agrovets.

5.3 Conclusion

The study concludes that on affective information farmers prefer pesticides is of good quality and they are aware of various types of pesticides used hence they are satisfied with the pesticides they use since they are effective. Further, farmers have an attitude of purchasing pesticide that is well known among the farmer in the region. On the behavioral information, farmers admitted to try the pesticides from one of the companies that is well known to them and they request that companies should reduce the prices of pesticides in which they will purchase buy similar pesticides from another brand if at same price.

On cognitive information, the study concludes that   farmers prefer to purchase merchants online when the information provided is clear to them, they get access to whatever products they need, and it's delivered to them. They are able to compare different agrochemicals and there is an easy way of paying for the products. Farmers when provided with information regarding the agrochemicals and the procedure of making purchase is easy, so is the payment process, also, the stores can be accesses anytime and anywhere and there is no restriction of the quantity of purchase. The decision to purchase that agrochemical brand is based on farmer's social class.

5.4 Recommendations of the Study

The study therefore recommends that the agrovets in Machakos should consider the customers personal characteristics and incorporate them in their shopping platform in order to cater for all the needs of different customers and therefore increase their

satisfaction and in return increase their loyalty which in return increases the shops sales volume and in return increasing their profitability.

Agrovets in Machakos should put mechanisms in place to guarantee the quality of their agrochemicals and create avenues of settling disputes while making exchanges of products. Also, safe and reliable delivery services should be used to ensure that agrochemicals ordered are received by the farmers in time.

5.5 Limitations of the study

The researcher encountered slow response rate as majority of the respondents could not respond to the questionnaires in time. However, the researcher made courtesy calls to remind them to respond to the questionnaires in time. The respondents also felt that the information being sought was sensitive for disclosure which led to lack of cooperation.

The respondents were also hesitant to participate as they thought that the information collected would be used against them. The researcher however assured them that the information would be kept confidential and that they were not required to indicate their names as the study was pegged on anonymity and would only be used for academic purposes.

5.6 Suggestions for Further Studies

Further studies should be considered to explore the drivers and the challenges of using agrochemicals by farmers in Machakos county. This would be useful to understand the drivers that influence the embracement of introducing new agrochemicals to farmers and to get to understand their attitude towards the agrochemicals.

Due to its limitations, this research can only generalize to Machakos county in Kenya. In the future, we need studies that examine how consumer attitudes influence choice of agrochemicals among farmers in unrelated areas. Study findings indicate a need for more research into consumer awareness and perception on agrochemicals.

REFERENCES

Aaker, T. (2014). *Mood and judgment: The affect infusion model (AIM)*. Psychological Bulletin.

Ajzen, I. (2018). Consumer attitudes and behavior Handbook of consumer psychology (pp. 529-552): Routledge.

Alemu, M. H., & Olsen, S. B. (2019). Linking consumers' food choice motives to their preferences for insect-based food products: An application of integrated choice and latent variable model in an African context. Journal of Agricultural Economics, 70(1), 241-258.

Arno, A., & Thomas, S. (2016). The efficacy of nudge theory strategies in influencing adult dietary behaviour: a systematic review and meta-analysis. *BMC public health*, *16*(1), 1-11.

Ateka, J. M., Mbeche, R., Obebo, F., & Sila, D. (2022). Preferences and willingness to pay for yogurt product attributes among urban consumers in Kenya. Journal of International Food & Agribusiness Marketing, 34(4), 410-432.

Barlat, F., & Richmond, O. (1987). Prediction of tricomponent plane stress yield surfaces and associated flow and failure behavior of strongly textured fcc polycrystalline sheets. *Materials Science and Engineering*, *95*, 15-29.

Basak, S., Dasgupta, P., Das, B., Das, M., & Dabrowski, R. (2011). Determination of orientational order parameters of two tri-component mixtures from optical birefringence and x-ray diffraction measurements. *Acta Physica Polonica A*, *120*(6), 1037-1042.

Beach, H. (2013). *The expressive organization: linking identity, reputation and the corporate brand, oxford:* Oxford University Press.

Berkiwertz, Y. (2015). Instructor's resource guide to accompany business research methods. Boston, Mass: McGraw-Hill.

Bhuvaneswari, V., & Krishnan, J. (2015). A review of literature on impulse buying behaviour of consumers in brick & mortar and click only stores. *International journal of management research and social science*, *2*(3), 84-90

Bor, T. B., Kieti, D. M., & Rotich, D. J. (2018). Hotel choice attributes and demographic -characteristics of tourists in North Rift Region, Kenya. African Journal of Hospitality, Tourism and Leisure, Volume 7 (3).

Bordalo, P., Gennaioli, N., & Shleifer, A. (2013). Salience and consumer choice. Journal of political economy, 121(5), 803-843. .

Cai, C. W. (2020). Nudging the financial market? A review of the nudge theory. *Accounting & Finance*, *60*(4), 3341-3365

Cavell, T. A. (1990). Social adjustment, social performance, and social skills: A tri-component model of social competence. *Journal of clinical child psychology*, *19*(2), 111-122.

Cooper, D. R., & Schindler, P. S. (2014). *Business Research Methods* (10th ed.). New York: McGraw-Hill.

Cresswell, J. W. (2010). *Research design qualitative, quantitative and mixed methods approaches.* London: Sage Publication, Inc.

De Groote, H., Mugalavai, V., Ferruzzi, M., Onkware, A., Ayua, E., Duodu, K. G., . . . Hamaker, B. R. (2020). Consumer acceptance and willingness to pay for instant cereal products with food-to-food fortification in Eldoret, Kenya. Food and nutrition bulletin, 41(2), 224-243.

Dharet,J. (2014). Heart strings and purse strings carryover effects of emotions on economic decisions. Psychological Science, 15(5), 337–341.

Duffett, R. G. (2017). Influence of social media marketing communications on young consumers' attitudes. *Young Consumers*, *18*(1), 19-39.

Erasmus, A. C., Boshoff, E., & Rousseau, G. G. (2001). Consumer decision-making models within the discipline of consumer science: a critical approach. *Journal of Consumer Sciences*, *29*.

Fishbein, M. E. (1967). Readings in attitude theory and measurement.

Fitzerpatrik, Q., Ibrahim, A., & Rehman, H. (2011). *The art of identity: Creating and managing a successful corporate identity.* Gower.

Howard-Sheth, J.N (1968). *Theory of buyer behavior*. J. Wiley & Sons, New York, NY

Jeschke, P. (2016). Propesticides and their use as agrochemicals. Pest Management Science, 72(2), 210-225.

Jung, J. and Sung, E. Y., (2008). Consumer-based brand equity; Comparisons among Americans and South Koreans in the USA and South Koreans in Korea, Journal of Fashion Marketing and Management, Vol. 12, No. 1, pp. 24-36.

Kay, L. (2016*). Some explorations in initial interaction and beyond: Toward a development theory of interpersonal communication.* Human Communication, Research.

Kimenju, S. C., De Groote, H., Karugia, J., Mbogoh, S., & Poland, D. (2005). Consumer awareness and attitudes toward GM foods in Kenya. *African Journal of Biotechnology, 4*(10), 1066–1075.

Kosgei, B. J. (2018). Attitudes towards opaque beer and the factors which would influence its sales performance (Doctoral dissertation, University of Nairobi).

Kothari, C. (2019). research methodology methods and techniques by CR Kothari. *Published by New Age International (P) Ltd., Publishers*, *91*.

Makanyeza, C. (2014). Measuring consumer attitude towards imported poultry meat products in a developing market: An assessment of reliability, validity and dimensionality of the tri-component attitude model. *Mediterranean Journal of Social Sciences*, *5*(20), 874.

Meena, R. K., & Mishra, P. (2020). Bio-pesticides for agriculture and environment sustainability Resources Use Efficiency in Agriculture (pp. 85-107): Springer.

MoALF. (2017). Climate Risk Profile for Machakos County. Kenya County Climate Risk Profile Series. Nairobi, Kenya: The Ministry of Agriculture, Livestock and Fisheries (MoALF).

Montgomery, J. H. (2020). *Agrochemicals desk reference*. CRC Press.

Ntawuruhunga, D., Affognon, H.D., & Fiaboe, K.K.M. (2020) Farmers' knowledge, attitudes and practices (KAP) on production of African indigenous vegetables in Kenya. *Int J Trop Insect Sci 40*, 337–349

Nyarunda, A. C. (2016). Consumer perception, attitude, and patronage towards the purchase of imported versus locally produced apparel in Nairobi County, Kenya. *School of applied human sciences, Kenyatta university*.

Obonyo, S. A. (2019). *The influence of out of home advertising on consumer atitude in fast moving consumer goods in Westlands division, Nairobi County* (Doctoral dissertation, University of Nairobi).

Oluoch, S., Lal, P., Susaeta, A., & Wolde, B. (2021). Public preferences for renewable energy options: A choice experiment in Kenya. Energy Economics, 98, 105256.

Ozer, L., & Gultekin, B. (2015). Pre-and post-purchase stage in impulse buying: The role of mood and satisfaction. *Journal of retailing and consumer services*, *22*, 71-76

Prabha, D. D. (2017). a Study on Consumer Awareness and Perceptions Towards Organic Food Products With Special Reference To Tirupur District. *International Journal of Current Research and Modern Education (IJCRME)*, *2*(2), 169–172.

Ramadhani, T. (2002) *Marketing if indigenous fruits in Zimbabwe.* Socio-economicstudies on rural Development, Vol. 129., Germany: Wissenschaftsverlag

Ranjbar shamsi, H., Najafabadi, M.O., & Hosseini, S. (2016). Factors Influencing Consumers' Attitudes Toward Organic Agricultural Products. *Journal of Agricultural & Food Information, 17*, 110 - 119.

Sagoff, N. (2013). Promoting consumer adoption of high-technology products: Is more information always better? *Journal of Consumer Psychology*, 12(4), 341–351.

Samarasinghe, R. (2012). The influence of cultural values and environmental attitudes on green consumer behaviour. *The Journal of Behavioral Science*, *7*(1), 83-98.

Sanchez-Sabate, R., & Sabaté, J. (2019). Consumer attitudes towards environmental concerns of meat consumption: A systematic review. *International journal of environmental research and public health*, *16*(7), 1220.

Shiv, B., & Huber, J. (2000). The impact of anticipating satisfaction on consumer choice. Journal of Consumer Research, 27(2), 202-216.

Sunstein, C. R., & Reisch, L. A. (2017). *The economics of nudge*. Routledge

Takemura, K. (2014). Behavioral decision theory. Psychological and mathematical descriptions of human choice behavior: Springer Japan.

Verma, V. K., Chandra, B., & Kumar, S. (2019). Values and ascribed responsibility to predict consumers' attitude and concern towards green hotel visit intention. *Journal of Business Research*, *96*, 206-216.

Wang, Y., Yu, W., & Wang, F. (2018). Experimental evaluation and modified Weibull characterization of the tensile behavior of tri-component elastic-conductive composite yarn. *Textile research journal*, *88*(10), 1138-1149.

Waweru, D., Mose, N., & Otieno, S. (2022). Household Energy Choice in Kenya: An Empirical Analysis of the Energy Ladder Hypothesis. Journal of Energy Research and Reviews, 10(4), 12-19.

Woo, E., & Kim, Y. G. (2019). Consumer attitudes and buying behavior for green food products: From the aspect of green perceived value (GPV). *British Food Journal*.

APPENDICES

Appendix I: Introduction Letter

May,2023

Masters Student- MSc. Marketing

University of Nairobi

<u>**RE: REQUEST FOR RESEARCH DATA**</u>

I am a student at the University of Nairobi, where I am working toward earning a degree in Masters of Science in Marketing. Currently, I am in my third year. As a component of the overall evaluation for this class, I am needed to turn in a research paper on **" the influence of consumer attitudes on choice of agrochemicals among smallholder farmers in Machakos county"** The data gathered from your firm will be utilized to help reach this conclusion. This report will not contain your name or any other personal information about you in any way, shape, or form. This study will use a cross-sectional research technique for its data collection. In a survey that uses a cross-sectional design, it is possible to observe and describe relevant study variables at a single point in time.

Thank you in advance.

Masters Student – Researcher

University of Nairobi

Appendix II: Questionnaire

Instructions: Please take the time to read the questions carefully and respond accurately as you see fit. Please fill out each form completely and accurately. Tick (√) where appropriate.

Section I: Demographic Information

1. Please identify your gender.

Male [ ] Female [ ]

2. Please choose the age range that best fits you.

Below 30 years [ ] 31-40 Yrs [ ] 41-50 Yrs [ ] Above 50 Yrs [ ]

3. Please mention the highest academic qualification that you have achieved.

Primary School Level [ ] Secondary School Level [ ] Middle College Level [ ] Univer

[ ]

4. How many years have you been a farmer?

a) Less than 5 Years [ ] b) 5-10 Years [ ] c) 11-15 Years [ ] d) Above 16 Years [ ]

SECTION TWO: CONSUMER ATTITUDES

How much do you agree with the statements that follow, which describe the consumer attitudes that is used at your hospital? Use the following scale: 1- No extent, 2- Little extent,3-Moderate extent, 4-Great Extent, 5- Very great Extent.

Affective Information	1	2	3	4	5
I purchase pesticide that is well known among the farmer in the region					
The pesticides is of good quality					
The pesticides are of fair price					
I am aware of the various types of pesticides used by farmers.					
I am satisfied with the pesticides I use since they are effective					
Behavioral Information	1	2	3	4	5
I will consider buying/trying the pesticides from one of the companies that is well known to me.					
I will continue to buy pesticides from one of the brands that have being using before					
Quality of the pesticides should be improved					
Prices of the pesticides should be reduced					
I prefer to buy similar pesticides from another brand if at same price					

Cognitive Information	1	2	3	4	5
I acquire information about the pesticides from my fellow farmers.					
I get information from promotional media (radio or tv ad, billboards etc)					
I am willing to pay more if the pesticides am using is effective					
The brand is my social class					
The package of the chemical is well informative on how to use the product.					
The agrochemical is affordable					

SECTION 3: CONSUMER CHOICES

Please use a five-point Likert scale to express your degree of agreement about the specified characteristics of choices. The scale ranges from 1 - No extent, 2 - Little extent, 3 - Moderate extent, 4 - Great extent, to 5 - Very great extent.

Choices	1	2	3	4	5
The availability of a certain agrochemical on the market is a factor that plays a role in the choice to acquire that agrochemical.					
My history of success in applying the agrochemical in question has a role in determining whether or not I will buy it.					
The fact that this brand is immediately distinguishable from its competitors and positioned led to the decision to buy it.					
The reputation of the supplier is a factor that plays into my choice to buy an agrochemical.					
Because I have a long-standing commitment to that agricultural chemical company, I have settled on making this acquisition.					

Thank You