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Entrepreneurial orientation and performance of smallholder avocado women farmers in Uasin Gishu County, Kenya.

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ENTREPRENEURIAL ORIENTATION AND PERFORMANCE OF SMALLHOLDER AVOCADO WOMEN FARMERS IN UASIN GISHU COUNTY, KENYA

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DECLARATION

I certify that this study project I have submitted for consideration is entirely original and hasn't already been submitted or authorized for a degree by this or another university. Except when appropriate reference is provided, the project does not, to the best of my knowledge and belief, include any content that has already been authored by another individual. This research project may not be reproduced in whole or in part without the authors and Strathmore University Business School's consent.

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DR. SIMON NDIRITU

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LIST OF ACRONYMS AND ABBREVIATIONS

EO	Entrepreneurial Orientation
GAP	Good Agricultural Practice
GDP	Gross domestic product
HCD	Horticultural Crops Directorate
R&D	Research and development
SMEs	Small and medium-sized enterprises
SPSS	Statistical Package for the Social Sciences
USAID	United States Agency for International Development

ABSTRACT

It is commonly recognized that entrepreneurial activity contributes to the development of economies both locally and worldwide. Farmers with small plots of land in developing nations, particularly in sub-Saharan Africa, are active participants in agricultural markets such as export and domestic chains. The general objective of the study was to determine the effects of Entrepreneurial Orientation on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya. The specific objectives were to identify effects of innovativeness, risk-taking propensity, proactiveness, and training on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya. The study was guided by the Kirzner Theory and The Social Cultural Theory of Entrepreneurship. This study adopted mixed method approach. This captured both qualitative and quantitative data. The target population for this study was small scale avocado farmers from Turbo, Soy, Ainabkoi, Moiben, Kessess and Kapseret sub counties of Uasin Gishu County. Cluster sampling procedure was applied to select the subjects of study based on geographical location. Convenience sampling procedure was then used to pick the sample based on availability and willingness to provide information for the study. Data was collected through a questionnaire structured to meet the objectives of the study. Descriptive analysis was used to make sense of the data. The data were coded, and then analyzed using SPSS version 21, and the findings obtained presented in the form of tables, charts, and figures. The data collected in each Entrepreneurial Orientation were analyzed in a table to get the mean and standard deviation, respectively. The findings indicated that innovativeness, risk-taking propensity, proactiveness, and training significantly influence performance of farmers in Uasin Gishu County. The study recommended that more research should be done in the area of innovativeness to determine other methods that can help farmers define creative ideas to deal with challenges. The study also recommends that the County Government of Uasin Gishu should have trainings and workshops in place to encourage interactions and sharing of ideas by farmers. In addition, they should share new information, trends and ideas with farmers, so they grow as global exporters of avocados.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Under the economic pillar of the Kenyan Vision 2030, agriculture has been identified as one of the major sectors that would be responsible for delivering the annual economic growth of 10 percent that is envisioned (Kwaramba, Chigumira, & Zimori, 2020). According to the findings of Sell and Minot (2018), the contribution of the horticulture sub-sector to the total agricultural sector of the national economy is significant. Producing vegetables and fruits is the primary source of income for the majority of smallholder farmers, who make up as much as 70 percent of the agricultural workforce. This revenue accounts for 18 percent of the average family income in the country (Deepa & Murthy, 2019).

It is commonly recognized that entrepreneurial activity contributes to the development of economies both locally and worldwide (Iza & Dentoni, 2020). The term farmer entrepreneurship refers to the practice of creatively recombining agricultural resources in order to generate new avenues for the production of value (Xhoxhi, Dentoni, Imami, Skreli, & Sokoli, 2021). Farmers that are willing to take risks and experiment with new methods, organize a previously untapped resource, or make use of recent knowledge in order to create new markets for agricultural goods are among the first in a community to do so (Okello, 2020).

Women play a pivotal role in agricultural production and they make up between 42% and 65% of the agricultural labour force in Kenya (World Bank, 2014) in addition to their traditional domestic role. Furthermore, women produce between 60 and 80 per cent of food in most developing countries and are responsible for half of the food production in the world (Chinery, 2011). Women's roles in agricultural production are not the same as it varies considerably among and within regions and is changing rapidly in many parts of the world where economic and social forces are transforming the agriculture sector. However, despite women being a critical force in agriculture and rural development in sub-Saharan, their central role in agricultural production has been largely ignored, particularly in policy

(FAO, 2011). According to Seymour (2017), women have risen up to play significant roles in the socioeconomic development of their communities throughout the many African areas.

The reduction of gender inequality is generally acknowledged as a factor in agricultural development and the achievement of food and nutritional security (Mburu, Affognon, Irungu, Mburu, & Raina, 2015). African women contribute equally to the creation of both financial and social infrastructure (Sell & Minot, 2018). The growth and well-being of societies are significantly influenced by entrepreneurial activity. As a result, a range of parties, including governments, nonprofits, academic institutions, and private citizens, are motivated to promote the growth of entrepreneurial ecosystems that are supportive (Mwambi, Oduol, Mshenga, & Saidi, 2016).

Smallholder farmers in developing nations, particularly in Sub-Saharan Africa, engage in agricultural markets including export and domestic chains, according to Kilima and Kurwijila (2020). Over 80% of the food for markets and domestic use is supplied by farmers (Samans, Blanke, Corrigan and Drzeniek, 2015). In Kenya, 70% of the rural population depends on agriculture, and agricultural techniques account for 65% of export revenue (Mwambi et al., 2016). In Kenya, crop farming and animal raising are the two main agricultural industries. Coffee, tea, sugarcane, and horticulture crops are among the major crops farmed for both domestic and international markets (Edna, 2019). In recent years, horticultural farming has grown, and products including avocados, bananas, passion fruits, tomatoes, mangoes, French beans, and other vegetables have begun to provide significant revenue for growers (Mbuva, 2021). Gains from involvement in export markets are greater than those from involvement in local markets (Murugani, 2016).

Lack of resources or inadequate infrastructure may make it difficult for smallholder producers to achieve demanding production standards and, as a result, cooperate with export companies (Ayuya, 2018). Smallholder farmers have significant challenges due to market failure, which is exacerbated for disadvantaged groups due to their circumstances, such as women, the poor, and producers in regions with limited agricultural potential.

Compared to males, women are more likely to be "unserved" by formal financial markets, have less access to market information services, and lack secure rights to production resources and assets such as land, labor, and capital (Masamha, Uzokwe, & Thebe, 2018). According to previous research, women have been attracted to entrepreneurship mostly because of the rewards, work-life balance, independence, and flexibility that it offers (opportunity-driven conditions) (Adams, Quagrainie, & Klobodu, 2017). On the other hand, others contend that downsizing and restructuring, which have decreased the number of safe employment on the labor market (necessity-driven conditions), have forced women into entrepreneurship (Machuki, 2021).

In Kenya, avocado is a significant non-traditional export crop. There is a fast rising worldwide need for it (Karuiru, 2018). It has recently become the third-most traded fruit in the world, after mango and pineapple, accounting for more than 25% of all tropical fruit exports each year (Food and Agriculture Organization (FAO), 2020). Unsaturated fatty acids, protein, and fat-soluble vitamins—all of which are uncommon in other fruits—are also found in avocado (Uosukainen, 2018). The fruit pulp contains roughly 30% oil, which is comparable to olive oil (Mwambi et al., 2016). It serves as a raw ingredient for the cosmetic and pharmaceutical sectors (Duarte, 2017). Contract farming is a viable choice for commercializing the fruit and enhancing the wellbeing of the vast majority of smallholder farmers engaged in its production (Cucho-Padin et al., 2020).

For the sake of their own survival and growth, avocado smallholder growers need specific assistance (Shadbolt et al., 2013). Having easy access to agricultural assistance is one of these initiatives. The Kenyan government, with the help of development partners, has launched a series of initiatives aimed at supporting women entrepreneurs in the agricultural sector (Dung, Bonney, Adhikari, & Miles, 2021). Input subsidies, agrovet services, financial and credit, entrepreneurial skills, business plan training, extension and advisory services, infrastructure support, and marketing and market research are some of the assistance programs offered through university and non-governmental organization projects (Gisip & Harun, 2013; Rademaker et al., 2016).

1.1.1 Entrepreneurial orientation

The methods, routines, and decision-making procedures that result in the introduction of new goods and services are referred to as entrepreneurial orientation. It includes the goals and deeds of important participants acting in a dynamic creative process with the goal of creating new businesses (Iza & Dentoni, 2020). It describes a certain organizational level behavior that involves taking risks, being self-driven, engaging in innovation, and acting proactively and aggressively to surpass rivals in the marketplace (Mwangi, 2014). As stated by Rauch, Wiklund et al. (2009). EO stands for the procedures and standards that serve as the foundation for the firm's entrepreneurial choices and activities. Miller created the idea of entrepreneurial orientation in 1983, defining it as having three components: innovativeness, proactiveness, and risk-taking. However, Lumpkin and Dess (2009) hypothesized that the notion of entrepreneurial orientation has two extra salient characteristic,s competitiveness, and aggression. This study will adopt the definition of Miller because it will help understand the entrepreneurial characteristic of the farmers.

The primary characteristics of entrepreneurial attitude are a predisposition to operate independently, a readiness to experiment and accept risks, a tendency to be aggressive against rivals and proactive with regard to market prospects (Kosa, Mohammad, & Ajibie, 2018). Exploiting possibilities given in the corporate environment is connected to entrepreneurial inclinations (Egbe, Onomu, Ike, & Akpoviri, 2020). Entrepreneurial attitude entails a readiness to innovate to refresh market offers, to be more proactive than rivals about new market prospects, and to take risks when experimenting with new and untested services, products, and markets (Wiklund & Shepherd, 2005).

Proactivity means taking the initiative, which is important for innovation and entrepreneurship (Machuki, 2021). It has to do with what the farmer, who is in charge of the activity, thinks about the area around the rural property and the overall plan for the activity (Canever et al., 2011). So, the property manager is acting in a proactive way when he or she looks for management practices that will help increase farm productivity, increase the productivity of the system, create better jobs in rural areas, cut costs (without hurting the system), and plan for the future based on what might happen (Wickramaratne,

Kiminami, & Yagi, 2014). A farmer might also be able to predict and keep an eye on the environment by staying up to date, looking for information, and taking part in activities related to the sector (Machuki, 2021).

The capacity of a company to consciously commit resources to initiatives with a high potential for profits but also a high potential for failure is known as risk taking (Paramashivaiah, 2018). Iza and Dentoni (2020) define risk taking as the readiness to invest funds in initiatives that have a realistic potential of failure that might be expensive. Most choices in rural areas are made in the face of production, market, financial, and human uncertainty. But it's also crucial to understand that a successful farm takes calculated risks in line with its objectives and resources (Barbieri & Mahoney, 2019; Clark, 2020).

1.1.2 Smallholder Farmers Performance

The definition of the smallholder farmer, often used interchangeably with small-scale farmer, varies among scholars and organizations based on the definer's area of interest and focus. It will typically include the size of the land, income of the farmer and amount of output/produce that the farm/farmer produces (Cohn et al., 2017). This study adopted this definition of small scale farmer. The Food and Agriculture Organization of the United Nations (FAO) describes the smallholder farmer as working on land plots smaller than 2 hectares, producing food primarily for their use and relying heavily on family labour (Rapsomanikis, 2015).

One of the things that is given attention under the economic pillar in Kenya Vision 2030 is increasing the value of the agricultural sector. The contribution of the agriculture sector to the development of the economy in Kenya is significant. The agricultural industry in Kenya is responsible for at least 25 percent of the country's gross domestic product, and 75 percent of the population relies on agriculture on a modest scale for both their food and their income (Perret, 2006). However, Kenya's farmers are susceptible to hazards in agriculture that arise not just from climate change but also from other types of natural and man-made disasters.

Kenya's goal is to increase its revenue from agriculture, livestock, and fisheries by increasing the value of the country's goods via processing and value addition before those items are sold on the market (Fleming, 2020). Smallholder farmers have the potential to be given the tools necessary to capitalize on new market opportunities for high-value agricultural products. These opportunities have arisen as a direct result of the growing demand for these products on a global scale, particularly for fresh vegetables and fruits (Humaira, Jannah, Fitriani, & Maad, 2021). It is essential to encourage smallholders' access to global export markets for high-value products in order to increase incomes and, as a result, alleviate poverty, which is most prevalent in Sub-Saharan Africa. Considering that the majority of the world's rural poor are engaged in agriculture, this is a global issue.

1.1.3 Avocado Farming in Kenya

Avocado is a non-traditional export product in Kenya with favorable market demand that may be used to create a strong and thriving agricultural economy (Mwambi et al., 2016). Smallholder farmers account for 85% of all avocado producers in the nation, making up the majority of the industry (Uosukainen, 2018). A significant source of avocados for the European Union is Kenya. Compared too many other nations that export avocados. Due to its production season, Kenya is in a unique position. Additionally, the country benefits from lower transportation costs than its African rival, South Africa (Karuiru, 2018).

Local types account for over 70% of Kenya's total avocado output, while Fuerte and Hass, improved varieties that are good for export markets, account for roughly 20% and 10% of production, respectively (Horticultural Crops Directorate (HCD), 2015). Avocados have risen to become the most popular fruit sold in recent years on the Kenyan export market, where they make up more than 17% of all horticultural exports (Horticultural Crops Directorate (HCD), 2015). The production of avocados gives a chance to diversify the rural agricultural sector, which is often dominated by cash crops in developing nations, such coffee, cocoa, or tea (Edna, 2019). When not exported, these conventional cash crops are of little utility to either farmers or consumers in the nations where they are grown and are prone to falling prices. Unlike the majority of other income crops, avocados have a high

nutritional content, which makes the crop a potential significant source of nourishment (Tabeshpour et al. 2017).

The Kenyan government has put into place a number of projects to enhance avocado production, quality, and the sector's overall export performance, working with partners including USAID and the Embassy of the Kingdom of the Netherlands. Farmers have been given credit for high-quality seedlings, trained in Good Agricultural Practice (GAP), and connected to exporters via formal contracts to achieve this (Mwambi et al., 2016). The programs also discovered that contract farming provides a way for farmers to profit from production while also ensuring that the nation maintains its competitiveness in the international market in light of the new requirement for Global Gap certification, marketing restrictions, and high production costs (Solidaridad et al., 2016).

1.2 Statement of the Problem

Promoting agricultural commerce and production is suggested as a key tactic for boosting the economy and eradicating poverty (Larson et al. 2014). Despite the crucial responsibilities that women play in society as mothers, teachers, nurses, farmers, and other professions, they have been excluded from full participation in economic, social, and political activities (Diiro, Seymour, Kassie, Muricho, & Muriithi, 2018). Women business owners who recognize prospects in farming must save and make their own investments if they want to compete and succeed. They make investments in agricultural businesses expecting a return or to break even (Okello, 2020).Additionally, males could take over crop production from women if it becomes profitable, making it more difficult for women to join marketplaces that are competitive (Machuki, 2021).

According to Marlow (2012) and Ahl (2018), the gendered character of entrepreneurship has recently emerged as a key area of study, and scientists are urged to look at the causes and mechanisms behind the disparate rates of entrepreneurial activity among men and women. The majority of research have recognized that small- to medium-sized businesses' profitability and sustainability are positively impacted by entrepreneurial inclinations (Cho & Lee, 2018). The number of female entrepreneurs is on the rise, and studies indicate that

women are successfully competing with their male colleagues (Chatterjee et al., 2019; Van Der Merwe, 2015). Female and male entrepreneurs manage their businesses using various tactics (Quaye et al., 2015).

Gender norms, according to Adom and Anambane (2019), prevent many women from starting their own businesses in developing nations. As a result, the gender of the company owner has a significant impact on how well small- to medium-sized businesses succeed and how long their businesses last (Ayub et al., 2013; Fellnhofer et al., 2016). Though EO is crucial for agripreneurs, particularly in the advancement of their careers in avocado farming, many developing nations like Kenya continue to ignore its significance. Small-scale avocado producers continue to confront difficulties throughout the value chain, including high transaction costs, exclusion from high-value markets, information asymmetry, and non-enforcement of marketing contracts (Karuiru, 2018). Farmers who are forced to sell in conventional spot marketplaces that yield poor prices due to high rates of poverty complicate matters further. As a result, little is understood about the function of farmers' entrepreneurial orientation (EO) as a precursor to innovation. At the level of the individual farmer, EO refers to a farmer's deliberate preference for experimenting, taking chances, and being proactive (Beattie, 2016). Avocado cultivation is a great way to improve rural lives and may lower youth and female unemployment. Hence, this study sought to fill the gap by doing a study to determine the effects of Entrepreneurial Orientation on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya.

1.3 Research Objectives

The general objective of the study was to determine the effects of Entrepreneurial Orientation on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya.

The study was guided by the following specific objectives:

1. To identify effects of innovativeness on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya
2. To determine how risk-taking propensity influence performance of avocado smallholder women farmers in Uasin Gishu County, Kenya
3. To find out the effects of proactiveness on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya
4. To find out the effects of training on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya

1.4 Research Questions

1. How does innovativeness influence performance of avocado smallholder women farmers in Uasin Gishu County, Kenya?
2. Does risk-taking affect performance of avocado smallholder women farmers in Uasin Gishu County, Kenya?
3. What is the effect of proactiveness on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya?
4. Does training influence performance of avocado smallholder farmers in Uasin Gishu County, Kenya?

1.5 Scope of the Study

The study was confined to Uasin Gishu County, Kenya. The study sought to determine the effects of Entrepreneurial Orientation on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya. It focused on how innovativeness, risk-taking, proactiveness, and training affect performance of avocado smallholder women farmers in Uasin Gishu County. The study was anchored by the Kirzner and the Business Strategy theories. The primary data was collected from smallholder avocado farmers in the county. The study was done for a period of 4 months between December 2021 – March 2022.

1.6 Significance of the Study

This research will be of use to all of the stakeholders in Uasin Gishu County since it will provide information on potential treatments and solutions to improve the performance of smallholder farmers and empower women.

The study will be of immense importance to government of Kenya by providing useful information on the status of Entrepreneurial Orientation, avocado farming, and women concerning economic empowerment and provide a useful guideline for policy formulation. The results of this research will be very helpful to the decision-makers in the county and in the nation as a whole when it comes to the development of appropriate interventions and strategies that will improve avocado farming.

By experimentally demonstrating that creativity, taking calculated risks, being proactive, and training have a statistically significant impact on smallholder farming success, the results will advance knowledge in the field.

Researchers and academics could use this study as a point of reference. Besides, they can use as a basis for further research on Entrepreneurial Orientation and smallholder farmer performance.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

This chapter covered literature review of previous studies in line with the study's goals. This included the effect of entrepreneurial orientation on agricultural performance, such as innovativeness, a penchant for taking risks, proactivity, and training. The chapter also looked at conceptual framework, research gaps, and theoretical reviews.

2.1 Theoretical Framework

This study was anchored on Kirzner and Social Cultural Theory of Entrepreneurship.

2.1.1 Kirzner Theory

A theory of entrepreneurship developed by Professor Israel Kirzner in 1973 employs Austrian economic principles to describe the role of the person who recognizes and seizes business opportunities in the face of uncertainty (Iza & Dentoni, 2020). In pursuit of his personal profit, the entrepreneur is passionate about addressing errors in the pricing system as well as the blatant ignorance and error shown by certain economic players (Kangogo, Dentoni, & Bijman, 2021). The entrepreneur makes money by providing the services necessary to find and choose arbitrage opportunities, which enables supply and demand for a certain commodity to match.

Entrepreneurship, in the opinion of hmad, Suseno, Seet, Susomrith, and Rashid (2018), is the awareness of and foresight into market circumstances, and it must logically come before activities made in line with that awareness. According to Kirzner, entrepreneurship requires the ability to be sensitive to fresh business prospects that no other economic player has yet identified (Cowden & Tang, 2021). The entrepreneur may foresee demand for a new good that hasn't yet been produced and decide to produce it himself; he may also find market arbitrage opportunities to sell a similar factor of production for more money than he paid for it; or he may notice that certain factors of production are underpriced and decide to take advantage of this knowledge to make money (Cowden & Tang, 2021). This theory is applicable to the research because smallholder women farmers must be aware of any

possibilities presented by mistakes made by other participants in the economy in order to remedy them and turn a profit.

2.1.2 Social Cultural Theory of Entrepreneurship

Social Cultural Theory of Entrepreneurship theory was found by Zimmer (1986). The theory states that the culture of entrepreneurship is affected by norms and ways of life. Business enterprise attributes, for example, advancement, inventiveness, hazard taking, activity, forcefulness and aggressiveness is advanced, and where social procedures are not unbending then such identities get to be intrigued with beginning and working their own ventures (Mwaura et al., 2014). The primary characteristics of entrepreneurial attitude are a predisposition to operate independently, a readiness to experiment and accept risks, a tendency to be aggressive against rivals and proactive with regard to market prospects (Kosa, Mohammad, & Ajibie, 2018).

Exploiting possibilities given in the corporate environment is connected to entrepreneurial inclinations (Egbe, Onomu, Ike, & Akpoviri, 2020). Entrepreneurial attitude entails a readiness to innovate to refresh market offers, to be more proactive than rivals about new market prospects, and to take risks when experimenting with new and untested services, products, and markets (Wiklund & Shepherd, 2005). Farmers that are willing to take risks and experiment with new methods, organize a previously untapped resource, or make use of recent knowledge in order to create new markets for agricultural goods are among the first in a community to do so (Okello, 2020).

This theory supports this study because the culture of aggressiveness and risk taking cultivates entrepreneurial skills needed to sustain a business. It is pertinent in creating business methods, innovativeness, risk taking and aggressiveness of farmers to assure success in avocado farming, given that the majority of the smallholder women farmers of avocados in Uasin Gishu County work in an unpredictable environment. The theory is a good fit for this subject because it explains how entrepreneurship, new businesses,

including farming, may use business strategies including innovation, taking calculated risks, and customer focus to achieve enterprise growth.

2.2 Empirical Review

This section examined earlier research on the effects of entrepreneurial orientation, inventiveness, risk-taking tendency, proactivity, training, and performance.

2.2.1 Innovativeness and Performance

The development of agricultural practices along the lines of value chains has been seen as one of the options for increasing productivity among smallholders with the advent of rural development as a cohesive route for agricultural development (Etriya, Omta, Scholten, & Wubben, 2020). Innovation, according to Osoro (2012), is a crucial method of seizing chances, making it a part of entrepreneurial Orientation. Particularly among young people and women who have received agricultural education, agriculture and business are methods for reducing poverty (Osikabor et al., 2011). Farmers must possess strong entrepreneurial skills in order to promote innovation and development in the agricultural industry (Marsden & Smith, 2015; Pyysiäinen, Anderson, McElwee & Vesala, 2016).

Farm enterprises and farmer lifestyles are impacted by farming methods and conditions (Machuki, 2021). In fact, greater farm diversification is considered as an essential development since there is rising need for changes in non-agricultural roles and services as well as changes in food production methods (Okello, 2020). According to a study by Chagwiza et al. (2016), cooperatives are one of the cutting-edge institutional organizations that could help agripreneurs overcome some of the difficulties they encounter in managing their farms. The study examined the effects of cooperative membership among dairy producers in Selale, Ethiopia. The buying and selling of agricultural products, logistical services like transportation, training and business development services, the supply of inputs, and connections to key partners like financial institutions are just a few of the agribusiness support services that cooperatives provide (Abebaw & Haile, 2013). Therefore, farmers are able to lower pricing risks via the cooperative business model, which might strengthen their entrepreneurial resilience.

Through innovation, a potential entrepreneur recognizes opportunities for the creation of new products or the enhancement of existing products in a more innovative business system. As a result, the potential entrepreneur decides to start a business, adopt modern technologies, and improve the performance of an existing business, which in turn generates more employment opportunities through higher sales and profits (Osoro, 2012, Mwangi, 2014, Nyaga 2017). A research on the impact of intellectual capital on the expansion of small and medium-sized businesses in Kenya was done by Ngugi (2017). The study's conclusions showed that the development of SMEs in Kenya is significantly influenced by variables of intellectual capital, including the owners' management abilities, entrepreneurial prowess, and innovativeness.

Innovation shows a tendency to incorporate fresh concepts, inventiveness, research, and creative processes, which may result in current services, goods, or technical advancements (Truong, 2020). Farmers' willingness to discover original, unconventional, or creative solutions to challenges and to satisfy production demands are examples of their innovativeness (Machuki, 2021). New technology, procedures, goods, and services make up these solutions. Because they have limited investment capacities, the majority of farmers in underdeveloped nations lack the financial resources to engage in formal R&D. (Kosa et al., 2018). In certain cases, the government offers them enhanced seeds at discounted prices. To demonstrate interest in the seeds and other methods that the extension staff could give, a farmer must have a strong business orientation.

In a 2017 article published in Daily Nation, Kazungu said that recent FAO investigations showed Kenya to be among the top countries for creative agriculture. Even while taking risks is essential to innovation since the market potential for novel items is much unknown, innovation is more likely to occur when risks are taken (Sethi and Sethi, 2009). According to studies, the failure rate for efforts at innovation might reach 50% (Nakata & Sivakumar, 1996; Wong & Tong, 2012). When new technologies are applied to various fields, new entrepreneurial possibilities arise as a result of technological progress and development (Xhoxhi et al., 2021).

2.2.2 Risk-taking propensity and Performance

Risk-taking is the extent to which managers are prepared to undertake significant and uncertain resource commitments, according to Miller and Friesen (2008). Organizations and their leaders are exposed to three different categories of risk, according to Dess and Lumpkin (2005): business risk, financial risk, and personal risk. Business risk is the risk associated with investing in unproven technology or entering unexplored industries. Financial risk is connected to big resource commitments or excessive borrowing for expansion. Firms with an EO often engage in hazardous behaviors, such as heavy leverage and significant resource commitments, in an effort to pursue market possibilities and earn high profits. A person's decision to prefer a certain strategic course of action is tied to personal risk. This individual is often an executive (Egbe et al., 2020).

Individual farmers' tendency for taking risks in agriculture differs (Iza & Dentoni, 2020). In their 2017 study of more than 1,000 farmers, Adams et al. (2017), discovered a connection between a farmer's propensity to take on risk and the kinds of crops that are raised. High risk-takers were more likely to work in livestock feeding and income crops. Dairy and tobacco farming attracted risk-takers who were in the middle of the risk spectrum, whereas general farming attracted the least risk-takers. This kind of conduct may be self-restraining since it prevents farmers from taking on more lucrative endeavors by discouraging them from taking calculated risks. Those who engage in "safety-first farming" may be constrained by their own risk aversion, claim Kunreuther and Wright (2019). These results indicate that risk-taking tendency and its precursors are entrepreneurial effort incubators in developed economies for the objectives of generating wealth for the individual, raising the national GDP, improving job possibilities, and enhancing society (Kosa et al., 2018).

According to Lumpkin and Dess (2016), an entrepreneurially oriented firm invests significant amounts of borrowed money to seize opportunities in the market that promise substantial returns. Through senior management teams, it is anticipated that the beneficial association between a person's predisposition for taking risks and their decision-making in

this area would also apply to businesses. According to Bonney, Adhikari, and Miles (2020) entrepreneurs see risk as the uncertainty and possible losses related to results that might come about as a result of a certain course of action or conduct. Risk inclination and risk perception are key factors in risk taking. In other words, risk aversion or risk-taking anxiety decreases as risk inclination increases (Newbery, Roderick, & Wilkinson, 2020).

Okeyo et al. (2016), found that greater levels of performance are connected with a moderate degree of risk-taking tendency. In their 2016 study, Wambugu, Gichira, Wanjau and Mungatu (2016) assessed risk-taking based on how people perceive the terms "risk-taking" and "calculated risk," as well as based on a claim regarding exploration in commercial operations. Wambugu et al., (2016) shown that taking risks had no effect on customer performance but had a negative influence on product performance. They contend that this result may be attributable to the fact that taking risks is often expensive owing to rival reactions, which may cause resource loss and drift when businesses are just starting out and lack the coordination mechanisms to appropriately guide risk-taking behavior. They argue that although taking risks may be advantageous for more established businesses, it is not advantageous for startups.

When choosing how to continue in circumstances with unclear consequences, taking or avoiding risks is referred to as having a risk-taking mentality (Rohrmann, 2004). Rauch et al. (2004) discovered that, while being much less important than other EO factors, the risk-taking component is positively connected to performance. The relationship between taking risks and performance is less clear than the relationship between initiative or inventiveness and performance Rauch et al. (2004). According to (Naldi, Nordqvist, Sjöberg & Wiklund, 2017), taking risks is seen as an autonomous dimension that is favorably correlated with the other EO aspects. According to Pérez-Luño et al. (2018), taking risks is positively correlated with the volume of innovations produced by a business, and the bigger a firm's capacity for taking risks, the more likely it is that it will favor innovation development.

2.2.3 Proactiveness and Performance

Being proactive involves taking the initiative, taking advantage of first-mover advantages, and predicting and seizing new chances ((Newbery et al., 2020). Entrepreneurial pro-activeness, according to Alvearez and Barney (2012), is the effort a company does to make sure that its goods and services reach a new market, underserved market, or a new population that may use them before the rivals find these niches. Proactivity is crucial because it denotes a mindset that is forward-looking and is accompanied by inventive and entrepreneurial actions (Machuki, 2021). Proactivity is linked to leadership and the ability to see possibilities before others, even if one is not the first to do so (Mwangi, 2014).

According to Frösén et al. (2016), market-oriented agripreneurs should be structured in a way that focuses on the demands of their existing and potential customers in order to profit from their agricultural enterprise. Three components make up market-oriented behaviors, according to Shadbolt et al. (2013): customer orientation, competitor orientation, and cross-functional activity coordination. Agripreneurs must be forward-thinking since they work in a very volatile business environment with several risks (Shadbolt et al., 2013). Therefore, viewpoint implies an agripreneur establishing a strategic foresight capability, which might allow him to examine all the upcoming problems and commercial prospects (Miska et al., 2018).

Agca, Topal & Kaya (2019), made the case that being proactive gives a company the chance to see possible hazards and address any risks before they have a negative impact on the business. These help a business seize new markets as soon as possible. According to Adesoga, Olalekan, and Taiwo (2018) who focused on the impact of proactiveness on the expansion of a few chosen medium- and small-scale businesses in Ogun State, Nigeria, leadership in and of itself does not always translate into an entrepreneurial attitude. However, every leadership style demonstrates traits that have been associated with entrepreneurship, such as a pro-active mentality, which is essential to the expansion of any organization.

Being proactive relates to market opportunity in free business by seizing any opportunity and acting dishonestly in charge to mold the environment, that is, to alter trends and even to produce demand (Okello, 2020). A proactive initiative's characteristics include ferocity and oddball strategies while going up against competing efforts in the same market niche. Such businesses aggressively seek out and take advantage of new chances to shape their surroundings (Atuahene-Gima & Ko, 2001). Active businesses change their whole environment by introducing new goods, knowledge, and administrative techniques rather than only responding to it (Callaghan, 2009). 235 start-ups in China were used in a 2018 study by Gao, Ge, Lang, and Xu (2018) to examine the effects of proactive orientation and entrepreneurial strategy on entrepreneurial success. The study's conclusions showed that proactive orientation and entrepreneurial success seem to have a positive association in businesses when there is less competition. Competitive strategy and moderate strategy both have a beneficial moderating impact. On the other hand, there is no linear link between entrepreneurial effectiveness and proactive attitude.

2.2.4 Training and Performance

Farmers' unions and advisory services are significant tools for enhancing farmers' entrepreneurial abilities, according to policymakers and scholars (Machuki, 2021). To enhance productivity, smallholders are recommended to adopt an entrepreneurial farming strategy (Bjerke & Hultman, 2020). The empowerment of smallholder farmers to be business-minded is the only way to accomplish sustainable agribusiness production, processing, and selling (Wongtschowski et al., 2017). Financial management and business planning expertise are needed for this procedure. Services for business plans include assistance with agricultural planning, record keeping, market research, and financial management that includes cost-benefit analysis (Osoro, 2012).

Successful agricultural entrepreneurs need aptitude for business planning that will be used as a standard for operating agricultural operations (Cowden & Tang, 2021). Additionally, agripreneurs need to concentrate on the suitability of their general business and entrepreneurial abilities since they have been urged to become more market-oriented and to look for new prospects (Duft, 2010). According to Kavinda et al. (2013), several

researchers and academics have emphasized the significance and prominence of entrepreneurship training. It was discovered that entrepreneurship training significantly impacted how well entrepreneurs performed. According to Rosli and Mahmood (2013), entrepreneur innovation training improves a company's performance.

According to Bharadwai and Menon (2000), there is a favorable correlation between entrepreneur training and organizational success. According to the findings of a large number of studies, entrepreneur training and innovation both contribute to the improvement of organizational performance and have direct relationships with one another (Flynn, Doodley & Cormican, 2003). According to the findings of the research, researchers saw entrepreneurial training on innovation as a tool for reinvention in the public sector; hence, continual training is essential for the advancement of universities in the public sector (Mulgan & Albury, 2003). Sadly, in some nations, a significant number of public sector organizations do not place a greater emphasis on providing high-quality training programs on innovative agricultural practices (Bates, 2020; Albury, 2015).

Only 40% of workers in the public sector received training on innovation, according to a research, while the other 60% received no entrepreneurial education. They also spoke about how educating employees in innovation improves both their own and the organization's success (Mbiya, Egessa & Musiega, 2014). According to studies, individuals who completed entrepreneurial training in innovation had greater levels of inventiveness, a greater demand for accomplishment, and a propensity for taking high risks (Gürol & Atsan, 2016). The relationship between entrepreneurial attitude and business development has been the subject of many research (Oluwale, Olaposi, Adelowo, & Akangbe, 2016).

For instance, Mwangi and Ngugi (2014) discovered that the individual characteristics of EO firms' creativity, risk-taking, proactivity, and entrepreneurial management competence have a significant impact on the development of SMEs when focusing on the function of EO on the growth of SMEs in Kerugoya. In their 2015 study, Mwaura, Gathenya and Kihoro (2015) sought to investigate the impact of entrepreneurial orientation on the performance of SMEs, the majority of which were owned by women. They found that the relationship between the two variables of entrepreneurial orientation and enterprises owned

by women is significant and positive. Otieno (2012) focused on Kenyan industrial companies and how they employ EO. He said that training improves the financial performance of industrial companies.

2.3 Summary of Literature

An increasing number of academics are studying entrepreneurship as a way to help the economy grow and thrive (Green, David, Dent & Tyshkovsky, 1996; Morrison, 2000; Alstete, 2002; Rohaizat & Fauziah, 2002; and Frank, Korunka, Lueger & Mugler, 2005). There is evidence to back up the concept that entrepreneurship seeks to generate new economic activity (Low & MacMillan, 2018; Shane & Venkataraman, 2016). In spite of the fact that numerous studies have found a positive relationship between Entrepreneurial Orientation and performance, there are some who have found a negative relationship. (Arief & Thoyib (2018) Zhao, & Yu, 2014; Karacaoglu & San, 2017; Mokaya (2018) Sharma & Dave (2017) Zhang & Zhang (2019) (Covin, Slevin, & Schultz; 2014; Wood & Khan, 2001; Shamsudin & Shahadan, 2018; Slater & Narver, 2016).

Osoro et al. (2012) used the five factors innovativeness, risk-taking propensity, proactiveness, competitive aggressiveness, and autonomy—to examine the impact of entrepreneurial orientation on the success of small and medium-sized businesses in Kenya's information technology industry. On the other hand, Olowaye et al. (2016) examined the impact of risk taking on Nigerian business performance. Stock exchange used one risk taking propensity dimension, Waithaka (2016) used all five risk taking propensities, proactiveness, competitive aggressiveness, and autonomy, and Usman (2018) examined innovativeness, risk taking, and proactiveness in three different ways. They all have different performance outcomes (Raunch et al., 2019; Abuya, 2016).

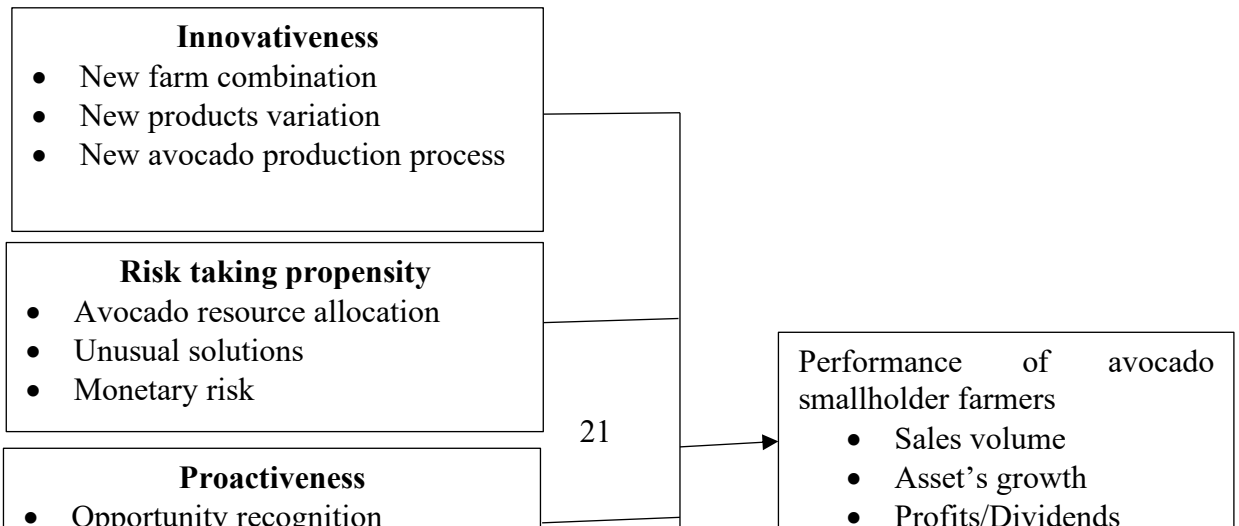
Many other writers have underlined the significance of innovation and taking risks for the success of businesses (Soininem et al., 2015; Crespell & Hansen, 2018). The competitive aggressiveness and risk-taking measures have not been properly stated, and the majority of research nearly never include autonomy (Kiriku, 2016; Olowaye, 2016; Usman, 2018; Mukami, 2014). Okeyo et al. (2016), used both the internal and external environment as

the moderating factors while examining entrepreneurial approach, business development services, business Environment, and Performance. On what qualities make for effective moderators, there is little agreement. Similar to this, Osoro et al. (2012), discovered a favorable relationship between entrepreneurial attitude and performance when examining the effect of contextual variables on performance. These factors included respondents' profiles, which included age, education level, training experience, etc. They are not the only ones, however, that may affect how EO and performance are related.

2.4 Research Gap

From previous studies done, very little is known about the function of farmers' entrepreneurial orientation (EO) as a forerunner to innovation. This topic has not been investigated before, therefore there is a lot of room for discovery. Despite the fact that the idea of entrepreneurial orientation has a long and illustrious history that is deeply rooted in the general business management literature (Robinson et al., 2011; Lumpkin and Dess, 2016), the term entrepreneurial orientation is used to refer to a farmer's intentional bias toward experimenting, taking risks, and being proactive at the level of an individual farmer (Matsuno et al., 2020; Verhees et al., 2017; Gellynck et al., 2015). As a result, farmers' EO may represent a significant driver of innovation, and as such, it may explain the innovation gap that exists between farmers who participate in avocado farming on a small scale. In addition, there have only been a handful of studies done so far that evaluate farmers' economic opportunities in rural settings in developing nations (Gellynck et al., 2020; Etriya et al., 2019).

2.5 Conceptual Framework



Independent Variable **Dependent Variable**

Source: (Research, 2021)

Figure 2.1 Conceptual Framework

2.6 Operationalization of the Variables

Table 2.1: Operationalization of Variables

	Variables	Operation definition	Measures	Source
Entrepreneurial Orientation	**Risk-taking propensity**	The capability of a company to intentionally invest	• Avocado resource allocation • Unusual solutions • Social risk	• Paramashivaiah, 2018

		resources in initiatives that have a high potential of success but also a high risk of failure	• Monetary risk	
	Innovation	Innovation is coming up with a new product or process with an aim of achieving customer satisfaction.	• New farm combination • New products variation • New avocado production process • New avocado supplier	• Narver et al. (2000)
	Proactiveness	Proactiveness is defined as taking the initiative essential for innovation and entrepreneurial activities	• Opportunity recognition • Taking charge of farming • Avocado growth emphasis	• Machuki, 2021
	Training	Improving farmers' entrepreneurial skills to empower them.	• New farming skills • Avocado Farming Information • Market information	• Lumpkin and Dess, 2016
Organizational Performance	**Processes**	A process is a collection of events and tasks that, if finished, will bring about the achievement of a desired outcome for	• Sales volume • Asset's growth • Profits/Dividends	• Van Looy and Shafagatova (2016)

		an organization. The management team is able to develop methods to enhance the processes because they can see the company as a collection of processes, which enables them to provide more value.		

Source: (Researcher, 2022)

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

The methodological basis for the investigation is presented in this chapter. It includes the research study's design, target population, sampling strategy and sample size, data gathering tools, and data analysis methods.

3.2 Research Design

A research design, according to Welman et al. (2009), is the strategy used to choose the participants in a study as well as the methods used to gather, generate, and analyze the data. Mixed method approach was used. This captured both qualitative and quantitative data. Qualitative data was used to triangulate the results from quantitative data. The design enabled the description of data by frequency and means with which something occurs or the relationship between variables (Cooper & Schindler, 2003). This strategy was appropriate for this study because it expects to collect detailed information from the participants in small-scale avocado farming in order to understand the impact of entrepreneurial orientation on those participants' performance in the market and provide an answer to the study's research question.

3.3 Population and Sampling

3.3.1 Population Size

Population, as defined by Pombo and Tromp (2011), is a collection of people, things, or things from whom samples are obtained for measurement. It describes a whole collection of individuals or things that share at least one characteristic. The target population for this study was small scale avocado farmers from Turbo, Soy, Ainabkoi, Moiben, Kessess and Kapseret sub counties of Uasin Gishu County. According to County Government of Uasin Gishu (2021), there are 1184 small-scale avocado farmers in the County.

Table 3.1 Table of Population

Sub County	Population
Turbo	309
Soy	236
Ainabkoi	198
Moiben	112
Kessess	204
Kapseret	126
Total	1184

Source: County Government of Uasin Gishu, (2021)

3.3.2 Sample Size

Due to the fact that most studies in the business and social sciences utilize an alpha level of 0.05, the researcher will employ a confidence interval of 5% (Israel, 1992; Bartlett, Higgins, & Kortlik, 2001). According to Bartlett et al. (2001), a 5 percent margin of error is acceptable in certain circumstances. The sample size was determined using Yamane's (1967) limited population formula, which was mentioned in Israel (1992). 95 percent of the time with a 0.05 alpha level

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

Where:

n= desired sample size

N= Population

e = margin of error at 5% (standard value of 0.05)

The sample size for the study is:

$$n = \frac{1184}{1+1184(0.05^2)}$$

=299 respondents

Table 3.2 Table of Sample

Sub County	Population	Sample
Turbo	309	78
Soy	236	60
Ainabkoi	198	50
Moiben	112	28
Kessess	204	52
Kapseret	126	31
Total	1184	299

Source: (Researcher, 2021)

3.3.3 Sampling Procedure

Stratified sampling procedure was applied to select the subjects of study based on geographical location. Uasin Gishu County was stratified based on sub countries. The use of stratified sampling helps to guarantee that a sufficient number of individuals from each cluster or stratum of the population are sampled (Iyoke et al., 2006). After convenience sampling was utilized to choose the sample population based on their availability and their desire to participate in the research project.

3.4 Data Collection Methods

A research instrument is a tool or apparatus that helps the researcher get the required data. The data collecting technique used determine the sort of device the researcher uses. A questionnaire that was tailored to the study's goals was used to gather data. Mugenda and Mugenda (2003) stated that questionnaires are often employed to gather crucial data about a community under research. Each question is tailored to meet certain study subjects. The questionnaire was created using a 5-point Likert scale. The questionnaires were given to the farmers to fill with help from research assistants. They were filled on the same day.

Each questionnaire was accompanied by a letter of authorization from the National Commission for Science, Technology, and Innovation, (NACOSTI), and an introductory letter from Strathmore University, all of which made the objectives of the research very obvious. The enumerator, who is proficient in English, Kiswahili, and the Kalenjin dialect, were the ones who administered the questionnaires and collect the primary data.

3.5 Research Quality

3.5.1 Pilot Test

Pilot testing was done using 12 small-scale avocado farmers, two from each sub county of Uasin Gishu county. The farmers who took part in the pilot testing did not participate in the actual study. According to Kombo and Tromp (2009) and Kothari (2014), a pilot test is a replica and rehearsal of the main survey. These authors discuss the pilot test in further detail here. The results are going to be included into an updated version of the questionnaire.

3.5.2 Reliability and Validity

The ability of the instrument to measure what it is intended to quantify is known as validity. Validity was defined by Gravetter and Forzano (2014) as the degree to which an instrument accurately reflects what it was intended to measure. The instrument's capability to provide similar or consistent findings after several administrations is known as reliability (Bordens & Abbott, 2008). Cronbach test was used to evaluate reliability, and an alpha reliability score of 0.70 or greater is regarded as adequate (Saunders et al., 2016).

3.6 Data Processing and Analysis

Data was analyzed using descriptive analysis. The data were coded and analyzed using SPSS version 21 and the generated results presented in form of tables, charts and figures. The data collected in each Entrepreneurial orientation were analyzed in a table to get the mean and standard deviation, respectively. The coefficients of the linear equation comprising one or more independent variables that best predicted the value of the

dependent variable was estimated using linear regression. Therefore, for each of the four objectives, the researcher did linear regression analysis.

Where:

Y= $\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$

Where:

Y = Revenue from Avocado sales

β_0=Intercept term

β_i= Coefficients of the Independent Variables

X_1= Innovativeness

X_2= Risk taking propensity

X_3= Proactiveness

X_4= Training

ε= error term

3.7 Ethical Consideration

By maintaining the secrecy of the information provided by the respondents and never intending to utilize the material for any other reason than coming to the research's conclusion, ethical concerns pertaining to the study will be resolved. In order to preserve their privacy, the names of the responders won't be required for the questionnaire. Only generic information were used for all personal information. To increase respondents' confidence in the researcher, an official letter of introduction from the institution was included with the questionnaire. Additionally, the researcher will obtained NACOSTI research permission.

CHAPTER FOUR
PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The data analysis, conclusions, and discussions are covered in this chapter. In addition to percentages, frequency distributions, means, and standard deviations, the study's results are reported. This chapter analyzes the study's variables and the linear model's estimated values.

4.2 Response Rate

Small-scale avocado growers from Uasin Gishu County's Turbo, Soy, Ainabkoi, Moiben, Kessess, and Kapseret subcounties made up the respondents. Out of the 299 issued questionnaires, 260 questionnaires, or 87 percent of the total disseminated questionnaires, were completely completed and returned, whereas 39 questionnaires, or 13 percent of the total questions provided to the respondents, were not returned. The response rate was 87% of the entire sample size, while 13% of the respondents did not respond. The 87 percent response rate made it easier to compile enough data that could be generalized to represent respondents' perspectives. This was in keeping with Patten and Newhart's (2017) finding that a response rate of more than 50% of the total sample size helps to collect enough information to be able to generalize it to reflect the views of the broader public.

Table 4.1 Response Rate

Response rate	Frequency	Percentage
Response	260	87%
Non-response	39	13%
Total	299	100%

4.3 Pilot Test Results

4.3.1 Validity

To make sure they functioned and measured as they were intended to, the accuracy of quantitative instruments should were assessed. Twelve small-scale avocado growers, two from each of the county's sub-counties, were provided the research tools to test the validity

of the data gathering instruments. The farmers that took part in the pilot research did not participate in the main investigation. The Statistical Package for Social Sciences (SPSS) Version 21 was used to calculate the coefficient of the data obtained from the pilot project. The fact that the questionnaires had a context of validity coefficient index over 0.82 suggested that they were reliable research tools for the investigation.

4.3.2 Reliability Analysis

Cronbach's alpha values in table 4.2 are substantially above 0.7, with the majority of them over 0.8, indicating that the instruments were dependable enough for measurement. An acceptable Cronbach alpha for the research was 0.75 or higher. The construct validity of the instrument was deemed to be acceptable since the majority of item total correlations were rather high (Ghauri, Grnhaug, & Strange, 2020).

Table 4.2 Reliability Results

Constructs	Cronbach's Alpha Values	Comments
Innovativeness	0.794	Accepted
Risk taking propensity	0.812	Accepted
Proactiveness	0.804	Accepted
Training	0.811	Accepted
Performance	0.790	Accepted

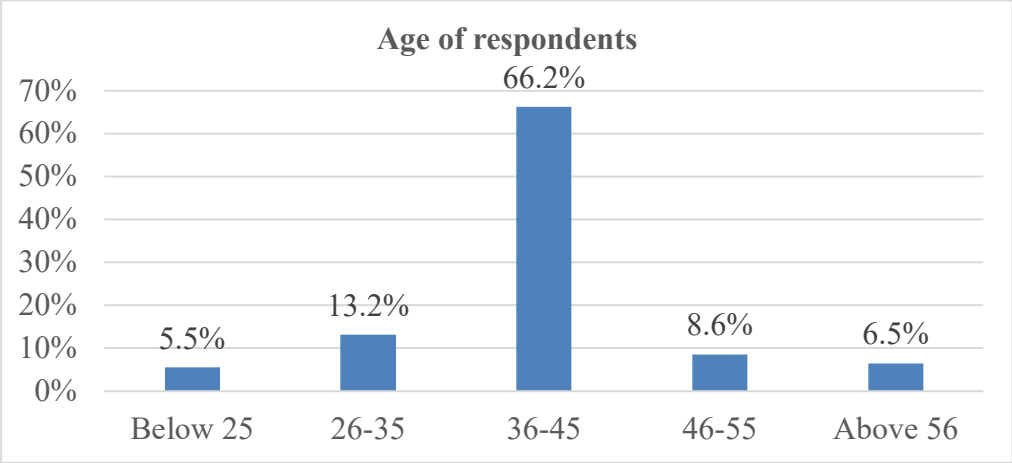
4.4 Demographic Information

The section contains information on the demographic characteristics of the respondents such as gender, age, years of schooling, years of experience and qualification.

4.4.1 Age bracket of Respondents

When respondents were questioned about their age range, the results are shown in Figure 4.2. The figure indicates that majority (66.2%) of the respondents who were in the age category of 36-45 years, 13.2% in the category of 26-35 years, 8.6% were in the category of 46-55 years, 6.5% were aged above 56 and 5.5% were below 25 years. This indicated that most of the respondents are in their productive years.

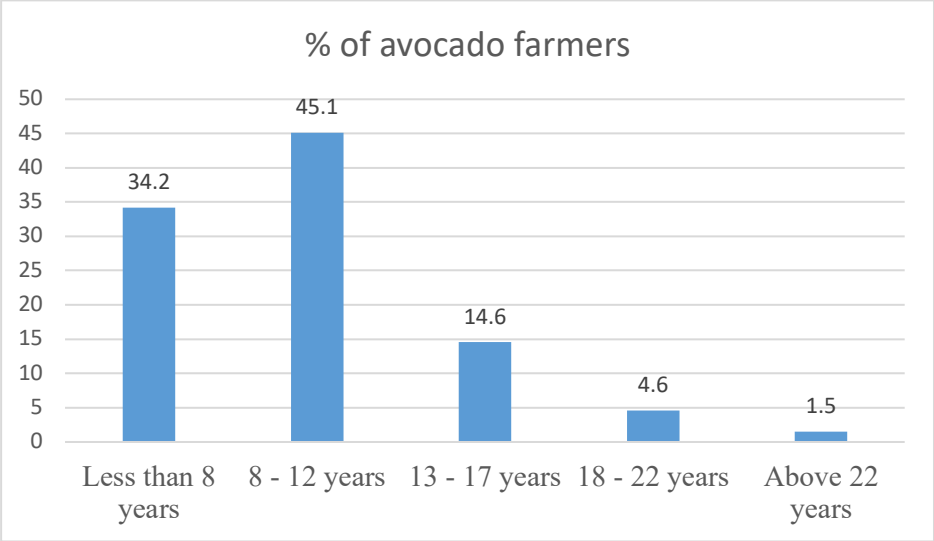
Figure 4.2: Age of Respondents



4.4.2 Years of Schooling

The respondents were asked the years of schooling they have and the findings are as shown in Figure 4.3. Majority of the respondents (45.1%) had 8 – 12 years of schooling, 34.2% of the respondents had less than 8 years of schooling, 14.6% had 13 – 17 years of schooling, 4.6% of the respondents had 18 – 22 years while 1.5% had above22 years of schooling. From the findings, it is evident that the small scale farmers have attended school hence have acquired basic skills.

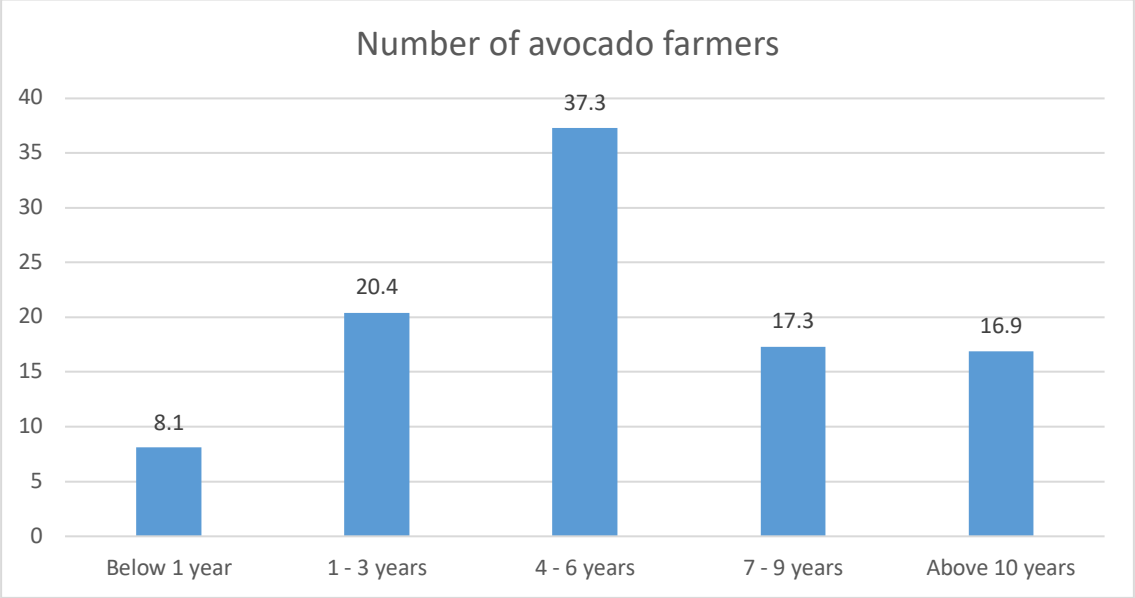
Figure 4.3 Years of Schooling



4.4.3 Years of Experience

Respondents were asked to indicate the number of avocado farming experience they have. The findings are shown in figure 4.4 below. Majority of the respondents (37.3%) indicated that they have 4 – 6 years while 20.4% had 1 – 3 years of avocado farming. Moreover, 17.3% had 7 – 9 years, 16.9 had above 10 years while 8.1% of the respondents had below 1 year of avocado farming.

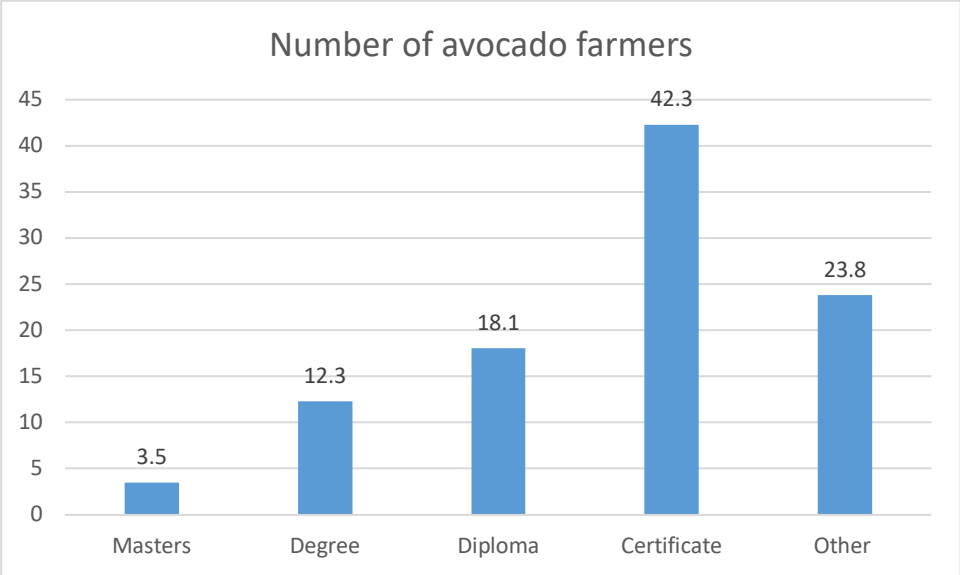
Figure 4.4 Years of Avocado Farming Experience



4.4.4 Highest Education Level

The study sought to establish the education level held by the small scale avocado farmers to determine if they are equipped with relevant skills and knowledge. The findings in Figure 4.5 shows majority of the respondents (42.3%) had attained a certificate as their highest level of education while 23.8% had other qualifications. The study further established that 18.1% of the respondents had a diploma, and 12.3% with degree. Moreover, 3.5% indicated they had Master's qualifications. This indicates that the respondents were in a position to answer the questionnaire as they were literate.

Figure 4.5 Highest Education Level



4.4.5 Farm Characteristics

According to the respondents, 45.1% indicated that the size of their land is less than 5 acres, 22.7 has between 5 – 10 acres, and 19.0% responded that they have between 11 – 15 acres while 13.2% of the respondents indicated that the size of land they own is more than 15 acres. This implies that the farmers are small scale farmers. The researcher sought to determine the size of land under avocado farming. From the findings, majority of the respondents (58.5%) have planted avocados in less than 2 acres of land, 35.3% of the small scale avocado farmers in Uasin Gishu indicated than they have planted in 2 – 5 acres, while 6.2% have utilized more than 5 acres in avocado farming. The researcher further sought to find out the number of visits by extension officers in the last one year to the farm. Majority of the respondents (43.4%) stated less than 5 years, 34.7% indicated 5 to 10 times while 21.9% indicated that they have been visited by extension officers to provide guidance more than 10 times in the last one year.

The study further sought to determine the number of trainings attended by the respondent in regard to management of avocado farming in the past 3 years. From the findings, majority of the respondents (42.6%) indicated they have attended 5 – 10 trainings, 35.9% had attended 11 – 15 times, and 14.4% had attended 15 – 20 times while 7.1% of the respondents indicated less than 5 times. This shows that the respondents have attended trainings and have the knowledge about avocado farming. Respondents were asked to indicate when they started avocado farming. Majority of the respondents (40.8%) indicated between 5 – 10 years, 37.8% of the respondents between 1 – 5 25.3% above 10 years while 3.9% below 1 year. This shows that the respondents qualify to provide information related to avocado farming.

Further, the study sought to determine the amount of capital used to start the avocado farming. Some of the respondents indicated that they were given the avocado trees free, while other respondents indicated that they used between Ksh. 5,000 to Ksh.77,000 as capital. On the number of avocado trees the farmers have, majority of the respondents (49.7%) indicated between 51 – 80 trees, 25.6% have 20 – 50 trees, 12.8% of the respondents have less than 20 trees while 11.9% have more than 80 avocado trees. The researcher sought to identify the varieties of avocado trees the small scale farmers have in their farms. They all indicated hass avocados. The farmers indicated that the productivity of the avocados is 50 to 200 a tree per harvest season.

Moreover, the study further sought to determine the farm inputs used by the farmers and productivity. The main inputs for avocado farming are fertilizers and seedlings when planting. The seedlings are bought at the county and ward agricultural offices and from private seedling sellers, retailing at Ksh. 130 to Ksh. 160 per seedlings. Farmers use chemicals to control pests and diseases as advised by the agricultural institutions. Majority of the farmers stated that they sell their avocados to exporters (67.2%) while 32.8% sell to middlemen and other buyers. Further, 56.4% of the respondents signed contracts with buyers while 43.6% have not signed contracts. Majority of the farmers who had signed contracts stated that they plan to renew the contracts with their exporters. The farmers fetch an average of Ksh 150,000 to Ksh. 200,000 per acre from each harvest, with each

fruit retailing at Ksh. 20 to Ksh. 50. The farmers stated that they are satisfied with the exporting companies in comparison to other marketing channels such as local markets.

4.5 Study Variables

The Likert scale used to quantify the research variables in this section ranged from "strongly agree" (5) to "strongly disagree" (1). According to the continuous Likert scale, the scores for disagreeing have been considered to reflect a variable with a mean value of 0 to 2.4. The scores of "Undecided" were used to represent a variable with a mean score of 2.5 to 3.4 on a continuous Likert scale, while the scores of "Agree" and "Strongly Agree" were used to represent a variable with a mean score of 3.5 to 5.0 on a continuous Likert scale, respectively. A standard deviation of more than 0.9 indicates a considerable variation in how the variable affected the respondents.

4.5.1 Innovativeness and Performance of Avocado Smallholder Women Farmers in Uasin Gishu County

This section of the questionnaire sought to establish the effects of innovativeness on performance of avocado smallholder women farmers in Uasin Gishu County. The results are shown in table 4.1 below.

Table 4.1 Innovativeness of avocado smallholder women farmers in Uasin Gishu County

Innovativeness	Mean	Std. Deviation
I have tried new ideas on the farm	3.75	1.068
I like experimentation by introducing new products to customers	3.69	1.116
Technological ideas in my avocado farming business has brought new products/ services. Like use of phones to advertise and receive orders	4.81	1.021
My farming encourages incremental improvements in products and services	4.66	0.977
I initiate innovations in every situation before the competitors responds. Like introducing new products and farming methods	4.02	1.281

I like looking up the most recent information about technology for my farm.	4.79	0.904
I like using novel technology on my farm.	3.87	1.152
If there is a discernible improvement in the quality of my product, I will reconsider the locations at which I retail it.	4.71	1.218
In an effort to please more clients, I'm happy to grow additional types on my farm.	3.96	1.088

From the results in Table 4.1 above, the respondents strongly agreed that technological ideas in my avocado farming business has brought new products/ services, for instance, use of phones to advertise and receive orders (mean = 4.81, SD= 1.021), the farmers always like to search for the latest information on technologies for the farm (mean = 4.79, SD= 0.904), if there is an improvement in their products, they are willing to change where they sell it (mean = 4.71, SD= 1.218) and the farming encourages incremental improvements in products and services (mean = 4.66, SD= 0.977).

The respondents agreed that they are willing to include new varieties on their farms to satisfy more customers (mean = 3.96, SD= 1.088), they like to try new technologies in my farm (mean = 3.87, SD= 1.152), they have tried new ideas on the farm (mean = 3.75, SD= 1.068) and they like experimentation by introducing new products to customers (mean = 3.69, SD= 1.116).

4.5.2 Risk-taking Propensity and Performance of Avocado Smallholder Women Farmers in Uasin Gishu County

This section of the questionnaire sought to establish how risk-taking propensity influence performance of avocado smallholder women farmers in Uasin Gishu County. The results are shown in table 4.2 below.

Table 4.2 Risk-taking propensity of avocado smallholder women farmers in Uasin Gishu County

Risk-taking propensity	Mean	Std. Deviation
Instead of replacing my existing kinds with others that I don't know, I would retain them on the farm.	3.86	1.112
If I am unsure about the returns on my agricultural investments, I prefer to stay away from them.	3.94	1.201
I don't want to increase my farming operations since I don't want to add to my expenses.	3.61	0.906
I'll incur the risks if someone advises adding additional or new types to my farm in exchange for a chance at greater income.	4.88	1.217
I venture into uncertain outcomes like new or upcoming products	4.62	1.342
I engage in high risk investment like new employees, machinery and loans to stimulate future increase of profits	4.43	0.964
I interact a lot with customers to explore new opportunities	4.81	1.285
I have the ability to win the competition in the market	4.05	1.206
Given opportunity, I can take loans in order to expand the business and increase the productivity	4.73	0.918

From the results in Table 4.2 above, the respondents strongly agreed to a large extend that if someone suggests to include more/ new varieties on their farms they will take the risks for a chance for higher profits (mean = 4.88, SD= 1.217), they interact a lot with customers to explore new opportunities (mean = 4.81, SD= 1.285), given opportunity, they can take loans in order to expand the business and increase the productivity (mean = 4.73, SD= 0.918) and they venture into uncertain outcomes like new or upcoming products (mean = 4.62, SD= 1.342).

The respondents agreed that they engage in high risk investment like new employees, machinery and loans to stimulate future increase of profits (mean = 4.43, SD= 0.964), they have the ability to win the competition in the market (mean = 4.05, SD= 1.206), If they are unsure about the advantages of investing in my farm, they would rather avoid doing so (mean = 3.94, SD= 1.201), instead of replacing my present types with ones they don't know, they would retain them on the farm (mean = 3.86, SD= 1.112) and they don't want to increase their farming operations because they don't want to add to their expenses (mean = 3.61, SD= 0.901).

4.5.3 Proactiveness and Performance of Avocado Smallholder Women Farmers in Uasin Gishu County

This section of the questionnaire sought to establish the proactiveness on performance of avocado smallholder women farmers in Uasin Gishu County. The results are shown in table 4.3 below.

Table 4.3 Proactiveness of avocado smallholder women farmers in Uasin Gishu County

Proactiveness	Mean	Std. Deviation
I have allocated funds to deal with the emerging opportunity and threats.	3.06	1.216
I identify and monitor market trends to predict future trends.	3.40	1.193
I adopt creative methods of running business ahead of its competitors	2.94	0.876
I am able to anticipate and respond to the emerging needs of customers	3.72	1.196
I continually seek opportunities like new market and new customers according to the present needs	4.83	0.904
I anticipate change and generate first-mover products	4.55	1.251

I'm prepared to implement farming methods that other farms have not yet adopted.	4.64	1.127
If I were to be asked to use a different kind of technology on my avocado farm, I would be one of the first farmers in the area to do so.	4.75	1.103
When it comes to my avocado farming, I consistently go above and above what is required of me, but there is always something more that can be done or made better.	4.03	1.176

The results from table 4.3 above indicate that respondents strongly agreed that they continually seek opportunities like new market and new customers according to the present needs (mean = 4.83, SD= 0.904), if asked to adopt another type of technology on their avocado farms, they would be one of the first farmers to use it (mean = 4.75, SD= 1.103), they are willing to start farm practices that other farms do not do yet (mean = 4.64, SD= 1.127) and they anticipate change and generate first-mover products (mean = 4.55, SD= 1.251).

The respondents agreed that for their avocado farming, they perform above and beyond expectations and there is always something more to be done or improved (mean = 4.03, SD= 1.176) and they are able to anticipate and respond to the emerging needs of customers (mean = 3.72, SD= 1.196). The respondents were undecided in identifying and monitoring market trends to predict future trends (mean = 3.40, SD= 1.193), allocating funds to deal with the emerging opportunity (mean = 3.06, SD= 1.216) and threats and adopting creative methods of running business ahead of its competitors (mean = 2.94, SD= 0.876).

4.5.4 Training and Performance of Avocado Smallholder Women Farmers in Uasin Gishu County

This section of the questionnaire sought to establish the effects of training on performance of avocado smallholder women farmers in Uasin Gishu County. The results are shown in table 4.4 below.

Table 4.4 Training of avocado smallholder women farmers in Uasin Gishu County

Training	Mean	Std. Deviation
I have avocado farming skills	4.62	1.103
I am willing to attend trainings to improve avocado farming	4.74	0.968
I am available to learning opportunities on improved trees	4.58	1.206
It does not bother me if I am unsuccessful as long as I take away something useful from the experience.	4.07	1.118
Within the next three years, I plan to increase the number of connections that I have with many different players in my value chain.	4.19	1.089
I apply new skills to improve my avocado farming	4.89	0.808

The results from table 4.4 above indicate that the respondents strongly agreed that they apply new skills in improving their avocado farming (mean = 4.89, SD= 0.808), they are willing to attend trainings to improve avocado farming (mean = 4.74, SD= 0.968), they have avocado farming skills (mean = 4.62, SD= 1.103) and are available to learning opportunities on improved trees (mean = 4.58, SD= 1.206). The respondents indicated that they were somewhat in agreement with the statement that they planned to increase the number of connections they had with other players in the value chain during the next three years (mean = 4.19, SD= 1.089), and are willing to fail if it means learning something new from another farming technique (Mean = 4.07, SD= 1.118).

4.5.5 Farm Organization

The study further sought to determine the farm organization by farmers with regards to avocado farming in the past two years. From the findings, majority of the farmers (76%) stated that the there was an increase in sales generated from avocado in the last year. Farmers stated that they recorded a 9% to 20% increase in sales compared to last year. The increase in sales has motivated farmers to plant more trees, attend more trainings and interact with other farmers in a bid to improve the quality features of their avocados over the last five years. The global market demand for avocados has increased, subsequently increasing the market share growth. This is evidenced by the increased number of buyers and contracts signed.

4.5.6 Avocado Farming Performance

This section of the questionnaire sought to determine about performance of avocado smallholder women farmers in Uasin Gishu County The results are shown in table 4.5 below.

Table 4.5 Farming Performance of smallholder women farmers in Uasin Gishu County

Performance	Mean	Std. Deviation
Profits have increased	4.60	1.031
Percentage of sales generated last year increased	4.59	0.853
Avocado market share growth has risen	4.47	1.067
I have customers who buy repeatedly from us	4.31	1.102
I have improved the quality features of my avocado in the past five years	4.22	1.906

Our customers are satisfied	4.09	0.981

From the findings, respondents strongly agreed that profits have increased (4.60), and that percentage of sales generated last year increased (4.59). They agreed that avocado market share growth has risen (4.47), and that they have customers who buy repeatedly from them (4.31). Further, they also agreed that they have improved the quality features of their avocado in the past five years (4.22), and that their customers are satisfied (4.09).

4.6 Multiple Regression Results

The research used a multivariate regression analysis to determine the association between the dependent and independent variables. ANOVA, beta coefficient tables, and a description of the regression model were used to display the findings of the regression study.

The linear regression model below was used:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y is the performance, β_0 is constant and ε is the error term of the model.

X_1 = Innovativeness

X_2 = Risk taking propensity

X_3 = Proactiveness

X_4 = Training

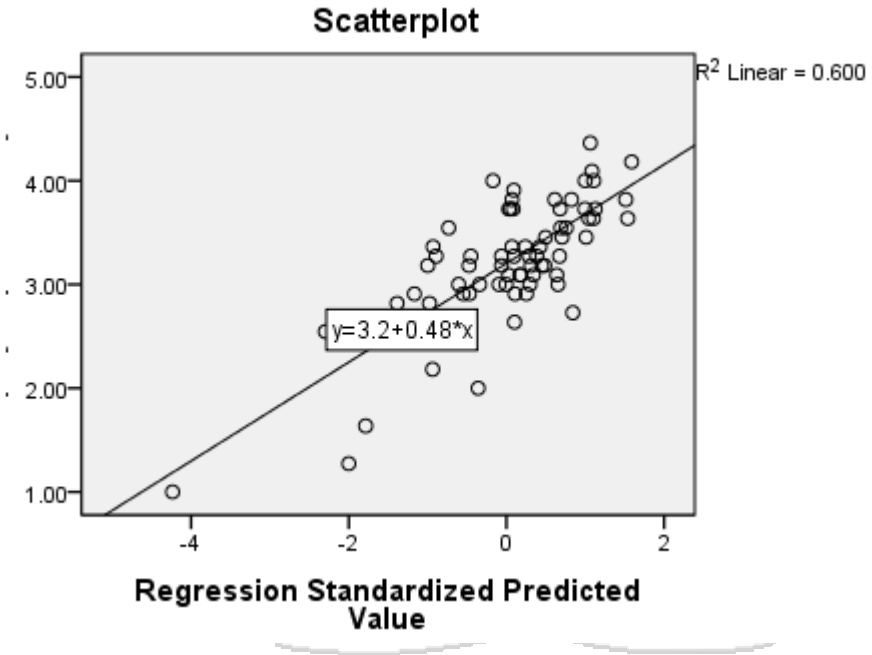
4.6.1 Test of assumptions of regression Analysis

Once it has been shown that the assumptions of normality, linearity, independence, and multicollinearity have not been broken, a regression analysis may then be carried out. Several experiments were carried out, the results of which are detailed in the parts that follow.

4.6.1.2 Linearity

The performance of smallholder avocado growers was the dependent variable, and each of the independent factors was examined for a linear relationship (innovativeness, risk-taking propensity, proactiveness and training). These associations were investigated using scatter plots, with the results shown in Figures 4.6 below. The resulting corresponding linear equation is shown.

Figure 4.6 Scatterplot



The associated linear equation is given below:

$y = 3.2 + 0.48x$

The linear model offers a rather excellent match, as shown by the coefficient of determination R2=0.600. Additionally, the data in the graphic above nicely fit a straight line, indicating a linear connection. After the investigation determined that the data set did not deviate from the assumption of linearity, linear regression analysis was conducted.

4.6.1.3 Independence

The research investigated the null hypothesis that there was no correlation between the residuals across observations. This was important in proving that the magnitude of residuals in one instance had no effect on residuals in the subsequent case. Table 4.8 shows the Durbin-Watson statistical findings. The Durbin-Watson statistic, whose values range from 0 to 4, indicates that the residuals are uncorrelated when it is around 2. High correlation is indicated by a number that is near to 0, while strong correlation is also indicated by a value that is close to 4. Due to the fact that the Durbin-Watson statistic in Table 4.6 was equal to 2.217, which was very close to the value 2, the residuals in the data set that was utilized in this investigation did not exhibit any serial correlation. Because of this, the data was thought to be sufficient for doing linear regression analysis.

4.6.2 Model Summary

The coefficient of determination, also known as the proportion of variance in the dependent variable that can be described by all the independent factors, describes how much change in the dependent variable (performance) can be explained by change in the independent variables.

Based on table 4.6, the R2 score is 0.600, which indicates that 60.0% of the variation in the independent variables has been well explained.

Table 4.6 Model Summary

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate	Durbin-Watson
1	.774[a]	.600	.576	.40074	2.217

a. Predictors: (Constant), innovativeness, risk-taking propensity, proactiveness and training

4.6.3 Analysis of Variance

Results from the analysis of variance demonstrate how well the regression equation predicts the dependent variable and how well it fits the data in table 4.7 below.

Table 4.7 Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.060	11	4.028	25.171	.000[b]
	Residual	9.684	203	.161		
	Total	21.744	214			

There is no linear connection between the variables, according to the null hypothesis. The null hypothesis may be ruled out using the F-test if other methods fail to do so. The test is extremely significant (p = 0.000 0.05) with F (3, 60) = 25.171 and df = 214. As a result, the null hypothesis is disproved, and we draw the conclusions that our model's variables have a linear connection, and that the regression model provides a good fit for the data.

Results presented in table 4.9 reveal that all the independent variables notably; (X_1) innovativeness, (X_2) risk-taking propensity, (X_3) proactiveness and (X_4) training have a significant influence on performance of avocado smallholder women farmers in Uasin Gishu County.

4.6.4 Beta Coefficients

The results of the test of unstandardized beta coefficients, which reveal the linear model's equation, are shown in Table 4.8.

Table 4.8 Beta Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.256	.309		.807	.422
	Innovativeness	. 240	.087	.221	2.412	.026
	Risk-taking propensity	. 278	.112	.310	3.071	.003
	Proactiveness	.324	.089	.291	2.864	.008
	Training	.283	.163	.257	2.642	.019

a. Dependent Variable: Performance of avocado smallholder farmers

The prediction equation is $Y= 0.256 + 0.240X_1 + 0.278X_2 + 0.324X_3 + 0.283X_4 + \varepsilon$
Innovativeness, risk-taking propensity, proactiveness, and training have p-value of 0.026, 0.003, 0.008 and 0.19 respectively. At a 5% level of significance, these p-values are statistically significant. As a result, the performance of the smallholder farmers is positively impacted by these four independent factors. Additionally, if the t-value for these independent variables is larger than 2, the t-test confirms that they are statistically significant.

All of the coefficients are positive, as shown in table 4.8, indicating that increasing a unit of inventiveness, risk-taking propensity, proactiveness, and training leads to an improvement in performance. The more significant the independent variable, the higher the beta coefficient values. The research clearly shows that proactiveness has the greatest impact on farmers' success.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

The key results are summarized and discussed in this section. The chapter also offers ideas for improvement and places where further research might be done before drawing conclusions.

5.2 Summary of Findings

The general objective of the study was to determine the effects of Entrepreneurial Orientation on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya. The specific objectives were to identify effects of innovativeness, risk-taking propensity, proactiveness, and training on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya. The target population for this study was small scale avocado farmers from Turbo, Soy, Ainabkoi, Moiben, Kessess and Kapseret sub counties of Uasin Gishu County. Cluster sampling procedure was applied to select the subjects of study based on geographical location. Convenience sampling procedure was then used to pick the sample based on availability and willingness to provide information for the study. Data was collected through a questionnaire structured to meet the objectives of the study. Descriptive analysis was used to make sense of the data. The data were coded, and then analyzed using SPSS version 21, and the findings obtained presented in the form of tables, charts, and figures. The data collected in each Entrepreneurial Orientation were analyzed in a table to get the mean and standard deviation, respectively.

According to the respondents, majority had less than 5 acres size of their land. This implies that the farmers are small scale farmers. Majority of the respondents have planted avocados in less than 2 acres of land and had been visited by extension officers in the last one year to the farm around 5 to 10 times. Further, farmers have attended 5 – 10 trainings on avocado farming. Majority of the respondents stated that they have between 5 – 10 years of avocado farming. Further, the study sought to determine the amount of capital used to start the

avocado farming. Some of the respondents indicated that they were given the avocado trees free, while other respondents indicated that they used between Ksh. 5,000 to Ksh.77, 000 as capital. On the number of avocado trees, majority of the respondents indicated between 51 – 80 trees.

The researcher sought to identify the varieties of avocado trees the small-scale farmers have in their farms. They all indicated hass avocados. The farmers indicated that the productivity of the avocados is 50 to 200 a tree per harvest season. Moreover, the study further sought to determine the farm inputs used by the farmers and productivity. The main inputs for avocado farming are fertilizers and seedlings when planting. The seedlings are bought at the county and ward agricultural offices and from private seedling sellers, retailing at Ksh. 130 to Ksh. 160 per seedlings. Farmers use chemicals to control pests and diseases as advised by the agricultural institutions. Majority of the farmers stated that they sell their avocados to exporters and other buyers. Most respondents have signed contracts with buyers and they plan to renew the contracts with their exporters. The farmers fetch an average of Ksh 150,000 to Ksh. 200,000 per acre from each harvest, with each fruit retailing at Ksh. 20 to Ksh. 50. The farmers stated that they are satisfied with the exporting companies in comparison to other marketing channels such as local markets.

Majority of the farmers stated that there was an increase in sales generated from avocado in the last year having recorded a 9% to 20% increase in sales compared to last year. The increase in sales has motivated farmers to plant more trees, attend more trainings and interact with other farmers in a bid to improve the quality features of their avocados over the last five years. The global market demand for avocados has increased, subsequently increasing the market share growth. This is evidenced by the increased number of buyers and contracts signed.

From the findings, respondents strongly agreed that profits have increased (4.60), and that percentage of sales generated last year increased (4.59). They agreed that avocado market share growth has risen (4.47), and that they have customers who buy repeatedly from them

(4.31). Further, they also agreed that they have improved the quality features of their avocado in the past five years (4.22), and that their customers are satisfied (4.09).

A response rate of 87% facilitated gathering sufficient data that can be generalized to represent the opinions of other women farmers on the sought study problem. The results of ANOVA test reveal that four of the independent variables notably innovativeness, risk-taking propensity, proactiveness, and training have a significance influence on performance of farmers in Uasin Gishu county. Since the P value < 0.05 level of significance, there is sufficient evidence to conclude that these independent variables significantly influence performance. Innovativeness has a favorable impact on farmers' performance, according to a regression study that shows an innovativeness coefficient of 0.240 and a p-value of 0.026 that is significant at the 5 percent level. Risk-taking tendency was shown to be significantly correlated with performance of farmers, with a correlation of 0.278 and a p-value of 0.003 at the 5% significant level. A positive impact on performance is shown by proactiveness, which has a coefficient of 0.324 and a p-value of 0.008 at a significant level of 0.001. Training has a favorable impact on farmer performance, as shown by the training coefficient of 0.283 and p-value of 0.019 that was judged to be significant at the 5 percent significant level. This unequivocally shows that farmers' success in Uasin Gishu County was greatly impacted by their capacity for innovation, risk-taking, proactivity, and training.

5.2.1 Innovativeness and Performance of Avocado Smallholder Women Farmers

From the results the respondents strongly agreed that technological ideas in my avocado farming business have brought new products/ services, for instance, use of phones to advertise and receive orders and that the farmers always like to search for the latest information on technologies for the farm. They also strongly agreed that if there is an improvement in their products, they are willing to change where they sell it and also that the farming encourages incremental improvements in products and services. The respondents agreed that they are willing to include new varieties on their farms to satisfy more customers, they like to try new technologies in my farm, they have tried new ideas on the farm and that they like experimentation by introducing new products to customers.

The findings of the study agreed with Okello (2020), who argued that farm diversification is an essential for enhancing performance and development of smallholder farmers. Innovativeness can be in the form of new products and services, technologies, information, trying new ideas of the farm and new varieties. The adoption of newer technologies and ideas improves the overall performance of the farmers. Innovativeness enables farmers to do more with less hence driving growth by combining inputs to enhance outputs. It leads to sustainable and prosperous agriculture as it gives an opportunity to farmers to enhance their productivity (Machuki, 2021).

Based on the findings, the avocado farmers should adopt innovation since the study revealed that innovative ideas adopted by women avocado farmers greatly influenced their performance. The ability of farmers to take up new products, ideas and technologies leads to incremental performance. The avocado farmers should adopt innovative farming which stem from existing products or processes and increase effectiveness, and competitiveness. These innovations revolutionize farming and allows farmers to enhance their performance through increased revenues and assets.

5.2.2 Risk-Taking Propensity and Performance of Avocado Smallholder Women Farmers

From the study results, the respondents strongly agreed that if someone suggests to include more/ new varieties on their farms they will take the risks for a chance for higher profits, and that they interact a lot with customers to explore new opportunities. Further, the respondents strongly agreed that given opportunity, they can take loans in order to expand the business and increase the productivity and they venture into uncertain outcomes like new or upcoming products. Respondents agreed that they engage in high-risk investment like new employees, machinery, and loans to stimulate future increase of profits, they have the ability to win the competition in the market, and that if they are unsure about the advantages of investing in my farm, they would rather avoid doing so. They also agreed

that instead of replacing their present avocado variety with ones they do not know, they would retain them on the farm, also agreed that they don't want to increase their farming operations because they don't want to add to their expenses.

The findings agreed with Iza and Dentoni (2020), who noted that farmers who take risks in their ventures are likely to perform better. Risk propensity depends on the attitude and perceptions of farmers towards making certain investments that deal with their farm activities. Some farmers are constrained by their tendencies which makes them miss out on important ventures that enhance their performance. There are risk-averse farmers who tend to be cautious and avoid taking risks with preference for less risky activities. They are risk takers who are open to more innovative ideas that improve their performance (Wambugu et al., 2016). The propensity to take or avoid risks greatly affects entrepreneurial performance of avocado farmers.

Based on the findings, farmers should take risks in and be more open to adapting innovative ideas. Farmers tend to evaluate various risks and impacts on their production before taking any risks, depending on their attitudes and perceptions.

5.2.3 Proactiveness and Performance of Avocado Smallholder Women Farmers

The findings of the study indicated that respondents strongly agreed that they continually seek opportunities like new market and new customers according to the present needs, and that if asked to adopt another type of technology on their avocado farms, they would be one of the first farmers to use it they are willing to start farm practices that other farms do not do yet. They also strongly agreed that they anticipate change and generate first-mover products.

The respondents agreed that for their avocado farming, they perform above and beyond expectations and there is always something more to be done or improved and they are able to anticipate and respond to the emerging needs of customers. The respondents were undecided in identifying and monitoring market trends to predict future trends, allocating

funds to deal with the emerging opportunity and threats and adopting creative methods of running business ahead of its competitors.

The findings of the study agreed with Callaghan (2019) that today's dynamic environment requires farmers to be proactive in nature to enhance their performance. Farmers should be proactive in monitoring market trends, equipping themselves with the latest information, getting funds, interacting with customers, adopting farm practices and new technology (Adesoga, Olalekan & Taiwo 2018). Proactiveness as a dimension of entrepreneurial orientation is an opportunity for farmers to seek a new perspective that involves taking actions that are anticipatory of future demands and trends hence capitalizing on them.

Based on the findings of the study farmers should utilize opportunities like new market and new customers and also adopt new technology on their avocado farms. Farmers can greatly benefit from proactive decision-making skills and equipping themselves with information on market trends, emerging needs of consumers, avocado varieties and beneficial investments. Farmers need to be proactive than reactive to situations to enhance their performance.

5.2.4 Training and Performance of Avocado Smallholder Women Farmers

The respondents strongly agreed that they apply new skills in improving their avocado farming, they are willing to attend trainings to improve avocado farming, and they have avocado farming skills. They also strongly agreed that they are willing to learning opportunities on improved trees, and that they planned to increase the number of connections they had with other players in the value chain during the next three years and are willing to fail if it means learning something new from another farming technique.

The findings agreed with the findings of Mulgan & Albury (2013), that training farmers is a way to enhance their proactiveness, innovativeness and overall entrepreneurial performance. Training farmers leads to increased quality work, increased farm products, income, interactions with others and less costs. It enhances their avocado farming skills, gives them learning opportunities and expands their contacts with other farmers. Training

also improves the capabilities of families to make a decision regarding risks and boosts their morale and motivation leading to enhanced performance (Mwaura, Gathenya & Kihoro, 2015).

Based on the findings farmers should attend more avocado farming trainings to enhance their avocado farming performance. The County Government of Uasin Gishu should hold frequent trainings for farmers to enhance their farming skills and open opportunities for interactions and information sharing amongst farmers.

5.3 Conclusion

Innovativeness, risk-taking propensity, proactiveness, and training significantly influenced performance of farmers in Uasin Gishu County. Entrepreneurial farmers may be the first to adopt new ideas, mobilize resources and use information gathered to build new markers for products. Equipping farmers with skills and knowledge makes them prepared for any kind of hazards, uncertainties and rapidly changing conditions in the future. Greater diversification by farmers is considered an essential for development and coping to changes in the agricultural sector. Farmers should take initiatives to equip themselves with skills and knowledge that enhance their performance.

Entrepreneurial farmers are often the first in their neighborhood to try out novel techniques, make use of neglected resources, or create a brand-new market for agricultural goods. These abilities will be especially important in the next decades when farmers are forced to modify their agricultural systems due to climate change. Entrepreneurship may aid agents in adapting to quickly changing market and environmental situations, according to recent research.

Overall, the study concluded that all the variables had significant impact on performance of farmers. Proactiveness had the greatest effect on performance followed by training then risk-taking propensity while innovativeness had the least effect on performance by farmers in Uasin Gishu County.

5.4 Recommendations

Based on the above findings, study objectives, significance and limitations of this study, the following are the key recommendations:

The current study strongly recommends that more research should be done in the area of innovativeness to determine other methods that can help farmers define creative ideas to deal with challenges. The study also recommends that the County Government of Uasin Gishu should have workshops in place to encourage interactions and sharing of ideas by farmers. In addition, they should share new information, trends and ideas with farmers so they grow as global exporters of avocados.

The study further suggests performing a risk valuation as a way of monitoring agricultural risks and enhance efficacy. This can be done with continuous training of farmers and encouraging proactiveness to increase revenues.

5.5 Limitations of the Study

The respondents needed additional time to complete the surveys since they were busy working on their farms and other locations throughout the day. Giving the respondents the questionnaires early and selecting them later allowed for the problem to be solved. This made it possible for the respondents to complete the survey at their own convenience. These findings cannot be applied to all 46 of Kenya's counties since the research was limited to the female smallholder avocado producers in Uasin Gishu County.

5.6 Suggestions for Further Research

There needs to be other studies done on women avocado farmers in other counties to determine the effects of entrepreneurial orientation on performance of avocado smallholder women farmers. It is also important to investigate and evaluate emerging issues in avocado farming in Kenya.

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APPENDICES

APPENDIX 1: LETTER OF INTRODUCTION

Date: 6th June 2022

Ref: Research Questionnaire

Dear respondents,

I am a student at Strathmore Business School pursuing a Master of Management in Agribusiness. As part of a requirement, I am doing a research project on effects of Entrepreneurial Orientation on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya.

Regarding the aforementioned, you have been chosen from among the several avocado smallholder women farmers in Uasin Gishu County to supply the data required to fulfill the study's goals. I kindly ask that you fill out the accompanying questionnaire to supply the necessary information.

Please be aware that the information received will only be used for research purposes and that it will be treated confidentially as necessary. We really appreciate your help.

Yours sincerely,

Clare Korir - 102643

APPENDIX II: QUESTIONNAIRE

This research seeks to determine the effects of Entrepreneurial Orientation on performance of avocado smallholder women farmers in Uasin Gishu County, Kenya. In order to accomplish this goal, pertinent inquiries have been given to collect data for analysis. Please take a moment to provide the necessary information your best effort. Please be aware that the information you provide will be kept strictly confidential and used exclusively for academic reasons.

PART I: Background Information of the Respondent

1. What is your gender? Male [ ] Female [ ]
2. How old are you?.....
3. How many years of schooling do you have? ……
4. How many years of experience do you have in do you have in avocado farming?.....
5. Do you have any other qualification?.....

PART II: Farm Characteristics

6. Size of land in acres……
7. What is the size of land under Avocado?.....
8. Number of visits by extension officers in the last one year……
9. Number of trainings attended in regard to management of your avocado farming in the past 3 years……
10. When did you start avocado farming?.....

Below 1 year [ ] between 1-5 [ ] between 5-10 [ ] above 10 years [ ]

11. How much capital was used to start the farming? ……
12. How many avocado trees do you have?.....
13. Which varieties of avocado trees do you have in your farm?

……

……

……

14. What is the productivity per tree?.....
15. What inputs do you use?.....

    .....
16. Where do you sell your avocado?.....

    .....
17. Do you have a contract? (if so, state the contract)

    ……

    …….....
18. Do you plan to renew the contract?.....
19. What is your last income from the sale of avocado?.....
20. What is the price per unit for the last sale?.....
21. How is your satisfaction level of the chosen marketing channel of avocado?.....

    .....

PART III: Innovativeness

To what extent does the statements below relate to innovation and performance of avocado smallholder women farmers in Uasin Gishu County? The following scale will be applicable: 5= Strongly Agree 4= Agree 3= undecided 2= Disagree 1= Strongly Disagree

No.	Innovativeness	1	2	3	4	5
1.	I have tried new ideas on the farm					
2.	I like experimentation by introducing new products to customers					

3.	Technological ideas in my avocado farming business has brought new products/ services. Like use of phones to advertise and receive orders					
4.	My farming encourages incremental improvements in products and services					
5.	I initiate innovations in every situation before the competitors responds. Like introducing new products and farming methods					
6.	I always like to search for the latest information on technologies for my farm					
7.	I like to try new technologies in my farm					
8.	If there is an improvement in my product, I am willing to change where I sell it					
9.	I am willing to include new varieties on my farm to satisfy more customers					

PART IV: Risk-taking propensity

Please indicate on the level that you agree to the following statements concerning Risk-taking propensity and performance of avocado smallholder women farmers in Uasin Gishu County. The following scale will be applicable: 5= Strongly Agree 4= Agree 3= undecided 2= Disagree 1= Strongly Disagree

No.	**Risk-taking propensity**	**1**	**2**	**3**	**4**	**5**
1.	Instead of replacing my existing kinds with others that I don't know, I would retain them on the farm.					
2.	If I am unsure about the returns on my agricultural investments, I prefer to stay away from them.					
3.	I don't want to increase my farming operations since I don't want to add to my expenses.					

4.	I'll incur the risks if someone advises adding additional or new types to my farm in exchange for a chance at greater income.					
5.	I venture into uncertain outcomes like new or upcoming products					
6.	I engage in high risk investment like new employees, machinery and loans to stimulate future increase of profits					
7.	I interact a lot with customers to explore new opportunities					
8.	I have the ability to win the competition in the market					
9.	Given opportunity, I can take loans in order to expand the business and increase the productivity					

PART V: Proactiveness

Please indicate on the level that you agree to the following statements concerning proactiveness and performance of avocado smallholder women farmers in Uasin Gishu County. The following scale will be applicable: 5= Strongly Agree 4= Agree 3= undecided 2= Disagree 1= Strongly Disagree

No.	**Proactiveness**	**1**	**2**	**3**	**4**	**5**
1.	I have allocated funds to deal with the emerging opportunity and threats.					
2.	I identify and monitor market trends to predict future trends.					
3.	I adopt creative methods of running business ahead of its competitors					

4.	I am able to anticipate and respond to the emerging needs of customers					
5.	I continually seek opportunities like new market and new customers according to the present needs					
6.	I anticipate change and generate first-mover products					
7.	I'm prepared to implement farming methods that other farms have not yet adopted.					
8.	I am one of the first farmers to utilize a new technology if it is requested on my avocado plantation.					
9.	When it comes to my avocado farming, I consistently go above and above what is required of me, but there is always something more that can be done or made better.					

PART VI: Training

Please indicate on the level that you agree to the following statements concerning training and performance of avocado smallholder women farmers in Uasin Gishu County. The following scale will be applicable: 5= Strongly Agree 4= Agree 3= undecided 2= Disagree 1= Strongly Disagree

	Training	**1**	**2**	**3**	**4**	**5**
1.	I have avocado farming skills					
2.	I am willing to attend trainings to improve avocado farming					
3.	I am available to learning opportunities on improved trees					
4.	It does not bother me if I am unsuccessful as long as I take away something useful from the experience.					

5.	Within the next three years, I plan to increase the number of connections that I have with many different players in my value chain.					
6.	I apply new skills to improve my avocado farming					

PART VII: Farm Organization

Please answer the following questions concerning performance of avocado smallholder women farmers in Uasin Gishu County.

1. Did the percentage of sales generated from avocado last year increase?.....
2. How much did you make from the sale of avocado last year?.....
3. How much did you make from the sale of avocado this year?.....
   .....
4. Have you improved the quality features of my avocado in the past five years (Please explain).....
   .....
5. How is the avocado market share growth in the past five years?.....
   .....

PART VIII: Performance

Please indicate on the level that you agree to the following statements concerning performance of avocado smallholder women farmers in Uasin Gishu County. The following scale will be applicable: 5= Strongly Agree 4= Agree 3= undecided 2= Disagree 1= Strongly Disagree

No.	**Performance**	1	2	3	4	5
1.	Percentage of sales generated last year increased					
2.	My profits have increased					

3.	I have improved the quality features of my avocado in the past five years					
4.	Avocado market share growth has risen					
5.	I have customers who buy repeatedly from us					
6.	Our customers are satisfied					

APPENDIX III: SCHEDULE OF ACTIVITIES

Activity	Dec 2021- Feb 2022	March 2022	April 2022	May - June 2022	July 2022
Development and Pilot Study					
Adjustments of the proposal					
Data collection					
Data Coding and Analysis					
Report Writing and Compilation					

APPENDIX IV: BUDGET

Cost Items	**Cost in Kshs**
Stationeries	14,000/=
Typing and Printing services for proposal	12,000/=
Transport	6,000/=
Cost of printing & distributing questionnaires	6,000/=
Cost of typing, analyzing and printing of the report	12,000/=
Miscellaneous expenses	10,000/-
Total	**60,000/=**

APPENDIX V: RHINNO CERTIFICATE

Strathmore University Institutional Scientific and Ethical Review Committee (SU-ISERC)

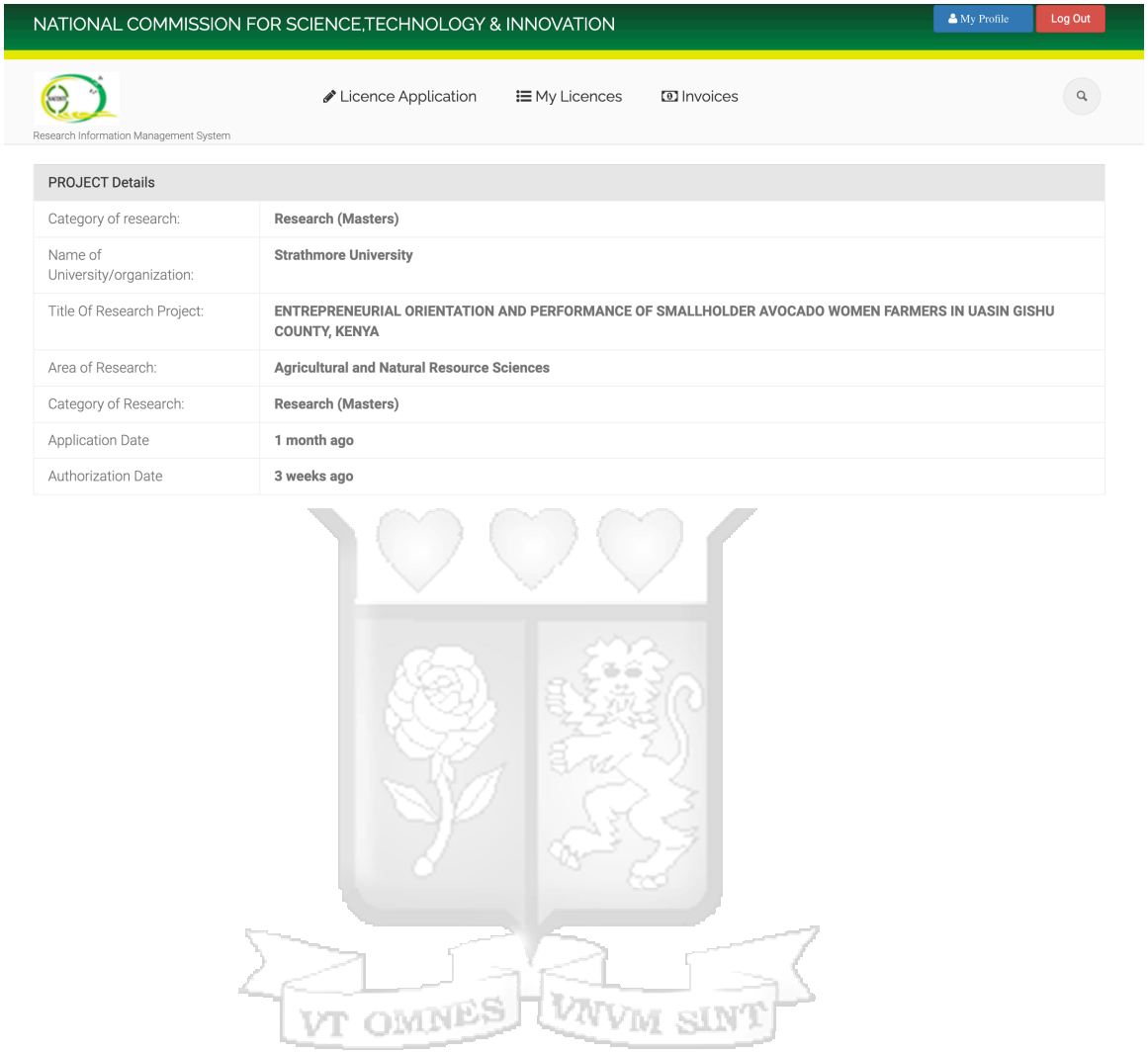
Final Decision

This is to certify that the application for ethics clearance submitted by:
Principal Investigator: Ms. Korir, Clare
Reference number: SU-ISERC1417/22
For Study: " "
Was reviewed and received the following status: "approved"
Reviewer Comments

Reviewer #1:
'Your submission lacks the signature of the supervisor. Please ask your supervisor to sign your submission. Secondly, the ICF is incomplete, a more elaborate form would do. Thanks
'

The SU-ISERC wishes you all the best with this research undertaking.
28 July 2022 20:32:44

APPENDIX VII: NACOSTI CERTIFICATE



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Research Information Management System

PROJECT Details	
Category of research:	**Research (Masters)**
Name of University/organization:	**Strathmore University**
Title Of Research Project:	**ENTREPRENEURIAL ORIENTATION AND PERFORMANCE OF SMALLHOLDER AVOCADO WOMEN FARMERS IN UASIN GISHU COUNTY, KENYA**
Area of Research:	**Agricultural and Natural Resource Sciences**
Category of Research:	**Research (Masters)**
Application Date	**1 month ago**
Authorization Date	**3 weeks ago**