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Impact Investing and Sustainable Livelihoods of Dairy Farmers at Githunguri Sub County, Kiambu County in Kenya

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Abstract
The study sought to establish the effect of impact investing on sustainable livelihoods of dairy farmers operating in Kenya. The study focused on impact investing practices comprising of microfinance products, contract farming and environmental conservation practices. A descriptive research design was adopted in the study. The target population comprised of 22,644 farmers distributed in the 5 Wards of Githunguri Sub County in Kiambu County, Kenya. Yamane Sampling formula was utilized in deriving a sample of 398 respondents where stratified random sampling technique was adopted to randomly select the sample in the 5 wards. Quantitative data was utilized in the study and was collected through a structured questionnaire. Both descriptive and inferential statistics were employed in analyzing the gathered data. SPSS software was utilized in generating the statistics. The analysis results established that microfinance products and contract farming bear positive and significant effects on sustainable livelihoods of dairy farmers operating in Githunguri Sub County, Kiambu County. Environmental conservation practices were found to have a positive but insignificant effect on sustainable livelihoods of dairy farmers.
Keywords: Microfinance Products, Contract Farming, Environmental Conservation Practices
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1. INTRODUCTION

Global Impact Investing Network (2020) defines impact investment as investments made with an aim of generating positive, environmental and measurable social impact in addition to financial returns. KPMG (2019) adds that impact investing is an approach that focuses on generating financial returns while simultaneously creating positive as well as social impacts. Cole *et al.* (2020) posits that the bottom line of impact investing is helping in the reduction of the negative effects associated with business activities in the social environment. This makes impact investing to be perceived as an extension of a philanthropic initiative. As attentiveness in sustainable agricultural value chains and food systems continues to grow, there has been an increase in the number of investors exploring opportunities of high impact investing in areas of farming, food production, energy and forestry across various sectors. The risks associated with climate changes which majority of investors have become accustomed to, portrays the challenges being faced by agricultural and food systems. Global warming coupled with subsequent extreme weather events ranging from severe drought, flooding to wildfires intensifies the uncertain climatic conditions that farmers and agriculturalists in various parts of the globe face (Venturi & Perra, 2022).

In France, there has been an increased growth of public awareness on matters pertaining to environmental conservation issues. One notable course of action was to protect, restore and manage ecosystems while at the same time providing human benefits and well-being for climate and diversity (Policy Planning Commission, 2013). The actions were associated with adoption of sustainable agricultural practices, investing in reforestation, and restoring degraded lands.

In the context of Brazil, ApexBrasil (2022) revealed that in additional to the financial gains attached to the investments, Brazilians have managed to address issues such as societal inequalities in areas of accessibility of social amenities such as education, health and financial services. The country has managed to achieve this through stabilizing interest rates at low levels and enforcing regulatory changes that have resulted to creation of a favorable development initiative that purposes to generate economic, social and environmental impacts and increase its competitiveness and attraction to foreign investments.

In Chile, there has been an increase in the amount of investments that have been directed to impact investing for the benefit of the small-scaled farmers and business enterprises. According to Chilean Association of Investment Fund Administrators, FISAmeris (2020) provides that impact investing practice had accumulated more than US $ 318 million in form of managed assets as of 2020. This represented a double of the amount of US $ 138.2 million recorded in 2018. The increase in the funds is attributed to investing in environmental, social and corporate governance areas. In the social aspect, impact investing in Chile focuses on community related issues such as human rights, workers' rights, health and controversial business practices. In the corporate governance aspect, the investment considers issues like quality of management, risk profile and company's culture

accountability, lobbying and transparency.

From the context of Malawi, in order to promote environment friendly agricultural activities, firms such as Jacoma Estates have stepped in as an agricultural business managing more than 1600 hectares of land while at the same time growing and sourcing export related products such as macadamia nuts and parprika (Ngoasong *et al.,* 2015). The business has further employed about 1000 employees of which 30% accounts for women. In addition to sourcing export products from farmers, the company works closely with more than 5,200 small-scale farmers through interlinking them with export markets and providing support through technical and Agri-inputs assistance to promote their farm production and meet export quality standards (Ngoasong *et al.,* 2015).

In Ghana, as a course of action Micro Forestry, a company operating in the country has stepped in to undertake tree-planting processes aiming at meeting the timber demands in the country. The company has employed more than 2000 workers to meet its plantation target of planting trees in more than 30,000 hectares of land especially in rural areas experiencing few formal opportunities of employment (Mensah, 2019). This is a contribution to the country's SDGs, in mitigating climate change through the reduction of carbon emissions by planting trees improving the country's forest cover and further providing a sustainable source of local timber.

From the context of Senegal, Diouf (2014) asserts that as a mitigation move, companies such as SPEC have come in to promote adoption of renewable solar energy through transferring technology and establishing local production and ultimately substitute the high cost of energy. Through SPEC, a network of local service providers has been created and incentivized small local enterprises in distributing and installing the solar products to individual homes. SPEC further partners with financial institutions to avail financial support through loans to individuals to buy solar panels. This approach has led to availing solar electricity to homesteads and small business enterprises who could not access electricity acquired from oil imports (Bridges Impact, 2022).

In Kenya, firms such as Athi River Steel Plant Ltd employs locals in sourcing scrap metals that it transforms into upgraded steel products. The company currently produces more than 700 high quality steel products ranging from bolts, nuts, and structural building materials to galvanized water pipes. The company is a top producer and exporter of steel products in East Africa (Bridges Impact, 2022). The company's turnover has increased from US $188,000 in 1990s to more than US $18m in 2020. The success of the company has resulted in creation of more than 800 regular, sustainable and salaried jobs with a positive and significant impact on individuals, communities around and the economy of Kenya. Collection of scrap metals has also served as an environmental conservation measure through recycling and reusing of metal waste from all around resulting in a cleaner environment.

Impact investing involves investments that are made aimed at generating positive, measurable social-environmental impacts alongside a financial return. Kish and Fairbairn (2017) attribute some of the impact investing approaches to comprising of microfinance products, contract farming as well as environmental conservation practices. This study reviews these approaches to determine how they affect the sustainable livelihoods of dairy farmers in Githunguri Sub County, Kiambu County.

According to Kiambu County Integrated Development Plan 2018/2022, the county has about 250,000 dairy cows reared by about 65,786 farmers, of which 22,644 farmers are in Githunguri Sub County, and with an estimated annual turnover of about Ksh.10 billion. The rising demand for dairy products in the country and globally presents a significant market opportunity for the small-scale dairy farmers in Githunguri Sub County, Kiambu County. This is achievable if the farmers employ measures to increase their productivity and improve economic efficiency. According to Varamini (2019), agricultural practices employ more than a billion people worldwide of which half are small scale farmers whose main aim to take up farming is to support their families.

Dairy farmers in Githunguri Sub County, Kiambu County face numerous challenges such as poor livestock breeds brought by inadequate Artificial Insemination services, and poor local breeds and genetics. Additionally, farmers face a challenge of low milk production due to poor quality of animal fodder and feeds, poor and/or inefficient disease control mechanisms, high cost of animal feeds, unskilled workforce, declining land sizes, inefficient avenues for marketing their milk and low producer prices for the raw milk.

This study is further occasioned by existence of research gaps from past studies on the theme of the current study. A study by Zhan *et al.* (2015) assessed how investments in large scale agricultural activities impacts communities in South East Asia revealed that the investors positively impacted communities through creating employment, conserving environment through cultivating degraded lands and increasing the levels of incomes to the communities. Another study by Cole *et al.* (2020) assessed the long-run returns on Impact Investing focusing on Developing Economies and Emerging Markets and established no correlation with the current study. A study by Watts (2017) focused on evaluating how impact-investing influences finance and farming activities in Southern Tanzania Highlands and revealed that impact investors provided farmers with avenues for upgrading their farming activities through provision of farming inputs and technical services.

As documented above, the current studies have not revealed a clear relationship between impact investing and sustainable livelihoods of dairy farmers. It is based on these gaps that this study aims to determine the effect of impact investing on sustainable livelihoods of dairy farmers in Githunguri Sub County, Kiambu County in Kenya. The general objective of the study was to establish effect of impact investing on sustainable livelihoods of

dairy farmers in Githunguri Sub County, Kenya. The specific objectives of the study were to assess the effect of microfinance products on sustainable livelihoods of dairy farmers in Githunguri Sub County, Kiambu County, to establish the effect of contract farming on sustainable livelihoods of dairy farmers in Githunguri Sub County, Kiambu County and to assess the effect of environmental conservation practices on sustainable livelihoods of dairy farmers in Githunguri Sub County, Kiambu County.

2. LITERATURE REVIEW

2.1 Theoretical Review

A theoretical review according to Grant and Osanloo (2014) forms a guide or a blueprint for social researches. The review comprises of a framework anchored on existing theory in a specific inquiry field which is related to a study's objectives. The study was guided by the following theories: Financial Deepening Theory, Knowledge Based Theory, Principle-Agent Theory, and Theory of Planned Behavior.

2.1.1 Financial Deepening Theory

The theory was developed in 1973 by Mckinnon and Shaw and is concerned with increasing provision of financial services and accessibility to fundamental financial services comprising of savings, credit and insurance in a society while establishing the relationship between financial deepening and economic growth. The theory posits that financial deepening forms a crucial perquisite for a nation's economic growth. According to the theory, accessibility to credit enhances execution of economic activities and forms a key source finance to firms. Financial deepening forms an enabling environment for financial intermediaries to efficiently perform their duties of pooling, mobilizing and channeling savings from surplus units into a more productive capital pool before distributing them to units that experienced financial deficits thus contributing to the country's economic growth (Ndege, 2012).

Financial deepening brings out financial inclusion, which provides complementary and incremental solutions for fighting poverty. Bhattarai (2015) notes that financial deepening plays a crucial role in enlarging households and individual's capabilities of accessing necessary needs like health, and education thus providing a more direct impact on reduction of poverty. A well-deepened and mature financial sector is characterized by the following: increase in varieties of financial services, stability and regulation, the degree to which the allocation of capital into the households in the private sector is increased and the amount of intermediated cash is increased. According to Iyoboyi (2013) changes in financial deepening triggers economic growth resulting in increasing financial systems with widened variety of services geared towards developing the economy.

The study adopts the financial deepening theory to help explain the variable on microfinance products and to show the correlation between financial institutions increasing accessibility of their microfinance products and services to farmers and their financial independence. According to Shkodra (2019) Farmers who have access to financial products are at an advantage to carry out their farming activities with ease while generating continuous income streams enhancing and sustaining their livelihoods. In respect to the theme of the current study, provision of financial services/products such as farming loans and farming insurance services promote farming activities which in the long run enables the farmers to pay off their financial obligations and premiums with ease.

2.1.2 Knowledge Based Theory

The theory was proposed by Penrose in 1959 and underpins the roles played by knowledge, a key resource of the firm, in enhancing productivity in the economy and within different enterprises. Economies and enterprises with highly financially trained, educated, and technologically empowered manpower bears a high likelihood of posting high performance levels compared to those with deficiencies in such resources. In the context of farming, financially literate and technologically advanced farmers tend to be proactive and quick in learning and at the same time applying acquired skills in improving productivity, efficiency, innovativeness and risk taking in their enterprises. The theory provides a distinctive assessment of different learning types in respect to context or mode within which the learning occurs.

Knowledge acquisition by farmers is facilitated by existence of technical systems that surrounds operational environment of farmers. Grant (1996) posits that knowledge transferability through training and technical systems can be applied in integrating attitudes and learning with individuals' behaviors. Technologically and technically equipped dairy farmers have the capabilities of making correct decisions pertaining to the advancement and growth of the farming enterprise (Knockaert & Ucbasaran, 2011).

Dairy farmers possessing such technical and technological knowledge portray various knowledge- based decisions in areas of milk production, breeding, marketing, feeding, financial management and disease control. The decisions form a clear distinction between low and high performing farming enterprises. Technological knowledge, trainings and technical systems bears an impact on milk production, breeding, enterprise development and marketing to dairy farmers. Consequently, the knowledge acquired bears an influence on the mission, vision, values and culture of the farming enterprises (Janetrix, 2019).

Provision of technical knowledge and technological advancements forms the basis of improving farming practices amongst dairy farmers. Technological knowledge according to the theory enables farmers to advance

their farming practices that culminates to improved performances. Technology specifically culminates to sustainable agricultural practices that enhances the livelihoods of farmers.

2.1.3 Principle-Agent Theory

The theory was proposed by Jensen and Meckling (1976) and posits that firms can be perceived as a nexus for a set of contracting relationships among individuals, whereas classical economics regards firms as single-product entities with the purpose of maximizing profit. The advancement of the theory by Fligstein and Freeland (1996) further postulated that agency theory acts as the most efficient and effective way of governing the relationship between principle–agent. The theorists argue that several aspects of the relationship between agent and principles such as agent duties, rewards, and the principle's rights to monitor the agent's performance ought to be considered. The theory provides a strategy pertaining to the best relationship structure where the principle determines what needs to be done and the agents perform the principle's decisions. The theory forms a baseline that portrays the relationship between firms and the contracted farmers. Hausken (2019) notes that there exist difficulties in accounting uncertainties on contracts and this increases transaction costs. Uncertainties can be occasioned by changes in the climatic conditions and other agricultural production shocks. This bears an implication that there exists an opportunism opportunity between parties engaged in the contract especially after the collapse of the contractual period.

Adverse selection and moral hazard are the main principal-agent problems presented by the theory. According to Walen (2014), adverse selection entails a situation where information asymmetry exists on the side of the agent and the principal fails to have information thus making it difficult in determining the extent to which the agent adheres to the agreements in the contract. Moral hazard on the other hand implies that a party in the contractual agreement bears the opportunity of gaining through making a choice of not observing the principals stipulated in the contract. This further bears the implications that one party may choose to endeavor in higher risk activities bearing in mind that the other party will shield the costs associated with the risk activities.

The study adopts the Principle-Agent theory to help explain the variable on Contract Farming, theory informs of the need to have a contract between the dairy farmers and the contracting firms. In contract farming, both parties are required to fulfill their contractual obligations in that the contracted farmers are to farm in respect to the stipulations of the principals (contracting firms) whereas the contracting firms ought to abide to the agreements stipulated in the contract for the benefits of the farmers. The current study views contract farming as a beneficial relationship where farmers act as agents and contracting firms as the principal. Each of the entity has responsibilities outlined in the contract and the extent to which the responsibilities are adhered to determines the success of the contract.

2.1.4 Theory of Planned Behavior

The theory was proposed by Icek Ajzen in 1991 and is centered on the intentions of an individual to perform and display a certain behavior. The theory posits that a person's likelihood of engaging in a certain behavior is dictated by the strengths of their intentions, their attitudes towards the behavior and their perceived behavioral controls (Ijzen, 1991). The theory argues that strength associated with the intentions of engaging in a certain behavior determines their stand out performance. Despite the fact that majority of the behaviors perfectly meet the requirement, performance of the majority solely depends on non-motivational factors comprising of the availability of requisite opportunities and resources comprising of money, time, cooperation, and skills (Dezdar, 2017).

Jointly, these factors stand in for individual's exact control of their behavior. What a person does according to the theory is ascertained by individual motives attributed by social support, attitudes, and recognized behavior control. Planned Behavior Theory has been utilized widely in social studies aiming at providing a prediction on an individual's intentions of participating in environmental conservation initiatives. In order to have an understanding of a given behavior's performance, it is important to understand the underpinning intentions of the behavior. Intentions incorporates motivational factors giving rise to a behavior (Putraa, 2020).

The study adopts the Theory of Planned Behavior to help explain the variable on Environmental Conservation Practices. The theory contributes to the current study by helping to understand the motives of firms in participating in environmental conservation practices that not only the benefit of farmers but also are in line with their corporate social responsibilities. The theory is further crucial in outlining the attitudes, factors and perceptions that prompt firms to engage in the conservation practices.

2.2 Empirical Literature Review

The empirical review aims at discussing past studies based on the objectives of the study by reviewing literature related to the theme of the current study. Nutley, Powel & Davies (2013) asserts that an empirical review is the most explicit form of review which may either be based on quantitative or qualitative data and whose findings underpin both theoretical and experiential aspects that gives a systematic understanding of a study.

2.2.1 Microfinance Products

Kish and Fairbairn (2017) assessed how impact investing and investing for profits relates with moral agricultural performances in investment projects. The study specifically sought to assess distinctive approaches employed by

the investors and financial communities to attract farmers to entice famers to engage in impact investing. The study targeted Russian small-scaled wheat farmers. A descriptive-cross-sectional research approach was employed in the study. Focus group formed the main data collection instrument. Qualitative data collected was analyzed thematically and the results revealed that financing communities and firms largely provided financial services and products to farmers to enable them participate in the farming practices. The practice was considered moral as it was beneficial to both the farmer and the investing financial communities and firms.

Mwangi (2015) conducted a study on how microfinance services affect economic empowerment of small-scale farmers operating in Kiambu County. The study adopted a quantitative descriptive research approach and target population comprised of 100 randomly selected farmers from the county. Primary data was adopted in the study and was collected through both unstructured and structured questionnaires. The study employed both qualitative and quantitative analysis techniques in analyzing the collected data. The results of the study revealed that microfinance services provided to farmers such as credit and market access and financial literacy provision positively correlated with economic empowerment of farmers in the County. The study concluded that enhancing the provision levels of microfinance services culminates into enhancing the levels of economic empowerment to farmers.

Irungu (2013) sought to establish how agricultural credit financing relates with financial performance of farmers focusing on small-scaled farmers operating in Kiria Divison, Murang'a County. A descriptive research approach was adopted in the study where the target population comprised of 150 randomly selected small-scale farmers who obtain financing from various financial institutions. The study adopted questionnaires to collect data where SPSS was employed in generating descriptive statistics. The relationship between independent and dependent variable was assessed through adoption of a linear regression model. The study established that agricultural credit financing highly relates with financial performance of farmers.

Nkere (2016) sought to establish how financing and crop insurance affects the productivity of wheat farmers operating in Narok County. A descriptive research design was adopted in the study with a target population of 20 farmers practicing large scale farming and registered by CGAK. Data collection was through structured questionnaires administered to respondents by help of research assistants. Both descriptive and inferential statistics were applied in analyzing the collected data. The results revealed that both financing and crop insurance positively and significantly affected the levels of wheat productivity in the county.

2.2.2 Contract Farming

Hoang (2021) conducted a study on how contract farming impacts the income of farmers with the value chain focusing on Vietnam. Both empirical and theoretical reviews were applied in the study where past studies on contract farming significantly contributed to the study. To achieve the study's objectives, both qualitative and quantitative approaches were employed. A survey was conducted on 460 farmers in rice, fruits, coconuts and vegetable farming. Additionally, exploratory interviews were applied in collecting qualitative data from 28 purposively selected respondents. The study utilized econometric models to assess the relationship between the study variables. The results of the study revealed that contract farming was perceived as a crucial farming aspect for enhancing social welfare, increasing productivity and quality of food, and enhancing environmental protection and food security.

Dubbert (2019) conducted a study seeking to establish how participation in contract farming impacted farming performance from Ghanaian cashew farmers. The study employed a cross-sectional research design and targeted 391 households in cashew farming from Wenchi, Techiman and Nkoranza districts. A multi-stage sampling method was adopted in subdividing farmers participating in contract farming and nonparticipants. Questionnaires formed the main data collection instrument. The analysis results of the data collected revealed that small-scaled farmers benefited more in contract farming. Additionally, the study established that contract farming in cashew nuts enabled farmers to spread risks to the contracting firms.

Mpeta and Kuzilwa (2015) conducted a study on how contract farming affects productivity and efficiency of Tanzanian small-scale farmers in sunflower sector. A cross sectional research design was employed in the study. The study targeted two villages where a sample of 396 sunflower farmers were selected and involved in the study. Face to face interviews formed the main data collection method. Descriptive statistics comprising of means, frequencies and standard deviation were used in analyzing the collected data. The results of the study revealed that contract farming bears a significant effect on sunflower yield potential but reduces the technical efficiencies of farmers.

Kanana and Mbugua (2019) sought to establish the factors that influence contract farming performance in Kenya focusing on sorghum farmers in Meru County. The study adopted a descriptive research design and 1200 targeted contracted farmers in Imenti North Constituency. The study employed Garg and Kothari (2014) sampling formula in deriving a sample of 291 respondents. Semi structured questionnaires formed the main data collection instrument. Both quantitative and qualitative methods were used in analyzing the collected data. A multiple linear regression analysis was employed in assessing the degree of relationship between independent and dependent variables. The study established that as a result of participating in contact farming, farmers derived benefits such

as trainings, arrangements in input supply input loans and crop insurance. Additionally, annual average income of farmers significantly increased resulting from engaging in contract farming and the increase was occasioned by high crop yields and increased prices through contract markets.

2.3.3 Environmental Conservation Practices

Boimah and Sarpong (2018) sought to assess how adoption of environmental conservation practices affects input usage and farm performance focusing on Northern Region in Ghana. The study employed a cross-sectional research design and target 411 farmers' maize farmers from three districts. A multi-stage sampling technique was utilized in selecting the farmers. Interviews formed the main data collection tools for the study. The results of the study established that the maize farmers in the selected districts practiced conservation practices such as maize-legume rotation, minimum tillage and incorporation of inorganic-organic fertilizers. The practices according to the study significantly contributes to environmental conservation and sustained productivity.

Muthoni (2016) sought to establish how integration of sustainable environmental practice affects performances of CBMFO operating in Kiambu. The study employed a combination of descriptive survey and case study research designs and targeted 155 respondents. Systematic, purposive and random sampling methods were employed in identifying respondents in the target population. Primary data collection was through interviews, transect walks, focus group discussion, video tapes and photographs. Secondary data was derived from government departments, university library and KNBS. The gathered data was cleaned, coded and analyzed using descriptive analysis approaches. The study established that the CBMFOs faced land degradation challenge and had minimal environmental conservation practices which exposed farming activities to jeopardy. This in the long run negatively affects the livelihood of members.

Karaya, Onyango and Ogendi (2020) sought to establish how farmer's group participation affects adoption of household sustainable practices for managing lands focusing on Kenyan drylands. The study employed a cross-sectional research approach and targeted 150 farmers. In-depth household interviews formed the main data collection instrument. The analysis results revealed that group participation positively and significantly affects adoption of household sustainable practices for managing lands. Additionally, partnering with development agencies such as NGOs significantly influenced the adoption practices.

2.3 Operationalization of Variables

Table 2.1 Operationalization of Variables

VARIABLES	DEFINITION	CONSTRUCTS	SCALE OF MEASUREMENT
Microfinance Products	Refers to both financial and non-financial services that investing firms offers to farmers with the view of supporting farming activities (Chan & Lin, 2015).	• Loans • Training • Insurance	• Mean • Standard Deviation • Regression Analysis
Contract Farming	An agreement where a financing farm lends farming inputs to farmers in exchange of exclusive rights for purchasing (Satish, 2020)	• Price Determination • Standard Requirements • Farming Inputs	• Mean • Standard Deviation • Regression Analysis
Environmental Conservation Practices	A practice that facilitates natural and environment resources protection from degradation resulting from farming activities (Kassam & Brammer, 2016)	• Manure Storage • Nutrients Management • Conservation Tillage	• Mean • Standard Deviation • Regression Analysis
Sustainable Livelihood of Dairy Farmers	Refers to the enhancement or maintenance of farmers' accessibility to income-generating activities on a long-term basis (More *et al*., 2015).		• Mean • Standard Deviation • Regression Analysis

3. RESEARCH METHODOLOGY

This section explains the research design, target population, the sample and sampling techniques and data collection methods. Further, validity and reliability procedures for testing the research instrument are discussed.

The section ends with outlining the diagnostic tests were carried to assess whether the linear model adheres to the assumptions.

A descriptive research design was adopted in the current study. The design fits the current study as it further enables the researcher to generate both descriptive and numerical data that was crucial in explaining the relationship between the variables of the study. The target population of the current study comprised of dairy farmers operating in Githunguri Sub County in Kiambu County and registered with Githunguri Dairy Farmers Co-Operative Society Limited (GDFCSL). According to GDFCSL (2021), there are 22,644 dairy farmers registered with the cooperative. The farmers were distributed across the five wards that make up Githunguri Sub County. The wards comprise of Githiga, Githunguri, Ikinu, Komotha, and Ngewa. The target population was spread in 5 wards as outlined in table 3.1.

Table 3.1 Target Population

Ward	Target Population	Percentage
Githiga	3791	16.70%
Githunguri	7986	35.30%
Ikinu	2631	11.60%
Komotha	5571	24.60%
Ngewa	2665	11.80%
Total	**22644**	**100**

The study employed a Yamane (1967) sampling formula in deriving a sample of 398 respondents. The formula is presented below:

$$n = \frac{N}{1 + Ne^2}$$

Where n= sample size

N= target population

e= acceptable sampling error

The study was conducted at 5% level of significance.

Substituting the values in the formula,

$$n = \frac{22644}{1 + 22644(0.05)^2}$$

n =398

Stratified random sampling technique was adopted in the study to select the sample population in the five wards. The distribution of the sample size is presented in table 3.2.

Table 3.2 Sample Size

Ward	Target Population	Sample	Percentage
Githiga	3791	66	16.70%
Githunguri	7986	141	35.30%
Ikinu	2631	46	11.60%
Komotha	5571	98	24.60%
Ngewa	2665	47	11.80%
Total	**22644**	**398**	**100**

The study relied on primary data. For the purposes of collecting primary data, the study adopted a questionnaire which contained close and open-ended questions. The questionnaire used a likert-scale with a scale of 1-5 where 5= Strongly Agree, 4 = Agree, 3 =Neutral 2 = Disagree 1 = Strongly Disagree. The use of questionnaires is supported by assertions from Mugenda and Mugenda (2013) who noted that questionnaires are appropriate for obtaining key information pertaining to variables under study since they are cheap to administer.

Before the researcher proceeds to the field to collect data, an introduction letter from JKUAT and a research permit from the National Commission for Science, Technology and Innovation was obtained. The researcher also included a cover letter to each of the dairy farmer under study detailing the purpose of the study, who is conducting the study; why it is important for the respondents to respond to questionnaires and assuring the respondents that their responses were held in strict confidence and used only for the intended academic purpose. The study applied drop and pick method and through emails to enhance the response rates.

The study adopted 5% of the sample size which comprised of 20 respondents. This involved issuing 20 questionnaires to randomly selected farmers in the Sub county. The respondents in the pilot study was exempted from the main study. The study applied reliability analysis to assess internal consistency of the study variables. Cronbach's Alpha coefficient was computed on all components of questionnaire and their assessment given. Alpha of 0.7 was used in this study as a threshold. The study applied both content and construct validity to measures the extent to which the selected items contained in the sample represents the content being measured by the test. To ensure content validity, the researcher involved supervisor in assessing questionnaire's concepts and in determining whether they measure what they purport to measure. Construct validity was assessed through factor

analysis where a factor loading value of 0.5 was adopted as a threshold.

After completing the data collection process, the collected data was cleaned for uniformity, accuracy, and completeness. The data was then summarized, organized, coded and tabulated before final analysis. Both descriptive and inferential statistics were applied to analyze the data. Descriptive statistics comprised of standard deviation, means and percentages while inferential statistics comprised of regression and correlation analysis. SPSS computer software version 22 and MS excel was employed to generate both the descriptive and inferential statistics. The results of the study were summarized and presented by through pie-charts, tables, and bar charts. The study adopted the following multivariate model to establish the relationship between impact investing and sustainable livelihood of farmers.

$$\mathbf{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where;

$\mathbf{Y}$ = Sustainable Livelihood of Farmers

$\mathbf{X_1}$ = Microfinance Products

$\mathbf{X_2}$= Contract Farming

$\mathbf{X_3}$ = Environmental Conservation Practices

$\boldsymbol{\varepsilon}$ = Error term

β_0= Regression constant or intercept,

$\beta_1, \beta_2, \beta_3$ and β_4 are the unknown coefficients of independent variables.

The study adopted a regression analysis with the Ordinary Least Square model but prior its application in the study, there is a need to examine if the data satisfies the assumptions of the model. The study thus conducted diagnostic tests to ensure that ordinary least square assumptions are satisfied before the multiple linear regression is conducted. The study conducted Linearity Test, Normality Test, and Homoscedasticity Test.

To assess the normality of the data set, the study performed a Kolmogorov-Smirnov (K-S) Test. The rule is that if the p-value is less than 0.05 (significant), the data is normally distributed and if the p-value is greater than 0.05 (insignificant) the data is not normally distributed and thus an OLS was not be appropriate for the analysis. Ghasemi and Zahediasl (2012) note that a K-S test serves as the mostly used test for assessing the normality of data due to the fact that there exists a lot of disadvantages associated with other tests and that the test can be easily examined through Statistical Package for Social Scientist.

Linearity is displayed when data points are arranged in an oval shape. When the data is plotted and any other shape is formed apart from the oval shape, there is a high likelihood that there was no linearity from the population where the sample was drawn in respect to variables being analyzed. In such a case, a linear regression model is not suitable for the study. The importance of testing for linearity lies in the fact that many statistical methods require an assumption of linearity of data (that the data was sampled from a population that relates the variables of interest in a linear fashion).

Homoscedasticity describes a situation whereby the error term is similar across all values of independent variables. This implies that the level of variability on dependent variable is equal for each of the values of the independent variables (Garson, 2012). The study used Breusch-Pagan test developed by Breusch and Pagan (1979) to test for homoscedasticity in the linier regression model of the study. Homoscedasticity assumptions is arrived at when the probability value in the Breusch-Pagan test is greater than 0.05.

4. RESEARCH FINDINGS AND DISCUSSION

This section provides an outline of the findings of the study. The section specifically outlines the results in areas of response rate, pilot result summary, demographic characteristics of the respondents and both descriptive and inferential statistics. The descriptive statistics are presented in form of means, averages and standard deviations while inferential statistics included both correlation and regression analysis.

4.1 Response Rate

A total of 398 questionnaires were issued to the target respondents comprising of dairy farmers operating in Githunguri Sub County in Kiambu County. 284 questionnaires were returned having been fully filled. This represented a response rate of 71.4%. The response rate was perceived to be enough and sufficient for analysis as per argument formulated by Cooper and Schindler's (2011) who argued that a response rate of 70% or above is excellent for analysis. Application of drop and pick method of data collection by help of research assistants contributed to the high response rate. Figure 4.1 shows the response rate.

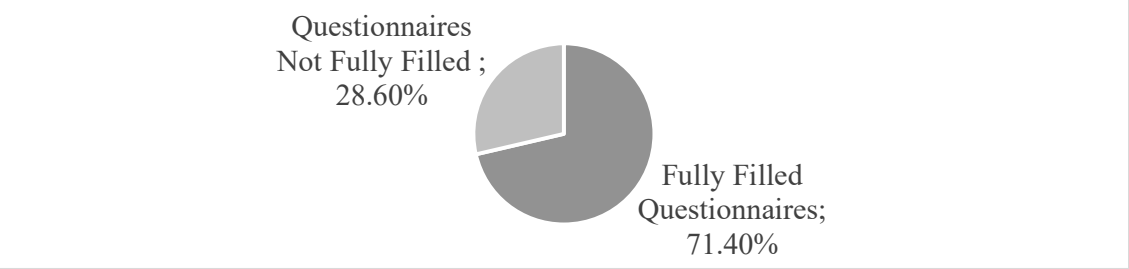

Figure 4.1: Response Rate

4.2 Pilot Test Summary Results

A pilot study was conducted to enable the researcher improve the data collection instrument thus enhancing the data collection process. Mugenda and Mugenda (2013) asserts that a suitable pilot study should cover 5-10% of the sample size. The current study adopted 5% of the sample size which comprised of 20 respondents. This involved issuing 20 questionnaires to randomly selected farmers in the Subcounty. The respondents in the pilot study were exempted from the main study.

4.2.1 Reliability Test Results

Kothari (2004) defines reliability as the level of consistency of measurements in a research instrument. Reliability measures consistency of instruments, whether they can yield similar results when subjected to comparable conditions (Cronbach, 1951). The study applied reliability analysis to assess internal consistency of the study variables. Cronbach's Alpha coefficient was computed on all components of the questionnaire and their assessment given. Alpha of 0.7 was used in this study as a threshold. The results presented in table 4.1 show that the Cronbach Alpha value for each of the variable was above the threshold of 0.7 implying that they were all reliable in assessing respective aspects in the study.

Table 4.1: Reliability Test Results

Scale	Cronbach's Alpha	Number of Items	Comment
Microfinance Products	0.913	7	Reliable
Contract Farming	0.811	7	Reliable
Environmental Conservation Practices	0.799	6	Reliable
Sustainable Livelihoods of Dairy Farmers	0.901	4	Reliable

4.2.2 Validity Test Results

Validity is the extent to which an instrument measure what it is supposed to measure. The study applied both content and construct validity to measure the extent to which the selected items contained in the sample represent the content being measured by the test. To ensure content validity, the researcher involved the supervisor in assessing the concepts of the questionnaire and in determining whether it measures what it purports to measure. The supervisor's comments, advice, and viewpoints were used to improve the questionnaire's items to make sure they contained the information they were intended to. Construct validity was assessed through component factor analysis where a factor loading value of 0.5 was adopted as a threshold. The goal of component factor analysis is to identify the questionnaire items that represent the same characteristics of a variable. Each item should target a particular element of a variable, therefore items that capture similar aspects should be eliminated or changed. The results indicated that none of the items was eliminated since they all had factor loading values over 0.5 and therefore addressed each variable uniquely. The items were regarded as valid for use in the main study for data collection.

4.3 Demographic Characteristics Results

The study included the demographic results to describe the nature of respondents. The demographics included in the study comprise of gender, ward, level of education, number of years in dairy farming, and monthly income from dairy farming.

4.3.1 Gender of Respondents

The results on gender presented in figure 4.2 show that male dairy farmers were 61.3% while female dairy farmers were 38.7%, implying that both gender were represented in this study. The results implied a big percentage of dairy farming in Githunguri Sub County is undertaken by male gender.

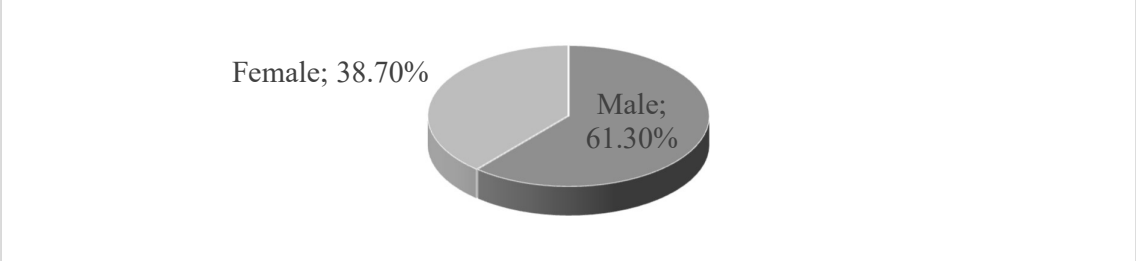

Figure 4.2: Gender Distribution

4.3.2: Respondents Ward Representation

The results on the ward from where the respondents came from is as outlined in figure 4.3 show that those from Githiga Ward were 20.9%, Githunguri were 34.5%, Ikinu were 11.2%, Komotha were 24.6% while Ngewa accounted for 8.8%. The results show that majority of the respondents came from Githunguri ward. The findings imply that all wards were well represented in this study.

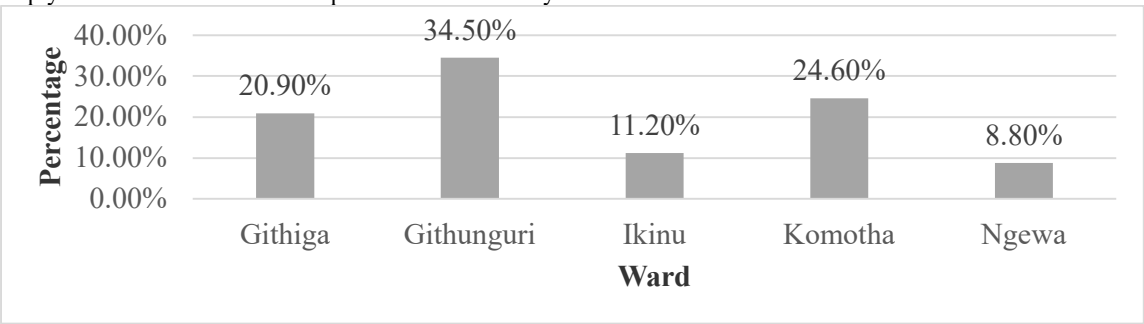

Figure 4.3 Respondents Ward Representation

4.3.3 Respondents Highest Level of Education

The results on the level of education of respondents outlined in figure 4.4 show that those with secondary level of education were 49.6%, college were 27.5%, graduates were 22.9% while none of the respondents had a doctorate. The results show that majority of the respondents had attained secondary education. Additionally, all respondents involved in the study were educated, implying that they were in a position of reading, understanding and responding to the contents of the questionnaire. The findings on the highest level of education imply that respondents were qualified to respond to study questions.

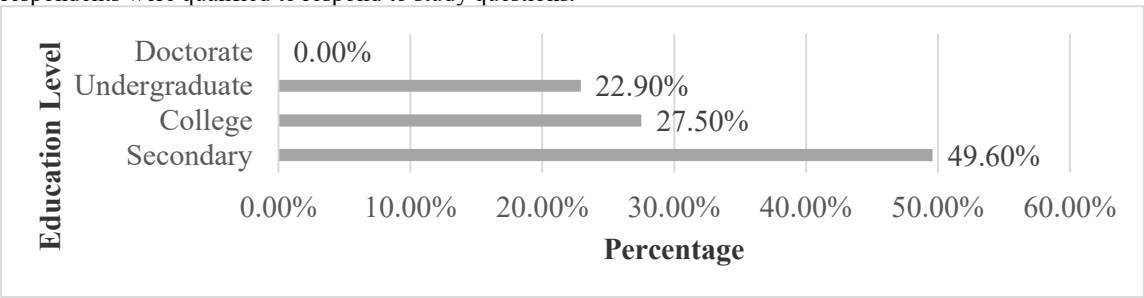

Figure 4.4: Respondents Highest Level of Education

4.3.4 Respondents Number of Years in Dairy Farming

The results on the number of years of respondents in the dairy farming presented in figure 4.5 show that 16.3% were in dairy farming for a period of less than 5 years, 33.5% between 5 and 10 years, 30.4% between 11 and 15 years while those with above 15 years accounted for 19.8%. The results show that majority of the respondents have been in the dairy farming for more than 5 years. This implies that respondents were experienced to favorably respond to the study questions.

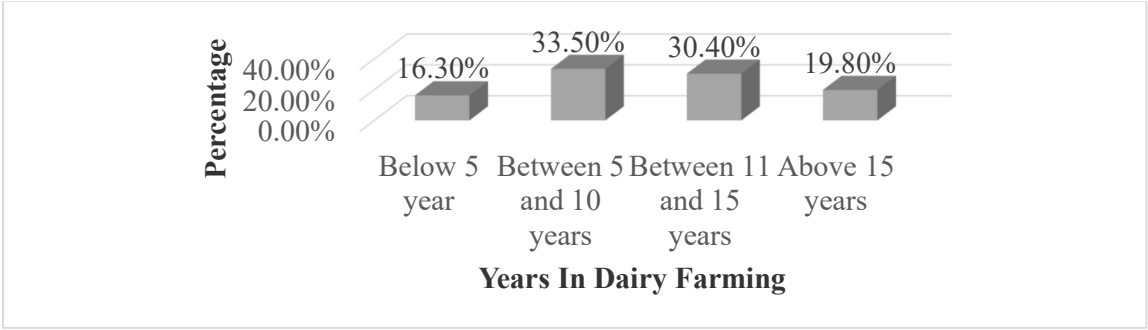

Figure 4.5 Number of Years in Dairy Farming

4.3.5 Monthly Income from Dairy Farming

The study sought to establish the monthly income of the respondents from dairy farming. The results in figure 4.6 show that 20.7% of the respondents had a monthly income of below Ksh. 10,000, 33.8% between Ksh. 10001 and Ksh. 30000, 28.5% between Ksh. 30001 and Ksh. 50000 while 17% had a monthly income of above Ksh. 50000. The results show that majority of the respondents had a monthly income from dairy farming of above Ksh. 10000 and that all the respondents were deriving an income from dairy farming hence suited to respond to the study questions.

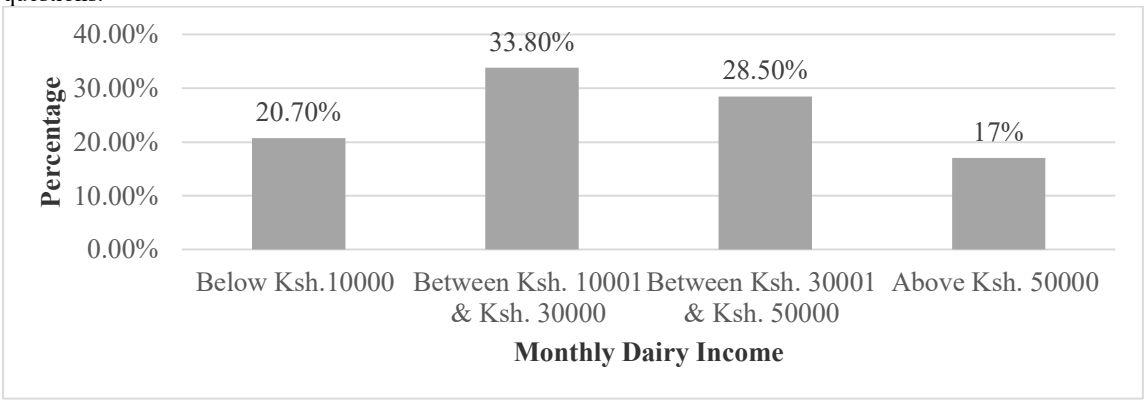

Figure 4.6 Monthly Income from Dairy Farming

4.4 Descriptive Statistics

The inclusion of descriptive statistics in the study was aimed at describing the nature of responses of respondents on various items on the questionnaire. In the questionnaire, the statements addressing each variable was formulated in 1-5 Likert scale where respondents were supposed to indicate the degree of agreement or disagreement on various statements. The study then derived the mean response and standard deviations per statement to conclude on the nature of response.

4.4.1 Microfinance Products

The descriptive results on microfinance products outlined in table 4.2 show that respondents were in agreement with the statements that they are provided with loans by investing firms(mean=4.11), that the loans have favorable repayment terms(mean=3.64) and that they are provided with insurance services by the investing firm(mean=3.98). Respondents further agreed with the statements that the investing firms provide financial literacy and microfinance products trainings on dairy farming(mean=3.65), that the trainings contribute in enhancing the levels of production in the firm(mean=3.97) and that provision of microfinance products enhances their dairy farming activities(mean=4.01).

Respondents were however neutral on the statement that the insurance services provided guarantee compensation in case of an eventuality(mean=3.42). On average, all respondents agreed with the statements on microfinance products as shown by average mean of 3.83 and average standard deviation of 0.676. The results imply that provision of microfinance products to the farmers play a key role in enhancing their livelihood sustainability and improve their farming. Chan and Lin (2015) notes that provision of micro finance products make dairy farming more productive as farmers are financially empowered to acquire modern farming equipment, introduce advanced dairy farming technologies as well as access to a stabilized market for their produce.

Table 4.2: Descriptive Statistics on Microfinance Products

Statement	Mean	Standard Deviation
There is provision of business loans by investing firms	4.11	0.213
The loans have favorable repayment terms	3.64	0.844
There is provision of insurance services by the investing firm	3.98	0.719
The insurance services guarantee compensation in case of an eventuality	3.42	1.013
The investing firms provide financial literacy and microfinance products trainings on dairy farming	3.65	0.826
The training contributes in enhancing the levels of production in the firm	3.97	0.869
Provision of microfinance products enhances dairy farming activities	4.01	0.246
Average	**3.83**	**0.676**

4.4.2 Contract Farming

The descriptive results on contract farming outlined in table 4.4 show that respondents were in agreement with the statements that they are supplied with food supplements by the investing firm(mean=3.56), that the investing firms determine the quality of produce to be produced(mean=3.92), that failure to meet the set qualities negatively affects the relationships(mean=3.88) and that the price of the produce is determined and set by the investing firm(mean=4.07). Respondents further agreed with the statements that the market price does not necessarily match the existing market price(mean=4.26) and that contract farming enhances the effectiveness of dairy farming in their farm(mean=4.04). Respondents were however neutral on the statements that they supplied with milking machines by the investing firm(mean=3.42). On average however, all respondents agreed with the statements on contract farming as shown by average response mean of 3.88 and average standard deviation of 0.59. The results imply that contract farming creates an avenue for farmers to produce with a market-ready mindset which prompts them to put more efforts in their activities. This is shown in the table 4.3:

Table 4.3: Descriptive Statistics on Contract Farming

Statement	Mean	Standard Deviation
Food supplements are provided by the investing firm	3.56	0.901
Milking machines are provided by the investing firm	3.42	1.043
The investing firms determines the quality of produce to be produced	3.92	0.762
Failure to meet the set qualities negatively affects the relationships	3.88	0.881
The price of the produce is determined and set by the investing firm	4.07	0.227
The market price does not necessarily match the existing market price	4.26	0.173
Contract farming enhances the effectiveness of dairy farming	4.04	0.143
Average	**3.88**	**0.59**

4.4.3 Environmental Conservation Practices

The descriptive results on environmental conservation practices outlined in table 4.4 show that respondents were in agreement with the statements that the investing firm advocates for dairy farming activities that support environmental conservation(mean=4.16), that they are provided with guidelines on managing nutrients in the farm(mean=3.51), that provision of environmental conservation guidelines reduce environmental pollution and wastage(mean=3.87) and that provision of environmental conservation guidelines increase their production levels(mean=4.07). Respondents were however neutral on the statements that the firm provides guidelines on the best ways of storing manure(mean=3.29) and that they are provided with guidelines on tilling land(mean=3.46). An average response means of 3.73 and standard deviation of 0.756 imply that all respondents agreed with the statements on environmental conservation practices. The results imply that adoption of environmental conservation practices in dairy farming is key towards realizing a sustainable livelihood by the farmers which in turn enhances their farming activities. Adoption of environmental conservation practices that bear an impact on the dairy herds and cropping systems such as nutrient management, manure storage, conservation tillage, stream fencing and cover crops contribute to realization of cascading financial benefits (Sumner, 2018).

Table 4.4: Descriptive Statistics on Environmental Conservation Practices

Statement	Mean	Standard Deviation
The investing firm advocates for dairy farming activities that supports environmental conservation	4.16	0.273
The firm provides guidelines on the best ways of storing manure	3.29	1.362
Guidelines on managing nutrients in the farm are provided by the investing firms	3.51	0.938
Guidelines on tilling land are provided by the investing firms	3.46	0.998
Provision of environmental conservation guidelines reduce environmental pollution and wastage.	3.87	0.752
Provision of environmental conservation guidelines increase my production levels	4.07	0.211
Average	**3.73**	**0.756**

4.4.4 Sustainable Livelihoods of Dairy Farmers

The study first sought to assess the changes in form of percentage of the income of dairy farmers as a result of impact investing. The results presented in figure 4.7 show that the level of income of 10.4% of farmers had increased with below 10%, 24.8% of farmers had increased with between 10% and 20%, and 22.7% of farmers had recorded an increase of between 21% and 30%. Those farmers who had recorded an increase of between 31% and 40% were 20.3%, between 41% and 50% were 12.5% while those with above 50% accounted for 9.3%. The results show that all farmers involved in the study had recorded a certain percentage increase in the level of income as a result of impact investing.

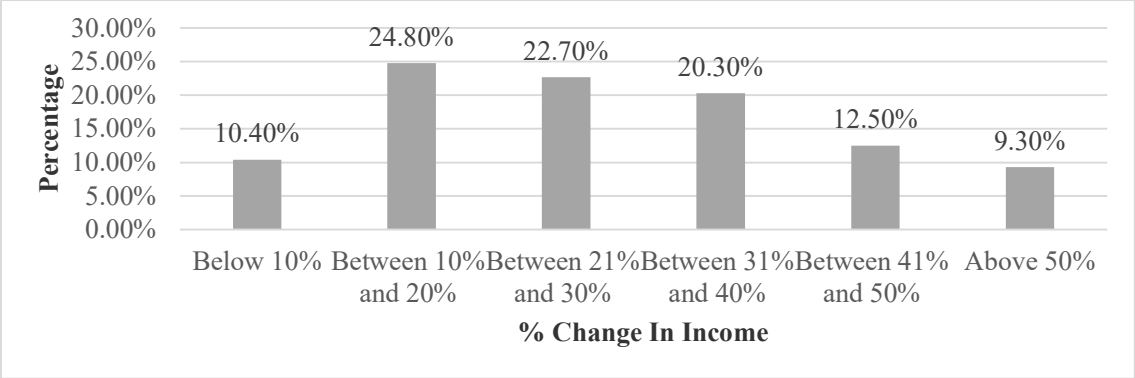

Figure 4.7 Percentage Change on Income Levels

The descriptive results on sustainable livelihoods of dairy farmers outlined in table 4.5 show that respondents were in agreement with the statements their income level has increased(mean=4.35) that their income level has increased due to an increase in their production capacity(mean=4.17), that their income level has increased due to an increase in the quality of their produce(mean=4.26) and that their income level has increased as a result of expansion of their farming activities(mean=4.43). All the respondents agreed with the statements on their sustainable livelihoods as a result of impact investing (mean=4.3, std.dev=0.164). The results bear the implications that adoption of impact investing in areas of microfinance products, contract farming as well as environmental conservation practices enable farmers to increase their output levels which enhances their livelihoods. Cole *et al.* (2020) posits that the bottom line of impact investing is helping in the reduction of the negative effects associated with business activities in the social environment.

Table 4.5: Descriptive Statistics on Sustainable Livelihoods of Dairy Farmers

Statement	Mean	Standard Deviation
Income level has increased	4.35	0.233
Production capacity has increased resulting to an increase in my income levels	4.17	0.209
Quality of the produce has increased resulting to an increase in my income levels	4.26	0.108
Farming has expanded resulting to an increase in income levels	4.43	0.107
Average	**4.3**	**0.164**

4.5 Inferential Statistics

4.5.1 Correlation Results

The correlation analysis results outlined in table 4.6 show that microfinance products and sustainable livelihood

of dairy farmers in Githunguri Sub County correlates to a positive and significant level (r=0.426, sig=0.001). This implies enhancement in the levels of microfinance products as part of impact investing results to improved levels of sustainable livelihoods amongst dairy farmers in Githunguri Sub County. The results tally with Chan and Lin (2015) assertions that provision of micro finance products makes dairy farming more productive as farmers are financially empowered to acquire modern farming equipment, introduce advanced dairy farming technologies as well as access to a stabilized market for their produce.

The results further show that contract farming and sustainable livelihood of dairy farmers in Githunguri Sub county correlates to a positive and significant level (r=0.307, sig=0.009). This implies enhancement in the levels of contract farming as part of impact investing results to improved levels of sustainable livelihoods amongst dairy farmers in Githunguri Sub County. The results are in tandem with Hoang (2021) who noted that the main reason behind involvement of contract farming by farmers is reduction of risks.

The results finally show that environmental conservation practices and sustainable livelihood of dairy farmers in Githunguri Sub county correlates to a positive but insignificant level (r=0.106, sig=0.064). This implies enhancement in the levels of environmental conservation practices as part of impact investing results to insignificant improvement in the levels of sustainable livelihoods amongst dairy farmers in Githunguri Sub County. The results tally with Sumner (2018) who noted that adoption of environmental conservation practices that bear an impact on the dairy herds and cropping systems such as nutrient management, manure storage, conservation tillage, stream fencing and cover crops contributes to realization of cascading financial benefits.

Table 4.6: Correlation Analysis

		Microfinance Products	Contract Farming	Environmental Conservation Practices	Sustainable Livelihood of Dairy Farmers
Microfinance Products	Pearson Correlation	1			
	Sig. (2-tailed)				
	Sig. (2-tailed)	0.087			
Contract Farming	Pearson Correlation	0.107	1		
	Sig. (2-tailed)	0.241			
Environmental Conservation Practices	Pearson Correlation	-0.148	-0.206**	1	
	Sig. (2-tailed)	0.205	0.079		
Sustainable Livelihood of Dairy Farmers	Pearson Correlation	0.426**	0.307**	0.106**	1
	Sig. (2-tailed)	0.001	0.009	0.064	
	N	284	284	284	284

4.5.2 Multiple Regression Analysis

A multiple regression analysis was included in the study with the aim of establishing the existing relationships between the independent and dependent variables. The regression analysis was conducted at 95% confident level. The model summary results presented in table 4.7 show how the independent variables relate with the dependent variable. The model further assesses the percentage the independent variables account on the dependent variable. According to the results, the R-Value was found to be 0.743 implying existence of a moderately high relationship between the independent variables and dependent variable. The R-Square value, which denotes the coefficient of determination, was 0.552 implying that 55.2% of variation in sustainable livelihood of dairy farmers in Githunguri Sub County is attributed to aspect of impact investing which comprise of microfinance products, contract farming and environmental conservation practices.

Table 4.7: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.743[a]	0.552	0.496	0.947662

Predictors: (Constant), Microfinance Products, Contract Farming and Environmental Conservation Practices

The study further included Analysis of Variance (ANOVA) model aiming at assessing the statistical

significance of the model linking independent variables with the dependent variable. The level of significance is arrived at by comparing the value of F-Calculated with the value of F-Critical from the F-Statistics table at (4.279) and at 0.05 significance level. According to the results outlined in table 4.8, the F-Calculated value was 16.9874 while the F-Critical value was 2.40. F-calculated value is greater than F-Critical value implying that the model is statistically significant to assess the relationship thus can be used in the study.

Table 4.8: ANOVA (Model Significance)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	229.841	4	57.46025	16.9874	0.017985[b]
Residual	943.721	279	3.3825		
Total	1173.562	283			

Dependent Variable: Sustainable Livelihood of Dairy Farmers

Predictors: (Constant), Microfinance Products, Contract Farming and Environmental Conservation Practices

The model of coefficient was included in the study to determine how the dependent variable changes as a result of a unit change in the independent variables. According to the results in table 4.9, microfinance products bear a positive significant effect on sustainable livelihoods of dairy farmers operating in Githunguri Sub County (beta=0.401, sig=0.000<0.05). The results bear the implications that when microfinance products are increased with one unit, sustainable livelihoods of dairy farmers operating in Githunguri Sub county increases with 0.401 units. According to Mwangi (2015), microfinance services provided to farmers such as credit and market access and provision of financial literacy positively correlates with economic empowerment of farmers.

The results further revealed that contract farming bear a positive significant effect on sustainable livelihoods of dairy farmers operating in Githunguri Sub County (beta=0.376, sig=0.009<0.05). The results bear the implications that when contract farming is increased with one unit, sustainable livelihoods of dairy farmers operating in Githunguri Sub county increases with 0.376 units. According to Hoang (2021), contract farming is perceived as a crucial farming aspect for enhancing social welfare, increasing productivity and quality of food, and enhancing environmental protection and food security.

The results finally revealed that environmental conservation practices bear a positive but insignificant effect on sustainable livelihoods of dairy farmers operating in Githunguri Sub County (beta=0.099, sig=0.078>0.05). The results bear the implications that when environmental conservation practices are increased with one unit, sustainable livelihoods of dairy farmers operating in Githunguri Sub county increases with 0.099 units. Environmental conservation practices as Boimah and Sarpong (2018) notes significantly contributes to environmental conservation and sustained productivity.

Table 4.9: Model Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	0.443	0.126		3.5159	0.001
Microfinance Products	0.401	0.114	0.352	3.5175	0.000
Contract Farming	0.376	0.209	0.326	1.7990	0.009
Environmental Conservation Practices	0.099	0.143	0.047	0.6923	0.078

Dependent Variable: Sustainable Livelihood of Dairy Farmers

The optimal model of the study becomes

Sustainable Livelihood of Dairy Farmers = 0.443+ 0.401 (Microfinance Products) + 0.376 (Contract Farming)

According to the optimal model, sustainable livelihood of dairy farmers in Githunguri Sub County stands at 0.443 units while holding all other factors constant. The model further shows that microfinance products bear the highest effect on sustainable livelihood of dairy farmers and followed by contract farming. Environmental conservation practices had the least effect on sustainable livelihood of dairy farmers.

5. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the Findings

The general objective of the study was to establish effect of impact investing on sustainable livelihoods of dairy farmers in Githunguri Sub County, Kenya. The study focused on four composition of impact investing comprising of microfinance products, contract farming and environmental conservation practices. The target population of the current study comprised of dairy farmers operating in Githunguri Sub County in Kiambu County and registered with Githunguri Dairy Farmers Co-Operative Society Limited (GDFCSL). According to GDFCSL (2021), there are 22,644 dairy farmers registered with the cooperative. The farmers were distributed across the five wards that

make up Githunguri Sub County. The wards comprise of Githiga, Githunguri, Ikinu, Komotha, and Ngewa. The summary of the results is outlined below:

5.1.1 Microfinance Products

According to descriptive statistics results, all respondents agreed with the statements about microfinance products and its effect on sustainable livelihoods of dairy farmers in Githunguri Sub County. The correlation analysis results also established that microfinance products significantly and positively correlate with sustainable livelihoods of dairy farmers. Additionally, the results from the regression analysis established that microfinance products positively and significantly affect sustainable livelihoods of dairy farmers in Githunguri Sub County. The results of the study therefore imply that enhancing and increasing access to microfinance products leads to enhanced levels of sustainable livelihoods of dairy farmers operating in Githunguri Sub County.

5.1.2 Contract Farming

According to descriptive statistics results, all respondents agreed with the statements about contract farming and its effect on sustainable livelihoods of dairy farmers in Githunguri Sub County. The correlation analysis results also established that contract farming significantly and positively correlates with sustainable livelihoods of dairy farmers. Additionally, the results from the regression analysis established that contract farming positively and significantly affects sustainable livelihoods of dairy farmers. The results of the study therefore imply that enhancing contract farming leads to enhanced levels of sustainable livelihoods of dairy farmers operating in Githunguri Sub County.

5.1.3 Environmental Conservation Practices

According to descriptive statistics results, all respondents agreed with the statements about environmental conservation practices and its effect on sustainable livelihoods of dairy farmers in Githunguri Sub County. The correlation analysis results also established that environmental conservation practices insignificantly and positively correlate with sustainable livelihoods of dairy farmers. Additionally, the results from the regression analysis established that environmental conservation practices positively but insignificantly affects sustainable livelihoods of dairy farmers. The results of the study therefore imply that enhancing environmental conservation practices among the farmers lead to enhanced levels of sustainable livelihoods of dairy farmers operating in Githunguri Sub County.

5.2 Conclusion of the Study

From the analysis results, the study concluded that impact investing in microfinance products has a positive and significant effect on sustainable livelihoods of dairy farmers in Githunguri Sub County and that microfinance products further increase the levels of sustainable livelihoods in the same direction.

There was a positive and significant effect of impact investing in contract farming in a way that when impact investing in contract farming increases, the levels of sustainable livelihoods also increases in the same direction and in a significant manner. Finally, the study also concludes that impact investing in environmental conservation practices has a positive but insignificant effect on sustainable livelihoods of dairy farmers in Githunguri Sub County in a way that practices in environmental conservation increases the levels of sustainable livelihoods positively and significantly.

5.3 Recommendations

5.3.1 Policy Recommendations

The study provide recommendation to the impact investing firms to enhance and improve on microfinance products and services offered to dairy farmers since the practice bears a positive and significant effects on the level of sustainable livelihood of dairy farmers in Githunguri Sub County. These can be achieved through practices such as provision of loans to farmers with favorable repayment terms, provision of insurance products that guarantee compensation in case of eventuality, and providing financial literacy and microfinance products trainings that contribute to enhancing production levels.

The study further provide recommendation to the impact investing firms to enhance and improve on contract farming practices since the practice bears a positive and significant effects on the level of sustainable livelihood of dairy farmers in Githunguri Sub County. These can be achieved through practices such as of supplying farmers with food supplements, milking machines, and determining the quality of produce to be produced and the price.

The study further provide recommendation to the impact investing firms to enhance and improve environmental conservation practices since the practice bears a positive though insignificant effects on the level of sustainable livelihood of dairy farmers in Githunguri Sub County. These can be achieved through practices such as advocating for dairy farming activities that support environmental conservation, providing guidelines on the best ways of storing manure, managing nutrients, and tilling land, providing environmental conservation guidelines to reduce environmental pollution and wastage which increases production.

5.3.2 Recommendations for Further Research

The context of the current study was in dairy farmers operating in Githunguri Sub County. Further research is

recommended on the effect of impact investing on sustainable livelihoods of other sectors of the economy such as energy sector, livestock sector, health sector among related non-dairy farming sector. Further, the study further established that impact investing practices (microfinance products, contract farming and environmental conservation practices) account for 55.2% of variations in sustainable livelihood of dairy farmers in Githunguri Sub County. The study thus recommends further research on other impact investing practices not researched in the current study and that account for 44.8% as was established by the regression results. Further research is also recommended in other counties as a way of validating this study and establishing whether the findings can be replicated across all County governments in Kenya.

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