

**INFLUENCE OF STUDENTS' PARTICIPATION IN YOUNG FARMERS' CLUBS
ON PERFORMANCE IN AND ATTITUDE TOWARDS AGRICULTURE IN
SECONDARY SCHOOLS IN SUBA SUB-COUNTY, KENYA**

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**A Thesis Submitted to the Graduate School in Partial Fulfilment of the
Requirements for the Award of the Degree of Master of Science in
Agricultural Education**

EGERTON UNIVERSITY

OCTOBER, 2025

DECLARATION AND RECOMMENDATION

Declaration

This thesis is my original work and has not been submitted for any award of a degree or diploma in this or any other University.

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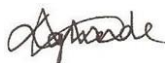
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Recommendation

This thesis has been submitted for examination with our approval as University supervisors.

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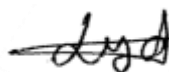
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DEDICATION

This thesis is dedicated to my parents, Ezekiel Muok and Esther Aketch Muok for their love, prayers, and support as I pursued my Master's program.

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ABSTRACT

Kenya's economic growth is primarily driven by agriculture. Setting up Young Farmers' Clubs (YFCs) in secondary schools is one way of attracting young people in agriculture as well as developing their production skills. The level of participation in YFCs is likely to influence the students' performance as well as their attitude towards agriculture. The purpose of this research was to ascertain how students' involvement in Young Farmers' Clubs influence their performance in agriculture and attitude towards the subject in secondary schools in Suba Sub-County. The research employed cross-sectional survey design targeting 628 Form Three students taking agriculture in public secondary schools in Suba Sub-County. The data was collected from an accessible population of 286 Form Three agriculture students who are also members of Young Farmers' Clubs in 37 public secondary schools in Suba. A sample size of 126 respondents was obtained through stratified random sampling. Nassiuma, (2000) formula was applied to obtain the sample size. Respondents were allocated across the strata according to school categories i.e.; one national school, two extra county schools, two county schools and three sub- county schools giving a total of eight schools. Data was collected using semi-structured questionnaires. The instrument's validity was assessed by specialists in agricultural education and extension from Egerton University. Reliability was established through a pilot testing involving 30 agriculture students in five secondary schools in neighbouring Nyatike Sub-County. Cronbach alpha coefficient was used to assess the instrument's reliability where a coefficient of 0.817 was computed and taken as satisfactory. SPSS version 25 was used for data cleaning, coding and analysis. The hypotheses were examined at 5% significance level using ordered logistic regression analysis. This study found that Young Farmers' Clubs are accorded with key school facilities such as farm and access to the library. Young Farmers' Clubs perform a variety of activities, ranging from crop production (e.g. vegetable growing and tree planting) to livestock keeping (e.g. rearing of cattle and sheep). The study findings revealed that students' performance and attitude towards agriculture are positively influenced by participation in Young Farmers' Clubs. This study recommends that students' participation in Young Farmers' Clubs activities could be encouraged in all secondary schools as a way of augmenting students' performance in agriculture and improving their attitude towards the subject. This can be done by providing adequate time for YFC's activities. In addition, the necessary facilities should be made available so that their involvement is worthwhile.

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LIST OF ABBREVIATIONS AND ACRONYMS

4H	Head, Heart, Hands, and Health
ASK	Agricultural Society of Kenya
AY	Advancing Youth
CBE	Competency- Based Education
DFYFC	Dominion Federation of Young Farmers' Clubs
EAA & HS	East African Agricultural and Horticultural Society
ELT	Experiential Learning Theory
FFA	Future Farmers of America
GDP	Gross Domestic Product
MOFA	Ministry of Food and Agriculture
NACOSTI	National Commission for Science, Technology, and Innovation
SAE	Supervised Agricultural Experience
SPSS	Statistical Package for the Social Sciences.
TZ	Tanzania
USA	United States of America
UK	United Kingdom
YFC	Young Farmers Clubs
YFCK	Young Farmers Clubs of Kenya
YIAP	Youth in Agriculture Program

CHAPTER ONE

INTRODUCTION

1.1 Background Information

Agricultural activities appear to be supported by many western and developing nations to mobilize youth for national development (Geza et al., 2021). The integration of such activities into agricultural lessons ensures that agricultural educators prepare learners who value agriculture and respond to the needs associated with the increase in demand based of consumers (Boone & Boone, 2009). Youth engagement in agricultural production via activities has been known to contribute largely to the empowerment of citizens and agricultural growth in Denmark, Great Britain, the Netherlands, the United States and Germany (Du et al., 2010). Even though agriculture is crucial to economic growth, there is still a negative attitude towards agriculture among the youth (Giuliani, 2017). Significant efforts have been made to enhance agricultural production, which has seen the introduction of agriculture into the school curriculum in several nations, such as the United Kingdom (UK) in 1908 (Cheesbrough, 1966), the United States (US) in 1917 (Conner et al., 2017), Tanzania (TZ) in 1974 (Tesha, 2018) and Kenya in 1959 (Konyango & Asienyo, 2015).

Young Farmers' Clubs (YFCs) enable learners to view agriculture as a reputable career from which individuals establish a decent means of living and not an avenue for condemning practitioners to poverty (Mukembo et al., 2014). In most developed nations, YFCs are well-established and active organizations as demonstrated by the Dominion Federation of Young Farmers' Clubs in New Zealand. This program has had an immense contribution to the establishment of YFCs throughout New Zealand (National 4-H, 2012). Canada implemented a 4H (Head, Heart, Hands, and Health) intervention that broadcast data on novel farming techniques and maintained research stations, research institutions, and experimental farms across the country. In Wales and England, YFCs operations comprise agriculture, community volunteering, athletics, and social and environmental activities (Mukembo, 2013). In the European Union's rural policies, frantic efforts have been made to support bills that aim to make farming appealing to new people, especially in the recent past (Kassam, et al., 2009). In the USA, three main areas form the component of agricultural education curriculum. These include; Supervised Agricultural Experience (SAE), classroom instruction, and involvement in National Future Farmers of America (FFA) (Romberger, 2019).

Youth in Agriculture Program (YIAP) in Ghana aims to inspire the youth to recognize farming as a commercial venture, thereby encouraging them to take it up as a lifelong

vocation (MOFA, 2014). The YIAP has the role of encouraging the youth to view up farming and other related natural processes as a lifelong vocation through the provision of tractor services and agro-inputs. The primary aim of YIAP is to make the youth to embrace farming as a viable commercial enterprise, generating recognizable income to meet farmers' domestic and personal requirements and to improve the standard of living of the youth through improved income (MOFA, 2013). In Nigeria, the Young Farmers' Club is an organization in which young people (9–20 years) are encouraged to learn about better farming and homemaking. The members are under the guidance of the agriculture teachers, agricultural extension personnel and local volunteer leaders (Adebo & Sekumade, 2013). In Tanzania, the youth offer a chance for increased economic development by being involved in horticultural farming (URT, 2013).

Agriculture contributes significantly to Kenya's economy. It directly accounts for 26% of the nation's Gross Domestic Product (GDP) and 27% indirectly via connections with distribution, manufacturing, and areas related to service production (FAO, 2020). As a means of enhancing agricultural production and sustainability, the Kenyan government has integrated YFCs programs into secondary school agricultural education. Zossou et al. (2020) ascertain that practical activities contribute immensely to the effectiveness of teaching agriculture. Mukembo et al. (2014) goes on to say that, inadequate exposure to agriculture in secondary schools may lead to non-accomplishment of lifelong abilities, poor living standards, and ultimately a reduction in agricultural production and poor performance in agriculture, which might adversely affect the nation's economic growth. This study aimed to address the issue of performance in agriculture and attitude towards the subject by focusing on influence of participation in Young Farmers' Clubs activities among agriculture students in Suba Sub-County, Kenya.

Suba Sub-County is among the Eight Sub-Counties in Homa-Bay County. It borders Nyatike Sub-County to the East and Mbita Sub-County to the West. The Sub-County has 37 registered secondary schools in which agriculture is compulsory from Form 1 to Form 2. The general performance in agriculture in the Sub-County is below average compared to other subjects (Suba Education Report, 2025). The results presented in Table 1 show that the mean score attained in agriculture stands at D+ (plus) from the year 2021-2024.

Table 1

Mean Scores attained in different Subjects in the Kenya Certificate of Secondary Education from 2021-2024 in Suba Sub-County

Subject	Year (2021) Mean Score	Year(2022) Mean Score	Year(2023) Mean Score	Year(2024) Mean Score
Mathematics	2.20	2.88	2.61	3.35
English	3.90	2.92	3.08	4.69
Kiswahili	4.08	4.90	4.00	5.23
Chemistry	3.55	2.07	2.90	4.60
Biology	2.70	3.63	3.87	4.84
Geography	6.32	7.00	6.80	7.20
Agriculture	2.88	3.70	3.01	4.74
CRE	5.24	5.68	6.00	6.88
Business Studies	4.00	4.75	4.09	4.90

Source: Suba Sub-County Director's Office (Feb 2025).

The goal of the study was to ascertain how students' involvement in YFCs influence their performance in agriculture and attitude towards the subject in secondary schools in Suba Sub-County.

1.2 Statement of the Problem

Agriculture remains the key driver of Kenya's economy and is expected to attract and develop young people with production and technical skills. Setting up of Young Farmers' Clubs in secondary schools is one way of attracting young people to agriculture as well as developing their agricultural skills. Despite the introduction of YFCs in secondary schools, the performance in agriculture is below average compared to other subjects, especially in Suba Sub-County. Current data indicates that only 46% of students in the Sub-County participate in Young Farmers' Clubs activities. The level of participation in YFCs is likely to influence the students' performance as well as their attitude towards agriculture. Related studies have not clearly shown how students' participation in YFCs influences performance in agriculture and attitude towards the subject. This is the gap that this study seeks to address.

1.3. Purpose of the Study

The purpose of this study was to determine the influence of students' participation in YFCs on performance in agriculture and attitude towards the subject in secondary schools in Suba Sub-County, Kenya.

1.4 Objectives of the Study

The study was guided by the following objectives;

- i. To document the status of the Young Farmers' Clubs in secondary schools in Suba Sub-County.
- ii. To document the activities of the Young Farmers' Clubs in secondary schools in Suba Sub-County.
- iii. To determine the influence of students' participation in the Young Farmers' Clubs on performance in agriculture in secondary schools in Suba Sub-County.
- iv. To determine the influence of students' participation in the Young Farmers' Clubs on attitude towards agriculture in secondary schools in Suba Sub-County.

1.5 Research Questions and Hypotheses

The study was directed by the following key research questions and hypotheses.

1.5.1 Research Questions

- i. What is the status of the Young Farmers' Clubs in secondary schools in Suba Sub-County?
- ii. What are the activities of the Young Farmers' Clubs in secondary schools in Suba Sub-County?

1.5.2 Research Hypotheses

The study was guided by the following null hypotheses

H₀₁: Participation in the Young Farmers' Clubs has no statistically significant influence on students' performance in agriculture in secondary schools in Suba Sub-County.

H₀₂: Participation in the Young Farmers' Clubs has no statistically significant influence on students' attitudes towards agriculture in secondary schools in Suba Sub-County.

1.6 Significance of the Study

The study findings may prove useful to agriculture students as it may contribute to their performance in agriculture and attitude towards the subject. The opportunity to work on a school farm may equip them with experience that would enable them to develop a positive attitude towards agriculture. This may lead to a better understanding of agriculture.

Through this study, agriculture teachers could benefit as they become aware of the significance of including the concepts of Young Farmers' Clubs activities in the teaching of agriculture as prescribed in the syllabus thus improving performance in agriculture and attitude towards the subject.

The choice of Suba Sub-County as the location of this study was justified by its low performance in agriculture compared to other disciplines. Therefore, the study will provide specific insights that can inform targeted interventions in Suba.

1.7 Scope of the Study

The study was limited to Suba Sub-County. The study involved public secondary schools that offered agriculture and had the Young Farmers' Clubs. The study focused on Form Three students taking agriculture based on the fact that at this stage, students have already chosen their subjects. The research centered on participation in YFCs as the independent variable and performance in agriculture and attitude towards the subject as the dependent variable.

1.8 Assumptions of the Study

The study had four assumptions:

- i. All participants had adequate knowledge of the YFCs activities in schools.
- ii. The YFCs programs had been implemented and executed uniformly in secondary schools.
- iii. Participants would provide accurate and honest information.
- iv. There was a causal relationship between participation in the Young Farmers' Clubs and students' performance in agriculture and attitude towards the subject.

1.9 Limitations of the Study

Several limitations were anticipated in the research process.

- i. Survey questionnaires were employed as the primary technique for collecting data; as such, it was likely that most of the questionnaire items were closed-ended due to the structured nature of the tool. Thus, the participants were not allowed to give additional views regarding the specific question.
- ii. Because the research area was so large, not all students were included; nevertheless, an appropriate sample size and sampling procedure were employed to ensure the information collected was representative.

1.10 Definition of Terms

Agricultural Education: This is the intervention/program of instruction about agriculture and associated subjects. It takes into consideration animal and plant production, soil science, horticulture, forestry, mechanics, agribusiness, and economics (Gallai et al., 2009). In this study, it refers to the teaching on the production of crops and livestock with the aim of equipping learners for employment in the agriculture sector.

Attitude: It is the way of thinking or feeling about a phenomenon (Edwards, 2017). In this study, it refers to the learners' expressive view point on agriculture, activated by appropriate stimuli derived from the activities of YFCs. It was determined using a Likert scale which ranged between 1–5 where Positive attitude ranged between four and five while a negative attitude ranged between one and two with three being neutral.

Career: This is time-extended work arising from a purposeful pattern of life through work that an individual undertakes (Neal & Walters, 2008). In this study, it refers to the agriculture-related jobs available to learners upon excellent performance in agriculture.

Co-Curricular Activities: A sequence of activities or processes associated with the school system, which aid of bringing about the development of learners in all spheres, outside the classroom for their educational attainment (Rahman et al., 2017). In this study, it refers to the activities of YFCs that equip learners with practical concepts of agriculture.

Participation: It is the action of taking part in an activity (Dictionary.com, 2023). In this study, it refers to students' involvement in the activities carried out by Young Farmers' Clubs (tree planting, crop production, livestock production and symposia) to improve their performance in agriculture and attitude towards the subject. It was measured by the level of involvement in YFCs activities that is low, average or high as per the index.

Performance: This is the academic achievement in a subject by a student (Oxford Learner's Dictionary, 2023). In this study, performance refers to the academic achievement in agriculture. It was measured by the scores attained in students' assessment test as i.e. fail, average or good.

Practical: It is the act of doing something rather than just writing it (Oxford Advanced Learner's Dictionary, 2023). In this study, it involves hands-on activities that usually elucidate theoretical concepts in agricultural instruction.

Skill: It is the ability to do something well because of training or practice (Kolb, 2012). In this study, it refers to the potential of the learners to master the practical concepts of YFCs to execute a task with predetermined outcomes as well as achieving better results in agriculture.

Status: It refers to the position of something compared to others in society regarding social and professional standing (Dictionary.com, 2023). In this study, it relates to the functions of Clubs for young farmers in secondary schools regarding intentions, membership, and participation in various YFCs activities geared towards improving performance and changing learners' attitude towards agriculture.

Young Farmers' Club: It is an organized group of young people who pool resources to develop farming skills within the society (Njoroge et al., 2014). In this study, it refers to an organized group of students doing agriculture, usually aged between 13 and 26 years, as a framework of developing farming practices within a secondary school setup.

Youth: It is a time when one is young and usually the time between childhood and adulthood (Afande et al., 2015). In this study, it refers to secondary school students who are within the age bracket of 13 and 26 years and usually take part in the practical activities of YFCs.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature is reviewed in this chapter under the following sub headings; History of Agricultural Education in Kenya, Youth Involvement in Agriculture, Role of YFCs, Young Farmers' Clubs activities, Participation in Young Farmers' Clubs and Performance in Agriculture, Participation in Young Farmers' Clubs and Students' attitude towards agriculture. The theoretical and conceptual frame works supporting the study are discussed in the section's conclusion.

2.2 History of Agricultural Education

Agricultural Education has its primary roots in the colonial era where it was considered among other technical subjects, the most appropriate subject to be taught to the Africans (Fafunwa, 2022). The Phelps-Stokes Commission (1924) noted that the Africans relied more on agriculture than any other people in the world. As a result, agricultural education should correspondingly receive significant consideration in the school plans. Agricultural Education is majorly undertaken to enable students to venture into agricultural activities and prepare them for future employment in the agricultural sector (Roy, 2023). Agricultural education experienced a significant growth in the United States in the 19th century. In 1862, the department of agriculture was created by the United States Congress to gather and diffuse agricultural knowledge. The wide spread of agricultural education was realized after 1900 in relation to requirement for technical knowledge and practical skills in using modern agricultural techniques (Phipps et al., 2008). Great Britain implemented 4-H, a youth program that resembles YFC. Food and Agricultural Organisation of the United Nations trains people in new farming techniques. Notably, united States play a major role in providing technical support to farmers in developing countries through Agency for International Development (AID).

Agricultural education began in Kenya in 1960. Robert Maxwell tested an agricultural education program in Chavakali, Kenya in 1960. Three goals were the program's main focus. These include: making rural secondary education in Kenya more practical and relevant to the societal needs; developing demonstration area and generating passion and willingness to work among the students in relation to agricultural courses and future life of students. This forms the basis of hands-on activities in agricultural education. The subject name at that time

was vocational agriculture since the subject shaped students with a lot of technical knowledge. This subject aimed to produce graduates who were skilled for employment in agriculture. At first, the pilot project encountered a lot of resistance since agriculture was seen as an occupation for the uneducated (FAO, 2006). This occupation was also viewed as a dirty job (Hirschi, 2010). In 1985, primary and secondary schools were required to teach agriculture. This is due to the wake of development in colonial education (Njoroge et al., 2014; Republic of Kenya, 1981).

The Ominde Commission (M.O.E, 1964) recommended students' active participation in agricultural activities with the aim of preparing them for further studies in agriculture. National development plans (Kenya 1960, 1970, 1974, 1979) made recommendations for the improvement of agricultural education by having more secondary schools teaching agriculture. The provision of agricultural education and training through schools, colleges and extension education including youth clubs was seen as one way in which agricultural development could have been purposefully accelerated (Mosher, 1971).

In order to provide students with knowledge and cultivate a favorable attitude towards agriculture, the subject was incorporated into school curricula (Kenya Govt., 1988). Under the 8-4-4 educational system, the subject was taught from class 4 through class 8. Because of the large quantity of students, It was vital to instill in them a greater comprehension and appreciation of agriculture at a young age while they were enrolled in primary schools. The teaching of agriculture requires sufficient land to set up field demonstrations for instructional purposes. However, most schools could not develop their land due to lack of resources. Therefore, majority of institutions taught agriculture in a theoretical manner without a great deal of hands-on experience with actual farm conditions. As a result, cost sharing was introduced, Kamunge report's recommendations in 1988. (Kenyan Govt, 1988).

Mackay study emphasized, among other things, the necessity of making students self-sufficient after graduation by providing students with a comprehensive and practice-focused curriculum. However, Forms 1 and 2 agriculture was required in secondary schools. According to Ngugi, (2002), the outcome of the 8-4-4 system on facilities was far significant, leading to increased candidature in agriculture to a point where it exhausted school resources. In 1989, more than 2000 schools had over 100,000 students sitting for agriculture. This was when the first 8-4-4 Kenya Certificate of Secondary Education examination was held. The increased candidature led to the following challenges;

- i. Shortage of teachers trained in the agriculture.

- ii. Insufficient workshops and equipment.
- iii. Lack of school farms.

Given the challenges, curriculum was revised as follows.

- i. Elimination of practical topics that required the use of workshops.
- ii. Incorporation of topics that could be learnt through observation.
- iii. Elimination of agriculture as a compulsory subject in junior forms.

According to Kenyan Government in 1988;

Agriculture was tested in the following three areas;

- i. A theoretical paper (443/1) consisting of general agriculture, crop production, agricultural economics, and land and water management.
- ii. A theoretical paper (443/2) consisting of livestock husbandry and agricultural engineering.
- iii. A project involving actual production.

The government of Kenya has been administering the 8-4-4 (8 years in primary, 4 years in secondary and 4 years in university) system of education over the years. Competency- Based Education (CBE) has been gradually taking over since the year 2017 (Amutabi, 2021). Competency- Based Education has been embedded in agricultural education, however, it depends on the preparedness of teachers, availability of instructional resources e.g. school farms and adoption of active, competency aligned pedagogies. Competency-Based Education emphasizes on in-service training of agriculture educators, promoting project based learning approach and access to ICT and hands-on learning platforms in schools. The current Kenya Basic Education Curriculum Framework is the outcome of extensive stakeholder engagement, a needs assessment study, and discussions from a national curricula reform conference and workshops as well as several benchmarking. This framework is based on educational components of the Kenya Vision 2030 on the provision of high-standard trained skills for employment (Ngome, 2012). Through this, the government aims at setting a niche of education focusing more on science and technology-based programs. These programs are important in the view that they can cope with technological transformations thus providing employment opportunities at globally competitive job market.

The framework has been built to realize the current changes in the Kenyan Education system,

as the country comes to terms with the new education system. The structure is as follows: 2 years of pre-primary, 3 years of lower primary, and 3 years of upper primary, 3 junior school, 3 years of senior secondary, and 3 years of tertiary education. The pre-primary education is comprised of 2 years i.e., pre-primary 1 and pre-primary 2 for children in the age bracket of 4-5 years. In this category, the subjects offered include, language activities, mathematical activities, environmental activities, psychomotor and creative activities as well as religious education activities. Digital literacy is applicable in the teaching and learning of all the subjects. Agriculture has been reworked in the education system; specialization in agriculture has been captured in the early stages (Republic of Kenya, 2017a). Young Farmers' Clubs serve as a role model in schools. Their active engagement in modern sustainable agriculture shows students that agriculture is a rewarding career. Learners are actively involved in outreach programs, farm visits and demonstrations which enhance learning (Orina, W.A. 2020).

2.3 Youth Involvement in Agriculture

Youth is defined based on age brackets (Afande et al., 2015). The Ministry of Youth, Sports and Culture (2004) in Ethiopia, places youth in a bracket of 15 – 29 years. The National Youth Policy (2010) in Ghana, classifies youth in a bracket of 15-35 years. Kenya's National Youth Policy (2002) puts the youth in the bracket of 18 – 34 years. Though agriculture has rewarding opportunities, youth tend to withdraw from this sector because they consider it as dirty (Mangal, 2009). They prefer migrating to urban areas to look for white-collar jobs. The strength of agriculture to offer employment for the youth is recognized globally. The youth tend to shy away from farming yet they are the most capable group as far as agriculture is concerned (Chipfupa, & Tagwi, 2021). The youth provide labor and donation of materials necessary for the establishment of agricultural projects. Such materials include local seeds, vegetable seedlings, tree seedlings and farm tools for the establishment of various projects. They attend meetings and exchange programs to practice the knowledge gained (Daudu et al., 2009). The youth work in their household farms, or offer their labor for hire. Involving youth in agricultural production could transform the sector and improve food security to match the growing population (Daudu et al., 2009). Young farmers are expected to replace the aging producers (Lewa & Ndungu, 2011). Older farmers are becoming less energetic and have the challenge of adopting new farming technologies. Fewer young people are getting involved in agriculture, which is a concern, despite its importance (Mibey, 2015). Lack of dedication, funding, ignorance of basic farming practices, and low returns on

agricultural investments are the main issues preventing youth from taking part in agricultural activities (Laban et al., 2021).

2.4 Role of Young Farmers' Clubs

Young Farmers' Clubs (YFCs) help learners to view agriculture as an important profession from which individuals can establish a decent livelihood and not an avenue for condemning practitioners to poverty (Mukembo et al., 2014). In New Zealand, the Dominion Federation of Young Farmers' Clubs has made an immense contribution to the establishment of YFCs throughout New Zealand (Marczyk et al., 2005). Canada implemented a 4-H intervention that broadcasts data on novel farming techniques and maintains research stations, research institutions, and experimental farms across the country (National 4-H, 2012). In Wales and England, YFCs operations comprise agriculture, community volunteering, athletics, social and environmental activities (Mukembo, 2013). High school agricultural education in USA focuses on three major areas i.e. Supervised Agricultural Experience (SAE), classroom instruction, and active participation in the National Future Farmers of America (FFA) (Romberger, 2019). This has equipped the youth with adequate agricultural skills.

The Youth in Agriculture Program (YIAP) in Ghana, is a program set to encourage young people to recognize and embrace agriculture as a profitable enterprise, thereby venturing in farming as a lifelong career (MOFA, 2013). YIAP has the responsibility of making the youth accept farming as a commercial venture, generate appreciable income to meet farmer's domestic and personal requirements and improve the standard of livelihood of the youth through improved income (MOFA, 2013). Youths are encouraged to acquire knowledge on better farming methods and homemaking skills in Nigeria. The members are always under the guidance of teachers, extension officers and local volunteers (Adebo, 2013). The clubs are run by members and provide young people with an opportunity to travel abroad for agricultural competitions. In Tanzania, the Advancing Youth (AY) program aims to train the youth to offer a chance for increased economic development by being involved in horticultural farming (URT, 2013).

Participation of youth in agriculture programs has made a significant contribution to development and empowering citizens (Daudu et al., 2009). According to Mangal (2009), young people perceive farming as a physically taxing, labor-intensive, filthy work that provides no sense of self-worth. Young Farmers' Clubs can help young people perceive agriculture as a profitable career vocation that allows individuals to earn a respectable living

rather than one that condemns its practitioners to poverty (Olujide, 2008). The organizations that are involved in learning of agriculture include the National Future Farmers of America Organization (FFA), 4-H Clubs, Youth in Agriculture Program (YIAP), Advancing Youth (AY) program and YFCs. The National FFA Organization inducts students' leadership on skills and is designed to assist members become useful citizens in the agricultural sector (Texas Young Farmers, 2007). The FFA is an integral part of the program of agricultural education in many high schools; each student has a Supervised Agricultural Experience program (SAE). Learners take part in many conferences and conventions to develop leadership skills, citizenship, patriotism and excellence in field of agriculture (Phipps et al., 2008).

The 4-H Club is a youth development program that inducts children about the sciences, leadership skills and research. It has over 6 million members globally and is the largest youth development organization in the United States. Members of 4-H use practical based learning approach to reach their goals and also assist their communities (National 4-H, 2012). According to Adebo (2013), a special characteristic of the 4-H Club is learning by doing. It is an action based program where participants observe others study and experiment, but they 'don't practice' by themselves.

In Kenya, YFCK was formed in 1948. It was largely sponsored by Sir Alex Ward with the aim of preparing young people to be efficient future farmers. Activities of Clubs were confined to tree planting, organizing camps and conducting exchange programs with Young Farmers' Clubs of the United Kingdom. The Clubs provide youth with a platform to explore agriculture as a career option, while fostering hands-on skills for sustainable growth and independence. The formation of YFCK in secondary schools stimulates the passion of youth in agriculture. This is done by exposing students to be innovative in agricultural concepts and diffuse agricultural information through slide shows and interactive online programs in order to equip them with modern farming techniques and technical proficiency. Encouraging teenagers in farming secures the future of the nation as well as the world at large. YFCK was to help the youth develop better farming ideas , provide social and recreational activities, help give the necessary dignity to agriculture as an occupation and develop good and competent agricultural leadership. The YFCK are associations whose member's ages are between 15-26 years and drawn from secondary schools and tertiary institutions. These clubs function under the aegis of the Agricultural Society of Kenya (ASK), whose primary purpose is to check the activities for administrative reasons (Njega et. al, 2024).

According to Lewa and Ndung'u (2011), the objectives of YFCK include the following:

- i. To encourage youth engagement in agriculture.
- ii. To cultivate a sense of self-reliance and individual responsibility among the youth.
- iii. To expand the movement by instilling in people agricultural knowledge and organization of competitive exhibitions.
- iv. To promote active membership participation in clubs.
- v. To train youth on modern farming techniques.
- vi. To conduct exchange visits for agricultural practices.
- vii. To arrange income generating projects for the clubs.
- viii. To encourage members to adjust to better farming methods and promote good community relations.

In 1960s, the Kenyan Government added agricultural education in secondary school curricula to acquaint learners with modern agricultural methods, career options and as a means of stimulating students' interest in farming (Mukembo et al., 2015). In 1985, agriculture was introduced as a mandatory subject in primary and secondary schools to make the youth self-reliant. This follows recommendations by the Mackay Commission. School agriculture is considered as an effort to instill values, attitude, knowledge as well as practical skills in learners, which are required to improve agricultural production (Nyangau et al., 2011).

According to Mangal (2009) and Mutambo (2011), the roles of Young Farmers' Clubs are as follows:

- i) Promote agriculture among the youth. This, the club can do by undertaking income-generating projects in various agriculture-related activities such as rabbit keeping, dairy farming, beef cattle rearing, poultry keeping, goat rearing, beekeeping, pig keeping, fish farming, tree nurseries and vegetable farming.
- ii) Act as disseminators of the latest agricultural technology and innovations to the farmers. Given that, the students especially in rural areas depend on farming to generate income, they should teach their parents on the latest farming methods and make them take it as a business.
- iii) Research the cost-effective methods of farming. Most schools have internet facilities

hence; the young farmers can access information and use it to improve their farms.

- iv) Write articles on agriculture-related topics and post them on their website, or publish them in the local newspaper, Kenya Farmers Magazine or any agricultural-based journal.
- v) Organized tree planting days at the school with the support of the administration. They should therefore involve the entire school to sensitize them on the need to grow trees and to conserve the environment, in order to succeed.
- vi) Create leaders for the school's student council. The clubs offer the students a chance to demonstrate their leadership skills or practice leadership.
- vii) Promote national integration and cohesion through participation in national camps and rallies. These also offer opportunities for young farmers across the republic to interact, share experiences, and hence appreciate cultural diversity among our people.
- viii) Train students in the staging of exhibitions as done by the Agricultural Society of Kenya at the school level, branch and national levels.
- ix) Continuously conduct a recruitment drive to increase its membership country-wide.

According to ASK (2020), the Agricultural Society of Kenya was founded in December 1901 under East African Agricultural and Horticultural Society (EAA & HS). The main goal was to promote agricultural expansion based on European Settlement. This was the brainchild of John Ainsworth. He believed that the organization was to be a lucrative institution in the struggle to establish and maintain an agricultural export commodity economy. The shows were very beneficial shop windows for prospective buyers both locally and internationally. Nairobi therefore was made the Society's headquarter with the first performance held at the Jeevanjee Gardens and market in 1902.

2.5 Young Farmers' Clubs Activities in Schools

According to Dissanayake et al. (2013), the findings revealed that, activities such as livestock production, crop production, symposia, and tree planting were associated with YFCs. The findings by Edwards (2017) also supported these findings by associating tree planting, crop production, and livestock production with YFCs. Researchers have also made significant efforts to investigate the YFCs activities that are often executed in schools.

Mukembo (2013) established that, learners majorly involve themselves in YFCK activities to improve their academic performance, acquire life skills, and for personal interests. According to Van den Berg and Jiggins (2007), students who engage in FFA operations often acquire leadership skills in an agricultural environment, experience personal growth, build character, boost self-confidence and self-reliance, and have healthy lifestyles. Njoroge et al. (2014) established that students in schools that were engaged in YCFK activities performed better in agriculture than learners in schools that were not involved in such activities. Mbanaso et al. (2013), also support the findings of Mukembo (2013) and Njoroge et al. (2014) that, students who are members of the YFCs programs perform better in agriculture than learners who are not members of the YFCs. In a study conducted by Van den Berg and Jiggins (2007), it was established that tree planting was the dominant activity associated with the YFCs.

Mbanaso et al. (2013) add that, the absence of equipment and negative attitude towards agriculture by the youth also limit the engagement of learners in YFCs operations. The findings of Dissanayake et al. (2013) also attribute that, lack of involvement of students in YFCs operations lead to a negative attitude towards agriculture. Mwangangi (2012) found that adverse weather conditions and term dates limit the involvement of students in YFCs activities. According to Edwards (2017), the engagement of learners in YFCs activities is often limited by lack of adequate facilities/equipment, lack of financial resources, and negative attitude towards agriculture by the youth.

According to Njoroge et al. (2014), the primary YFCs activities that are executed in secondary schools are tree planting, livestock husbandry, crop production, educational trips, symposia, and YFCs national rallies. Several factors limit the involvement of learners in certain, if not all YFCs activities. Such factors include the term dates and weather conditions which influence the annual involvement of students in YFCs activities such as crop production, tree planting, YFCK national rallies, and ASK (Agricultural Society of Kenya) exhibitions. For instance, learners often focus on the production of crops during the rainy season. Activities such as educational trips and ASK exhibitions were noted to register high levels of student involvement, as they are not significantly affected by weather conditions. Lack of resources ,pests and diseases have also been established to limit the involvement of learners in YFCs operations. Among the YFCK activities identified by Njoroge et al., (2014), livestock production was established to be the most common or prominent activity of YFCs in secondary schools.

2.6 Participation in Young Farmers' Clubs and Performance in Agriculture

According to Dissanayake et al. (2013), the performance of learners in agriculture improved with increased number of activities associated with the YFCs. The researchers added that students who were involved in YFCs activities were not only associated with high performance in agriculture but also developed a positive attitude towards the subject. In a study conducted by Njoroge et al. (2014), the researchers established that YFCs activities had a positive influence on the performance of learners in agriculture. Schools that had YFCs activities were associated with high performance. This performance was attributed to the exposure of students to practical activities via the Young Farmers' Clubs of Kenya (YFCK). The researchers also argued that secondary school learners' potential to comprehend, apply, and retain agricultural skills and knowledge taught increased when learning and teaching were executed practically through YFCK. Moreover, the researchers indicated that the better performance registered in agriculture relative to other subjects in the curriculum was attributed to its practical orientation. Njoroge et al. (2014) also noted that different YFCs activities have varying influences on the performance of learners in agriculture. For instance, livestock projects were noted to have the greatest influence on the performance of students in agriculture. This was followed by educational trips, crop production projects, and national agricultural rallies, ASK competitions, and tree planting respectively.

The outcomes of Koutsou et al. (2014) and Dissanayake et al. (2013) also confer with the findings of Njoroge et al. (2014) that the involvement of learners in YFCs activities results in an improved performance in agriculture. They found that most clubs members were likely to pursue further studies in agriculture due to improved performance. Their findings show that, in order to enhance academic performance, students primarily join YFCs.

2.7 Participation in Young Farmers' Clubs and Students' Attitude towards Agriculture

According Massoni, (2011), Students participate in numerous activities beyond official school curriculum which could favorably contribute to their future undertakings. Lunenburg (2010) stated that "extracurricular, co-curricular and non-classroom activities are important in learning. Non-classroom activities are learning experiences that occur outside the traditional classroom. They emphasize on the location and method of learning. These activities promote learning through real-life exposure and interaction. They include livestock rearing, field trips and farm visits. Extra-curricular activities on the other hand are those activities that are outside the academic curriculum but still contribute to personal, social and emotional

development of learners. They do not directly support classroom instruction but enrich learners' experiences. These activities focus on talents; leadership and team work e.g. public speaking, agricultural contests and national rallies.

Co-curricular activities on the other hand are the activities that directly support curriculum and are usually planned as an extension of classroom learning. They help students develop practical skills and competencies related to the subject. These activities are skilled oriented and often assessed. They majorly include crop production and animal production practices. Students participate in many activities including YFCs activities which contribute to their attitude towards agriculture (Massoni, 2011). These activities may include tree planting, symposia, crop production activities and livestock production activities. Such activities equip learners with skills to practice what has been learnt by providing the relevant experience in putting knowledge into practice outside formal classroom sessions (Lunenburg, 2010; Massoni, 2011).

The findings of Dissanayake et al. (2013) attribute that, students' lack of involvement in YFCs operations was largely due to a negative attitude towards agriculture. This negative perception was further reinforced by lack of adequate facilities. This shows that schools that had provided students adequate land for project work showed a positive attitude towards agriculture. It was noted that agriculture is a relatively easy subject to grasp, this influences students' perception and attitude towards it. Agriculture teachers therefore, should uphold the state of affairs by recognizing and rewarding students 'achievements wherever they excel in examinations. Parts of the yields or small tokens like exercise or textbooks may be given to students to motivate them. This motivation will help them to develop a favorable outlook on agriculture. According to Edwards (2017), attitude towards agriculture is attributed to by engagement of learners in YFCs activities, however, this can be limited by lack of adequate facilities/equipment and financial resources.

Williams and Hovorka (2013) recommended that participation in a range of YFCs activities enables learners to develop a positive attitude towards agriculture. Attracting youth to and retaining them in the agriculture sector remains a global challenge. Many developing countries such as Uganda are faced with the challenge of ensuring food security for their increasing population amidst a decline in youth participation in agriculture (Mukembo, 2013). Although the employment opportunities available in the sector continue to increase for graduates in agriculture, in many countries, few youth have embraced agricultural production as a career. These employment opportunities have made the youth develop a

positive attitude towards agriculture. Njoroge et al. (2014), ascertain that learners who actively take part in YFCs activities developed positive attitude towards agriculture.

2.8 Enhancing Participation in Young Farmers' Club Activities

Significant efforts have been made to investigate the mechanisms that can be put in place to make YFCs activities applicable for learning agriculture. According to Mwangangi (2012), the employment of reward mechanism ensures that students are attracted to educational programs such as YFCs. This goal can be accomplished by organizing competitions on YFCs activities and giving prizes to students who perform well in such events. Edwards (2017) also supports this argument by asserting that making educational programs fun contributes largely to the appeal of such programs to students. Apart from advocating for the integration of awards or competitions in YFC symposia, these researchers also recommend the introduction of fun activities such as agricultural education camps. Williams and Hovorka (2013) also recommended the delivery of a range of events and competitions to build and test the skills, attitude, and knowledge of members, as a suitable mechanism for enhancing the effectiveness of YFCs activities in learning agriculture.

According to Mbanaso et al. (2013), the provision of information, facilitation of training, and delivery of guidance to educators and learners also contribute significantly to the effectiveness of YFCs activities in the teaching of agriculture. Chaudhary and Asha (2015) state that creating a favorable environment for YFCs programs' execution by consulting with, taking views of, and listening to learners also contributes to the efficacy of the program in teaching agriculture. These researchers add that embracing the aspect of cooperation with other stakeholders also enhances the development of YFCs, which in turn makes its activities more effective for teaching agriculture. This goal can be accomplished by working actively with other organizations about the broader legislative, social, educational, and agricultural development, and representing the interests of students in the implementation and design of these dimensions. Pittaway et al. (2015) add that adequate measures should be targeted towards the identification and acquisition of financial resources to enhance the facilitation of YFCs activities.

Edwards (2017) advocates for the consolidation of additional activities in YFCs programs. Some of the activities that these researchers recommend are agricultural shows, charity and fundraising, agricultural trips, awards, volunteering opportunities, junior exchange, international exchange, and training seminars. Uricchio et al. (2013) also support this

argument by recommending the integration of activities such as stock judging, floral art, presentation/demonstration, photography, silage making and assessment, public speaking, and group debating. According to Dissanayake et al. (2013), the integration of these activities in the YFCs programs is significant in ensuring that the YFCs become more appealing to the youth/students and enhances ability to grant members memorable experiences.

2.9 Theoretical Framework

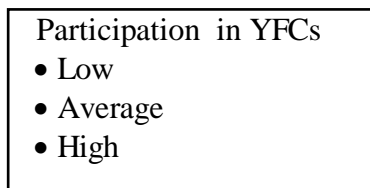
The research was guided by the Experiential Learning Theory (ELT) established by David Kolb (1984). The theory elaborates on the effect of learning by acting or doing. According to Kolb and Kolb (2012), the theory of experiential learning describes learning as a process where the creation of knowledge occurs via the change or transformation of experience. Kolb and Kolb emphasize that, the ELT was branded to stress the key role played by experience in the learning process. Kolb (2014) adds that, experiential learning theory operates and center on the principle that people learn best via experience. Experience often offers relevance to the process of education. Kolb and Kolb argue that an ounce of experience outweighs a multitude of theories, as the vitality and verifiability of the significance of any theory are dependent on experience.

Experiential Learning Theory (ELT) is highly relevant and applicable to the study of how involvement in Young Farmers' Clubs might affect students' performance in and attitude towards agriculture. Experiential Learning Theory places a strong emphasis on experiential learning and holds that experience is transformed into knowledge (Cunningham, 2021). Young Farmers' Clubs frequently offer practical learning experiences including planting, harvesting, and overseeing agricultural projects. Students get hands-on experience with agricultural methods through these activities. Students might create new thoughts or revise existing ones on agricultural issues through introspection and group projects. Through talks and workshops, the Young Farmers' Clubs may teach members about the science underlying agriculture or sustainable farming methods (Skaltsa et al., 2021). Students can use what they have learned to start their garden or create creative farming techniques, among other real-world applications. These activities strengthen their learning and problem-solving abilities, which are critical for agricultural success.

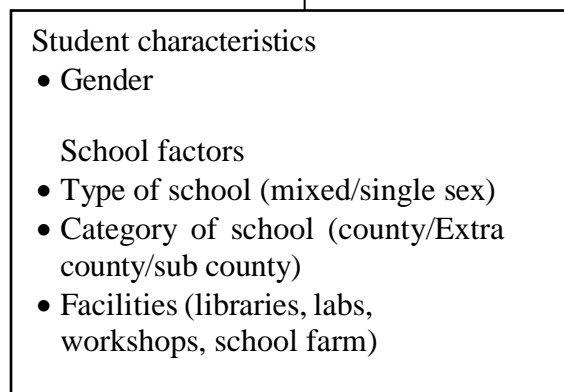
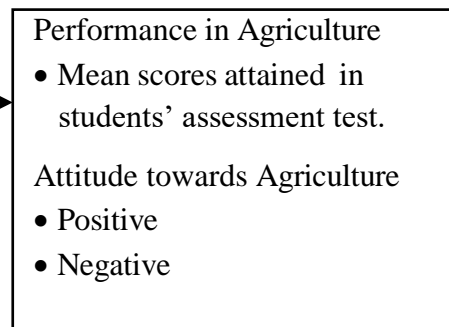
2.10 Conceptual Frame Work

The framework illustrates how participation in YFCs influences both performance in agriculture and attitude of students towards agriculture. The independent variable was participation in YFCs which was measured by the level of participation in livestock production activities (poultry rearing, rabbit keeping, cattle farming), crop production activities (growing of staples and vegetables), symposia, tree planting, national rallies, ASK (Agricultural Society of Kenya) exhibitions and educational trips. The dependent variables were performance in agriculture and attitude towards agriculture. Performance was measured by mean scores attained in students' assessment test while attitude was measured using a Likert Scale. The study's moderating variables are those that have an impact on how strongly independent and dependent variables are influenced. These variables include things connected to students, such gender, and those related to schools, like school type. These factors were looked at to see how they would affect the relationship that was being studied. In order to identify trends and variations among the categories, the study's final data were disaggregated appropriately.

Independent Variable



Dependent Variables



Moderating Variables

Figure 1: *Conceptual Framework Showing the Influence of Students' Participation in YFCs on Performance in Agriculture and Attitude towards the Subject*

Performance and attitude towards agriculture may be influenced by the type of the school. Different schools have varied resource allocations. National, Extra-County and county schools have good facilities such as school farms, libraries, laboratories and workshops which enhance practical learning in agriculture. Sub- County schools may lack these facilities leading to poorer engagement. Students who score highly in KCPE examination are always admitted to National schools and Extra-County county schools. These schools have better teaching resources and facilities for agriculture, thereby boosting their practical learning, exam performance and general attitude towards agriculture. Practical skills disciplines are always associated with the ability of boys thus the perception might affect performance of girls.

CHAPTER THREE

RESERACH METHODOLOGY

3.1 Introduction

This chapter presented the methodology that was employed in execution of the research. The chapter presents the research design, study location, target population, sampling procedure and sample size, instrumentation, data collection, and analysis.

3.2 Research Design

This study employed a cross-sectional survey research design to investigate the influence of students' participation in YFCs on performance in agriculture and attitude towards the subject in secondary schools in Suba Sub-County. According to Bryman (2012), a cross-sectional research design was employed to examine a single variable within different groups that were the same in all other aspects or characteristics. Fiona et al. (2014) add that studies that employ this design are founded on observations that occur in various groups at a given time. The design is not associated with any experimental procedure and does not involve the manipulation of any variable. Cross-sectional research design simply enables the researcher to record information, as opposed to engaging in any experimentation of the issue under investigation. The design also allows the illustration of the characteristics that occur among various categories of learners that participate in a study. Survey research seeks to obtain information regarding self-reported ideas about the respondents' feelings, opinions, attitudes and beliefs on the current situation in comparison with the influence of participation in YFCs.

3.3 Study Location

This study was carried out in Suba Sub County due to its low performance in agriculture. Suba Sub-County is among the eight Sub-Counties in Homa-Bay County, Kenya. It borders Nyatike Sub-County to the East and Mbita Sub-County to the west. It comprises three wards namely; Kaksingri, Gwassi North and Gwassi South. The headquarter is located at Magunga. The Sub-County is situated at an altitude range of 0-1500 masl. The Sub-County spans an area of 1435 km² and has a total population of 120,000 people. Farming is the major economic activity within the Sub-County. The Sub-County comprises 37 secondary schools. Gwassi North ward has 20 secondary schools, Kaksingri ward comprises nine secondary schools and Gwassi South has eight secondary schools. Single-gender schools are five in number while mixed-gender schools are 32 (Suba Education Report, 2016).

3.4 Target Population

The study focused on a target population of 628 Form Three students taking agriculture in public secondary schools in Suba Sub-County. This is because, in Form Three, a student would have chosen agriculture among the electives. The accessible population was 286 Form Three students who were members of the Young Farmers' Clubs.

3.5 Sampling Procedure and Sample Size

The accessible population of the study constituted 286 Form Three students who were members of YFCs. The researcher prepared a sampling frame with the help of head teachers in the selected schools within Suba Sub-County. The sampling frame contained details such as names of schools as well as names of students who were members of YFCs. Stratified random sampling technique was employed to get the study sample where school categories served as the strata. The respondents from each stratum were selected using Random sampling. Samples across the strata were distributed as follows; one national school, two extra county schools, two county schools and three sub county schools giving a total of eight schools. This stratified approach ensured that each category of schools was represented, reflecting the diversity of resources, student population and access to agricultural programs.

Sample size was calculated using the formula proposed by Nassiuma, (2000):

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

Where:

n = Sample size, N = Population,

C = Coefficient of variation, e = Standard error

Coefficient of variation=30% (this is allowed according to Nassiuma, (2025),

e = 0.02 and N=286

Therefore,

$$n = \frac{286 \times (0.30^2)}{0.30^2 + (286 - 1)0.02^2}$$

$$n = \frac{25.74}{0.20}$$

$$n = 126$$

Using the above formula, a sample of 126 Form Three students who were members of YFCs was selected for the study. Table 2 displays the distribution of respondents from different school categories.

Table 2

Distribution of Samples across School Categories

Category of School	Samples Across Categories
National	2
Extra county	29
County	50
Sub-County	45
Total	126

Data in the Table 2 shows that County and Sub-County schools dominate the Sub- County. This is because; these schools are widely distributed across the Sub-County to form the backbone of secondary education at the grassroots. Their dominance is reflected in the higher number of respondents drawn from them. This highlights their critical role in delivering accessible education to the majority of learners within local communities.

3.6 Instrumentation

Primary data was gathered by means of students' assessment test and a semi-structured questionnaire. The test covered all areas in the approved syllabus (Form One, Form Two work, and a bit of Form Three work). Semi-structured questionnaires were constructed based on the research objectives. The questionnaire consisted of both closed-ended and open-ended

questions. Closed-ended questions provided a basis for quantifying the data obtained. The open-ended ones provided useful information that was used in explaining the findings of the study. The questionnaire was structured into five sections. The first section was to gather demographic data of the respondents while other sections collected information related to the research questions under study. According to Bailey (2014), questionnaires present several benefits when used in studies including efficiency, limited time for data acquisition, permission for data gathering from a large/enormous sample, and cheapness. These benefits account for the researcher's selection of a questionnaire as the ideal research instrument.

3.6.1 Validity

Validity refers the degree to which an instrument fulfills the functions which it is intended to. According to Mugenda and Mugenda (2003), validity refers to how accurately the findings generated by data analysis represent the actual phenomenon being investigated. Experts from the Department of Agricultural Education and Extension of Egerton University were consulted to assess the concepts that the instrument was intended to measure and determine whether the items or indicators accurately represented the concepts of interest in order to ascertain both the face and the content validity of the instrument.

3.6.2 Reliability

Reliability of a research instrument is the capacity of a research equipment to produce consistent data after repeated trials (Kombo & Tromp, 2006; Kothari, 2004; Mugenda & Mugenda, 2003). The instrument was piloted using 30 (thirty) Form Three students taking agriculture and members of YFCs in five schools in neighboring Nyatike Sub-County. Stratified random sampling was employed to select the five (5) schools for the study based on categories i.e. National, Extra-county, County and Sub-county schools. Random sampling was used to select 30 respondents. Six (6) respondents per school were selected. According to Kathuri and Pals (1993), 20-30 cases are appropriate for pilot testing of instruments in survey studies. The reliability was assessed using Cronbach's alpha coefficient . Data from national rallies were excluded to avoid skewing the reliability coefficient, as these events had a significantly smaller number of participants. A reliability coefficient of 0.817 was computed after the adjustments and taken as satisfactory.

3.7 Data Collection Procedure

The Suba Sub-County education office was contacted and informed about the researcher's presence and to issue an introductory letter to be presented to various heads of sampled schools. The questionnaire was administered to the respondents to gather the relevant data in the Sub-County. The questionnaire was hand-delivered to YFCK members in each of the eight selected secondary schools in Suba Sub-County. The researcher first introduced himself to the respondents and explained the purpose of the study. The researcher went through the questionnaire together with the respondents to clarify issues that might have not been clear. Respondents were given an hour to complete the questionnaires and to sit for the assessment test. They were assured that the information provided through the questionnaires would be treated as confidential. Duly filled questionnaires and scripts were collected the same day.

3.8 Ethical Considerations

Ethical compliance was a critical component of the study given that the study involved the participation of secondary school students. The study adhered to several ethical standards to ensure integrity of research process and protection of participants. With the recommendation of the Egerton University Board of Postgraduate Studies (Graduate School), permission was granted by the National Commission for Science, Technology and Innovation (NACOSTI) for the study to proceed. This is a formal requirement for conducting research. An informed consent was secured from every participant along with the assent from the students themselves. Participants were briefed regarding objectives of the study and their voluntary participation. The study guaranteed confidentiality and anonymity of the respondents. No identity information was collected and research data was handled with high degree of confidentiality and solely utilized for academic purposes.

3.9 Data Analysis

The gathered data was coded and entered in the Statistical Package for Social Sciences (SPSS) version 25 for management and analysis. Both descriptive and inferential statistics were employed for data analysis. Descriptive statistics included mean, frequencies and percentages. These were used to describe the status and activities of YFCs in secondary schools in Suba Sub-County. Ordered logistic regression was employed to quantify the influence of students' participation in the Young Farmers' Clubs on performance in agriculture and attitude towards the subject. Ordered logistic regression was also used to model ordered categorical response variables and applied to data that met the proportional

odds assumption.

The response variable Y is categorical response variable with K +1 categories:

Y= (0, 1, 2, ..., K).

Where,

Y = Satisfaction level

0 = Un satisfied

1 = Somewhat satisfied

2 = Fairly satisfied

3 = Very satisfied

The proportional odds assumption states that the influence of any predictor variable remains constant across all the categories of ordinal outcome variable..

The link function is a transformation of the probabilities that allows for the estimation of the model. In ordered logistic regression the link function is the logit. The link defines what goes to the left side of the equation link the random component on the left side of the equation and the systematic component on the right (Shakhawat et al., 2012). The logit equations of the Ordered Logistic Regression model form a comparison of the log odds of each of the non-reference K response variables to the categorical variable of choices.

For a polytomous outcome Y, and P predictors($X_1, X_2, \dots X_p$), the systematic part of the model is defined as follows:

$$\log \frac{P(X_1, X_2, \dots X_p)}{1 + P(X_1, X_2, \dots X_p)} = \beta_{0j} + \beta_{1j}X_{1j} + \beta_{2j}X_{2j} + \dots + \beta_{pj}X_{pj}$$

This can be re-expressed in terms of the individual category outcome probability by solving for the unique probabilities to give:

$$(X_1, X_2, \dots X_p) = \frac{(\beta_{0j} + \beta_{1j}X_{1j} + \beta_{2j}X_{2j} + \dots + \beta_{pj}X_{pj})}{1 + (\beta_{0j} + \beta_{1j}X_{1j} + \beta_{2j}X_{2j} + \dots + \beta_{pj}X_{pj})}$$

For a predictor X_i , the coefficient β_j gives the change in log odds of the product associated with a unit increase in X_i , for unpredictable fixed values for the remaining predictors $P(X_1, X_2, \dots X_p)$. The exponentiated regression coefficient $\exp(\beta_j)$ represents the odds ratio associated with a one unit change in (O'Connell, 2006). A logistic slope coefficient is

interpreted as the effect of a unit of change in the X variable on the predicted logit with the other variables in the model held constant. That is, how a one-unit change in X affects the log of the odds when the other variables in the model held are constant.

Table 3

Summary of Data analysis

Hypothesis	Independent Variables	Dependent Variables	Test Statistics.
H ₀₁ : Participation in Young Farmers' Clubs has no statistically significant influence on students' performance in Agriculture.	Participation in YFCs	Performance in agriculture	Ordered logistic regression
H ₀₂ : Participation in Young Farmers' Clubs has no statistically significant influence on students' attitude towards Agriculture.	Participation in YFCs	Students' attitude towards agriculture	Ordered logistic regression

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results and discussions based on the study objectives and hypotheses. Major areas analyzed and discussed involve the adequacy of response rates, background information, status and activities of the Young Farmer's Clubs. The aim of this research was to determine the influence of students' participation in YFCs on performance in agriculture and attitude towards the subject in secondary schools in Suba Sub-County, Kenya. The study targeted 628 Form Three agriculture students and accessible population of 286 members of YFCs. The following objectives guided the study;

- i. To document the status of the Young Farmers' Clubs in secondary schools in Suba Sub-County.
- ii. To document the activities of the Young Farmers' Clubs in secondary schools in Suba Sub-County.
- iii. To determine the influence of students' participation in the Young Farmers' Clubs on performance in agriculture in secondary schools in Suba Sub-County.
- iv. To determine the influence of students' participation in the Young Farmers' Clubs on attitude towards agriculture in secondary schools in Suba Sub-County.

Both descriptive and inferential statistics were used in the study to meet the research objectives. Conclusions were then formulated from research findings. The study assessed the adequacy of response rates before presenting and discussing the findings.

4.2 Response Rate

The research involved 126 respondents from selected secondary schools within Suba Sub-County. Information was gathered from the respondents using a questionnaire and an assessment test. The information concerning response rate is presented in Table 4.

Table 4*Questionnaire Response Rate*

Categories	Number of Respondents
Issues questionnaires	126
Returned questionnaires	126
Response rate	100.0%

A total of 126 questionnaires were administered as per the sampling technique used in the study. All the questionnaires were successfully administered among the targeted respondents making a response rate of 100.0% which the study found to be satisfactory in achieving its objectives.

The study achieved a high rate of response as a result of rigorous data collection procedure that involved the researcher himself, contact persons (school head teachers) and phone calls. According to Froehlich et al. (2020), a response rate of 80% and above implies a good representation of the sample and enhances data quality.

4.3 Background Characteristics of the Student Respondents

Data was collected on the background information of students. The information gathered included their types of schools, categories of schools, gender and Kenya Certificate of Primary Education (KCPE) entry scores. The findings were presented and discussed in the sections that follow.

4.3.1 Types of Schools

The table 5 below represents the types of schools categorized solely by gender composition. Emphasis was given to mixed-gender and single gender institutions for the purpose of analysis.

Table 5*Types of Schools*

Types of schools	Frequency	Percent
Mixed	95	75.4
Single Gender	31	24.6
Total	126	100.0

Data summarized in Table 5 indicate that the majority (75.4%) of the respondent were enrolled in mixed-gender schools. These schools create conducive environment where boys and girls have equal access to education opportunities. Students placed in groups of different abilities benefit because they are grouped together with other students who are not like themselves. This encourages sharing of ideas and content retention. Nowadays, most societies embrace gender equality. However, the future direction in this subject is going to involve students who do not identify themselves as being male or female.

4.3.2 Category of School

The data was collected based on different categories of schools that were involved in the study. Data summarized in Table 6 reveal that 39.7% of the sampled schools were county schools, 35.7% were sub-county schools, 23% were from extra county schools and the remaining 1.6% was from national schools.

Table 6

Category of School

Category of School	No. of Respondents	Percent
National	2	1.6
Extra county	29	23.0
County	50	39.7
Sub-county	45	35.7
Total	126	100.0

Table 6 shows that majority of schools in Suba Sub-County are County and Sub-County schools. These schools offer learners the advantage of being closer to their parents. This leads to close monitoring and follow-up by parents which also contribute to academic achievement. National, Extra-County and county schools have better facilities than Sub-County schools such as school farms, libraries, laboratories and workshops which enhance practical learning in agriculture.

4.3.3 Gender of the Students

Data summarized in Figure 2 show gender equality distributed as: Male (50.8%) and female (49.2%).

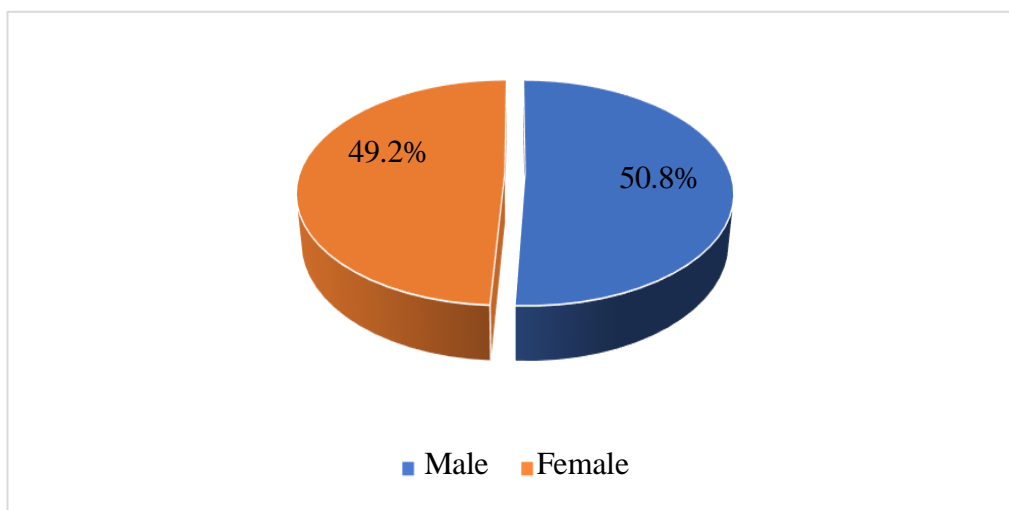


Figure 2: *Gender of the Students*

The result presented in Figure 2 suggests that male dominance in school enrolment is not a significant issue in the study area. With females representing 49.2% and males 50.8% of the study population, the data indicates a relatively balanced gender distribution in school attendance. These results differ from most of the previous studies which showed that adequate gender empowerment was necessary in ensuring that more females are involved in the country’s education system (Leal Filho et al., 2023). This may point out on the need to maintain the status quo where boys and girls have equal opportunity in the education system (Adams et al., 2021).

4.3.4 KCPE Entry Scores

The study was interested in the entry scores of the students during their KCPE examination. The results were summarized in Table 7.

Table 7

KCPE Entry Scores

Entry Marks	Frequency	Percentage
Less than 250	26	20.6
250-299	53	42.1
300-349	37	29.4
350 and above	10	7.9
Total	126	100

Note: Minimum = 181; Maximum = 375; Mean = 285.7; Std. Deviation = 40.7

Table 7 conveys that about 42.1% of the students had scored between 250 and 299 marks while 29.4% of the students had 300-349 KCPE entry marks. An average student in the study scored about 285 marks (standard deviation of 40.7 marks). Students with higher KCPE entry marks may perform better since they had a better education foundation than their counterparts who had not performed well in the primary school national examination. KCPE entry marks determine the category and type of school a student is admitted. Students with high top marks in KCPE examination are admitted to National schools and Extra-County county schools. These schools have superior teaching resources and facilities for agriculture hence boosting their practical learning, exam performance and general attitude towards agriculture.

4.4 The Status of Young Farmers' Clubs

The data were collected on the status of the Young Farmers' Clubs. This was to enhance a better understanding of structure, membership, facilities and overall effectiveness in promoting members engagement in agriculture. The facilities possessed by sampled schools were summarized on Table 8.

Table 8

Facilities Provided by the Schools for Young Farmers' Clubs

Facilities	Frequency	Percent
School farm	124	98.4
Library	117	92.9
Classroom	117	92.9
Laboratory	115	91.3
Workshop	26	20.6
Nature Corner	41	32.5

The most popular YFCs facilities that were provided by the sampled schools included the school farm as represented by 98.4%. The vast majority of schools have school farms indicating a strong emphasis on practical agricultural education. This aligns well with the goals of YFCs which focus on engaging students in farming activities and improving their agricultural skills. The presence of School farms reflects the central role in facilitating Experiential learning in agriculture. Other major facilities included the libraries (92.9%), classrooms (92.9% and laboratories (91.3%). Libraries and classrooms are fundamental facilities that support practical instructions and access to agricultural literature and learning

materials. Their availability suggests that most schools integrate agricultural education into the formal curriculum, blending both theory and practice effectively. Presence of laboratories indicates a strong scientific learning in agriculture. There were only few schools that were reported to have agricultural workshops and nature corners. Many schools are not aware of nature corners as learning facilities. Nature corners might be used to cultivate environmental awareness. However its presence in some schools suggests growing attention to biodiversity and environmental awareness as part of agricultural education. Workshops were the least provided facility pointing to a significant gap in agricultural learning. Lack of workshops limits students' exposure to such practices like mechanized agricultural practices.

Generally, Schools with essential facilities create an inviting environment for Young Farmers' Clubs activities. Low availability of workshops and nature corners suggest a need for expanded infrastructure that support practical and environmental learning . The study sought to know the class in which most students join Young Farmers' Clubs. Consequently, respondents were asked to specify the class they were at time of joining young farmers club. The results are summarized in Table 9.

Table 9

Respondents' Class when they joined Young Farmers' Clubs

Class	Frequency	Percent	Cumulative percent
Form 1	79	62.7	62.7
Form 2	33	26.2	88.9
Form 3	1	11.1	100.0
Total	126	100.0	

The data in Table 9 reveals that the majority (62.7%) of the respondents were in Form 1 when they joined the Young Farmer's Clubs. This suggested that, majority of students had a favorable opinion in agriculture (even before they joined secondary schools). This also suggests that the clubs actively engage students early in their secondary school education. Early engagement allows sustained participation which enhances agricultural learning outcomes. Students who join in Form 2 (26.2%) may be influenced by peers or may have developed interest in agriculture after some exposure in Form 1. This also reflects ongoing recruitment efforts beyond the first year of secondary education. The result indicates that joining Young Farmers' Clubs at later stages is less common. This is due to increased academic workload and other commitments as students approach external examinations. This

reduces their availability to join Young Farmers' Clubs. The trend of students' recruitment in Form 1 emphasizes the need to focus on recruitment and orientation programs on new students to maximize membership and long term engagement.

The data was collected on students' reasons behind joining Young Farmers' Clubs. The findings are summarized in Table 10.

Table 10
Students' Reasons for Joining Young Farmers' Clubs

Reasons	Frequency	Percent
To improve my performance in Agriculture	123	94.4
To improve my attitude towards agriculture	113	89.7
To gain modern skills in agriculture	107	84.9
To be exposed to modern farming techniques	95	73.8
In preparation for my future career	13	10.3
To implement theoretical knowledge learnt in class	3	2.4
Others ¹	4	3.2

Note: Others include: achieve educational goals; have knowledge on how to start agriculture; demonstrate my skills in agriculture; increase food production

The most common reason for joining Young Farmers' Clubs was to improve the students' performance in agriculture as reported by 94.4% of the total respondents. This indicates that students primarily view the club as a platform to enhance their academic achievement. Another popular reason is to improve attitude towards agriculture (89.7%), this suggests that many students may initially have limited interest in agriculture and view clubs as a way to build appreciation and enthusiasm. It reflects the club's influence in changing perceptions and combat the negative attitude associated with agriculture among the students. Other reasons include; to gain modern skills in agriculture (84.9 %,) and to be exposed to modern farming techniques (73.8%). These demonstrate awareness of the evolving nature of agriculture and the need for current practical skills beyond traditional farming. It also points the significance of equipping youth with knowledge that aligns the modern agricultural practices.

Few respondents (10.3%) join the clubs with a career in agriculture in mind. This suggests that while students recognize the academic and skill based benefits of the clubs, few see

agriculture as long term professional path. This implicates how agricultural careers are presented in schools and highlights a potential area for improvement in career guidance and motivation. The other reason for joining Young Farmers’ Clubs is to implement theoretical knowledge as represented by 2.4%. This suggests a gap in students understanding of how theory connects to practice, which educators might address through integration of classroom content with clubs activities.

4.5 Young Farmers’ Clubs Activities

This investigation aimed to ascertain activities performed by Young Farmers’ Clubs. The results are presented in Table 11.

Table 11

Projects and activities Implemented by Young Farmers’ Clubs members

Projects	Frequency	Percentage
Vegetable growing	124	98.4
Tree planting	122	96.8
Poultry rearing	78	61.9
Rabbit keeping	25	19.8
Symposium	28	22.2
Maize farming	22	17.5
sheep rearing	13	10.3
Others	26	20.6

Table 11 indicate that, 98.4% and 96.8% of Young Farmers' Clubs members had implemented vegetable growing and tree planting, respectively. High participation rate in vegetable growing suggests that vegetable farming is both manageable and resource friendly, making it ideal for school environment, It is also a fast yielding agricultural activity that allows students to quickly see results hence reinforcing motivation and practical learning.

Students’ involvement in tree planting indicates a strong environmental and sustainable component within the YFCs activities. Tree planting promotes ecological awareness and aligns with global calls for youth involvement in climate change mitigation. It also reflects efforts to integrate agroforestry in school farming program. Poultry rearing as a project was also popular as implemented by 61.9% of the Young Farmer’s Clubs respondents. This is due to its high return, low maintenance, ready market and educational value. Poultry farming

offers lessons in animal care, nutrition, disease management and business practices making it valuable hands-on learning tool. Rabbit keeping is practiced by 19.8% of the YFCs members. Though rabbit keeping is less common but it still provides meaningful learning experiences in small livestock management. Lower participation may be due to limited space and resources. About 22.2% of members participated in symposia. This shows some engagement in academic platforms where members share knowledge, innovations and experiences. However, the low rate suggests a potential area for expansion. Symposia may not be organized at school level and might require registration fee, travel and accommodation, all of which may be difficult for Young Farmers' Clubs to afford. Maize farming is limited in schools due to space requirement and longer growing seasons.

Sheep rearing was the least practiced activity (10.3%). This could be due to higher costs, greater space need and more complex care requirement. The low adoption points the challenges of incorporating large livestock in school settings. Other cited projects that were even less popular included cattle keeping, goat farming, beekeeping, irrigation, management of nurseries, banana plantation and keeping of donkeys.

Among the respondents in schools that kept livestock, the majority of them indicated that they reared cattle, sheep, poultry and goats as presented in Table 12.

Table 12

Types of Livestock kept by Young Farmers' Clubs members

Livestock	Frequency	Percent
Cattle	90	27.5
Sheep	90	27.5
Poultry	64	19.6
Goats	48	14.7
Donkeys	20	6.1`
Pigs	9	2.8
Rabbits	4	1.2
Bees	1	0.3
Fish	1	0.3

About 27.5% of members Young Farmers' Clubs reared cattle and sheep while 19.6% kept poultry. This shows that large livestock play a significant role in school based agriculture

projects. Cattle were of great significance in the production of milk which was sold to the surrounding community. The returns could be used to improve the clubs activities. Sheep are often easier to feed and manage; Poultry is often a popular choice for school based agriculture due to its low cost and quick return on investment. Its low rank might reflect competition with larger livestock or focus on crop based projects, however, poultry still remains an important component of small scale animal farming. Those that kept goats were 14.7% while Young Farmers' Clubs that kept donkeys, pigs, rabbits, bees and fish accounted for less than 10, each. Though goats are hardy animals, their moderate popularity suggests they are valued but perhaps limited by space and feeding constraints in school environment. Donkeys may not be prioritized as livestock projects for students because they do not offer direct learning opportunities related to animal products e.g. milk and meat. Bees and fish farming were the least practiced activities. These types of livestock projects require specialized knowledge, equipment and more complex infrastructure e.g. hives and fish ponds which may be beyond the current capacity of most schools.

This study was interested in the types of crops grown by the Young Farmers' Clubs. The results are summarized in Table 13.

Table 13

Types of Crops grown by Members of Young Farmers' Clubs in the School (n=126)

Crops	Frequency	Percentage
Maize	105	24.1
Kales	81	18.6
Tomatoes	52	12.0
Beans	43	9.9
Bananas	36	8.3
Sorghum	22	5.1
Carrots	21	4.8
Grevilea	19	4.4
Other vegetables	18	4.1
Others	38	8.4

Other vegetables include: cabbages, spinach, cowpeas, onions, peas, pumpkins, spider plant others; include; Millet, sugarcane, fruits, groundnut, flowers, Irish potatoes, watermelon, wheat, yams.

The result in Table 13 shows that maize, kales, tomatoes and beans were the commonest crops as reported by 24.1%, 18.6%, 12.0% and 9.9% of the respondents respectively. This highlights the significance of maize as a main food and its central role in school agriculture. Maize farming provides practical learning on land preparation, crop management and harvesting while contributing to food security in the school set up.

The dominance of kales suggests a strong emphasis on vegetable gardening. Kales are fast growing, nutritious and easy to manage making them ideal for school based farming. Their inclusion also supports goals of improved students' nutrition and regular farm engagement due to their short growing cycle. Tomatoes on the other hand are high value vegetable crops. Their presence in school garden indicates a move towards commercial viability and practical skills in crop diversification. However, tomatoes require more intensive care which may limit their adoption in schools with fewer resources.

Beans are key protein source and often grown alongside maize in intercropping system. Their inclusion reflects a traditional, sustainable farming practice and introduces students to concepts such as nitrogen fixation and crop rotation. Banana farming shows engagement in perennial crop farming though it requires more space and longer time to mature. It is a valuable crop and offers opportunity to teach students about orchard management and sustainable fruit production. Sorghum is grown by 5.1% of respondents; this shows some schools' interest in promoting drought-resistant crops. This choice may reflect efforts to educate students on climate-smart agriculture and indigenous crop resilience.

Carrots are cultivated by 4.8% of the members. Like tomatoes and kales, they are relatively easy to grow in small plots and offer lessons in horticulture and soil management. Their lower frequency might be due to soil or climatic limitations. Grevillea is a fast-growing tree species and often used for agroforestry or shade. It is cultivated by 4.4% of respondents. Its inclusion reflects environmental education goals, such as promoting reforestation, soil conservation, and the integration of trees into farming systems.

A combined 12.5% of the responses fall under "other vegetables" and "others," reflecting a variety of less common crops being cultivated. These may include onions, spinach, cabbages, or herbs. This diversity shows creativity and adaptability among members of YFCs, who tailor their crop choices to local conditions, school objectives, or market demands. Respondents were requested to indicate whether Young Farmer's Clubs projects were usually assessed by their agriculture teacher. The results are presented in Table 14.

Table 14*Whether Students Projects were assessed by their Agriculture Teacher*

Response	Frequency	Percent
Yes	124	98.4
No	2	1.6
Total	126	100.0

The results in Table 14 show that the most of the projects implemented by the Young Farmer's Clubs were assessed by the agriculture teachers representing 98.4% of the total responses. This positive response suggests that agriculture teachers are highly engaged in monitoring and evaluating students' practical activities within the YFCs. Such regular assessment is essential for reinforcing learning outcomes, providing feedback and ensuring that students apply practical knowledge effectively. Teacher involvement also reflects strong institutional support for agricultural education and indicates that practical projects are integrated in agricultural education.

This research aimed to understand how frequently respondents participated in the Young Farmers' Clubs activities. The outcomes are summarized in Table 15.

Table 15*Students Frequency of Participation in the Young Farmers' Clubs Activities*

Frequency	Frequency	Percent	Cumulative Percent
Daily	45	36.0	36.0
Weekly	73	58.4	94.4
Monthly	4	2.4	96.8
Termly	4	2.4	100.0
Total	126	100.0	

Majority of the respondents pointed out that they participated in the Young Farmers' Clubs activities every week as represented by 58.4%. This suggests that the clubs are well integrated into students' schedules and that agricultural activities are consistently prioritized. Weekly involvement provides a balanced approach between the YFCs activities and students' academic workload. Most institutions slot clubs activities ones in a week.

About 36.0% of the students participated in Young Farmers' Clubs activities daily. This demonstrates a substantial dedication on the ongoing activities such as caring for crops and livestock. This daily engagement enhances practical learning and fosters a sense of responsibility among students. It also suggests that agricultural activities are part of daily routine. A few respondents participated on a monthly and termly basis. Such infrequent involvement reflects challenges such as time constraints and lack of interests or limited access to agricultural projects. It may also suggest that in some schools, YFCs activities are treated more as occasional events rather than ongoing learning process.

The major activities performed by the Young Farmers' Clubs in the selected schools are depicted in Table 16.

Table 16

Major Activities Performed by the members of Young Farmers' Clubs

Activity	Frequency	Percent
Livestock production	105	84.3
Crop production	111	90.2
Symposium	28	22.8
Tree planting	108	87.8

Crop production and tree planting were the most common activities performed by the Young Farmers' Clubs as represented by 90.2% and 87.8% of the total responses. This highlights the central role of crop farming in Young Farmers' Clubs programs. It suggests that schools prioritize growing food crops and vegetables as a way of equipping students with practical farming knowledge, improving school food supplies and enhancing students' appreciation of agriculture through hands on experience. Tree planting creates awareness of environmental conservation and sustainability within agricultural programs. Widespread involvement in tree planting shows a well-rounded approach to agricultural education balancing it with environmental care. Livestock production was reported by 83.7% of the total respondents.' This shows that animal husbandry is an integral part of Young Farmers' Clubs curriculum. High participation rate reflects the accessibility and educational value of school based livestock projects. Low participation in symposia (22.8%) suggests that such academic activities are less frequent or not widely accessible as production based projects.

4.6 Influence of Students' Participation in Young Farmers' Clubs on Performance in Agriculture

The third objective sought to determine the influence of students' participation in the Young Farmers' Clubs on performance in agriculture in Secondary Schools in Suba Sub-County. In pursuing this objective, a null hypothesis, 'H₀₁: Participation in Young Farmers' Clubs has no statistically significant influence on students' performance in agriculture in secondary schools in Suba Sub-County' was formulated. The extent of students' participation was measured concerning the frequency at which they participated in the activities organized by the Young Farmers' Clubs in the selected schools. Results are summarized in Table 17.

Table 17

Extent of Students' participation in Young Farmers' Clubs activities (n=126)

Activity	Never	Once a term	Once every			Daily
			once a month	2 weeks	Once a week	
Poultry rearing	24(19%)	4(3%)	3(2%)	5(4%)	30(24 %)	60(48%)
Rabbit keeping	97(77%)	5(4%)	4(3%)	5(4%)	7(6%)	8(6%)
Goat rearing	66(52%)	5(4%)	8(6%)	9(7%)	4(3%)	34(27%)
Sheep rearing	32(25%)	3(2%)	8(6%)	16(13%)	11(9%)	56(44%)
Cattle keeping	37(29%)	8(6%)	7(6%)	6(5%)	15(12%)	53(42%)
Pig keeping	82(65%)	8(6%)	9(7%)	4(3%)	12(10%)	11(9%)
Vegetable growing	5(4%)	14(11%)	12(10%)	24(19%)	32(25%)	39(31%)
Maize growing	12(10%)	31(25%)	32(25 %)	14(11%)	29(23%)	8(6%)
Bean growing	29(23%)	25(20%)	31(25%)	14(11%)	18(14%)	8(6%)
Symposium	53(42%)	28(22%)	19(15%)	15(12%)	5(4%)	6(5%)
Planting trees/management	40(32%)	31(25%)	11(9%)	3(2%)	18(14%)	23(18%)
Agricultural shows	73(58%)	35(28%)	2(2%)	5(4%)	7(6%)	4(3%)

Most of the respondents pointed out that they participated in poultry rearing daily as represented by 48%. About 24% indicated that they participated in poultry rearing weekly. The high level of involvement can be attributed to poultry farming being relatively low maintenance and space efficient, making it is an ideal activity for school settings. Daily engagement reflects the daily care and attention required for managing poultry which may be

seen as both practical learning experience and a source of regular agricultural productivity. Only 4% of the respondents indicated that they participated fortnightly. Very few respondents indicated that they participated in poultry rearing once a month (2%) and once a term (3%). Students who claimed that they never participated in poultry rearing were 19%.

Most of the respondents pointed out that they never participated in rabbit keeping as represented by 77.0%. Respondents who suggested that they participated in rabbit keeping once a term, once a month, once every 2 weeks, once a week and daily accounted for less than 10% each. This low engagement could be due to the space requirements and specialized care or lack of interest in rabbit farming. Schools may also lack sufficient infrastructure or guidance for managing rabbits effectively.

Most of the respondents stated that they never participated in goat rearing as demonstrated by 52% of the total responses. Respondents who indicated that they participated in goat rearing once a term, once a month, once every two weeks and once a week accounted for less than 10% each. However, about 27.0% of the respondents indicated that they participated daily. This indicates that while goat farming may be viewed as more intensive, it is still a valuable activity for some students providing practical learning on animal husbandry, breeding and management. The relatively high percentage of daily participation indicates that goat rearing could be a prominent project where students take on long term responsibility.

The largest proportion of respondents reported that they participated in sheep rearing daily as revealed by 44% of the total responses. This reflects the importance of sheep farming in agricultural education. It stresses on provision of lessons in animal management and product harvesting (wool, meat and milk). About 8% indicated that they participated in sheep rearing weekly while 13% indicated that they participated fortnightly. A few respondents indicated that they participated in sheep rearing once a month (6%) and once a term (2%). Students who claimed that they never participated in sheep rearing were 25%. Those who never participated could be due to space constraints or focus on other livestock activities such as poultry and cattle rearing.

A higher percentage of respondents indicated that they engaged in cattle rearing daily as represented by 42% of the total responses. This suggests its popularity in schools that emphasize livestock management. Cattle farming offer students with valuable skills in milking, animal health and farm management. About 12% indicated that they participated in cattle keeping every week while 5% indicated that they participated fortnightly. A few

respondents indicated that they participated in cattle keeping once a month (6%) and once a term (6%). Students who claimed that they never participated in cattle keeping were 29%. This could be due to logistic challenges or the need for more resources to support such high maintenance activity.

Most of the respondents suggested that they never participated in pig keeping as represented by 65% of the total responses. This is because it requires considerable amount of care, specialized feeding, space limitations and smell associated with pig farming may also contribute to its low engagement. Respondents who indicated that they participated in pig keeping once a term, once a month, once every 2 weeks, once a week and daily accounted for less than 10% each.

A higher proportion of individuals reported that they engaged in vegetable growing daily as represented by 31% of the total responses. This reflects the practical and educational benefits of growing vegetables in a school setting, including nutritional education, sustainability and economic potential. Regular involvement in vegetable gardening helps students to develop valuable agricultural skills and appreciation for food production. About 25% indicated that they participated in vegetable growing every week while 11% indicated that they participated fortnightly. A few respondents indicated that they participated in vegetable growing once a month (10%) and once a term (19%). Students who claimed that they never participated in vegetable growing were 4%.

Most of the respondents pointed out that they participated in maize growing once a month as depicted by 25% of the total responses. This moderate participation suggests that maize farming is a key crop for many schools though it may not require frequent care as daily livestock management. About 25% and 23.0% of the respondents suggested that they participated in maize growing once per term and once a week, respectively. Students who indicated to have participated in maize growing once every two- weeks accounted for about 11%. Those who indicated that they participated daily were only 6%. The 10% who never engaged in maize farming might reflect varying school priorities or limited land resources.

Most of the respondents revealed that they never participated in beans growing as represented by 23.0% of total respondents. About 20% and 25% of participants suggested that they participated in beans growing once per term and once a month, respectively. Some of the students indicated that they participated in beans growing once a month (11%) and twice a month (14%) in their schools. Those who indicated that they participated daily were

only 6%. The 6% daily participation rate might reflect the need for students to take additional responsibilities in maintaining the crop. Beans are grown as part of agricultural activities but not necessarily require a daily attention.

Most of the respondents suggested that they never participated in symposia as represented by 42% of the total responses. This suggests that symposia may not be as frequently organized or prioritized as practical agricultural education activity. About 22% of the respondents pointed out that they participated in symposia once in a term. Some of the respondents stated that they engaged in symposia once a month (15%) and twice a month (11%). Those who indicated that they participated once every 2 weeks and daily accounted for less than 10% each. The low participation rate indicates that symposia are less engaging or accessible for students compared to more hands projects like crop and livestock production.

Most of the participants revealed that they never participated in tree planting / management as represented by 32% of the total responses. About 25% of the respondents indicated that they participated in tree management once in term. Some students suggested that they participated in tree management once a week (14%) and daily (18%). This reflects school emphasis on environmental sustainability and conservation. Tree planting/management is often integrated into broader environmental education and daily participation may involve regular maintenance of trees or an ongoing commitment to environmental stewardship. Those who indicated that they participated once a month and once every 2 weeks accounted for less than 10% each.

Most of the respondents pointed that they never participated in agricultural shows as represented by 58% of the total responses. About 28% of the respondents suggested that they participated in agricultural shows once per term. Those who indicated that they participated in agricultural shows once a month, once every 2 weeks, once a week and daily accounted for less than 10% each. Low level of participation in agricultural shows suggests that these activities are less frequent or difficult for students to access due to logistical challenges, location or financial constraints.

On a Likert scale of 1 – 5, students' participation in the various Young Farmers' Clubs activities (poultry rearing, rabbit keeping, goat rearing, sheep rearing, cattle keeping, pig keeping, vegetable growing, maize growing, bean growing, symposia, planting trees, agricultural shows,) was quantified. The results are summarized in Table 18.

Table 18*Mean Extent of Students' Participation in Young Farmers' Clubs Activities*

Mean participation scores	Frequency	Percentage
1.00-1.99	11	8.7
2.00-2.99	54	42.9
3.00-3.99	38	30.2
4.00-5.00	23	18.3
Total	126	100

Note: Mean = 2.981; Standard deviation = 0.795; Minimum = 1.46; Maximum = 4.62s

The findings in Table 18 show that greater percentage of the respondents scored between 2.00 and 2.99 as represented by 42.9% of the total responses. This suggests that their participation is moderate. Students in this category engage in Young Farmers' Clubs activities occasionally perhaps once a week or on a regular but not daily basis. This level of participation indicates that while these students are consistently involved, their engagement is not intensive as those with higher participation scores. This was closely followed by students who scored between 3.00 and 3.99 who comprised of 30.2%. These students engage in Young Farmers' Clubs activities more frequently perhaps once a week or several times. This indicates high level of commitment with these students likely to take on more responsibilities within the club. They are deeply involved in agricultural projects.

Their active participation reflects a more established interest in agriculture and desire to develop practical skills. Those who scored between 4.00 and 5.00 comprised 18.3%. This represents the highest frequency of engagement. These students are involved in Young Farmers' Clubs activities very frequently, possibly on a daily basis or several times in a week. These students are highly committed to club activities taking on substantial roles in the projects and likely to experience the most intensive learning and skill development. Their involvement suggests a deeper interest in agriculture with regular and sustained contribution to clubs activities. Those who scored between 1.00 and 1.99 were only 8.7%. This indicates that their participation was minimal. These students engage in activities occasionally. Low participation in this category could be due to lack of interest and time constraints. It also highlights that some students are not fully integrated in Young Farmers' Clubs activities.

The data indicates that most students (40.9% and 30.2%) participate in Young Farmers' Clubs activities to a moderate and high extent. This suggests that the clubs are successfully engaging a significant portion of students and fostering a strong level of involvement. Only a small group (8.7%) showed minimal participation. This indicates challenges in student engagement or barriers to full involvement. The clubs should make activities more accessible to increase the level of participation. Continued support and expanded opportunities for highly involved students may also ensure that Young Farmers' Clubs remain effective and dynamic platform for agricultural education.

To measure performance, students were subjected to assessment test that covered all areas that had been covered in the approved syllabus (form one work, form two work, and a bit of form three). Table 19 below presents the result of the test.

Table 19

Students' Test Results

Test results	Frequency	Percent	Cumulative Percent
Low (less than 50%)	6	4.8	4.8
Moderate (50-69%)	23	18.3	23.0
High(70% and above)	97	77.0	
Total	126	100	

The outcomes in Table 19 reveal that most of the students performed well with 77.0% scoring highly (70% and above). This suggests that a substantial portion of students are performing well, demonstrating a strong understanding of the content. High performance indicates that Young Farmers' Clubs activities are effective in supporting students learning. Those who scored moderately (50% - 69%) comprised about 18.3%. This represents a significant portion of the students' body. It also indicates that there is always room for improvement in the understanding of the content. These students require additional support to boost their performance. Students in this group grasp some aspects of the content but still require more exposure to hands-on learning activities. Those who performed poorly (less than 50%) were only 4.8%. This could be due to lack of engagement in practical activities.

The overall results of the test were however not normally distributed. The result in Figure 3 shows that generally, the test results were positively skewed (mean was greater than the median).

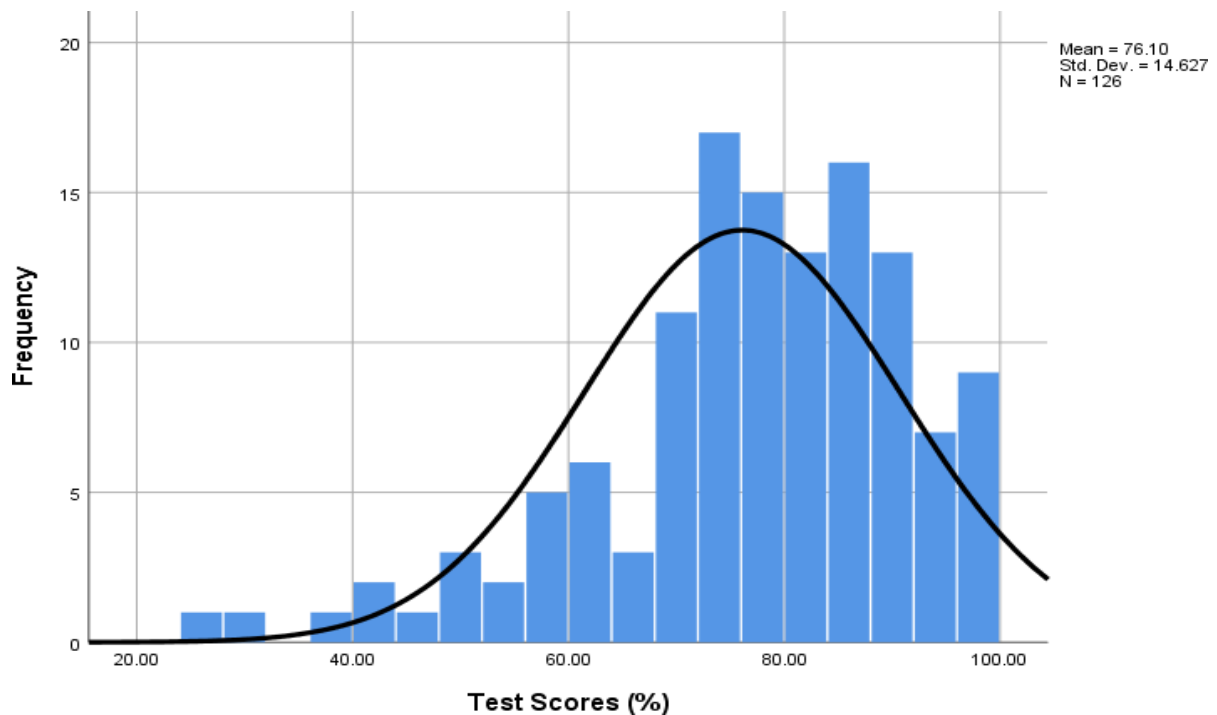


Figure 3; *Distribution of Student Test Results*

Lack of normality in the distribution of the test scores (with positively skewed performance) may suggest that the test items were not evenly constructed across the performance spectrum. This could indicate that many students in the Young Farmers’ Clubs performed well in agriculture, due to their rigorous engagement in clubs activities.

Test of Hypothesis HO₁:

Objective three was translated into the following hypothesis:

HO₁: Participation in the Young Farmers’ Clubs has no statistically significant influence on students’ performance in agriculture in secondary schools in Suba Sub-County.

The hypothesis was tested using ordered logistic regression. Table 20 shows the influence of participation in the Young Farmers’ Clubs on students’ performance in agriculture in secondary schools in Suba Sub-County.

Table 20

Ordered Logistic Regression for the Influence of Participation in Young Farmers' Clubs on Students' Performance in Agriculture

Parameters	Variables	Estimate	Std. Error	Wald	df	Sig.
Threshold	[Student performance = 1.00]	-1.586*	.793	3.853	1	.036
	[Student performance = 2.00]	.225	.832	.073	1	.787
Location	Extent of Participation	.499*	.186	3.840	1	.041

N = 126, Log Likelihood = 90.02, LR χ^2 (1) = 4.21, Prob > χ^2 = 0.000, Pseudo R²=0.73,

* = Significant at 5% level

Threshold Parameters include; [Student Performance = 1.00] (Low performance category), [Student Performance = 2.00] (Moderate performance category) and Extent of Participation (Main Predictor Variable):

Results in Table 20 reveal that the coefficient for the extent of participation in YFCs activities was positive and statistically significant at 5%. The threshold for "low performance" is significantly negative (-1.586) with a p-value of 0.036, which is statistically significant at 5% level ($p < 0.05$). This proves that higher participation in YFCs activities is associated with a lower likelihood of students performing poorly (low performance category). Students who are more engaged in YFCs activities are less likely to fall into the low-performance group.

The threshold for "moderate performance" is not statistically significant, with a p-value of 0.787. This is much greater than the typical significance threshold (0.05). This implies that there is no statistically significant influence of YFCs participation on the likelihood of students being classified into the moderate performance category. Participation in YFCs activities does not significantly increase or decrease the odds of students being in the moderate performance group.

The coefficient for Extent of Participation is positive (0.499) and statistically significant at ($p = 0.041$, $p < 0.05$). This indicates that increased participation in Young Farmers' Clubs is positively associated with better performance in agriculture. Students who participate more frequently in YFCs activities are likely to fall into higher performance

Higher participation in YFCs activities is associated with a reduced likelihood of low performance (students scoring below 50%). The extent of participation in YFCs activities is a

significant predictor of better performance in agriculture, with students who participate frequently showing higher performance outcomes.

The log-likelihood for the fitted model of 90.02 and the log-likelihood chi-squared value of 4.21 indicate that the two parameters (participation in YFCs activities and students' performance in agriculture) are jointly significant at 5%. Pseudo R2 of 0.73 implies that 73% of the difference in performance was due to participation in Young Farmers' Clubs activities. It therefore meets the statistical threshold confirming that the students' performance variable was well attributed to the extent of participation in YFCs activities. Based on these results, the null hypothesis was rejected. Thus, participation in Young Farmers' Clubs has a statistically significant influence on students' performance in agriculture in secondary schools in Suba Sub-County. This suggests that, students who actively participated in YFC's activities performed better than those who participated less.

Table 21

Students' Performance in the Assessment Tests

Extent of Participation	N	Minimum	Maximum	Mean	Std. Deviation
Very Low	2	34	46	40.0	8.5
Low	42	30	96	74.5	12.8
Moderate	48	36	94	74.9	14.1
High	31	26	98	79.2	17.9
Very High	3	74	98	87.3	12.2

Students in the very low participation category scored within a narrow range (34 to 46), with an average score of 40.0. The standard deviation of 8.5 indicates some variability in their test scores, but the overall performance is quite low. This suggests that students with minimal participation in YFCs activities perform poorly on agriculture tests, supporting the idea that more involvement in hands-on agricultural learning could improve academic outcomes.

Students with low participation in YFCs activities show a broader range of performance (30 to 96), with an average score of 74.5. The standard deviation of 12.8 indicates a moderate spread in scores, suggesting that while most students are performing better than those with very low participation, there is still significant variation in how well they understand and apply agricultural concepts. Despite this, their average performance is moderate, likely reflecting some benefit from YFCs activities, but not as much as those who participate more

frequently. For students with moderate participation, the mean score rises slightly to 74.9, with scores ranging from 36 to 94. The standard deviation of 14.1 is higher, indicating greater variability in performance. While the average performance is still in the moderate range, the results suggest that more active participation begins to contribute positively to students' understanding and test performance. However, there is still considerable room for improvement in this group. The high participation group shows a noticeable improvement in average performance, with a mean score of 79.2. The range of scores (26 to 98) is quite wide, and the standard deviation of 17.9 indicates that while many students perform well, there is still a degree of variability in their performance. This suggests that students with high participation are benefiting from the hands-on experience provided by the YFCs but may face challenges in certain areas of agricultural knowledge or application. Nonetheless, this group performs significantly better than those with lower participation levels.

The findings are in line with Njoroge et al. (2014), YFCs activities have positive influence on performance of learners in agriculture. Institutions that had YFCs activities were associated with high performance. This performance was attributed to by exposure of students to practical activities via the Young Farmers' Clubs of Kenya (YFCK). Similar results were depicted from the Box plot of the student's test scores against the five groupings according to the extent of participation in YFC's activities (very low, low, moderate, high and very high).

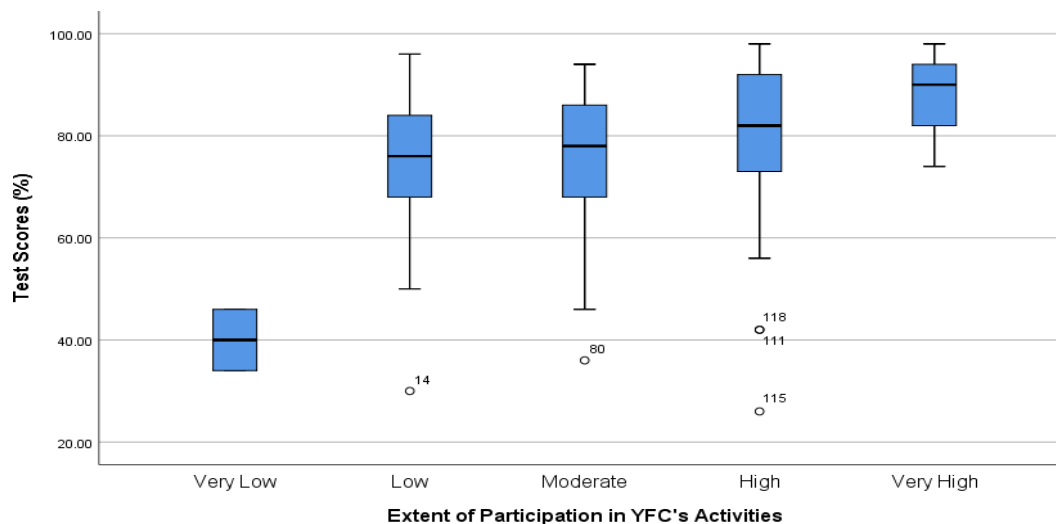


Figure 4: *Distribution of Test Scores against the Extent of Participation in YFC's Activities*

Figure 4 shows that the average performance of students increased with an increase in their participation in YFC's activities. A closer look at Table 21 shows that the average performance of the students with different extents of participation was as follows: Very low (40.0); low (74.5); moderate (74.9); high (79.2) and very high (87.3). This depicts an increasing trend in performance with an increase in participation.

4.7 Influence of Students' Participation in Young Farmers' Clubs on attitude towards Agriculture in Secondary Schools in Suba Sub-County

The fourth objective was to investigate how participation in the Young Farmers' Clubs influence students' attitude towards agriculture in secondary schools in Suba Sub-County. In pursuing the objective, null hypothesis, 'H0₂: Participation in Young Farmers' Clubs has no statistically significant influence on students' attitude towards agriculture in secondary schools in Suba Sub-County' was formulated. The extent of students' participation was measured concerning the frequency at which they participated in the activities organized by the Young Farmers' Clubs in the selected schools (see section 4.6) while a likert scale was used to gauge attitude towards agriculture as summarized in Table 22.

Table 22

Students' Attitude towards Agriculture (n=126)

	SD	D	U	A	SA	Mean	Std. Dev
I would like to study agriculture up to Form Four and beyond	2(1.6%)	1(0.8%)	4(3.2%)	38(30.2%)	81(64.3%)	4.55	0.74
Agriculture is important to me	3(2.4%)	1(0.8%)	3(2.4%)	67(53.2%)	52(41.3%)	4.30	0.77
Learning of agriculture helps me to be more useful in the society	1(0.8%)	9(7.1%)	3(2.4%)	48(38.1%)	65(51.6%)	4.34	0.91
I am happy to learn agriculture	1(0.8%)	2(1.6%)	4(3.2%)	68(54%)	51(40.5%)	4.32	0.69
Agriculture helps me to enrich my knowledge	3(2.4%)	4(3.2%)	1(0.8%)	56(44.4%)	62(49.2%)	4.35	0.85
I don't learn agriculture to please my parents	11(8.7%)	5(4%)	5(4%)	55(43.7%)	50(39.7%)	4.03	1.19
Agriculture is relevant in the world today	1(0.8%)	5(4%)	11(8.7%)	42(33.3%)	67(53.2%)	4.35	0.87

Agriculture is an easy subject to learn	10(7.9%)	7(5.6%)	7(5.6%)	49(38.9%)	53(42.15)	4.02	1.19
It is interesting doing agriculture assignments	1(0.8%)	9(7.1%)	10(7.9%)	51(40.5%)	55(43.7%)	4.25	1.15
Agriculture is one of my favorite subjects	2(1.6%)	7(5.6%)	8(6.3%)	44(34.9%)	65(51.6%)	4.29	0.93
Learning agriculture is in itself rewarding	7(5.6%)	16(12.7%)	7(5.6%)	41(32.5%)	55(43.7%)	3.96	1.23
I continue thinking about agriculture even when the lesson is over	12(9.5%)	24(19%)	13(10.3%)	56(44.4%)	21(16.7%)	3.40	1.24
The hours I spend learning agriculture are the ones I enjoy most	6(4.8%)	12(9.5%)	18(14.3%)	50(39.7%)	40(31.8%)	3.86	1.14
I am highly motivated to learn agriculture	2(1.6%)	10(7.9%)	6(4.8%)	46(36.5%)	62(49.2%)	4.24	0.98
I am confident in performing well in agriculture examinations	2(1.6%)	1(0.8%)	4(3.2%)	52(41.3%)	67(53.2%)	4.44	0.74
I use my spare time to read agriculture books	2(1.6%)	16(12.7%)	5(4%)	63(50%)	40(31.7%)	3.98	1.01
I enjoy studying agriculture at all times	8(6.3%)	7(5.6%)	8(6.3%)	55(43.7%)	48(38.1%)	4.02	1.12
I do not learn agriculture only to pass my examinations	5(4%)	4(3.2%)	4(3.2%)	37(29.4%)	76(60.3%)	4.39	0.99

The results in Table 22 show that a larger number of respondents, 64.3% representing 81 out of 126 strongly agreed that they would like to study agriculture up to Form Four and beyond. The low standard deviation (0.74) suggests a high level of consensus among students, indicating that most students are highly motivated to continue their studies in agriculture. This is followed by respondents who agreed, 30.2% representing 38 respondents and the undecided, 3.2% representing 4 respondents. A cumulative of 94.5% of the total 126 participants either agreed or strongly agreed with the statement “I would like to study

agriculture up to Form Four and beyond”. Only 8% and 1.6% of the respondents disagreed or strongly disagreed with the statement representing 1 and 2 respondents respectively. Mean was 4.55 while standard deviation was 0.74. The findings show that, secondary school students have developed positive attitude towards agriculture and are willing to continue studying the subject considering that most of the respondents strongly agreed.

On agriculture being important to the respondents, the mean attained was 4.30 while standard deviation was 0.77. This suggests that most of the respondents view agriculture is an important subject to them. Accumulative of 94.5 % of total respondents agreed and strongly agreed with the statement, ‘agriculture is important to me’. Those who agreed with the statement were 53.2% representing 67 respondents, the ones who strongly agreed were 41.3% representing 52 respondents. Only 0.8% and 2.4% of the respondents disagreed and strongly disagreed with the statement, representing 1 and 3 respondents respectively. About 2.4% representing 3 respondents were undecided. The standard deviation indicates that there is some variability in responses, but most students value agriculture and see it as a significant subject.

Most of the respondents agreed that learning agriculture helped them to be more useful members in society. A cumulative of 89.7% of the respondents agreed and strongly agreed with the statement, ‘learning agriculture helps me to be more useful in society. 7.9% of the respondents either disagreed or strongly disagreed with the statement. Specifically, most of the respondents (51.6%) representing 52 respondents strongly agreed that learning agriculture helped them to be more useful in society while 38.1% agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 7.1% and 0.8%, respectively. About 2.4% were undecided. The mean was 4.34 with a standard deviation was 0.91. The higher standard deviation (0.91) suggests that while many students hold this view, a few may have different perceptions of agriculture’s societal relevance.

Greater part of the respondents confirmed that they were happy to learn agriculture. A cumulative of 94.5% of all the respondents agreed and strongly agreed with the statement, ‘I am happy to learn agriculture’ compared to only 2.4% who either disagreed or strongly disagreed with the statement. Most of the respondents (54%) representing 68 respondents agreed that they were happy to learn agriculture while an additional 40.5% representing 51 respondents strongly agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 1.6% (2 respondents) and 0.8%, (1 respondent) respectively. About 3.2% (4 respondents) were undecided. Mean and standard deviation were 4.32 and 0.69

respectively. Higher mean of 4.32 suggests that most students enjoy learning agriculture, and the low standard deviation (0.69) indicates that the responses are relatively consistent, with a strong tendency toward agreement.

Majority of the respondents attested that agriculture helped them to enrich their knowledge. The attained mean was 4.35 and the standard deviation was 0.85. A cumulative of 93.6% of all the respondents agreed and strongly agreed with the statement, 'agriculture helps me to enrich my knowledge' compared to only 5.6% who either disagreed or strongly disagreed with the statement. Most of the participants 49.2% (62 respondents) strongly agreed that agriculture helped them to enrich their knowledge while 44.4% (56 respondents) affirmed the statement. Those who disagreed and strongly disagreed with the statement comprised 3.2% (4 respondents) and 2.4%, (3 respondents) respectively. About 0.8% (1 respondent) was undecided. The mean score of 4.35 indicates a substantial level of agreement that agriculture enhances students' knowledge. The standard deviation suggests a moderate variation in students' views, but overall, students perceive agricultural education as enriching.

Most of the respondents reported that they did not learn agriculture to please their parents. A cumulative of 83.4% of all the respondents agreed and strongly agreed with the declaration, 'I don't learn agriculture to please my parents' compared to only 12.7% who either disagreed or strongly disagreed with the statement. Specifically, majority of the respondents (43.7%) agreed that they never learnt agriculture to please their parents while 39.7% strongly affirmed the statement. Those who disagreed and strongly disagreed with the declaration comprised 4% and 8.7%, respectively. About 4% were undecided. The mean and standard deviation for this statement were 4.05 and 1.19 respectively. A mean of 4.05 indicates that most students agree that they do not study agriculture just to please their parents. The higher standard deviation (1.19) shows more variability in responses, possibly indicating some students may feel they study agriculture due to parental influence, while others do not.

Most of the respondents believed that agriculture is relevant to the world today. The mean and standard deviation of the scores on agriculture being relevant to the world today are 4.35 and 0.877 respectively. A cumulative of 86.5% of all the interviewees agreed and strongly agreed with the statement, 'agriculture is relevant in the world today' compared to only 4.8% who either disagreed or strongly disagreed with the statement. Most of the respondents 53.2% (66 respondents) strongly agreed with the statement while an additional 33.3% (42 respondents) agreed with the statement. The respondents who disagreed and strongly disagreed with the statement comprised 4% (5 respondents) and 0.8% (1 respondent), respectively. About 8.7%

(11 respondents) were undecided. With a mean of 4.35, students generally agree that agriculture is highly relevant in today's world. The standard deviation of 0.87 suggests that most students share this view, though a few might be uncertain or have differing opinions.

Majority of the respondents have the perception that agriculture is an easy subject to learn. A cumulative of 81% of all the respondents agreed and strongly agreed with the statement, 'agriculture is an easy subject to learn' compared to only 13.5% who either disagreed or strongly disagreed with the statement. This yielded a mean of 4.02 and a standard deviation of 1.19. Specifically, most of the respondents (42.1%) representing 53 respondents strongly agreed that agriculture is an easy subject to learn while an additional 38.9% (representing 49) agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 5.6% (7) and 7.9%, (10) respectively. About 5.6% (representing 7) were undecided. The mean score of 4.02 indicates agreement that agriculture is relatively easy to learn, but the high standard deviation (1.19) suggests considerable variation. Some students may find agriculture easy, while others may struggle with it.

Majority of the respondents confirmed that it was interesting doing agriculture assignments. A cumulative of 84.2% of all the respondents agreed and strongly agreed with the statement, 'It is interesting doing agriculture assignments' compared to only 7.9% who either disagreed or strongly disagreed with the statement. Specifically, most of the respondents (43.7%) representing 55 participants strongly agreed that it was interesting doing agriculture assignments while an additional 40.5% (representing 51 respondents) agreed with the statement. Those respondents who expressed their disagreement and strong disagreement with this statement were 7.1% (representing 9 respondents) and 0.8% (representing 1 respondent), respectively. About 7.9% (10 respondents) were undecided. The mean and standard deviation of this statement were 4.25 and 1.15 respectively. A mean of 4.25 reflects that students generally find agriculture assignments interesting, although the standard deviation of 1.15 points to some variation in students' interest in assignments.

Majority of the respondents endorsed that agriculture was one of their favourite subjects. This was presented by a cumulative of 86.5% of all the respondents who agreed and strongly agreed with the statement, 'agriculture is one of my favourite subjects' compared to only 7.2% who either disagreed or strongly disagreed with the context. The mean and the standard deviation were 4.29 and 0.93 respectively. Specifically, most of the respondents (51.6%) representing 65 respondents strongly agreed while an additional 34.9% (44 respondents) agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 5.6% (7

respondents) and 1.6%, (2 respondents) respectively. About 6.3% (representing 8 participants) were undecided. With a 4.29 mean score, it's evident that agriculture is a favourite subject for many students. The standard deviation of 0.93 reveals that most students have a strong liking for agriculture, but there may be a few who feel indifferent.

Majority of the respondents believed that learning agriculture was in itself rewarding. The mean and standard deviation were found to be 3.96 and 1.23 respectively. A cumulative of 76.2% of all the respondents agreed and strongly agreed with the statement, 'learning agriculture is in itself rewarding' compared to only 18.3% who expressed their disagreement or strong disagreement with the statement. Specifically, most of the respondents (43.7%) representing 55 respondents strongly agreed that learning agriculture was in itself rewarding while an additional 32.5% (41 respondents) agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 12.7% (16 respondents) and 5.6%, (7 respondents) respectively. About 5.6% (7 respondents) were undecided. The mean of 3.96 indicates that students generally find learning agriculture rewarding. However, the higher standard deviation (1.23) reflects that some students may not find agriculture as rewarding as others.

Majority of the respondents confirmed that they continue thinking about agriculture even when the lesson is over. This was indicated by the mean of 3.40 and a standard deviation of 1.24 respectively. A cumulative of 61.1% of all the respondents agreed and strongly agreed with the statement, 'I continue thinking about agriculture even when the lesson is over' compared to only 28.5% who either disagreed or strongly disagreed with the statement. Specifically, most of the respondents (44.4%) representing 56 respondents agreed that they continue thinking about agriculture even when the lesson is over while an additional 16.7% (21 respondents) strongly agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 19% (24 respondents) and 9.5% (12 respondents) respectively. About 10.3% (13 respondents) were undecided. The lower mean of 3.40 suggests that, while some students continue to think about agriculture after class, this is not a universal sentiment. The standard deviation of 1.24 indicates a wide range of responses, with some students being highly engaged, while others may not reflect on agricultural topics outside of class.

Majority of the respondents confirmed that the hours that they spent learning agriculture were the ones they enjoyed most. This was shown by a mean of 3.86 and standard deviation 1.14. A cumulative of 71.5% of all the participants expressed their agreement and strong agreement with this statement, 'The hours I spend learning agriculture are the ones I enjoy most'

compared to only 14.3% expressed their disagreement or strong disagreement with the context. Specifically, most of the respondents (39.7%) representing 50 respondents agreed while an additional 31.8% (40 respondents) strongly agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 9.5% (12 respondents) and 4.8%, (6 respondents) respectively. About 14.3% (18 respondents) were undecided. The mean score of 3.86 suggests that students enjoy the time they spend learning agriculture, but not overwhelmingly. The moderate standard deviation (1.14) shows some variation in students' enjoyment of agricultural lessons.

Most of the respondents attested that they were highly motivated to learn agriculture. This statement scores a mean and standard deviation of 4.24 and 0.98 respectively. A cumulative of 85.7% of all the respondents concurred with the statement as agreed or strongly agreed, 'I am highly motivated to learn agriculture' compared to only 9.5% who either disagreed or strongly disagreed with the statement. Specifically, most of the respondents (49.2%) representing 62 respondents strongly agreed while an additional 36.5% (52 respondents) agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 7.9% (10 respondents) and 1.6% (2 respondents), respectively. About 4.8% (6 respondents) were undecided. A mean of 4.24 reflects that most students are highly motivated to study agriculture, and the standard deviation of 0.98 indicates moderate variability in their motivation levels.

Most respondents indicated that they were confident in performing well in agriculture tests. The mean and the standard deviation item was 4.44 and 0.74 respectively. A cumulative of 94.5% of all the total interviewees agreed and strongly agreed with the context, 'I am confident in performing well in agriculture examinations' compared to only 2.4% who either disagreed or strongly disagreed with the statement. Specifically, most of the respondents (53.2%) representing 67 respondents strongly agreed while an additional 41.3% (52 respondents) agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 0.8% (1 respondent) and 1.6 (2 respondents), respectively. About 3.2% (4 respondents) were undecided. The mean of 4.44 suggests that students gain confidence in their ability to perform well in agriculture examinations. The low standard deviation represented by 0.74 indicates that this confidence is widely shared among the students.

Most respondents state that they used their spare time to read agriculture books. A cumulative of 81.7% of all the respondents either agreed or strongly agreed with the statement, 'I use my spare time to read agriculture books' compared to only 14.3% who

either disagreed or strongly disagreed with the statement. Specifically, most of the respondents (50%) agreed that they used their spare time to read agriculture books which was an interesting subject to them while an additional 31.7% strongly agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 12.7% and 1.6%, respectively. About 4% were undecided. A mean of 3.98 indicates that many students use their free time to engage with agricultural materials, though the standard deviation (1.01) reflects some variability in this behavior, with some students being more diligent than others.

Majority of the respondents attested that they enjoyed studying agriculture at all times. A cumulative of 81.8% of those surveyed either expressed their agreement or strong agreement with the statement, 'I enjoy studying agriculture at all times' compared to 11.9% that either disagreed or strongly disagreed with the statement. Specifically, most of the respondents (43.7%) agreed, while an additional 38.1% strongly agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 5.6% and 6.3%, respectively. About 6.3% were undecided. A mean of 4.02 suggests that students generally enjoy studying agriculture, though not always. The moderate standard deviation (1.12) points to a mix of strong and weak enjoyment of agricultural studies.

Majority of the respondents suggested that they did not learn agriculture mainly to pass their examinations. A cumulative of 89.7% of all the respondents agreed and strongly agreed with the statement, 'I do not learn agriculture only to pass my examinations' compared to only 7.2% who either disagreed or strongly disagreed with the statement. Specifically, most of the respondents (60.3%) strongly agreed while an additional 29.4% agreed with the statement. Those who disagreed and strongly disagreed with the statement comprised 3.2% and 4%, respectively. About 3.2% were undecided. A high mean score of 4.39 shows that most students learn agriculture because they genuinely value the subject, not just to pass exams. A 0.99 standard deviation reveals that, there is some difference in this response, with a few students likely viewing agriculture mainly as a means to achieve academic success.

The results indicate that students generally have a positive attitude towards agriculture; this has been proved by most students agreeing that it is an important and rewarding subject. They feel motivated to learn, enjoy the subject, and are confident in their ability to succeed in agriculture tests. While many students are also engaged in extracurricular agricultural activities (like reading agriculture books), there is some variability in responses, especially regarding how often they think about agriculture outside the class and how much they enjoy

assignments. However, overall, the responses suggest that students view agriculture as a valuable and relevant field, which can lead to positive academic outcomes.

On a 1 to 5 Likert scale, an average student respondent obtained a mean of 4.17 and a standard deviation of 0.57 concerning their attitude towards agriculture. The summary of student attitude towards agriculture based on how they responded to a set of 18 statements is summarized in Table 23.

Table 23

Attitude Towards Agriculture

Attitude Towards Agriculture	Frequency	Percentage
Very poor	1	0.8
Poor	3	2.4
Moderate	7	5.6
Good	79	62.7
Very good	36	28.6
Total	126	100.0

The results in table 23 show that, 0.8% of students have a very poor attitude towards agriculture, which is a minimal proportion. This suggests that most of the students do not have a significantly negative view of agriculture. 2.4% of students have a poor attitude towards agriculture, which remains a small percentage. This indicates that while a few students may find agriculture less appealing, it is not a widespread sentiment. 5.6% of students hold a moderate attitude towards agriculture, suggesting indifferent view of the subject. This group might not have strong positive or negative feelings but may still appreciate some aspects of the subject. The majority of students (62.7%) reported having a good attitude towards agriculture. This is the largest group, indicating that most students appreciate and enjoy agriculture to a reasonable degree. This result shows a positive overall reception to the subject among the students body. 28.6% of students have a very good attitude towards agriculture, which is a substantial proportion. These students likely view agriculture very favourably and may have a strong interest in pursuing agricultural studies or careers in the future.

The findings indicate that most of students (91.3%) have good or very good attitude towards agriculture, with 62.7% reporting a good attitude and 28.6% a very good attitude. This suggests that agriculture is generally viewed positively by most students, which may be

influenced by their experiences in class and extracurricular activities. A smaller percentage (3.2%) of students has a poor or very poor attitude towards agriculture, suggesting that negative views of the subject are minimal. A small group of students (5.6%) report a moderate attitude, indicating that some may not feel strongly one way or the other about the subject.

Generally, the positive attitude expressed by the most of the students reflects well on the usefulness of agricultural education and activities in fostering a favourable view of the subject among students.

Test of Hypothesis H0₂:

Objective four was translated into the following hypothesis:

H0₂: Participation in Young Farmers’ Clubs has no statistically significant influence on students’ attitudes towards agriculture in secondary schools in Suba Sub-County.

The hypothesis was tested using ordered logistic regression. Table 24 shows the influence of participation in Young Farmers’ Clubs on students’ attitude towards agriculture in secondary schools in Suba Sub- County.

Table 24

The Influence of Participation in Young Farmers’ Clubs on Students’ Attitude towards Agriculture

Parameters	Variables	Estimate	Std. Error	Wald	df	Sig.
Threshold	[att_level = 1.00]	-3.201	1.150	7.750	1	.005
	[att_level = 2.00]	-1.773	.755	5.516	1	.019
	[att_level = 3.00]	-.683	.648	1.110	1	.292
	[att_level = 4.00]	2.753	.698	15.554	1	.000
Location	Participation extent	.029	.010	7.869	1	.005

N = 126, Log Likelihood = -114.02524, LR χ^2 (1) = 8.47, Prob> χ^2 = 0.0036, Pseudo R²= 0.358, * = Significant at 5% level

Thresholds correspond to the different attitude levels i.e 1.00 = very poor, 2.00 = poor, 3.00 = moderate, and 4.00 = good, in the regression model.

Threshold [att_level = 1.00] (Very Poor): The negative estimate suggests that higher

participation in YFCs is associated with lower likelihood of students having a very poor attitude towards agriculture. Since the p-value is less than 0.05, this effect is statistically significant. Threshold [att_level = 2.00] (Poor): Similarly, the negative estimate for the poor attitude level indicates that greater participation in the YFCs is linked with a lower likelihood of students developing a poor attitude. This result is also statistically significant ($p = 0.019$). Threshold [att_level = 3.00] (Moderate): The estimate for the moderate attitude level has been found negative but not statistically significant ($p = 0.292$). This shows that participation in YFCs does not have a significant influence on students' likelihood of having a moderate attitude towards agriculture.

Threshold [att_level = 4.00] (Good): The positive estimate for the good attitude level suggests that higher engagement in the YFCs is strongly associated with an increased likelihood of students having a good attitude towards agriculture. This effect is highly significant ($p = 0.000$). Extent of Participation; the variable representing the extent of participation in the YFCs is also statistically significant ($p = 0.005$), with a positive estimate. This suggests that greater participation in the YFCs is associated with a more positive attitude towards agriculture. For each unit increase in participation, the probability of having a more favorable attitude towards agriculture increases.

Results in Table 24 reveal that the coefficient for the extent of participation in YFCs activities was positive and statistically significant at 5%. The log-likelihood for the fitted model of -114.03 and the log-likelihood chi-squared value of 8.47 indicate that the two parameters (extent of participation and students' attitude towards agriculture) are significant at 5%. Pseudo R² of 0.358 meets statistical threshold suggesting that the students' attitude towards the agriculture variable was well attributed to the extent of participation in YFC activities. Based on these results, the null hypothesis was rejected. Therefore, participation in the Young Farmers' Clubs has a statistically significant influence on students' attitude towards agriculture in secondary schools in Suba Sub-County. This implies that students who actively participated in YFCs activities developed a better attitude towards agriculture than those who participated less.

The results of this investigation agree with Massoni (2011) and Lunenburg (2010), their separate studies noted that, students who participate in many activities including YFCs activities improve their attitude towards agriculture. According to Massoni (2011), extracurricular activities such as YFCs activities enhanced attitude towards agriculture positively. Similarly, according to Lunenburg (2010), extracurricular activities such as tree

planting, symposia, crop production activities and livestock production activities enhance learners of agriculture in terms of their attitude. Such activities give students the opportunities to practice what has been learnt by providing the meaningful experience and integrating knowledge outside the formal classroom.

The findings of the study are in concur with Dissanayake et al. (2013) who conducted a study on Tweeting based digital learning to improve agriculture education process. The study attributed students' negative attitude towards agriculture to the lack of involvement of students in YFCs operations (in addition to the lack of facilities). Schools that had allocated students adequate land for project work showed a positive attitude towards agriculture. Agriculture teachers who rewarded the students after successful conclusion of field production projects or after excelled in agriculture examinations were also reported to contribute positively to students' attitude towards agriculture.

The study findings are also consistent with Edwards (2017) who examined how young women participate fully in agricultural skills, competitions and leadership roles. The study found that attitude towards agriculture is attributed to the engagement of learners in YFCs activities. Schools that were not limited by lack of adequate facilities/equipment and financial resources also reported better levels of students' attitude towards agriculture.

The study findings also agree with Williams and Hovorka (2013) who recommended that participation in a range of YFCs activities as a good measure of developing a positive attitude towards agriculture among learners. The persistent global challenge of striking youth to and retaining them in the agriculture sector may also be solved by encouraging students to participate in YFCs activities (Williams & Hovorka, 2013).

The study findings are also in consonant with Njoroge et al. (2014) who ascertained that students who actively participated in YFCs activities developed positive attitude towards agriculture. In their study on the influence of Young Farmers' Clubs activities on secondary school student's performance in Rongai Sub-County, Njoroge et al. (2014) ascertained that , the problem of few youth who never embraced agriculture as a career (contributed by their poor attitude towards agriculture) can be solved by encouraging them to participate in YFCs activities during their school days.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

The aim of this research was to determine the influence of students' participation in YFCs on performance in agriculture and attitude towards the subject in secondary schools in Suba Sub-County, Kenya. The summary of the findings, conclusions, implications and recommendations are presented in this chapter. Suggestions for further research are also presented.

5.2 Summary of the Study

The study examined the influence of students' participation in YFCs on performance in agriculture and attitude towards the subject in secondary schools in Suba Sub-County, Kenya. Based on the analysis of the research questions and hypothesis the results are in line with the study objectives, the following findings were established:

Following the characteristics of respondents, the results show that the most (75.4%) of the students were enrolled in mixed-gender schools. There was equal enrolment of males and females among the respondents. About 42.1% of the students had scored between 250 and 299 in KCPE (entry marks) with an average student scoring about 285 marks (standard deviation of 40.7 marks).

The most popular facilities provided to the YFCs by the sampled schools included the school farm (98.4%). Majority (62.7%) of the respondents were in Form 1 when they joined Young Farmer's Clubs. Most of the projects implemented by the Young Farmers' Clubs were assessed by the agriculture teachers as represented by 98.4% of the total responses. The striking reason for joining Young Farmers' Clubs was to improve the students' performance in agriculture as reported by 94.4% of the respondents.

The common activities of YFCs included vegetable growing (98.4%) and tree planting (96.8%). About 27.5% of Young Farmers' Clubs were rearing cattle and sheep. Most of the respondents suggested that they participated in the Young Farmers Clubs activities every week as represented by 58.4% of the total responses.

Participation in Young Farmers' Clubs had a statistically significant influence on students' performance in agriculture in secondary schools in Suba Sub-County. Students who participated more in YFC's activities performed better than those who participated less.

Participation in Young Farmers' Clubs had a statistically significant influence on students' attitude towards agriculture in secondary schools in Suba Sub-County. Students who engaged actively in YFC's activities were likely to have a better attitude towards agriculture than those who participated less.

5.3 Conclusions

The following conclusions are made based on the findings of the study;

- i. Young Farmers' Clubs are supported by the school administration in a variety of ways. In most cases, the clubs are accorded some key school facilities such as a farm and access to the library. YFCs are popular in many schools, attracting membership from Form One in most instances. Most students enroll in Young Farmers' Clubs with intent of enhancing their performance in agriculture. Project and activities implemented by Young Farmers' clubs are usually assessed by the agriculture teachers.
- ii. Members of Young Farmer's Clubs perform a variety of activities, ranging from crop production (e.g. vegetable growing and tree planting) to livestock keeping (e.g. rearing of cattle and sheep). Most students participate in the clubs activities every week.
- iii. Performance of students in Suba Sub-County is positively influenced by participation in Young Farmers' Clubs. Students who participate more in YFC's activities perform better in agriculture than those who participate less.
- iv. Students' attitude towards agriculture in Suba Sub-County is positively influenced by participation in the Young Farmers' Clubs. Students who participate more in YFC's activities possess a better attitude towards agriculture than those who participate less.

5.4 Recommendations

Based on the findings of the study and conclusions, the following recommendations were made;

- i. The school administration could enhance the status of the Young Farmers' Clubs by encouraging students' membership from the time of admission.
- ii. School administration could support the activities of YFCs by allocating adequate resources and facilities in order to improve performance in agriculture and foster a positive attitude towards agriculture. The government could also consider providing subsidies to Young Farmers' Clubs to support the sourcing of key agricultural inputs

such as fertilizers, seeds and breeding stock.

- iii. Parents could motivate and support their children to join and actively participate in YFCs as a way of enhancing their performance in agriculture.
- iv. Community leaders, Non-Governmental organizations (NGOs) and agricultural organizations could actively coordinate with schools to promote and strengthen YFCs by offering mentorship, resources and opportunities that boost students' engagement and attitude towards agriculture.

5.5 Suggestions for Further Research

This study has examined the influence of students' participation in YFCs on performance in agriculture and attitude towards the subject in secondary schools in Suba Sub-County, Kenya.

However, more research needs to be done on the following areas:

- i. A gendered analysis of the student's participation in Young Farmers' Clubs activities in secondary schools in Suba Sub-County, Kenya.
- ii. Evaluation of challenges faced by Young Farmers' Clubs in meeting their objectives in Suba Sub-County, Kenya.
- iii. Evaluation of the type of support required in reversing the challenges faced by Young Farmers' Clubs in meeting their objectives in Suba Sub-County, Kenya.

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APPENDICES

Appendix A: Questionnaire for Agriculture Students

Introduction

I, James Muok, is a student at Egerton university Njoro campus pursuing a Master Degree in Agricultural Education. I am conducting a study on the influence of student's participation in Young Farmers' Clubs on performance in agriculture and attitude towards the Subject in Secondary Schools in Suba Sub-County, Kenya. You are hereby requested to provide the necessary information as per the Questionnaire. Utmost confidentiality will be observed regarding information provided.

Instructions: -

Please tick [] the preferred answer or fill in the spaces [.....] where applicable.

Section A: - Personal informations

Please tick {} in the appropriate bracket;

1. Type of your school: a) Mixed () b) Single sex ()
2. Category of the school; a) National () b) Extra county () c) County ()
d) Sub county ()
3. Gender: a) Male () b) Female ()
4. Indicate your KCPE entry Score-----

Section: Status of Young Farmers' Clubs

1. Which of the following facilities do you have in your school? (Tick all that apply).
a.) School farm () b) Library () c) Classrooms () d) Laboratory ()
e) Workshops () f) Nature corners/flower gardens ()
2. In which Form were you when you joined Young Farmers Clubs?
a) Form 1 ()
b) Form 2 ()
c) Form 3 ()
3. What are the reasons for joining Young Farmers' Clubs in your school?(Tick all that apply)
a) To improve your performance in agriculture ()
b) To change your attitude towards agriculture ()

- c) To gain modern skills in agriculture ()
- d) To be exposed to modern farming techniques ()
- e) Others (specify).....

Section C: Students' participation in Young Farmers' Clubs activities

1. Which projects do you participate in Young Farmers' Clubs in your school? (Tick all that apply).

- a) Vegetable growing ()
- b) Tree planting ()
- c) Poultry rearing ()
- d) Rabbit keeping ()
- e) Symposium ()
- f) Others (specify).....

.....

2. List the types of livestock reared in the school

.....

3. What are the types of crops grown by members YFCs in the school?

.....

4. Are projects being assessed by the agriculture teacher? Yes () No ()

5. How often do you participate in the activities? (Tick as appropriate)

- a) Daily () b) Weekly () c) Monthly () d). Termly ()

6. What activities does the Young Farmers' club in your school perform?

- a) Livestock production
- b) Crop production
- c) Symposium
- d) Tree planting
- e) Others (specify).....

7. List the livestock production activities carried out by YFC members in your school.

.....

.....

.....

.....

8. List the crop production activities carried out by YFC members in your school.

.....

.....

.....

.....

9. How frequently does the Young Farmers' Club in your school carry its activities?

Activities	Daily	Once a week	Once every two weeks	Once a month	Once a term	Never
Poultry rearing						
Rabbit keeping						
Goat keeping						
Sheep rearing						
Cattle keeping						
Pig keeping						
Vegetable growing						
Maize growing						
Beans growing						
Symposium						
Tree planting						
Agricultural shows						

Others (specify).....

Section D: Influence of Students' Participation in Young Farmers' clubs on Performance in Agriculture

1. Indicate your scores for the previous test as a percentage.....
2. In your opinion, does participation in Young Farmers' Club influence your performance in agriculture? (Tick as appropriate) a) Yes () b) No ()

If Yes explain how?.....

3. Rate the degree to which the following YFC activities contribute to your performance in Agriculture. (Tick as appropriate)

Activity	Very Much	Much	Moderate	Low	Very Low
Poultry rearing					
Rabbit keeping					
Goat keeping					
Sheep rearing					
Pig keeping					
Vegetable growing					
Maize growing					
Bean growing					
Tree planting					
Symposium					
Agricultural shows					

Others (specify).....

Section E: Attitude towards agriculture

1. Indicate your attitude towards agriculture in the following table by putting a tick in the correct box guided by the following key: SD = Strongly Disagree; D = Disagree; U = Undecided; A = Agree; SA = Strongly Agree

	SD	D	U	A	SA
a) I would like to study agriculture up to Form Four and beyond					
b) Agriculture is important to me					
c) Learning of agriculture helps me to be more useful in the society					
d) I am happy to learn agriculture					
e) Agriculture helps me to enrich my knowledge					
f) I don't learn agriculture to please my parents					
g) Agriculture is relevant in the world today					
h) Agriculture is an easy subject to learn					
i) It is interesting doing agriculture assignments					
j) Agriculture is one of my favorite subjects					
k) Learning agriculture is in itself rewarding					
l) I continue thinking about agriculture even when the lesson is over					
m) Hours I spend learning agriculture are the ones I enjoy most					
n) I am highly motivated to learn agriculture					
o) I am confident in performing well in agriculture examinations					
p) I use my spare time to read agriculture books					
q) I enjoy studying agriculture at all times					
r) I do not learn agriculture only to pass my examinations					

2. Explain how participation in Young Farmers' club influence your attitude towards agriculture

.....

Thank you very much for your responses

Appendix B: Students Assessment Test

Instruction

- Answer ALL questions in the spaces provided
- The paper contains 50 marks
- Time: 1 hour

1. Give **two** records kept in the farm. (2mks)

.....
.....

2. List **four** branches of livestock production. (2mks)

.....
.....
.....

3. Match the following tools or equipment with correct use. (7mks)

- | | |
|---------------------|-------------------------------------|
| a) Garden trowel | checking mastitis. |
| b) Watering can | performing open castration. |
| c) Wheel-barrow | lifting seedlings from the nursery |
| d) Knapsack sprayer | holding milk in transit and storage |
| e) Strip cup | watering seedlings in the nursery |
| f) Milk can | spraying chemical solutions. |
| g) Scalpel | transporting heavy loads. |

4. Give **four** uses of water in the farm (2mks)

.....
.....
.....

5. Describe **five** cultural uses of livestock. (5mks)

.....
.....
.....
.....
.....

5. Explain the process of establishing a nursery for raising vegetable seedlings. (5mks)

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.....
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.....

6. Identify **five** vegetable crops grown in Kenya and give the part consumed (5mks)

Vegetable Crop	Part consumed
i.
ii.
iii.
iv.
v.

7. Describe the procedure for transplanting tree seedlings. (6mks)

.....
.....
.....
.....
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.....
.....
.....

8. Explain the reasons for carrying out the following livestock rearing practices. (3mks)

- i) Feeding.....
.....
.....

- ii) Docking.....
.....
.....

iii. Castration.....
.....
.....

9. Outline **three** ways of controlling diseases in a poultry unit. (3mks)

.....
.....
.....

10. Discuss **five** nursery management practices (10mks)

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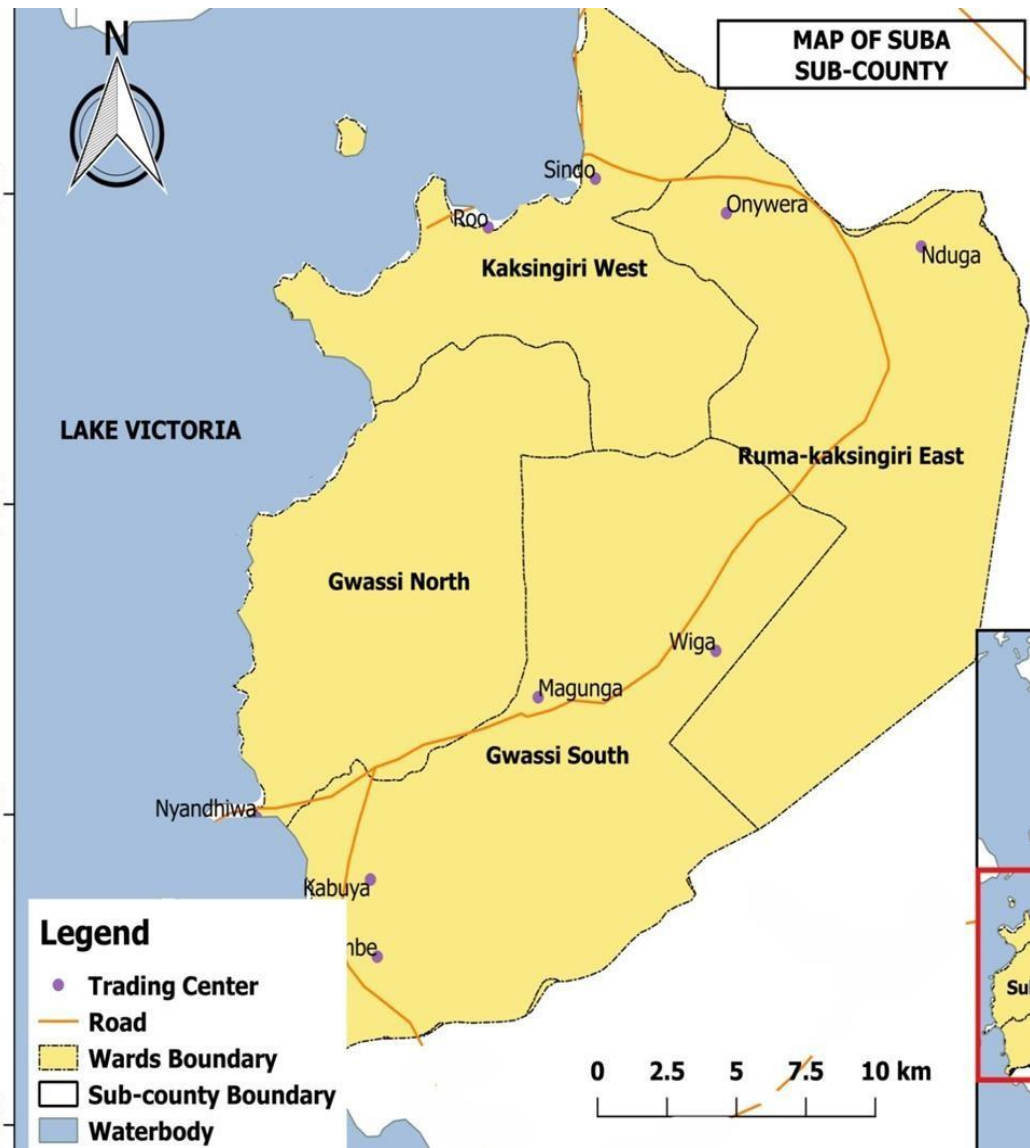
End

Appendix C: Map of Homa-Bay County



Source: Homa- Bay County Education Office (2019)

Appendix D: Map Showing Area of Study-Suba Sub County



Source: Suba Sub County Education Office (2019)

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

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Appendix F: Selected Data Analysis Output

Case Processing Summary

N		Marginal Percentage	
Perf_Extent	Low	6	4.8%
	Moderate	23	18.3%
	High	97	77.0%
Valid		126	100.0%
Missing		0	
Total		126	

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	93.228			
Final	90.021	4.207	1	.040

Link function: Logit.

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	71.268	67	.338
Deviance	53.332	67	.888

Link function: Logit.

Pseudo R-Square

Cox and Snell	.725
Nagelkerke	.734
McFadden	.719

Link function: Logit.

Parameter Estimates

Estimate		Std. Error	Wald	df	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
Threshold	[Perf_Extent = 1.00]	-1.586	.793	3.853	1	.036	-3.337	.165
	[Perf_Extent = 2.00]	.225	.832	.073	1	.787	-1.407	1.856
Location	Extent_participation	.499	.186	3.840	1	.041	-.062	1.059

Link function: Logit.

. logit attitude participation

Iteration	0:	log	likelihood	=	-118.26125
Iteration	1:	log	likelihood	=	-114.08287
Iteration	2:	log	likelihood	=	-114.02531
Iteration	3:	log	likelihood	=	-114.02524
Iteration	4:	log	likelihood	=	-114.02524

Parameter Estimates

Estimate		Std. Error	Wald	df	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
Threshold	[Perf_Extent = 1.00]	-1.586	.793	3.853	1	.036	-3.337	.165
	[Perf_Extent = 2.00]	.225	.832	.073	1	.787	-1.407	1.856
Location	Extent_participation	.499	.186	3.840	1	.041	-.062	1.059

	ation							
--	-------	--	--	--	--	--	--	--

Link function: Logit.

. logit attitude participation

Iteration 0: log likelihood = -118.26125

Iteration 1: log likelihood = -114.08287

Iteration 2: log likelihood = -114.02531

Iteration 3: log likelihood = -114.02524

Iteration 4: log likelihood = -114.02524

Ordered logistic regression	Number of obs	=	126
	LR chi2(1)	=	8.47
	Prob > chi2	=	0.0036
Log likelihood = -114.02524	Pseudo R2	=	0.0358

attitude	Coef.	Std. Err.	z	P> z	[95% Conf.	Interval]
participation	.0291869	.010268	2.84	0.004	.0090619	.0493119
/cut1	-3.200907	1.143382			-5.441894	-.9599201
/cut2	-1.773146	.7523469			-3.247719	-.2985733
/cut3	-.6826595	.6453479			-1.947518	.5821992
/cut4	2.752912	.692675			1.395294	4.11053

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.815	.779	13

Item Statistics Item-Total Statistics

	Mean	Std. Deviation	N	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Poultry rearing	2.8750	1.49731	32	45.5000	152.323	0.354	0.352	0.810
Rabbit keeping	3.5625	2.01506	32	44.8125	144.802	0.388	0.539	0.809
Goat keeping	3.9375	2.06253	32	44.4375	142.706	0.420	0.639	0.806
Sheep rearing	3.8750	2.01206	32	44.5000	129.290	0.750	0.924	0.775
Dairy keeping	4.3750	1.75518	32	44.0000	138.645	0.627	0.731	0.789
Pig keeping	4.0625	1.98279	32	44.3125	141.512	0.471	0.288	0.801
Vegetable growing	3.9375	1.98279	32	44.4375	129.093	0.769	0.915	0.774
Maize growing	2.1563	1.52631	32	46.2188	172.564	-0.180	0.552	0.813
Beans growing	2.2188	0.70639	32	46.1563	172.781	-0.303	0.546	0.812
Symposiums	5.0625	1.68365	32	43.3125	135.383	0.751	0.888	0.779
Tree planting	4.7813	1.80919	32	43.5938	135.475	0.687	0.850	0.783
Agricultural shows	4.6875	1.78592	32	43.6875	139.964	0.580	0.802	0.792
National rallies	2.8438	1.95282	32	45.5313	151.225	0.263	0.486	0.819

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.837	.846	11

Item Statistics Item-Total Statistics

Mean	Std. Deviation	N	Scale Mean if Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Poultry rearing	1.2581	31	13.1290	31.249	0.643	0.604	0.818
Rabbit keeping	1.2581	31	13.1290	30.116	0.691	0.604	0.811
Goat keeping	1.3226	31	13.0645	30.396	0.495	0.426	0.825
Sheep rearing	1.2258	31	13.1613	31.673	0.375	0.235	0.836
Pig keeping	1.3226	31	13.0645	28.129	0.654	0.896	0.809
Vegetable growing	2.1613	31	12.2258	33.114	0.362	0.600	0.836
Maize growing	1.4839	31	12.9032	28.624	0.506	0.978	0.826
Beans growing	1.4839	31	12.9032	28.624	0.506	0.979	0.826
Tree planting	1.4194	31	12.9677	28.166	0.614	0.985	0.813
Symposiums	1.4516	31	12.9355	28.262	0.580	0.978	0.817

Agricultural shows	1.2258	0.88354	31	13.1613	31.673	0.375	0.235	0.836
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Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.842	.861	18

Item Statistics

	Mean	Std. Deviation	N	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
a)I would like to study agriculture up to Form Four and beyond	2.0625	0.35355	32	29.6250	69.984	0.401	0.896	0.839
b)Agriculture is important to me	1.5938	1.13192	32	30.0938	58.926	0.706	0.836	0.818
c)Learning of agriculture helps me to be more useful in the society	1.5313	0.98323	32	30.1563	65.297	0.391	0.844	0.837
d)I am happy to learn agriculture	1.5625	1.01401	32	30.1250	62.694	0.545	0.964	0.828
e)Agriculture helps me to enrich my knowledge	1.2188	0.55267	32	30.4688	66.386	0.643	0.943	0.830

f) I don't learn agriculture to please my parents	1.1875	0.47093	32	30.5000	67.355	0.634	0.973	0.832
g) Agriculture is relevant in the world today	1.4688	0.98323	32	30.2188	59.854	0.766	0.975	0.816
h) Agriculture is an easy subject to learn	1.2188	0.49084	32	30.4688	67.741	0.557	0.971	0.833
i) It is interesting doing agriculture assignments	2.1250	0.55358	32	29.5625	69.867	0.249	0.869	0.841
j) Agriculture is one of my favorite subjects	1.6875	1.11984	32	30.0000	62.452	0.496	0.703	0.831
k) Learning agriculture is in itself rewarding	2.1875	0.69270	32	29.5000	67.226	0.420	0.814	0.835
l) I continue thinking about agriculture even when the lesson is over	1.5625	0.91361	32	30.1250	63.597	0.552	0.794	0.828
m) The hours I spend learning agriculture are the ones I enjoy most	2.2188	0.70639	32	29.4688	69.805	0.184	0.564	0.841
n) I am highly motivated to learn agriculture	1.9688	1.37921	32	29.7188	59.176	0.537	0.915	0.830
o) I am confident in	2.0000	1.31982	32	29.6875	62.351	0.402	0.779	0.839

performing well in agriculture examinations								
p)I use my spare time to read agriculture books	2.2500	0.84242	32	29.4375	68.641	0.224	0.579	0.839
q)I enjoy studying agriculture at all times	2.2500	0.87988	32	29.4375	68.641	0.210	0.874	0.840
r)I do not learn agriculture only to pass my examinations	1.5938	1.10306	32	30.0938	64.539	0.379	0.751	0.838

Appendix G: Letter of Ethical Approval

EGERTON

TEL: (051) 2217808

FAX: 051-2217942



UNIVERSITY

P. O. BOX 536

EGERTON

**EGERTON UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICS
REVIEW COMMITTEE**

EU/RE/DIR/009

Approval No. EUISERC/APP/222/2023

2nd March, 2023

James Opere Muok
P. O. Box 32–40222,
Oyugis
Kenya.
Telephone: 0727230385
E-mail: jamesmuok@yahoo.com

Dear James,

**RE: ETHICAL APPROVAL: INFLUENCE OF STUDENTS' PARTICIPATION IN
YOUNG FARMERS CLUB ON PERFORMANCE IN AND ATTITUDE TOWARDS
AGRICULTURE SUBJECT IN SECONDARY SCHOOLS IN SUBA –SUB COUNTY,
KENYA**

This is to inform you that *Egerton University Institutional Scientific and Ethics Review Committee* has reviewed and approved your above research proposal. Your application approval number is *EUISERC/APP/222/2023*. The approval period is *2nd March, 2023 –3rd March, 2024*

This approval is subject to compliance with the following requirements;

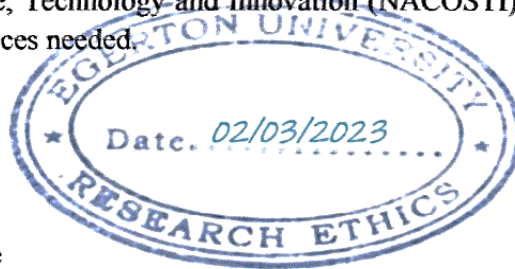
- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by *Egerton University Institutional Scientific and Ethics Review Committee*.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to *Egerton University Institutional Scientific and Ethics Review Committee* within 72 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to *Egerton University Institutional Scientific and Ethics Review Committee* within 72 hours.

"Transforming Lives through Quality Education"

- v. Clearance for Material Transfer of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to *Egerton University Institutional Scientific and Ethics Review Committee*.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and also obtain other clearances needed.

Yours sincerely,



Prof. Raphael M. Ngure

**CHAIRMAN, EGERTON UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICS
REVIEW CTTEE**

RMN/BK/

Appendix H: Abstract Summary

Rigorous Journal of Research and Development (RJRD)
ISSN (Online) 2790-3362
Vol. 2, Issue No. 6
DOI: <https://doi.org/10.70255/RJRD/v2i6/107>

Rigorous Scientific Publishers



Influence of Students' Participation in Young Farmers' Club on Performance in Agriculture in Secondary Schools in Suba Sub-County, Kenya

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²Department of Textile Technology, Kirinyaga University, Kenya

Abstract—Agriculture is one of the most important sectors for economic growth in Kenya. Setting up of young farmers' club (YFC) in secondary schools is one way of attracting young people in agriculture as well as developing their production skills. Inadequate participation in young farmers' club may lead to poor performance in agriculture and negative attitude towards the subject by secondary school students. The aim of this study was to determine the influence of students' participation in young farmers' club on performance in agriculture subject in secondary schools in Suba Sub-County. A cross-sectional survey research design was employed in the study which targeted 628 Form Three agriculture students in public secondary schools in Suba Sub-County. Data was collected from an accessible population of 286 Form Three Young Farmers' Club members in 37 public secondary schools in Suba Sub-County. Stratified random sampling was used to get the study sample of 126 respondents. Data was collected using semi-structured questionnaires. Experts from the field of Agricultural Education and Extension of Egerton University assessed the instrument to ensure validity. Reliability was estimated through a pilot testing of 30 agriculture students in five secondary schools in neighbouring Nyatike Sub-County. The reliability was estimated using Cronbach alpha co-efficient where a co-efficient of 0.817 was computed and taken as satisfactory. Data was arranged, coded and analyzed using SPSS version 25. The study findings revealed that students' performance in agriculture subject is significantly enhanced by participation in Young Farmers' Club. This study recommends that students' participation in Young Farmers' Club activities should be encouraged in all secondary schools as a way of augmenting the students' performance in agriculture subject. This can be done by availing adequate time for YFC's activities. In addition, students in YFCs should be accorded with the required facilities in order to make their participation worthwhile.

Key Words—Students' Participation, Young Farmers' Club, Performance in Agriculture, Secondary Schools, Kenya.

1. INTRODUCTION

Many developing and Western nations seem to embrace the mobilization of youth for the development of the nations by use of agricultural activities (Naamwintome & Bagson, 2013). The integration of such activities into agricultural lessons ensure that agricultural educators prepare learners who value agriculture and are responsive to the needs associated with an increasingly diverse base of consumers (Boone Jr & Boone, 2009). In nations such as Denmark, Great Britain, Netherlands, United States and Germany, the involvement of the youth in agricultural production via activities has been established to contribute largely to the empowering of citizens and agricultural growth (Duet al., 2010).

Citation:
Influence of Students' Participation in Young Farmers' Club on Performance in Agriculture in Secondary Schools in Suba Sub-County, Kenya. *Rigorous Journal of Research and Development*, 2(6), 53-60. <https://doi.org/10.70255/RJRD/v2i6/107>

Despite the significance of agriculture to economic development, there is still a negative attitude towards agriculture among the youth (Giuliani, 2017). Significant efforts have been made to enhance agricultural production which has seen the introduction of agriculture in school curriculum in several nations such as United Kingdom (UK) in 1908 (Cheesbrough, 1966), United States (US) in 1917 (Conner et al., 2017), Tanzania (TZ) in 1974 (Tesha, 2018) and Kenya in 1959 (Konyango & Asienyo, 2015).

Young Farmers Club (YFC) enable learners to perceive agriculture as a reputable profession from which individuals can establish a decent livelihood or living and not an avenue for condemning practitioners to poverty (Mukembo et al., 2014). In most of the developed nations, YFCs are well-established and active, as in the case of the Dominion Federation of Young Farmers' Clubs in New Zealand. This program has had immense contribution to the establishment of YFCs throughout New Zealand (National 4-H, 2012).