THE RELATIONSHIP BETWEEN SELECTED AGRICULTURE TEACHERS' JOB-SATISFACTION FACTORS AND PUBLIC SECONDARY SCHOOL STUDENTS' PERFORMANCE IN AGRICULTURE AT KCSE IN NYERI COUNTY, KENYA

Virginia Virdianne Mwikali

A thesis submitted to the Graduate school in partial fulfillment for the requirements of the Master of Science Degree in Agricultural Education of Egerton University

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DECLARATION AND RECOMMENDATION

Declaration

I declare that this is my original work and has not been submitted or published for the award of a degree or diploma in this or any other University.

Signature..... Date.....

Virginia Virdianne Mwikali
EM11/2878/11

Recommendation

The thesis has been submitted with our approval as University Supervisors.

Signature..... Date.....

Prof. John Gowland Mwangi
Department of Agricultural Education and Extension
Egerton University

Signature..... Date.....

Dr. Maurice Udoto
Department of Agricultural Education and Extension
Egerton University

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DEDICATION

This work is dedicated to the following: my sons, Clive and Calvin; my spouse, Charles; Welu and Nyaga's family; and all youth who value education.

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ABSTRACT

Secondary school education in Kenya equips students with the knowledge, skills and competences that are vital for achieving their desired KCSE performance. The level of teachers of Agriculture job satisfaction can affect implementation of Agriculture curriculum as well as students' Agriculture scores. In Nyeri County, public secondary-school students continue to perform poorly in KCSE with results from 2009 to 2014 indicating an aggregate of C- in Agriculture. This performance has affected transition to higher levels of education and career aspirations. Studies globally show that teachers' job satisfaction can affect students' performance. In Nyeri County, it was not clear whether Agriculture teachers' job satisfaction was affecting students' performance; hence, this study sought to provide that missing information. The study employed an ex-post facto survey research design. The study was a census involving 185 public secondary school teachers in Nyeri County. A structured self-administered questionnaire was used to collect data, which were analyzed using the Statistical Package for Social Sciences (SPSS) Version 22. Both face and content validity of the questionnaire were determined using a panel of five agricultural education experts at Egerton University while its reliability was determined using a sample of 30 Agriculture teachers from Kirinyaga County, which has teachers with similar characteristics as those of Nyeri County. A Cronbach's alpha reliability coefficient of 0.88 was obtained, which is above the minimum threshold acceptable in educational research. The Pearson Product Moment Correlation Coefficient was used to analyze data at a confidence level of α=0.05. Descriptive statistics such as means, frequencies, standard deviations and charts were used to summarize and present the findings of the study, which indicated a positive relationship between the selected Agriculture teachers' job satisfaction factors (working conditions, work load, terms and conditions of service and career development programmes) and students' performance in Agriculture in KCSE except in interpersonal relations where no relationship was found. Based on the findings, the study concludes that favourable working conditions, manageable workload, competitive terms and conditions of service and continuous career development programmes for Agriculture teachers should be enhanced to improve KCSE performance. The study recommends that the Ministry of Education and other education stakeholders improve Agriculture teachers working conditions, their condition of service and career development programmes in order to enhance students'

KCSE Agriculture performance scores.

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ABBREVIATIONS AND ACRONYMS

AET	Agriculture Education and Training
EFA	Education for All
FPE	Free Primary Education
GDP	Gross Domestic Product
GoK	Government of Kenya
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education
KNBS	Kenya National Bureau of Statistics
KNEC	Kenya National Examinations Council
MOE	Ministry of Education
SMT	Science, Mathematics and Technology
SPSS	Statistical Package for Social Sciences
TSC	Teachers Service Commission

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Teachers are important in the educational development of any society. Their job satisfaction affects the quality of the services they render (Okwaraji & Aguwa, 2015). There is consensus that of all the factors inside the school that affect children's learning and achievement, having effective teachers is the most important (Islahi, 2013; Tehseen & Hadi, 2015). Students' high performance leads to teachers' high job satisfaction, which in turn becomes a basis to influence future performance (Vassallo, 2014). Teachers' concerns about high student pass rates are understandable because achieving high student achievement levels in schools is a top national priority in many countries and it is reasonable to argue that stakeholders in education judge teacher effectiveness not on what they do in the classroom but by the results they produce in national examinations (Islahi, 2013; Sithole & Solomon, 2015). This is supported by Okwaraji and Aguwa (2015), Kraft, Marinell and Yee (2015) and Perumal (2011) who argue that a teacher's job satisfaction and commitment have strong implications not only on the quality of instruction, but also on students' achievement.

Theoretically, job satisfaction is the best predictor of positive work-related outcome such as improved performance (Khan et al., 2013; Okwaraji & Aguwa 2015). If workers are satisfied with their jobs, organizational productivities and performance of workers would be greater than before and intention of workers to quit and absenteeism would decrease. In schools, the job satisfaction of teachers is important because it impacts directly on the delivery of lessons, effectiveness of teaching, student performance and pass rates (Iwu, Gwija, Benedict & Tengeh, 2013; Mumtaz, Khan, Danial & Ahmad, 2011; Perumal, 2011). As a result, when Agriculture teachers are committed and satisfied the attributes aforementioned would translate into higher levels of teacher performance in the classroom. If Agriculture teachers are contented with their jobs they would be more productive and would develop and maintain high levels of performance leading to more efficiency and effectiveness in the teaching-learning process (Usop, Askandar, Langguyuan-Kadlong & Usop, 2013).

A student's performance in any examination is dependent on many variables. Such variables include the type of school and its facilities, the qualification of teachers, the students' academic background, the environment from which they come from, the type of leadership provided by principals and their qualifications and parentage (Karue & Amukowa, 2013).

Consequently, the quality of education is dependent partly on the quality of human and material resources available for teaching (inputs), quality of teaching and learning practices (process) and the quality of results (outcomes) (Lumasi & Mukonyi, 2015). The performance of teachers can be measured by performance indicators such as success in impact of pupils' progress; impact on a wider outcome for the pupils; improvement in specific elements of practice such as behaviour; management or lesson planning; success in KCSE / local examination; low repetition and dropout rates; teacher / pupil contact time; and students' time on relevant task (Akinyi, 2013).

Studies world over and in Sub-Saharan Africa (for example, Takupiwa et al., 2013; Wachira & Kamau, 2014) have shown that variables such as pay, promotion, working conditions, leadership, social relationships and the job itself affect the level of job satisfaction an individual derives from his or her work. Lack of professional development appointments and insufficient supportive supervision also contribute to low job satisfaction (Ilgan, Parylo & Sungu, 2015; Mugweru, 2013). In addition, tussles between the Kenya government and teachers which at times lead to industrial action affect job satisfaction. In the revised teachers' code of conduct and ethics, the Teachers Service Commission (TSC) has proposed stringent measures on teachers engaging in other income generating activities, which has led to threats of industrial action (TSC, 2014). All these indicate job dissatisfaction by teachers and raises queries on its effect on academic performance of students. This study, therefore, focused on the major job satisfaction factors identified in the extant literature namely working conditions, workload, terms and conditions of service, interpersonal relations and career development programmes.

Agriculture teachers are expected to be effective in their jobs. However, for them to be effective they must be accorded emotional, administrative and technical support (Muchiri & Kiriungi, 2015). Teachers are expected to perform teaching, administrative and supervisory duties that relate to their terms of service to promote education in Kenya (TSC, 2012). Unlike other subjects, the effective teaching of Agriculture takes place not only in a classroom and laboratories but also in the school farm (Harper, 2004). Agriculture teachers are expected to involve learners actively in agricultural activities through project work that exposes them to long lasting experiences and assists them think critically enhancing learning and retention (Kyule, Konyango & Nkurumwa, 2015). As noted by Manyali, Obara and Kibett (2015), the assessment of the projects in Agriculture poses unique challenges related to discrepancies in evaluation. Manyali, Obara and Kibett add that an Agriculture teacher plays a noble role in

ranking and maintaining interest in students with the desire to venture into Agriculture practical work. Through adoption of participatory curriculum implementation the Agriculture teacher promotes innovation and creativity in Agriculture subject which leads to acquisition of skills for life (Konyango & Asienyo, 2015). As a result, Agriculture teachers help to build self-confidence and high self-esteem among agriculture students. All these activities require a lot of commitment from the Agriculture teachers and are quite demanding; hence, this may affect job satisfaction.

An education system that equips human resource with knowledge, skills and competence that can sustain the field of Agriculture (Ministry of Agriculture, 2012) is needed. This could be possible if the youth are provided with quality education in Agriculture. It is against this background that good performance of students in Agriculture in secondary school is necessary. Consequently, the persistent low performance in Agriculture and particularly at the secondary school level as shown in Table 1 has been a source of concern among agricultural educators, researchers and policy makers countrywide. The table below shows a national drop in percentage mean for two consecutive years, that is, 2012 and 2013 and a decline in the number of students enrolled in the subject:

Table 1: **National Agriculture Mean Score and Candidates enrolled in KCSE Exam from 2009-2014**

Year	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**
Mean Score	6.104	5.345	5.569	6.009	5.577	5.935
Number of candidates	191,960	177,680	178,424	167,456	140,237	137,217

KNEC; 2009, 2010, 2011, 2012, 2013, 2014

In Kenyan schools, the value of a subject is gauged on the basis of its performance in the national examination (Orodho, 2014). Teaching and learning is measured through enhanced students' academic performance in national examinations (Oluchemi, 2012). Unfortunately, students in Nyeri County's public secondary schools continue to perform poorly in KCSE Agriculture examination. The situation is depicted in Table 2.

Table 2: **Students' Enrolment and Performance in Agriculture in Nyeri County from 2009-2014**

Year	2014	2013	2012	2011	2010	2009
Mean Score	5.561	5.403	4.872	5.607	5.176	5.516
Number of candidates	8,912	8,404	8,492	6,697	5,863	5,655

KNEC; 2009, 2010, 2011, 2012, 2013, 2014

From Table 2, the percent enrolment continued to increase due to subsidized free day secondary school education (MOE, 2017), while performance of Agriculture has stagnated in the C- grade bracket. Nyeri County is predominantly agricultural constituting the backbone of its economy. The bulk of the labour force which is skilled or semi-skilled is mainly engaged in agricultural activities. Unfortunately, students studying Agriculture in public secondary schools continue to perform poorly in Agriculture at the KCSE despite such rich agricultural background in Nyeri County.

Many studies have been conducted regarding influence of physical facilities (Kiruja, 2012), teaching learning resources, teaching styles and perceptions (Cheplogoi, 2011; Kidane & Worth, 2014; Muchiri, Odilla, Kathuri & Kiriungi, 2013) on performance and job satisfaction of teachers (Sithole & Solomon, 2014). A vast amount of reasons dictate students' performance in Agriculture (Ngware, Oketch & Mutisya, 2014). Some of the factors documented that influence performance in subjects include: attitude and physical facilities (Akinyi, 2013); school based factors (Mukhwana, 2013; Mwangi, 2013); teaching learning resources (Ambogo, 2012); assessment (Boud & Soler, 2016); student related factors (Mukhwana, 2013); and management practices (Waweru & Orodho, 2014). However, limited research has been conducted on the relationship between Agriculture teachers' job satisfaction on student Agriculture performance. The information gained from this study was intended to help fill the lacuna.

1.2 Statement of the Problem

Agriculture as a subject in secondary schools aims at developing basic principles of agricultural production relevant to Kenya in general, and specifically to the learners' environment. Second, learners are expected to acquire useful agricultural skills through the practicals they engage in. Kenyan government is keen to promote agri-business popularly referred to as *kilimo biashara*. However, Agriculture provides background for agri-business

is posting low performance at KCSE. The low performance in the subject may lead to poor agricultural practices, low transition to tertiary institutions, curtail agri-business and further studies in the field of Agriculture. Therefore, students, including those in public secondary schools require quality teaching in Agriculture for continued students' improvement in KCSE academic performance particularly in Agriculture. The quality of education is partly dependent on the quality of teachers of Agriculture and their level of job satisfaction. It is not clear whether there is a relationship between Nyeri County secondary school Agriculture teachers' job satisfaction and students KCSE performance in Agriculture. The study sought to provide the missing information.

1.3 Purpose of the Study

The study sought to determine the relationship between Nyeri County secondary-school Agriculture teachers' job satisfaction factors (working conditions, work load, terms and conditions of service, interpersonal relations and prospects for career development) and the performance of Agriculture students in KCSE.

1.4 Objectives of the Study

The objectives of the study were to determine:

i. The relationship between Agriculture teachers' satisfaction with working conditions and students' Agriculture performance in KCSE examination in Nyeri County.
ii. The relationship between Agriculture teachers' satisfaction with work load and students' Agriculture performance in KCSE examination in Nyeri County.
iii. The relationship between Agriculture teachers' satisfaction with terms and conditions of service and students' Agriculture performance in KCSE examination in Nyeri County.
iv. The relationship between Agriculture teachers' satisfaction with interpersonal working relations and students' Agriculture performance in KCSE examination in Nyeri County.
v. The relationship between Agriculture teachers' satisfaction with career development programmes and students' Agriculture performance in KCSE examination in Nyeri County.

1.5 Hypotheses

The following null hypotheses guided the study:

Ho_1: There is no statistically significant relationship between Agriculture teachers' satisfaction with working conditions and students' Agriculture performance in KCSE examination in Nyeri County.

Ho_2: There is no statistically significant relationship between Agriculture teachers' satisfaction with work load and students' Agriculture performance in KCSE examination in Nyeri County.

Ho_3: There is no statistically significant relationship between Agriculture teachers' satisfaction with terms and conditions of service and students' Agriculture performance in KCSE examination in Nyeri County.

Ho_4: There is no statistically significant relationship between Agriculture teachers' satisfaction with interpersonal working relations and students' Agriculture performance in KCSE examination in Nyeri County.

Ho_5: There is no statistically significant relationship between Agriculture teachers' satisfaction with career development programmes and students' Agriculture performance in KCSE examination in Nyeri County.

1.6 Significance of the Study

The study would be significant to Education Officers, school principals, teachers of Agriculture and Boards of Management in Nyeri County since the results obtained would help them devise strategies to improve KCSE performance through addressing job satisfaction issues. The findings are likely to provide a reference point for school principals in Nyeri County on staff management skills that would lead to improvement of students' performance in national examinations. Providing opportunities that would meet different job satisfaction needs of teachers of Agriculture could increase their motivation and morale hence teach students better. It would also guard against the teachers seeking alternative jobs. These study findings are also likely to be of importance to the TSC which employs teachers since it would inform policy formulation which would enable teachers achieve job satisfaction. Teachers' job satisfaction is likely to improve on students' performance in Agriculture. The study findings would as well inform the sub-counties Education Boards in designing programmes that would make teaching as a career more enjoyable and satisfying.

1.7 Scope of the Study

The study was confined to TSC employed teachers of Agriculture from all public secondary schools in Nyeri County which had presented candidates to KNEC from 2012 to 2014. Public secondary schools were selected because teachers of those institutions are employed using public funds and their work environment may be affected by resources provided. Agriculture teachers were targeted because they are involved in disseminating agricultural knowledge to the youth of a country whose economy relies on Agriculture. KCSE Agriculture mean scores from 2012 to 2014 were used because they are the most recent complete years that could be used for comparison in order to give an overview of performance in Agriculture. In addition, since performance does not change drastically, they formed a basis to compare since they had similar characteristics. The study was limited to selected teachers' job satisfaction determinants, namely; working conditions, workload, terms and conditions of service, interpersonal relations and career development programmess. As such, any other factor that influence students' performance in Agriculture which was not part of the defined parameters of the study was deemed out of scope. The study was carried out in January 2016.

1.8 Assumptions of the Study

The study assumed that:

i. Agriculture teachers were on duty during the study and were not away due to an industrial action.
ii. Agriculture teachers adequately prepared their students for KCSE agriculture examination.

1.9 Limitations of the Study

i. The researcher had no control over the school events and hence adhered to the overall County calendar of events to schedule data collection.
ii. KCSE average Agriculture mean scores of the preceding three years were used to fairly represent the performance of the students' instead of individual student's scores.

1.10 Definitions of Terms

Career Development Programmes: It refers to trainings meant to advance the job that one has in a particular area of work through acquisition of knowledge and skills (Oxford Advanced Learner's Dictionary, New 8th Edition, 2010). In this study it referred to in-service trainings offered to agriculture teachers to advance their skill and practices in content delivery.

Interpersonal Working Relations: The term refers to the way people behave towards each other or deal with each other in their place of work (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this study, it referred to the relationship of a teacher of Agriculture with the employer, management, colleagues, students, parents among others.

Job Satisfaction: Locke (1976) defines it as the pleasurable emotional state resulting from the perceptions of one's job as fulfilling or as allowing the fulfillment of one's important job values, provided these are compatible with ones needs. In this study, it referred to teaching motivation and morale a teacher of Agriculture gets in regard to working conditions, workload, terms and conditions of service, interpersonal work relations and career development programmes.

Performance: The term refers to the standard to which someone does something such as an examination (Macmillan English Dictionary for Advanced Learners; New Edition, 2007). In this study, it referred to mean scores of Agriculture in KCSE.

Performance Index: The term refers to a measure of how well or badly something is working (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this study, it referred to a measure of performance computed from both school mean scores over three years and student factors.

Public School: The term refers to a learning institution connected with the government and the services it provides (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this study, it referred to an institution of learning where students learn and is owned and run by the government in conjunction with parents.

School Category: The term refers to a group of schools with particular unique features (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this study, it referred to the grouping of secondary schools into national, county and sub-county.

School Factors: The term refers to certain aspects in a school (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this study, it referred to aspects such as category and location of the school.

Student Factors: The term refers to student characteristics (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this study, it referred to student characteristics that influence academic performance such as attitude, KCPE marks, level of discipline, performance in assignments and participation during instruction.

Teachers' Designation: The term refers to the action of giving a person a particular status (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this study, the term was used to refer to the teachers' job group.

Teachers' Experience: The term refers to the knowledge and skill that a teacher has gained through teaching for a period of time (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this study, the term referred to the number of years an Agriculture teacher had taught agriculture.

Teachers' Factors: The term refers to teachers demographic characteristics (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this study, it referred to characteristics such as gender, experience, qualification and designation.

Teachers' Qualification: The term refers to an examination that a teacher passed or a course of study that he or she successfully completed (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this study, the term was used to refer to the level of education of an Agriculture teacher such as diploma or degree level and also his or her course of study (professional qualification).

Terms and Conditions of Service: The term refers to the conditions that people offer, demand or accept when they make an agreement on employment (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this study, the term referred to the contractual agreement between Agriculture teachers' and the TSC on salary, allowances and benefits.

Working Conditions: The term refers to a set of standards connected with the job and the time spent doing it (Oxford Advanced Learner's Dictionary; New 8th Edition, 2010). In this

study, it referred to working situations on the ground in a school such as physical structures, availability of materials, stipulated syllabi to be covered in relation to time given.

Work load: According to Akinyi (2013), work load it describes the amount of time spent teaching and interacting with pupils in and outside the classroom, the time left for preparation and time spent in other co-curricular and the management activities. In this study, the term was used to refer to the amount of work an agriculture teacher is assigned every week such as number of lessons, class size, students' assignments and engagement in co-curricular activities.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

Most nations around the world base their education policy on the premise that quality education can be achieved only when teachers are professionally satisfied, motivated, committed and willing to perform for the benefit of the learners, community and the society (Dakduki, 2015). Moreover, the teacher is of paramount importance in any national system of education and the very progress of the nation depends upon the quality of its teachers. In Africa, there is a wide range of views about teacher performance, most of which are country specific. Standards of job satisfaction and performance are low and falling in many public secondary schools because of increased hours of work, larger class sizes, more subjects, and constantly changing curriculum (Odhiambo, 2015).

In Kenya, agriculture is considered to be the backbone of the economy. Agriculture provides food and employs majority of the rural people. The quality of Agriculture teachers in secondary schools may determine the extent to which agriculture would appraise Kenya's development standards if its students are well trained. However, Nyeri County public secondary schools performance in KCSE Agriculture is poor. This section briefly summarizes literature relevant to the selected agriculture teachers' job satisfaction factors that could have a relationship with students' performance in Agriculture. It is divided into the following headings: introduction, students' enrolment and performance trends in Agriculture, the concept and models of job satisfaction, selected agriculture teachers job satisfaction factors influencing performance (working conditions, workload, terms and conditions of service, interpersonal working relations and career development programmes), job satisfaction and academic performance, theoretical framework and conceptual framework.

2.2 Students' Enrolment and Performance Trends in Agriculture

The Commission of Inquiry into the Education System (GOK, 1999) in reviewing the 8-4-4 system of education noted that there was need to reduce examinable subject in secondary schools to a minimum of seven subjects and a maximum of nine in order to lessen the curriculum burden. Under the 8-4-4 system of education, it is stipulated that a student cannot, precisely, sit for all subjects offered at the end of secondary school course. The Kenya National Examinations Council (KNEC) guidelines categorized the subjects into five major

groups. However, the candidates must enroll for at least seven subjects selected from the above groups as follows:

Table 3: Subject Selection Criteria

Group	Subjects	Selection Criteria
1	English, Kiswahili, Mathematics	All
2	Biology, Physics, Chemistry	At least two
3	History and Government, Geography, Christian Religious Education and Hindu Religious Education	At least one
4	Home science, Art and Design, Agriculture, Aviation Technology and Computer science	At least one
5	French, German, Arabic, Music and Business Studies	At least one

KNEC, 2006

Candidates can sit for a maximum of nine and the extra one or two subjects can be selected from any of groups 2 and 5 (KNEC, 2006). From the above requirements, it can be noted that only subjects in group one are compulsory. The rest of the 4 groups involve subjects that must be selected and these are the elective subjects, where Agriculture falls, raising a dilemma of enrolment were the trend of decline in performance persists. On admission in form one, a student is exposed to all the group one subjects, all group two subjects, all group three subjects and any one or more of group four subjects, depending on the school preferences. This situation remains so until the end of form two. At the beginning of form three, the student selects seven; eight or nine subjects according to ones preferences (KNEC, 2006).

At the moment, Kenya has embraced agri-business popularly referred to as *kilimo biashara* (Ministry of Agriculture, 2013). It is, therefore, a concern that while the government is planning for agri-business, the very people who should be driving the process are posting low performance in the key subject necessary for agri-business. This, therefore, implies that for successful agri-business as projected by the government, something has to be done to either reverse the trend, or at least stop further decline in the performance of the subject by secondary school students. Table 4 depicts that among all the electives offered in group 4 and 5, Agriculture has predominantly posted the least performance mean percent over the period in question. Secondary schools offer several elective subjects some shown in Table 4; hence, learners have many alternatives to choose. Agriculture curriculum is not offered in some top performing schools in Kenya and in overall; there is a wide disparity in performance of Agriculture between counties and schools offering Agriculture (KNEC, 2011; 2012; 2013 &

2014). This, then, negates one of the major objectives of 8-4-4 school curriculum, which is to equip learners with relevant scientific and technical skills to enable them become self-reliant (GOK, 1999).

Table 4: Mean Per Cent Performance for Group 4 and 5 Subjects in KCSE (2009-2014)

Subject Code	Subject Name	2014	2013	2012	2011	2010	2009
		Mean%	Mean%	Mean%	Mean%	Mean%	Mean%
441	Home Science	55.52	57.98	56.88	45.97	54.80	51.89
442	Art and Design	53.07	56.00	63.79	54.80	59.54	58.57
443	Agriculture	40.50	33.60	34.97	37.15	33.99	38.83
444	Woodwork	44.23	53.32	46.01	35.49	50.18	47.11
445	Metalwork	60.77	54.66	53.43	51.57	37.70	60.82
446	Building & Construction	53.99	56.29	42.13	39.42	43.78	50.05
447	Power Mechanics	71.35	66.27	65.26	56.16	52.66	56.73
448	Electricity	69.30	60.08	60.60	65.37	61.51	59.55
449	Drawing & Design	66.95	56.45	43.04	55.24	50.05	46.74
450	Aviation Technology	52.58	58.33	59.90	60.2	64.84	61.07
451	Computer Studies	56.72	55.18	57.64	57.43	55.91	48.13
501	French	56.40	56.73	54.74	56.05	55.37	50.09
502	German	57.37	56.86	66.61	65.77	64.85	63.95
503	Arabic	52.75	55.37	46.52	62.37	67.00	71.95
504	Kenyan Sign Language	57.33	60.58	60.96	64.28	64.12	-
511	Music	53.91	56.83	50.60	48.77	-	-
565	Business Studies	46.82	47.12	44.30	45.53	39.73	35.42

KNEC 2009, 2010, 2011, 2012, 2013, 2014

Nyeri County is predominantly agriculturally endowed with over 57% households engaged in agriculture (Ministry of Devolution and Planning, 2013). Available data reveals that 95 per cent of the 1,686 women groups in Nyeri County accessed loans engage in agricultural projects (Women Enterprise Development Fund, 2014). In addition, most youth access loans in the Nyeri County engage in agricultural projects (Youth Enterprise Development Fund, 2014). Whereas women and out of school youth appreciate the role of agriculture in economic empowerment, it is alarming that the performance of Agriculture in secondary schools has been declining. Secondary data revealed that most secondary schools in Kenya have initiated income generating activities for supplementing their budgets (Gongera & Okoth, 2013). The findings indicated that these income generating activities give quite

substantial amount of money that contributes significantly towards development of the schools and reduce economic constraints in public secondary schools. Notable is the fact that most of these income generating activities are agricultural based and raise the highest percentage among all the alternative sources of income adopted by schools (Gongera & Okoth, 2013; Odundo & Rambo, 2013). This phenomenon invited interrogation on how students' performance relates with teachers' job satisfaction. Table 5 shows the relative enrolment nation-wide for Agriculture between 2009 and 2014 (KNEC, 2014).

Table 5: Summary of National Students' Enrolment in Agriculture and Mean Scores (2009- 2014)

Year	Total No. of Candidates	Enrolment in Agriculture	% Enrolment Agriculture	Mean % Performance
2009	337,404	137,217	40.67	38.83
2010	357,488	140,237	39.23	33.99
2011	411,783	167,456	40.67	37.15
2012	436,349	178,424	40.89	34.97
2013	446,696	177,680	39.78	33.60
2014	483,630	191,960	39.69	40.50

KNEC; 2009, 2010, 2011, 2012, 2013, 2014

From Table 5, it is evident that the national agriculture candidature falls between 39.23% and 40.89% of all students sitting KCSE in the country in the period considered. There were few students opting for Agriculture as an elective. The report suggests that the overall mean percent performance in the subject is low. It is against this backdrop that the present study sought to find out whether there is a relationship between teachers' job satisfaction and performance of Agriculture. Generally, the overall number of students is increasing gradually following universal free primary education and subsidized secondary school education (MOE, 2017). However, the percent increase in Agriculture enrolment is not concurrent with that of the overall candidature. Table 6 shows an increase in the number of students enrolled in Agriculture in Nyeri County following the introduction of free day secondary school education.

Table 6: **Enrolment in Agriculture in Nyeri County (2009-2014)**

Year	Total Number of Candidates	Enrolment in Agriculture	% Enrolment in Agriculture
2009	12,675	5,655	44.6
2010	13,179	5,863	44.5
2011	14,751	6,697	45.4
2012	14,499	8,492	58.6
2013	14,529	8,404	57.8
2014	15,339	8,912	58.1

Source: KNEC; 2009, 2010, 2011, 2013, 2014

From Table 6, it is evident that enrolment in Agriculture falls within 44.5 per cent and 58.6 per cent of all students sitting KCSE in the county in the period considered. Cheplogoi (2011), in his study in Baringo North District, established that there is a tendency for students to learn Agriculture for the sake of passing KCSE examination since it is widely believed by many students easy to pass; hence, it acts as a booster in KCSE mean grade. Therefore, if the performance of Agriculture were to improve in KCSE in Nyeri County, there is a likelihood of increased enrolment in the subject.

2.3 Theories of Job Satisfaction

The concept of job satisfaction is defined as how content an individual is with his or her job; whether he or she likes the job or not (Spector, 1997). It is assessed at both the global level, whether or not the individual is satisfied with the job overall, or at the facet level, whether or not the individual is satisfied with different aspects of the job (Spector, 1997). Spector (1997) listed fourteen common facets: appreciation, communication, coworkers, fringe benefits, job conditions, nature of the work, organization, personal growth, policies and procedures, promotion opportunities, recognition, security, and supervision. In addition, several models have been advanced in relation to job satisfaction namely; affect model, dispositional approach, discrepancy theory, equity theory and job characteristics model.

Locke's (1976) Affect Theory is arguably the most famous job satisfaction model. The main premise of the Affect Theory is that satisfaction is determined by a discrepancy between what one wants in a job and what one has in a job. Further, the Affect Theory states that how much one values a given aspect of work such as the degree of autonomy in a position moderates how satisfied / dissatisfied. When a person values a particular aspect of a job, their satisfaction is more greatly impacted both positively when expectations are met and negatively when expectations are not met, compared to one who does not value that aspect.

The Affect Theory also states that too much of a particular aspect will produce stronger feelings of dissatisfaction the more a worker values that aspect.

The dispositional approach suggests that individuals vary in their tendency to be satisfied with their jobs, in other words, job satisfaction is to some extent an individual trait (Staw, Bell & Clausen, 1986). This approach became a notable explanation of job satisfaction in light of evidence that job satisfaction tends to be stable over time and across careers and jobs (Staw & Cohen-Charash, 2005). A significant model that narrowed the scope of the dispositional approach was the Core-Self Evaluations' Model proposed by Judge, Locke and Durham (1997). Judge, Locke and Durham's (1997) argue that there are four core-self evaluations that determine one's disposition towards job satisfaction: self-esteem, general self-efficacy, locus of control, and neuroticism. This model states that higher levels of self-esteem (the value one places on his / her self) and general self-efficacy (the belief in one's own competence) lead to higher work satisfaction. Believing one has control over their own life, as opposed to outside forces having control, leads to higher job satisfaction.

The Equity Theory shows how a person views fairness in regard to social relationships such as with an employer. The Equity Theory suggests that employees weigh what they put into a job against what they get from it and then compare this ratio with the input-outcome ratio of other workers. If they find this ratio equal to that of the relevant others, a state of equity is said to exist (Adams, 1965). It was found that rewards increase employee satisfaction only when these rewards are valued and perceived as equitable by the employees. Other psychologists have extended the equity theory, suggesting three behavioral response patterns to situations of perceived equity or inequity (Huseman, Hatfield & Mile, 1987; O'Neil & Mone, 1998). These three types are benevolent, equity sensitive and entitled. The level by each type affects job satisfaction, and job performance. The benevolent are satisfied when they are under-rewarded compared with co-workers; equity sensitive believe everyone should be fairly rewarded and entitled people believe that everything they receive is their just due (Schultz & Ellen, 2010).

The concept of the Discrepancy Theory explains the ultimate source of anxiety and dejection (Higgins, 1999). An individual, who has not fulfilled his responsibility feels the sense of anxiety and regret for not performing well, they will also feel dejection for not being able to achieve their hopes and aspirations. According to the Discrepancy Theory, all individuals will learn what their obligations and responsibilities for a particular function, over a time period,

and if they fail to fulfill those obligations then they are punished. Over time, these duties and obligations consolidate to form an abstracted set of principles, designated as a self-guide (Higgins, 1987). Agitation and anxiety are the main responses when an individual fails to achieve the obligation or responsibility (Strauman, 1989). The Discrepancy Theory also explains that if achievement of the obligations is obtained, then, the reward can be praise, approval or love. These achievements and aspirations also form an abstracted set of principles referred to as the ideal self-guide (Higgins, 1987). When the individual fails to obtain these rewards, they begin to have feelings of dejection, disappointment or even depression (Strauman, 1989).

Job characteristics model which was proposed by Hackman and Oldham (1979) is widely used as a framework to study how particular job characteristics impact on job outcomes, including job satisfaction. The model states that there are five core job characteristics (skill variety, task identity, task significance, autonomy, and feedback) which impact three critical psychological states (experienced meaningfulness, experienced responsibility for outcomes, and knowledge of the actual results), in turn influencing work outcomes (job satisfaction, absenteeism, work motivation and performance).

2.4 Factors Influencing Agriculture Teachers' Job Satisfaction

Factors that influence teachers' job satisfaction were identified as working conditions, workload, terms and conditions of service, interpersonal work relations and career development among teachers. It is important to review the influence of the factors on students' performance in agriculture in public secondary schools in Nyeri County.

2.4.1 Working Conditions and Academic Performance

According to Khan et al. (2013) working environment is defined as the perceived entirety of non-pecuniary elements that provides surroundings to a teacher's job. Working environment has a major influence on the degree of job satisfaction of the employees (Saba, 2011). Organizations can enhance this degree of employee's organizational commitment by enhancing job satisfaction with reward and work conditions (Nawab & Bhatti, 2011). Providing excellent physical working environment like cleanliness of the working place, lighting, sufficient and relevant tools and equipment enables employees to perform their work without difficulty and professionally (Aydogdu & Asikgil, 2011). An attractive environment facilitate employees to carry out their work easily and thus are expected to have a positive

impact on organizational commitment and job satisfaction (Mangi, Soomro, Ghumro, Abidi & Jalbani, 2011). Kirimi, Gikunda, Obara and Kibett (2013) found that working conditions had a significant effect on performance of agriculture teachers' in which an improvement in the working conditions led to an increase in the teachers' performance.

In a study on impact of organizational commitment and job satisfaction of academicians in education institutions of higher learning in developing countries (Khan et al., 2013) financial resources did not appear to influence intentions to continue or leave work. Such studies pointed out that the climate or culture of the environment in which academicians work had a huge influence on their manner of satisfaction with the job, and their commitment to continue the job rather than seeking to fulfill basic requirements somewhere else. In countries where teachers working conditions are favourable, high academic performance has been recorded. In Finland, irrespective of the socio-economic status of a school's students, all schools are good to the extent that the nation has the narrowest achievement gaps in the world.

In Singapore, where schools infrastructure is good, teachers regard transfer to another school as an honour. The reassignment is seen as recognition of their professional quality and a test of their commitment and their skills. In Canada, with the exception of a few schools in remote aboriginal communities, all schools have adequate resources, staffed by knowledgeable, competent and highly qualified teachers (Hargreaves & Fullan, 2012). This is contrary to the conditions in Kenya's schools.

Orodho (2014) contends that the quality of education has been reflected not only in the subjects taught and achievement levels reached, but also in the learning environment. Most educators and researchers have agreed that total learning environment should be comfortable, pleasant and psychologically uplifting, among its occupants, and should support the academic process (Adeyemo, 2012). It has been observed that a working environment that is comfortable, relatively low in physical and psychological stress, has facilities and attainment of work goals will tend to produce high levels of satisfaction among employees (Ng'ethe, Iravo & Namusonge, 2012). In contrast, stressful working environments result to low level of satisfaction. Work environment is one of the factors that affect employee's decision to stay with the organization.

Productivity and efficiency are directly affected by how people work, and this equally is affected by their work environment (Ng'ethe, Iravo & Namusonge, 2012). This may include

issues such as office space, equipments, air conditioning and comfortable chairs, among others. One of the most important skills possessed by effective teachers is that of class management and effective use of teaching learning resource as noted by Orodho (2014). These skills are considered by Orodho (2014) and Oluchemi (2012) as being at the heart of planning effective teaching and learning that result into enhanced students' academic performance. When teachers use appropriate teaching/ learning resources effectively, they encourage behavior that is more positive and uplifting in one classroom; the behaviour will carry on into other classrooms, taking the safe environment further than one classroom (Adeyemo, 2012).

Students' achievement, as well as emotional and social outcomes, can all be positively affected by a well-planned learning environment (Oluchemi, 2012). The type of learning resources used during the teaching as well the management of students' behavior all contributes to enhanced students' academic performance (Hellriegel et al., 2009). There is a strong positive relationship between availability of teaching-learning resources and girls' performance in Science, Mathematics and Technology (SMT) (Musau, Migosi & Muola, 2013). The SMT teachers who used a resource-student ratio of one to one produced a good performance range which was above the average performance while candidates who had no SMT resources performed dismally. When more than three students shared a SMT resource the performance in the SMT subjects was not good either.

The government of Kenya in the Totally Integrated Quality Education and Training (TIQET) Report (Koech, 1999) noted that congestion within classrooms affects the teaching and learning environment. The quality and adequacy of learning facilities and equipment have a direct bearing on quality education. This is because sufficient quantity and quality resources and facilities determine how effectively the curriculum is implemented.

However, it is important to note that schools with abundant resources may not always utilize them efficiently to the utmost benefits of raising the students' level of performance while those with limited resources would utilize whatever they had efficiently to raise the pupils' level of performance. Awuor (2013) and Motanya (2011) studies identified poor learning environment in third world countries as one of the major factors that lead to poor performance. This was due to increased enrolment without further expansion of the facilities. This led to overstretching of resources which in turn affects the effectiveness of the teaching

and learning process resulting in poor performance of students. It also reduces teachers' job satisfaction (Awuor, 2013).

Agriculture in secondary schools is both a science and an art and involves numerous practical activities. Kidane and Worth (2014) asserts that agricultural practical lessons, laboratories and libraries are vital as a good link between theory and practice. Hence, students seemed to have a strong interest in combining practices with more theoretical lectures in the classrooms. In addition, the school curriculum has a direct influence on the students' enrolment in technical subjects which was determined by availability of physical facilities. Owoeye and Yara (2011) established that the rural-urban high school differential performance in agricultural sciences hinged on availability of laboratory facilities and the quality of practical work done therein.

The school environment was found to have played a role in influencing the occupational aspirations of the students, especially in terms of performance record and ability to influence to perceptions and expectations of students through interactions with the staff and other students (Kisilu, Kimani & Kombo, 2012). The school environment was found to play some part in this, especially in terms classrooms, laboratories, dormitories, surrounding environment, school discipline, library and availability of relevant text books in influencing the students' perception towards higher academic achievement and therefore higher levels of occupational aspirations. While these studies highlight the importance of the work environment on the employee satisfaction, there is no study done so far on the relationship of the working conditions of Agriculture teachers and students performance in Agriculture in Nyeri County.

2.4.2 Workload and Academic Performance

In a study on factors affecting performance in KCPE, Mwangi (2013) noted that the majority of teachers had inadequate time for lesson preparation due to heavy work load. Many teachers were not able to prepare lessons daily. Lack of time to prepare lessons made teachers to teach unprepared and this would affect pupils' performance. Heavy work load had a very strong impact on syllabus coverage which consequently affects academic performance. Heavy work-load among agriculture teachers could be due to under staffing leaving them with very little time for students' assignments which would in turn contribute to poor performance in examinations. Beyani (2011) also opined that teacher's work overload results into a low delivery rate which subsequently affect performance.

Other findings observed that the teaching staff is involved in other activities apart from teaching. Involvement in other extra activities besides teaching, may explain the failure by some teachers to complete their week's workload in time (Gakure, Mukuria & Kithae, 2013). Heavy workloads stress out the brain more than the body and having too much work to do demoralize teachers by making them feel incapable. In addition, it overwhelms teachers by depriving them of sufficient time to organize and manage their thoughts which may affect the performance of students. This is further affirmed by Kirimi, Gikunda, Obara and Kibett (2013) and Muchiri and Kiriungi, (2015) studies which noted a negative correlation between teaching load and the performance of agriculture teachers in secondary schools. As the teaching load increases, the performance of the teacher declines.

Agriculture teachers manage enormous enterprises in the school farm, supervise farm workers, students' projects and organize field trips for students which make their career challenging. Therefore, such work becomes too demanding which may be a de-motivating factor. These findings are in agreement with Awuor (2013) that work content affects teachers' job satisfaction and the performance of public secondary schools in Homabay County to a great extent.

A study on determinants of girls' performance in Science, Mathematics and Technology (SMT) subjects showed that a significant relationship between teaching load and girls' academic performance (Musau, Migosi & Muola, 2013). Teachers who taught 27 lessons per week produced a performance range which was above the average performance while the performance range of majority of the SMT teachers who taught more than 27 lessons per week was below the average performance indicating a strong negative correlation between the teaching load and girls' performance in SMT subjects at form four.

Musau, Migosi and Muola (2013) also found that girls' performance in SMT subjects decreased with class size. This finding coincided with the views of Barrett and Toma (2013) and Muchiri and Kiriungi (2015). Class size has an effect on the ability to retain effective teachers because those with large classes are more likely to seek other positions (Muchiri & Kiriungi, 2015). Larger class sizes decrease the amount of time that can be spent on instruction and dealing with individual learner (Kiumi, Kibe & Nganga, 2013). Research indicates, however, that instead of rewarding effective teachers by decreasing their class size, administrators often increase the class sizes of the most effective teachers in order to ensure better student test scores (Barrett & Toma, 2013). While the review highlighted how

workload affects employees' job satisfaction and performance, there was no study done on the relationship of workload of agriculture teachers on students' agriculture performance in Nyeri County.

2.4.3 Terms and Conditions of Service and Academic Performance

Pay is the major forecaster of job satisfaction. It is the amount of monetary compensation that is expected by the workers in relationship with the services provided to the organization (Otieno, Ajowi & Bosire, 2015). By identifying the impact of compensation, teacher's commitment can be improved and their degree of satisfaction could be improved as well. The compensation has optimistic relationship with job satisfaction and commitment (Mangi, Soomro, Ghumro, Abidi & Jalbani, 2011).

Starting salaries for teachers in Singapore, for example compare favourably with the salaries of engineers and other professionals so that teaching can attract the best and especially in mathematics and sciences (Hargreaves & Fullan, 2012). Finnish teachers have such high status that teaching is one of the top two preferred occupations, with medicine and higher than business and law (Hargreaves & Fullan, 2012). In the United States, teachers and teachers unions are constantly vilified by politicians and in the media. They are portrayed as being a problem and not a blessing hence teachers are the soft targets of all society's complaints (Hargreaves & Fullan, 2012). The government introduced a monetary incentive amounting to 30 per cent of the graduate teacher basic salary for agriculture teachers in Kenya. Agriculture teachers enter the graduate teacher salary scale three salary points above the minimum (Mugweru, 2013).

According to several findings, a dynamic association exists between salary and job satisfaction. Increase in one must enhance the other (Saba, 2011). The development in job satisfaction depends upon whether the rewards match the prospects, desires, and requirements of the employee. If improved performance leads to elevated rewards and if those rewards are seen to be reasonable and fair, improved satisfaction results (Khan, Nawaz & Khan, 2011). This is affirmed by Awuor (2013) whose study established that remuneration positively affects the job satisfaction and consequently performance of public secondary schools in Homabay County, Kenya to a great extent.

Mudor and Tooksoon (2011) study contends that low teachers' job satisfaction tend to lead to low level of commitment and productivity. Moreover, teachers prepare to leave teaching if a

job alternative offering a higher salary became available. Low teachers' job satisfaction is a significant predictor of teachers' intention to leave the teaching profession. This shows that the pay practice is positively associated with job satisfaction. The relationship between pay practice and job satisfaction is useful to influence motivation of employees' work then achieved higher productivity.

On the other hand, supervision is a significant factor of job satisfaction which refers to the function of leading, coordinating and directing the effort of others to achieve and attain the predetermined goals and objectives (Khan et al., 2013). A supervisor guides their subordinates so that they produce the desired amount and excellence of work within the stipulated time period (Ilgan, Parylo & Sungu, 2015). Supervision is the authoritative direction of the work of one's subordinates. It is the function of leading, coordinating and directing the work of others to achieve the selected objectives (Khan et al., 2011). The performance of the supervisor plays a vital role with regard to the employees' reactions to difficult situation.

Aydogdu and Asikgil (2011) noted that the workers who perceived their supervisor as more approachable and reactive were more likely to raise their concerns. There are a variety of interpretations of the term supervision but characteristically it is a management activity and supervisors have a management responsibility in the organization (Mudor & Tooksoon, 2011).

The school administration plays a vital role in the success of a school. The principal should be in a position to make the right decisions in order to improve learning in their schools through working with parents, encouraging students, motivating teachers in order to improve the quality of learning in schools (Uwezo Initiative, 2011). Mwangi's (2013) study revealed that most of the teachers were not supervised at any one time during the course of their teaching. The schools where teachers were supervised were found to be performing better in KCPE than those which were not supervised frequently.

Mudor and Tooksoon (2011) study revealed that workers prefer to have close supervision of work since they enjoy some visual assessment of their performance, suggesting that monitoring is desirable. Mudor and Tookson study found that there was a positive association between supervision and job satisfaction. Mudor and Tooksoon also noted that the extent to which supervision experienced by agricultural education teachers in Iowa is related to job satisfaction and intention to remain in the teaching profession. On the contrary, Awuor's

(2013) study established that supervision negatively affects the job satisfaction and hence performance of public secondary schools.

Academicians are more motivated and dedicated to carry out a job and also more satisfied if promotion opportunities are available to them (Khan et al., 2013). There is a need to look into the connection between job satisfaction and promotion practice in secondary schools on agriculture performance. According to Saba (2011), had Pakistan universities enhanced their pay structure and provided promotion opportunities for their teachers, the teacher then would show more contentment towards their job. The degree of job satisfaction can be enhanced by preparing flexible promotion policies and initiating advance preparation services for the job and specialized fields (Mangi, Soomro, Ghumro, Abidi & Jalbani 2011). Promotion possibilities involve the accessibility of progressive opportunities. If individuals assume that they will not have much promotion possibilities, then, there will be a negative impact as a whole (Aydogdu & Asikgil, 2011).

Reasonable probability of promotion according to the employee's skill and ability to make employee more faithful to their work become a foundation of pertinent workability for the employee (Ghafoor, 2012). Employees are likely to prefer jobs that provide them opportunities to utilize their skills and abilities and offer diverse responsibilities, autonomy and feedback on how well they are pursuing. Jobs that have too little challenge create dullness but too much challenge creates frustration and a sentiment of disappointment (Nawaz & Yasin, 2015).

Wanyama, Zakayo and Nassiuma's (2014) study revealed that appropriate and relevant employment terms and career development opportunities for teachers are important for attracting and retaining the most qualified, experienced and motivated teachers. This is in agreement with Quan-Baffour and Arko-Achemfour's (2013) study which observed that in many African countries teachers face a unique situation due to an apparent lack of career path and clear criteria for promotion such that teachers may remain in the same post level of their first appointment for their entire teaching life. This concern can lead to frustration and disillusionment among teachers, hence dissatisfaction with their work. In Kenya, the criteria of promotion of secondary school agriculture teachers is well outlined by the TSC in terms of academic qualifications, length of service and performance on the job. However, available literature shows that many teachers continue to stagnate in one job group (Mugweru, 2013). The job groups for secondary school Agriculture teachers employed by the government start

at J for teachers with a diploma in education and K for teachers with a degree in education (Mugweru, 2013).

The diploma holders move to job group K after three years and then to L after another three years automatically. The degree holders progress automatically to job group L after three years. Any ascent beyond job group L for all teachers is through interviews held at TSC headquarters (Mugweru, 2013). While the review highlighted how the terms and conditions of service had been used to address employees' job satisfaction, there was no study carried out in Nyeri County on the relationship between Agriculture teachers' satisfaction with terms and conditions of service and students' Agriculture performance, hence a knowledge gap.

2.4.4 Interpersonal Relations and Academic Performance

According Kirimi, Gikunda, Obara and Kibett (2013), there is a positive correlation between interpersonal relations and the performance of agriculture teachers in secondary schools. As the interpersonal relationships increases, the performance of the teacher also increases since teachers strongly desire interaction with colleagues. Ghenghesh (2013) further affirms that the most important reason found to be intrinsically motivating for teachers was having a good relationship with colleagues. Since people spend at least seven hours or more a day working with co-workers, forming a good working relationship with them is essential for anyone who is to enjoy their work and their time at their place of work.

Sithole and Solomon (2014) noted that most teachers are concerned about establishing good relations with administrative personnel. As pointed out by Gerstein (2012), in order to preserve their positions many workers concentrate on job performance and pleasing their superior because of their authority to demote, reassign or dismiss workers. According to Bryant and Sias (2011) and Salifu and Agbenyega (2013), employees who enjoy positive and trusting peer co-worker relationships report greater productivity and job satisfaction, making co-worker relationships an important concern for organizations.

One may postulate that teachers take maintenance of good relationships which colleagues as already existing and thus do not actively and consciously strive to work on improving them. What is at variance is that business studies teachers' in Botswana had seemingly little concern about maintaining good relationships with colleagues within and outside their departments and students (Sithole & Solomon, 2014). In a study of kindergarten teachers in Jordan, Taleb (2012) found that high levels of satisfaction were reported with regard to

principal-child relations as well as their own relationships with children, principals, other teachers, and parents. This was as a result of education reform that Jordan had witnessed which included trainings on enhancing the principals' interpersonal skills as leaders and administrators. Principals are continuously encouraged to promote positive social working environment within their kindergarten programmes and teachers are typically encouraged to interact with one another. These results indicate that friendships and social opportunities in the workplace are most likely associated with increased levels of job satisfaction.

Teacher's attitude and relationship with students has a very significant impact on the student's attitude towards the subject (Akintade, 2012). That the way he/she relates with the students and passes across instructions affect the student's response and attitude towards the subject and to a large extent their academic performance. While these studies highlight the importance of interpersonal relations on the employees' job satisfaction, there was no study done on the influence of interpersonal relations of Agriculture teachers on students' Agriculture performance in Nyeri County; hence, a knowledge gap that requires to be filled.

2.4.5 Career Development and Academic Performance

Career development occurs over time and hence can be analyzed from two levels namely: pre-employment and post-employment. According to Super and Jordan (1973), in choosing a career at around the age of 14 years, an individual gives more weight to his / her abilities and job requirements and by the age of 31 – 44 years, the career pattern becomes clear and effort is put forth to stabilize, to make a secure place, in the world of work. The Kenya Vision 2030 aims to provide globally competitive and quality education, training and research, and turning Kenya to a regional centre of research and development in new technologies is dependent on quality teachers (GoK, 2005 / 6). Kenya government policy documents have continued to underline the importance of continuous professional development for trained teachers. Sessional Paper No. 1 of 2005 emphasized the need for a dynamic, responsive and well-coordinated system of in-service training (INSET) as a pre-requisite for the success of the Free Primary Education (FPE) initiative and the achievement of Education for All (EFA) goals. However, key players in education in Kenya agreed that little has been achieved in this area. The Ministry of Education acknowledges the fact that there has been little INSET; hence, few teachers have opportunities to participate in INSET activities (Republic of Kenya, 2005).

Musau, Migosi and Muola (2013) observed that the quality of teachers is dependent on the selection of top quality candidates for teaching, their pre-service education and continuous professional development. For effective teaching, the level of a teacher's qualification should be much higher than that of the information he/she is expected to impart.

According to Muchiri, Odilla, Kathuri and Kiriungi (2013), most teachers of Agriculture in Meru Central district had developed a positive perception towards secondary school Agriculture during their training independent of the Agriculture teachers' teaching experience and professional qualifications. The study found that after being given the responsibility of teaching Agriculture, teachers clearly understood the subject hence they had a positive perception of it. Furthermore, the items in the measurement instrument were developed from objectives of teaching Agriculture and the importance of Agriculture. They perceived Agriculture as a useful subject to the students, school and the neighbouring community.

If the employees are intensively involved in their job, they would be more satisfied with their jobs. If they join this occupation due to their own interests, their satisfaction degree will be elevated as compared to if they are forced to do it (Saba, 2011). Work itself means the employees liking and disliking his or her job. It explains whether the job of an employee is gratifying or not (Ghafoor, 2012). Employees favour those jobs that give them opportunities to use their skills and abilities and offer a variety of tasks, liberty and feedback on how well they are doing (Khan et al., 2011). Past researchers have found evidence on the impact of training on productivity and where employees and employers were able to share the benefits from training.

On-going learning as well as training in workplace has a highly significant effect on job satisfaction, in addition on their study indicates that training increases the probability of work being either completely or very satisfied that enhance employee motivation and commitment. In other word, on-going learning or training has positive association with job satisfaction (Mudor & Tooksoon, 2011). INSET increases the working efficiency of the teaching staff. Gakure et al. (2013) noted that such trainings were almost absent for staff in primary schools in Gatanga District. In cases where trainings were done, they were scarce and short, thus not playing the role of equipping teachers with relevant skills for better delivery of their services. The trainings given were reported to be inadequate since there were no follow ups on the same. The trainings given were also not in line with the ever-changing curriculum of the schools.

Career development is important to maintain a motivated and committed workforce (Armstrong 2011). David and Bwisa (2013) sought to establish whether the teachers had an opportunity for career development in Trans Nzoia West district. The study results revealed that few teachers were involved. This is ironical considering the integral role played by career development. Organizations use career development to help people acquire the skills and experiences needed to perform current and future jobs. Continuous professional development leads to the improvement of school performance as well as the professional advancement of individuals as noted by David and Bwisa (2013).

Research studies have shown that individuals involved in continuous professional development often have a desire for career longevity and personal growth, a sense of moral obligation, to maintain and improve professional competence, enhance career progression, keep abreast of new technology and practice, or to comply with professional regulatory organizations (David & Bwisa, 2013). However, on the contrary, Wanyama, Zakayo and Nassiuma (2014) noted that career development programmes are usually very intensive and therefore, the teachers cannot prepare the candidates adequately for the national examinations resulting in poor results. The studies have highlighted the effect of career development programmes on job satisfaction. However, there was need to interrogate the role of career development programmes on Agriculture teachers job satisfaction and whether it had a relationship with students' Agriculture performance in Nyeri county; hence, a knowledge gap that needs to be filled.

2.5 Teachers Job Satisfaction and Students Academic Performance

Agriculture in secondary schools has been offered in many countries as an optional subject. When a curriculum is not compulsory as is the case for agriculture in Kenya today, certainly, may not attract as many students as the compulsory ones. This creates attitudes towards such a curriculum either for or against and worse still if the performance is low. Akintade (2012) observed that students' attitudes towards an elective subject, is greatly influenced by teaching methodology along with the teachers attitude towards the students. As observed by Warui and Gongera (2014) there has been a great debate over the past ten years as to the factors that tend to influence students' performance in the national examinations. This has continued to puzzle many involved parties, ranging from the general public to the government of the day. The issue of students' performance at national examination level should be looked at from a wider perspective of input and output (Warui & Gongera, 2014). Teaching demands the role of

teachers who must have a desire to make a difference in the lives of young people (Musalia, Mwove & Mugambi, 2015).

In many developing countries, Kenya included, teaching is considered a low-status career hence people chose it as a last career option. Teacher's job satisfaction influences their teaching character and reveals the real connection between what one wants from teaching and what one observes during teaching-learning process (Shabbir, Wei, Fu & Xie, 2014). Job satisfaction affects the performance of a teacher. More satisfied teachers perform better (Gana, 2011). Shabbir et al. (2014) found that the main weakness of teachers in public schools was the trend of lateness to reach the school and absenteeism. Lateness and absenteeism are negatively related to performance of a school (Suryadarma, Suryahadi, Sumarto & Rogers, 2006).

A successful completion of high school education is the basis for students' future achievements in education, their careers and in life (Lashgarara, 2011). This will be accomplished if the system assesses the implementation process, the attitude of the participants on delivery and curriculum of Agriculture Education and Training (AET) at secondary schools and up to tertiary levels of education in the context of local and current global development in agricultural sciences (Kidane & Worth, 2012). In addition, teaching and learning are dynamic processes which regularly need adjusting to meet the rapidly changing needs and opportunities in a given area (McGrath, 2012).

2.6 Theoretical Framework

The Herzberg's Two Factor Theory (1959) guided this study. The theory provides an informative and comprehensive approach for studying job satisfaction. The Herzberg's (1959) Two Factor Theory argues that employees are motivated by internal values rather than values that are external to the work. In other words, motivation to work is internally generated and is propelled by variables that are intrinsic to the work which include achievement, recognition, the work itself, responsibility, advancement, and growth. Achievement is represented by the drive to excel, accomplish challenging tasks and achieve a standard of excellence. The individuals' need for advancement, growth, increased responsibility and work itself are said to be the motivating factors. Conversely, certain factors induce dissatisfying experiences to employees and these factors largely result from non-job related variables also called extrinsic variables or hygiene factors. These are work policy,

salary, coworker relationships and supervisory or management styles, job security and work environment.

The Two Factor Theory is relevant to this study in that it recognizes that Agriculture teachers have two categories of needs that operate in them and that both should be addressed. The outcome of Herzberg's studies showed that the factors that lead to job satisfaction when present are not the same factors that lead to dissatisfaction when absent. Thus, they saw job satisfaction and dissatisfaction as independent. Applying the Two Factor Theory, Chandra, Cooper, Cornick and Malone (2011) contend that minimizing factors that bring about dissatisfaction results only in a harmonious work environment and job satisfaction therefore effort should be invested in motivators to increase job satisfaction. Herzberg emphasized that hygiene factors are necessary but not sufficient to provide job satisfaction.

Teachers' employers should also concentrate on the motivators for effective workplace motivation. Sole emphasis on hygiene factors alone may not enhance teacher motivation. In short, if Agriculture teachers are not dissatisfied with their jobs, it doesn't mean they are satisfied; rather motivators need to be activated for teacher satisfaction for better performance (Shah, Rehman, Akhtar, Zafar & Riaz, 2012).

2.7 Conceptual Framework

Working conditions, workload, terms and conditions of service, interpersonal working relations and career development programmes were postulated to have a relationship with students' agriculture performance in public secondary schools. Each independent variable had at least 8 indicators whose scores on the Likert scale were computed. The relationship between each independent variable and the dependent variable was determined. Prior to the main study other factors that have an effect on students' agriculture performance were controlled by conducting a preliminary survey to establish whether they are significantly different in the public secondary schools.

The moderator variables school category, teacher's factors namely experience, designation and qualification were investigated to establish their influence on performance in agriculture subject. School category was controlled by using standardized Agriculture mean scores obtained from a national examination done under similar conditions. Teachers' factors, students' factors were in-built in the study although they were not part of the independent variables.

The schools that had presented students for the KCSE examination from 2012 to 2014 were studied with a view to ensure that all schools, irrespective of characteristics of teachers were included in the sample. Since a census was employed the moderating variables had no significant influence on the independent variables. The arrow shows the interactions of the independent and moderator variables. Figure 1 displays a conceptual framework depicting the relationship between independent variables and the dependent variable.

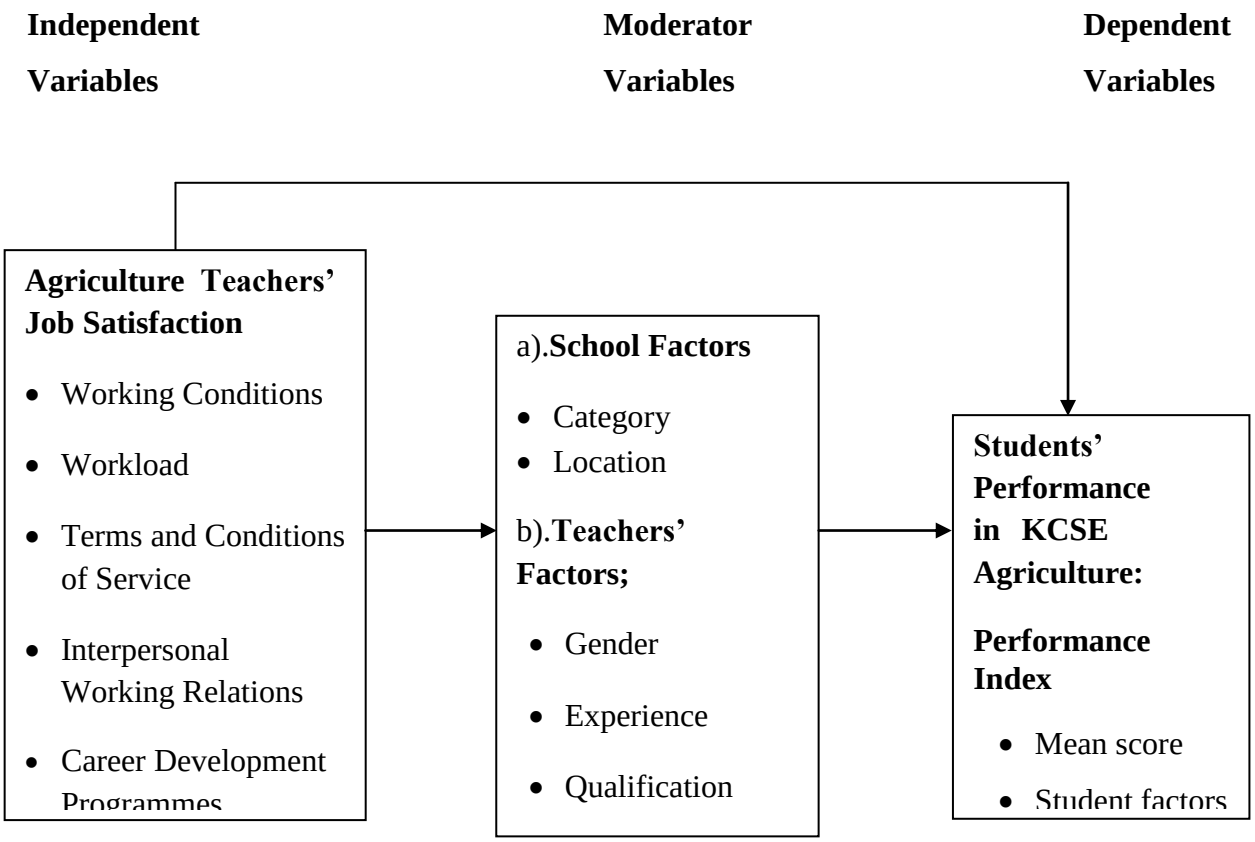

Figure 1: Relationship between Agriculture Teachers' Job Satisfaction, School and Teacher Factors and Student Performance on Agriculture in KCSE

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter is organised under the following headings: research design, study location, population of the study, sampling procedure and sample size, instrumentation, data collection tools, validity, reliability, data collection procedures and data analysis.

3.2 Research Design

The research employed an ex-post-facto research design where the teachers' opinions and responses on how job satisfaction correlates with students' Agriculture performance in KCSE examinations was sought and documented. The design was adopted because the cause, that is the independent variables (selected job satisfaction factors) were studied after they had exerted their effect on the dependent variable (performance in Agriculture). According to Borg and Gall (2007) and Creswell (2013), this is referred to as the fact. The effects of a naturally occurring treatment were examined after they had taken place. Students had been enrolling in agriculture from the time it became an elective subject and the factors had been influencing their performance. Therefore, establishing whether any correlation exists between teachers' job satisfaction and students' performance in Agriculture was measured without any manipulation by the researcher.

3.3 Location of the Study

The study was carried out in all public secondary schools in Nyeri County. The large number of public secondary schools offering Agriculture as a subject favoured the study. Nyeri County was found appropriate for the study because it predominantly engages in agricultural activities; hence, it provided background knowledge for Agriculture subject learning. Also, Nyeri County is highly populated and with the limited employment opportunities in the country, the students could end up seeking employment in agribusiness. The population was 693,558 persons in 2009 and was projected that it will be 845,863 by 2018. The population density was 280 per square kilometer in 2009 and is projected to be 342 per square kilometer by 2018 (Republic of Kenya, 2018).

Nyeri County is located in the central region of Kenya. It covers an area of 2,475.4 square kilometers and is situated between longitudes 36038'' east and 37020'' east and between the equator and latitude 00 380 south. It is 150 kilometers from Nairobi. Nyeri County borders

Laikipia County to the north, Kirinyaga County to the east, Muranga County to the south, Nyandarua County to the west and Meru County to the northeast.

Nyeri County has eight administrative sub counties namely: Mathira East, Mathira West, Kieni East, Kieni West, Tetu, Mukurweini, Nyeri South and Nyeri Central. Much of the agricultural products are from small holders' farms, which produce both food and cash crops in the high potential areas while in the marginal areas of Kieni plateau, subsistence and drought resistant crops with a mixture of horticulture, wheat farming and livestock rearing are predominant. The county has two forest eco-systems, namely Mount Kenya (5,199m) to the east and Aberdare ranges (3,999m) to the west. It has 5 major rivers and numerous streams which if tapped can make the county self-sufficient in surface and sub-surface water sources for agriculture.

3.4 Target Population

Nyeri County had 233 secondary schools by 2014 both public and private. Secondary schools are categorized as either public or private. Public secondary schools are further grouped into national, county and sub-county schools (KNEC, 2014). The target population constituted all the 185 agriculture teachers in the 181 public secondary schools comprising of 2 national, 25 county and 144 sub-county which had presented candidates to KNEC since 2012. Agriculture teachers were selected for the study because of their being in a position to understand best the dynamics of implementing the Agriculture curriculum having been trained in the subject. Also, Agriculture teachers were chosen because they play a vital role in the school and they have, important information concerning job satisfaction and its correlation with students' Agriculture performance in KCSE examinations in Nyeri County.

The study used a census in which everyone in the target population was involved (Punch & Oancea, 2014). All the Agriculture teachers in schools that had presented candidates to KNEC since 2012 were involved. Use of the census enabled the researcher to eliminate potential errors related to sampling; thus, the findings would be generalized to the target population (Borg & Gall, 2007). The target population is shown in Table 7.

Table 7: Target Population

School Category	Target Schools	No. of Teachers
National	2	4
County	25	37
Sub-County	154	144
Total	**181**	**185**

Nyeri County Education Office, 2014; TSC Nyeri County, 2015

3.5 Instrumentation

A closed-ended questionnaire was used to collect data and administered to Agriculture teachers. The questionnaire had two sections: Section A on demographic items; and Section B on major job satisfaction and student factor indicators statements. The indicator statements were anchored on a five point Likert scale where; 5-Strongly agree, 4-Agree, 3-Neutral, 2-Disagree and 1- Strongly Disagree. Respondents were required to indicate in this scale the extent they agreed or disagreed with the given job satisfaction or student factors statements. An index based on the questionnaire items was developed from Brayfield and Rothe Job Satisfaction Index (Brayfield & Rothe, 1951) and tested against a performance index.

Information on students' average Agriculture mean scores in KCSE for the period 2012-2014 was gathered from secondary data and documented (Appendix B). Teachers rated 5 indicators of student factors on a Likert scale which ranged from 5 to 25. The average mean score in KCSE of the past 3 years was added to the mean of the student factors from which an aggregate mean was obtained to constitute the performance index.

The study had five independent variables. Three independent variable namely; working conditions, workload and career development programmes were measured using 9 indicators. In a scale of 1-5 the respondents were asked to indicate the extent to which they agreed with a set of statements regarding the variables. The numbers in the Likert scale for the nine items were added to obtain a scale ranging from 9 to 45 which was then put into categories that defined the five different levels of satisfaction with job satisfaction factor. A value of 9 meant that the respondent disagreed with the statements hence was dissatisfied.

The other two independent variables, terms and conditions of service and interpersonal work relations had 8 indicators whose indices ranged from 8 to 40. In a scale of 1-5, the respondents indicated the extent to which they agreed with a set of statements regarding the

terms and conditions of service. Scores on the Likert scale for the eight different indicators of the independent variables were added together to form a scale that ranged from 8 to 40 which was then divided into the five different levels of satisfaction. The difference in the number of indicators for the independent variables was controlled by obtaining the mean values of the independent variables.

3.5.1 Validity

According to Burton and Mazerolle (2011), validity refers to the degree to which an instrument measures what it is supposed to measure for a particular purpose and a particular group. The study considered two types of validity, namely, face validity and content validity. Face validity is an evaluation of an instrument's appearance with the aim of establishing the instrument's ease of use and clarity while content validity is the evaluation of an instrument's representativeness of the topic to be studied so as to establish its credibility, accuracy, relevance, and breadth of knowledge regarding the domain. For the instrument to be valid, each of the items was expected to ask questions whose response could indicate whether the determinants of job satisfaction correlated with students' performance in Agriculture. Burton and Mazerolle's (2011) study noted that content validity is a matter of judgment by the researcher and experts, and has no specific formula for determination. To ensure the validity of the instrument the supervisor and four experienced researchers in agricultural education and extension department of the Egerton University, Njoro Kenya, peers and fellow students examined the instrument for content validity. Their feedback was used by the researcher to revise the instrument.

3.5.2 Reliability

Reliability refers to the consistency of a test or measurement (Burton & Mazerolle, 2011). Reliability concerns the extent to which the instrument yields the same results on repeated trials. Instrument reliability was determined by use of Cronbach's alpha after pilot testing. The Cronbach's alpha is appropriate for determining the reliability of the research instrument in this study because it measures internal consistency. A reliability correlation coefficient below the threshold 0.70 is rejected (Gall, Borg & Gall, 2007).

Cronbach's alpha is the most common measure of reliability. It is most commonly used when one has multiple Likert questions in a questionnaire that form a scale and one wishes to determine if the scale is reliable. The instrument was pilot tested in the adjacent Kirinyaga

County to a sample of 30 Agriculture teachers. The county was chosen because it had similar characteristics to those of the study location. In the case of the instrument used in this study, a Cronbach's reliability coefficient of 0.88 was obtained and this was high enough to assure consistency of the instrument. Pilot testing the instrument addressed deficiencies and ambiguities before production of final instruments for data collection.

3.6 Data Collection Procedures

Before the actual data collection started, a research permit was obtained from the National Commission for Science, Technology and Innovation (NACOSTI), Nairobi after approval was obtained from the Egerton University Graduate School. The researcher obtained clearance from the Nyeri County Commissioner, County Director of Education and TSC Human Resource Officer in order to collect data. Clearance was also obtained from the school administration. The respondents were briefed about the exercise and their consent sought. The questionnaire in appendix A was self-administered to the Agriculture teachers in respective schools. The respondents were given the questionnaires, allowed at most one hour to complete and return to the researcher. The responses were recorded in the questionnaire and later transferred into electronic database (SPSS) version 22 for further analysis.

3.7 Data Analysis

The data were checked to ensure correct entry of the responses. The data were then coded, summarized and classified according to the research questions and objectives of the study. The data was analyzed using the Statistical Package for Social Sciences (SPSS) version 22. The findings were reported using descriptive and inferential statistics. Descriptive statistics were used to present the data in form of means and tables while inferential statistics were used to analyze the data. Data analysis was done at 95% confidence level. Each of the independent variable was measured as an index, having a lower and upper limit. To cater for the objectives of the study, the indices had values ranging from 8 to 45. Agriculture performance was measured as an index of average mean scores in KCSE in three consecutive years and Agriculture teachers' rating on a set of student factors. The independent variables were analysed individually. Pearson's correlation coefficient was used to show the individual relationship between each independent variable and the dependent variable as shown in Table 8.

Table 8: **Summary of Data Analysis**

Null Hypotheses	Independent Variable	Dependent Variable	Statistical Test
Ho_1: There is no statistically significant relationship between Agriculture teachers' satisfaction with working conditions and students' Agriculture performance in KCSE examination in Nyeri County.	Working Conditions	Student Performance in Agriculture	Pearson's Correlation Coefficient
Ho_2: There is no statistically significant relationship between Agriculture teachers' satisfaction with workload and students' Agriculture performance in KCSE examination in Nyeri County.	Workload	Student Performance	Pearson's Correlation Coefficient
Ho_3: There is no statistically significant relationship between Agriculture teachers' satisfaction with terms and conditions of service and students' Agriculture performance in KCSE examination in Nyeri County.	Terms and Conditions of Service	Student Performance in Agriculture	Pearson's Correlation Coefficient
Ho_4: There is no statistically significant relationship between Agriculture teachers' satisfaction with interpersonal working relations and students' Agriculture performance in KCSE examination in Nyeri County.	Interpersonal Working Relations	Student Performance in Agriculture	Pearson's Correlation Coefficient
Ho_5: There is no statistically significant relationship between Agriculture teachers' satisfaction with career development programmes and students' Agriculture performance in KCSE examination in Nyeri County.	Career Development Programmes	Student Performance in Agriculture	Pearson's Correlation Coefficient

CHAPTER FOUR
RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter provides the results of data analyses and discussion with reference to research objectives and hypotheses as stated in Chapter One. The aspects analysed and discussed are divide into eight sections, which include: general characteristics of respondents, performance index, agriculture teachers' level of satisfaction, Agriculture teachers' working conditions and student performance, Agriculture teachers' work load and student performance, Agriculture teachers' terms and conditions of service and student performance, Agriculture teachers' interpersonal work relations and student performance and Agriculture teachers' career development programmes and student performance.

4.2 General Characteristics of Agriculture Teachers

One hundred and eighty five Agriculture teachers in all the target public secondary schools were involved in the study. Several characteristics of the Agriculture teachers were studied namely gender, age, professional training, level of education, academic qualification, current designation, other responsibilities of Agriculture teachers, teaching experience, school category of respondents', description of respondents' school and location of respondents' school.

4.2.1 Gender of the Agriculture Teachers

The respondents were asked to indicate their gender. The gender distribution of the agriculture teachers involved in the study constituted 60% male. The findings of the present study are in consonance with Kirimi, Gikunda, Obara and Kibett's (2013) study which noted that the implementation of Agriculture curriculum was handled by men. There was no significant difference in job satisfaction across gender although a study by Wilczynska, Batorski and Sellens (2016) of Polish workers found males have been less satisfied with their jobs than female.

4.2.2 Age of the Agriculture Teachers

Respondents were requested to give their age. The age of the respondents ranged between 25 years and 58 years with a mean age of 44 and standard deviation of 8.1. The mean age of 44 years may imply that most of the teachers were settled in the teaching professional and had a

desire for career longevity, personal growth and a sense of moral obligation. These findings are consistent with Mohammad, Rahman and Haleem's (2018) study of the banking sector that with the increase in the number of years overall job satisfaction of workers increases. Researchers in Agriculture have also shown the relationship between age and job satisfaction, indicating that older workers are more satisfied with their job than younger workers (Ayinde, Bolarinwa, Sanusi & Ajao, 2018; Grady, 1985; Nestor & Leary, 2000). However, Wilczynska, Bartoski and Sellens' (2016) study found the nature of relationship between age and job satisfaction among knowledge workers to be ambiguous. Notably, 54% of the teachers were above the mean age tending towards retirement hence there could be reduced intention of the teachers to quit or seek alternative job opportunities. The results further revealed that very few teachers had joined the profession indicated by the low percentage of teachers below 30 years. Figure 2 shows respondents' age distribution.

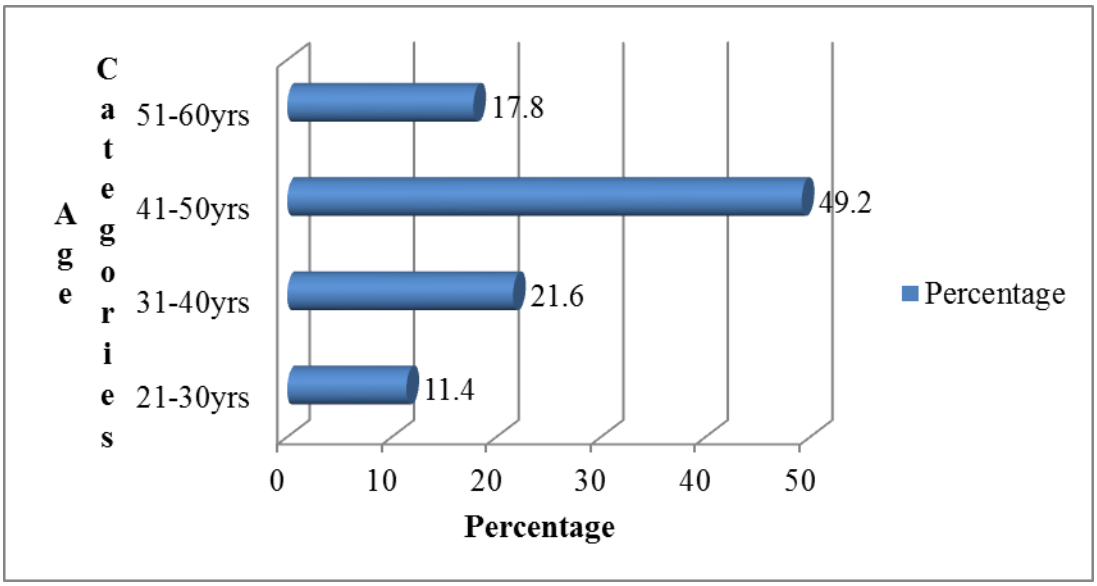

Figure 2: Age of agriculture teachers in years

4.2.3 Professional Training of Agriculture Teachers

Respondents were asked to indicate whether they were trained or not. All the respondents were trained Agriculture teachers. This implies that they were in a position to understand best the dynamics of implementing the Agriculture curriculum having been trained in the subject. Professionally trained teachers possess sufficient pedagogical skills that are suitable for the

dissemination of agriculture content leading to higher students' academic performance. As observed by Muchiri, Odilla, Kathuri and Kiriungi's (2013) study, most teachers of Agriculture develop a positive perception towards secondary school Agriculture during their training independent of the Agriculture teachers' teaching experience and professional qualifications. Attah and Adebayo (2018), in their study on achievement of students in Mathematics, confirmed that there is a positive significant relationship between teachers' training and student achievement.

4.2.4 Academic Qualification of Agriculture Teachers

Agriculture teachers had been asked to indicate the highest level of education they had attained. With high education level, teachers' intellectual capacity is expected to be high. A majority of the respondents had academic qualification of bachelor's degree and above (61.6%). A positive relationship between the educational level and job satisfaction was noted, so when the education level increases the level of job satisfaction also increases (Herzberg et al, 1957). Although the discrepancy theory explains that the time workers spent studying adversely affects job satisfaction, a study by Wilczynska, Bartoski and Sellens (2016) noted that the variable does not affect job satisfaction of knowledge workers. Therefore, it can be argued that academic qualification of respondents increased their job satisfaction. The results are presented in Figure 3.

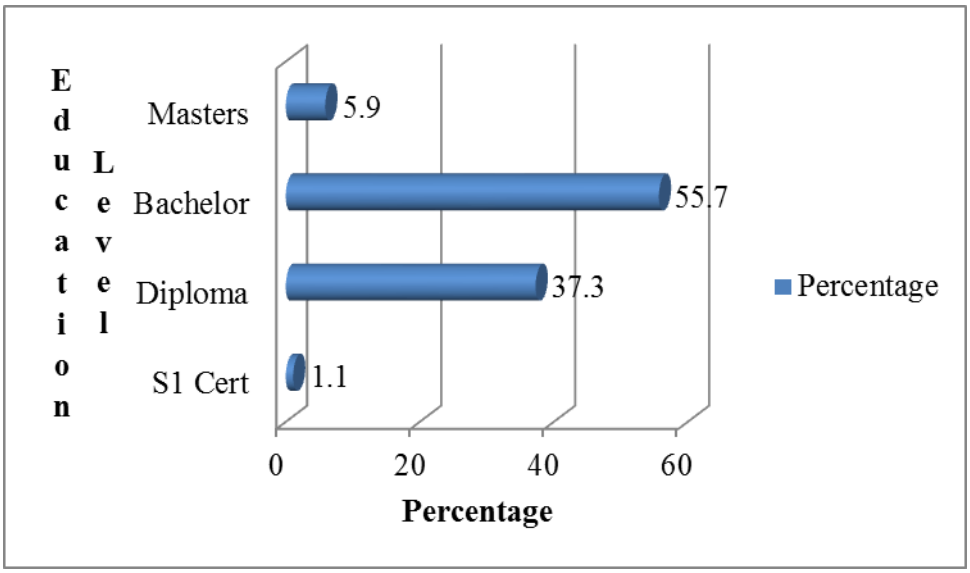

Figure 3: Distribution of agriculture teachers by education level

4.2.5 Current Designation of Agriculture Teachers

Agriculture teachers held different designations based on their qualifications and years of service. A majority held administrative positions (58.4%) ranging from subject heads to school headship. This implies that they were expected to perform teaching, administrative and supervisory duties that relate to their terms of service to promote education in Kenya. School administrators were found to contribute to students' academic performance through instructional supervision and teacher motivation, authorizing expenditure on and ensuring that teaching learning resources and physical facilities are in place (Wanyama, Simatwa & Okwach, 2018). This implies that agriculture teachers' designations can positively influence student outcomes through classroom instruction, school discipline and provision of teaching learning resources. Munguti (2016) study with focus on relationship between learning resources and students' academic performance in Makueni county concluded that access to a variety of learning resources, availability and use in teaching and learning promoted academic performance. On the other hand, Wilczynska, Bartoski and Sellens' (2016) study found that having a managerial position significantly increased satisfaction with a job, especially among the group of other workers. Respondents' designations were as shown in Figure 4.

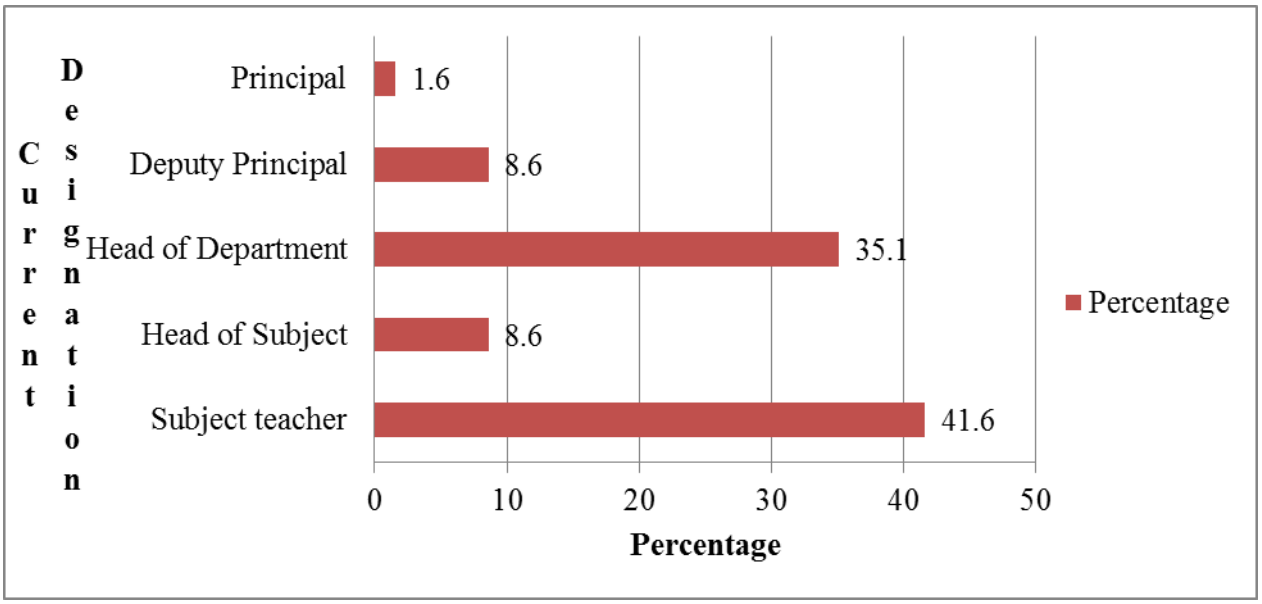

Figure 4: Distribution of respondents by current designation

4.2.6 Other Responsibilities of Agriculture Teachers

Other than teaching Agriculture, Agriculture teachers were asked give other responsibilities allocated. The data revealed that agriculture teachers were fully engaged and had other duties to carry out other than teaching. This is in agreement with the TSC's expectations that teachers are expected to perform co-curricular activities that relate to their terms of service to promote education in Kenya (TSC, 2012). Attah and Adebayo's (2018) study contends that teachers be provided with adequate work load in teaching for better students' achievement. The other responsibilities held are shown in Table 9.

Table 9: Other Responsibilities of Agriculture Teachers

Responsibility	Yes	
	Frequency	Percentage
Club patron	98	53
Guidance and counselling	42	22.7
Disciplinary committee	39	21.1
Dean	4	2.2
Christian Action/Union patron	7	3.8
Farm manager	1	0.5
Class teacher	96	51.9
Games teacher	26	14.4
House teacher	22	11.9

4.2.7 Teaching Experience of Agriculture Teachers

Respondents were asked to indicate the number of years they had taught. Teaching experience of the respondents ranged between 2 years and 32 years with a mean teaching experience of 17 and standard deviation of 8.2. A mean teaching experience of 17 years could imply that the teachers have mastery of content, skills and appropriate methodology. Preparation of candidates for the national examinations and marking agriculture project would be familiar tasks. Over, 78% of the teachers had a teaching experience of over 10 years, which further indicates high teaching competencies. Distribution of teaching experience is indicated in Figure 5.

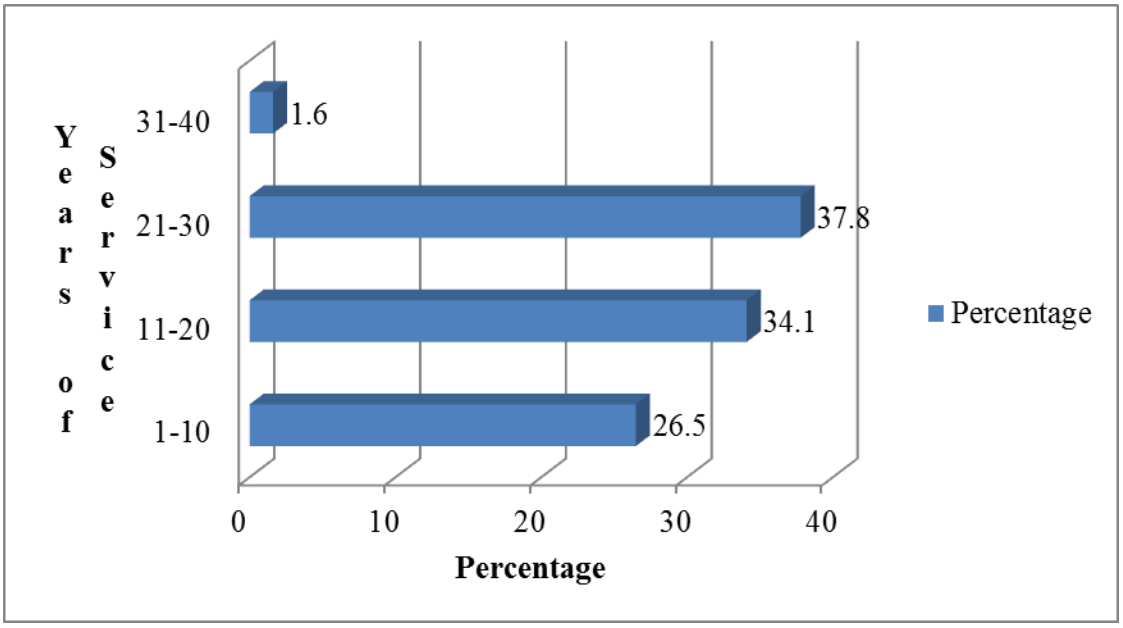

Figure 5: Distribution of agriculture teachers by experience

4.2.8 School Category of Agriculture Teachers

Respondents had been asked to identify their school category as national, extra-county or county. Most of the respondents taught in county schools (81.6%). This indicates that majority of students of Agriculture were in the county secondary schools and majority of the respondents were from those schools. Overall student Agriculture performance would be determined predominantly by the county schools' performance. The results were as shown in Figure 6.

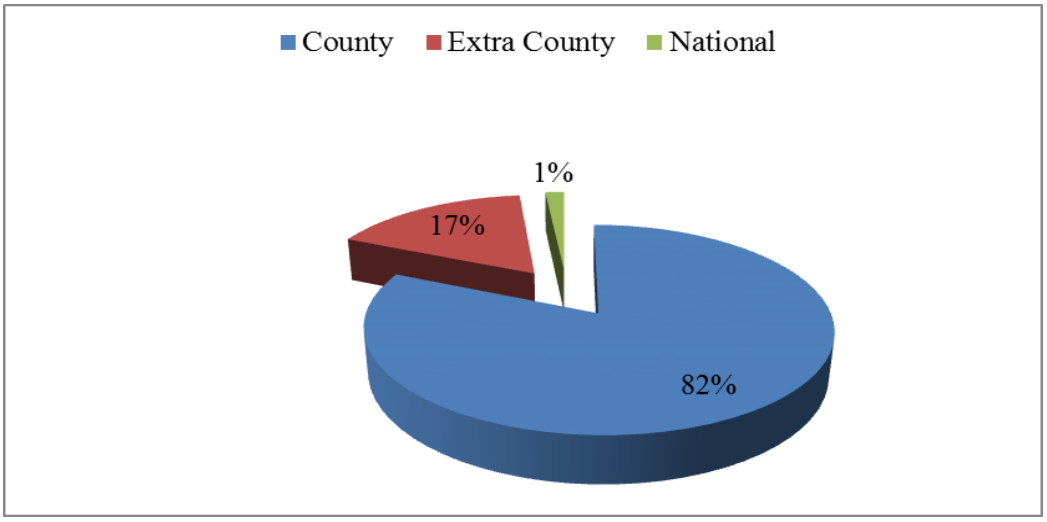

Figure 6: Distribution of agriculture teachers by school category

4.2.9 Description of Agriculture Teachers' School

Respondents were to indicate the type of their school. A study by Ahmed, Oliver, Afolabi and Danmole (2018) revealed that there was no significant difference in performance of students in boarding and day secondary schools and that there was significant difference in performance of single sex boarding schools in Biology. This implies that the performance of a student may not be determined by the kind of school they attend but by their self-construction of knowledge. Figure 7 presents the description of the schools involved in the study.

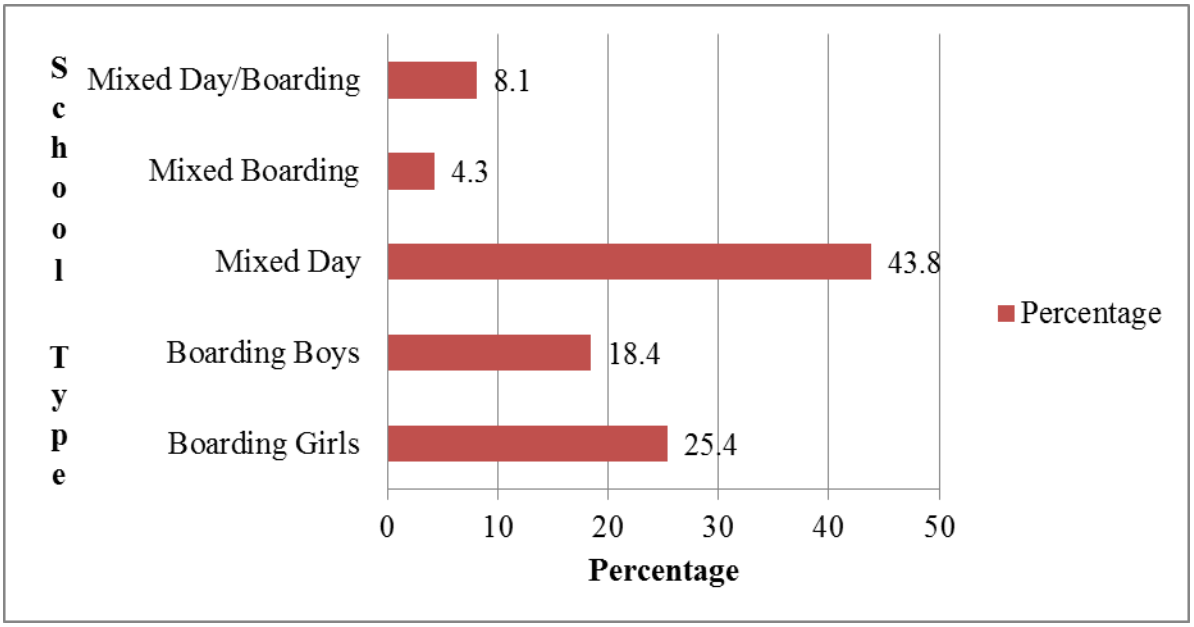

Figure 7: Distribution of agriculture teachers by school type

4.2.10 Location of Agriculture Teachers' School

Public secondary schools in the county are located in rural settings constituting 95.1%. This indicates that the teachers of Agriculture could utilize resources and knowledge of the neighbouring community in the teaching learning process. This could advantage learners further due to ease of accessing agricultural activities in their surroundings.

4.3 Performance Index

A performance index was computed using the average mean score of students' performance in KCSE and student factors performance indicator. Students' Agriculture performance index was computed by getting the aggregate score for KCSE agriculture subject mean score for three years (2012-2014) and the teachers of Agriculture satisfaction rating on a set of student factors.

The subject mean of three years Agriculture mean scores per school was calculated on a scale of 1-12 and then an overall mean obtained. The mean scores were categorized and ranked as shown in Table 10.

Table 10: **Distribution of the Levels of Performance in KCSE**

Category	Level of Performance	Frequency	Percent
Below 2.99	Poor	12	6.5
3.0 – 4.99	Below average	81	43.8
5.0 – 6.99	Average	52	28.1
7.0 – 8.99	Good	28	15.1
Above 9.0	Very Good	12	6.5
Total		**185**	**100.0**

Mean=5.5, SD=1.95

The Agriculture teacher was asked to rate the level of satisfaction with five student factors related to performance on a Likert scale (1=Strongly Disagree, 2= Disagree, 3=Undecided, 4=Agree and 5=Strongly Agree). The scores on the Likert scale for the 5 items were added to obtain a scale ranging from 5 to 25 which was then put in categories that defined the five different levels of teacher satisfaction with student factors. The results were as shown in Table 11.

Table 11: **Satisfaction with Student Factors**

Indicator	Frequency					Mean
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
Student attitude positive	69	110	1	4	1	4.3
Assignments performance	16	108	10	45	6	3.4
Fully engage in instruction	45	113	2	21	4	3.9
Performance vs KCPE	19	85	5	62	14	3.2
High level of discipline	19	113	8	42	3	3.6

n=185, Mean=3.6, SD=0.62

The two values; student factors performance indicator and the mean of mean scores were added and the mean obtained which provided a single index for performance. The average mean score in Agriculture was 5.5 and rating on student factors by the Agriculture teachers was 3.6 giving an overall mean of the computed performance index as 4.55. The performance index was correlated

with agriculture teachers' job satisfaction factors (working conditions, work load, terms and conditions of service, interpersonal work relations and career development programmes) when testing hypotheses.

4.4 Agriculture Teachers' Level of Job Satisfaction

Many factors influence Agriculture teachers' job satisfaction; however, the study confined itself to working conditions, work load, terms and conditions of service, interpersonal work relations and career development programmes. Each factor had at least 8 indicators which were computed to obtain the means shown in Table 12.

Table 12: **Level of Job Satisfaction**

Independent Variable	Mean	SD
Working Conditions	3.61	.60
Workload	3.35	.58
Terms and Conditions of Service	2.43	.60
Interpersonal Work Relations	3.66	.42
Career Development Programmes	3.28	.75

The mean on level of satisfaction was highest in interpersonal work relations (3.66) and least in terms and conditions of service (2.43). These findings are consistent with Mu, Wang, Liu and Hu's (2016) study on teacher job satisfaction in public schools that workload, career development programmes, terms and conditions of service influence teachers' job satisfaction.

4.5 Agriculture Teachers' Working Conditions and Student Performance

Working conditions were measured using 9 indicators. The scores for the nine items were added to obtain a scale which was then put into categories that defined the five different levels of satisfaction with working conditions. The ratings by 185 respondents on the nine indicators of satisfaction with working conditions were aggregated to obtain frequencies, percentages and a mean index.

4.5.1 Level of Satisfaction with Working Conditions

Overall, the respondents indicated satisfaction with the working conditions which meant that most of the basic requirements in a working environment were satisfactory as shown in Table 13.

Table 13: Agriculture Teachers' Satisfaction with Working Conditions

Indicator	Frequency					Mean
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
Classroom condition	42	122	2	18	1	4.0
Accessibility	56	103	3	21	2	4.0
School compound layout	33	111	9	30	2	3.8
Clean water provision	52	97	2	30	4	3.9
Sanitary facilities	34	103	4	39	5	3.7
Security	28	100	10	40	7	3.6
Teaching facilities	25	64	3	75	18	3.0
Timetabling	18	121	6	35	5	3.6
Project marks/KCSE	24	63	11	53	34	2.9

n=185

From the results it is clear that respondents indicated satisfaction in the following aspects, classroom condition (88.6%), accessibility (86%), school compound layout (77.8%), provision of clean water (80.5%), sanitary facilities (74.1%), security (69.2%) and timetabling (75.1%). However, they were dissatisfied with availability of teaching facilities (48.1%) and contribution of project marks to students' agriculture grade in KCSE (47.1%). Since the Agriculture teachers' indicated satisfaction with working conditions, they would be expected to exhibit high degree of commitment and increased performance as documented in past research by Ng'ethe, Iravo and Namusonge (2012). These results concur with those of Kirimi, Gikunda, Obara and Kibett (2013). This finding is in accordance with the study of Ouma and Munyua (2018) on the relationship between teachers' working conditions and students' academic performance in public day secondary schools in Nyando sub-county where a strong relationship was noted.

4.5.2 Relationship between Working Conditions and Student Performance

Hypothesis one stated that "there is no statistically significant relationship between Agriculture teachers' satisfaction with working conditions and students' Agriculture performance in KCSE examination in Nyeri County". This hypothesis was tested using Pearson's Product Moment

Correlation Coefficient. The mean index of the 9 indicators of working conditions was computed and found to be 3.61 and then correlated with the mean performance index. The results are presented in Table 14.

Table 14: Working Conditions and Students' Agriculture Performance Index

		Working conditions
Students' agriculture performance index	Pearson Correlation (r)	.223*
	Sig. (2-tailed)	.002
	n	185

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

The result indicate that a positive and statistically significant relationship exist between agriculture teachers' working conditions and the Agriculture performance of students at KCSE (r= .223, n= 185 and Critical alpha= 0.05). The study rejects the null hypothesis and accepts the alternative hypothesis that there is a statistically significant relationship between Agriculture teachers working conditions and students' performance in Agriculture. There is a strong positive relationship between working conditions and students' academic performance in Agriculture. This implies that an improvement in working conditions could lead to an improved performance of students'. This findings are consistent with other studies that working environment that is comfortable, relatively low in physical and psychological stress, has facilities and attainment of work goals will tend to produce high levels of satisfaction among employees (Allen, 2016; Ng'ethe, Iravo & Namusonge, 2012; Oluchemi, 2012; Orodho, 2014) and therefore enhanced students' academic performance.

4.6 Agriculture Teachers' Work Load and Student Performance

The factor was measured using 9 indicators. The scores for the nine items were added to obtain a scale which was then put into categories that defined the five different levels of satisfaction with work load. An overall work load index was computed by adding the scores from the 185 respondents and dividing by the number of indicators.

4.6.1 Level of Satisfaction with Work Load

Respondents recorded satisfaction in all the indicators except in syllabus coverage (83.8%) as shown in table 15.

Table 15: Satisfaction with Work Load

Indicator	Frequency					Mean
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
Class size	38	116	3	27	1	3.9
Co-curricular activity	25	102	7	42	9	3.5
Number of lessons	30	94	2	41	18	3.4
Time management	22	74	10	69	10	3.2
Freedom to evaluate	40	117	5	20	3	3.9
Agriculture mean score	20	84	7	61	13	3.2
Instructional materials	28	74	6	68	9	3.2
Accountability	27	126	11	15	6	3.8
Syllabus coverage	3	26	1	89	66	2.0

n=185

Respondents indicated that time allocated for teaching Agriculture was not adequate for syllabus coverage. Kenya Institute of Curriculum Development allocated three lessons in forms one and two and four lessons in form three and four which the respondents indicated as inadequate considering the practical nature of the subject. The aspects affirmed as satisfactory were class size (83.2%), co-curricular activity (68.6%), number of lessons (67%), proper time management (51.9%), freedom to evaluate (84.8%), Agriculture mean score (56.2%), instructional materials (55.1%) and accountability (82.7%). These results show that Agriculture teachers were satisfied with the workload. A study by Waita, Mulei, Mueni, Mutune and Kalai (2015) on pupil-teacher ratio and its impact on academic performance in public primary schools revealed an inverse relationship between student-teacher ratio and student academic achievement. The results were contrary to Roch and Sai's (2016) observations in their study on charter schools teachers job satisfaction that high work load lead to dissatisfaction among teachers.

4.6.2 Relationship between Work Load and Student Performance

Hypothesis two stated that "there is no statistically significant relationship between Agriculture teachers' satisfaction with work load and students' Agriculture performance in KCSE examination in Nyeri County". The mean index of the 9 indicators of Agriculture teachers' workload was 3.35 and was correlated with the mean performance index. The results were as presented in Table 16.

Table 16: Work Load and Students' Agriculture Performance Index

		Work Load
Students' agriculture performance index	Pearson Correlation (r)	.279*
	Sig. (2-tailed)	.000
	n	185

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

The result indicated that a statistically significant relationship existed between Agriculture teachers' work load and the performance of students at KCSE (r = .279, n= 185 and Critical alpha= 0.05). The study rejects the null hypothesis and accepts the alternative hypothesis that there is a statistically significant relationship between Agriculture teachers work load and students' performance in Agriculture. These findings suggests that although Agriculture teachers in Nyeri County manage enormous enterprises in the school farm, supervise farm workers, students' projects and organize field trips for students which make their career challenging. This has made them more efficient leading to better students' performance. In addition, 53.4% of the teachers held administrative positions which could have prompted them to be role models. These findings are contrary to those in other studies which noted a negative correlation between teaching load and the performance of agriculture teachers in secondary schools (Giuchi, Emanuel, Chambel & Ghislieri, 2016; Kirimi, Gikunda, Obara and Kibett, 2013; Muchiri & Kiriungi, 2015). The studies argued that as the teaching load increases, the performance of the teacher declines. This contradiction could be attributed to the indicators used in the study which focused mainly on students' issues. As a result, the teachers gave the students personalized attention and had full control of their classes (Waita, Mulei, Mueni, Mutune & Kalai, 2015).

4.7 Agriculture Teachers' Terms and Conditions of Service and Student Performance

Agriculture teachers' satisfaction with terms and conditions of service was measured using 8 indicators. The scores on the Likert scale for the eight different indicators of terms and conditions of service were added together to form a scale which was then divided into the five different levels of satisfaction and presented in frequencies and percentages. Terms and conditions of service mean index was computed by aggregating ratings from the 185 respondents and dividing with the eight indicators.

4.7.1 Level of Satisfaction with Terms and Conditions of Service

In this independent variable the responses were skewed towards dissatisfaction. Majority of the respondents either disagreed or strongly disagreed with the aspects. Despite the high level of dissatisfaction exhibited by the other indicators respondents agreed that the amount of salary was adequate (81.6%). This finding concurs with those of Rasheed, Humayon, Awan and Ahmed (2016) in their study on factors affecting teachers' motivation that, as terms and conditions of service package is made more attractive not only by higher salaries but a combination of fringe and non-fringe benefits, quality service and timely provision of benefits. Since most of the teachers had worked with the TSC for a long time and benefited from gradual improvement in remuneration they could have recorded it as adequate with reference to their past experience. The results were as shown in Table 17.

Table 17: **Satisfaction with Terms and Conditions of Service**

Indicator	Frequency					Mean
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
Amount of Salary	70	81	8	24	2	4.0
Chances of promotion	12	53	19	58	43	2.6
Sufficiency of salary	9	15	7	69	85	1.9
House allowance	10	21	9	80	65	2.1
Transport allowance	8	11	9	94	63	2.0
Retirement benefits	7	20	19	79	60	2.1
Medical allowance	8	12	5	62	98	2.1
Other income sources	9	82	6	55	33	2.9

n=185

4.7.2 Relationship between Terms and Conditions of Service and Student Performance

Hypothesis three stated that "there is no statistically significant relationship between Agriculture teachers' satisfaction with terms and conditions of service and students' Agriculture performance in KCSE examination in Nyeri County". The mean index of the 8 indicators of Agriculture teachers' terms and conditions of service was 2.43 and correlated with the mean performance index. The results were as presented in Table 18.

Table 18: **Terms and Conditions of Service and Students' Agriculture Performance Index**

		Terms and conditions
Students' agriculture performance index	Pearson Correlation (r)	.151*
	Sig. (2-tailed)	.040
	n	185

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

The result indicate that a statistically significant relationship exist between Agriculture teachers' terms and conditions of service and the performance of students at KCSE (r = .151, n= 185 and Critical alpha= 0.05). The study rejects the null hypothesis and accepts the alternative hypothesis that there is a statistically significant relationship between Agriculture teachers' terms and conditions of service and students' performance in Agriculture. This implies that there is a fairly moderate positive relationship between terms and conditions of service and academic performance in Agriculture. The findings are incongruent with the findings of Wanyama, Zakayo and Nassiuma (2014) who noted that appropriate and relevant employment terms for teachers are important for attracting and retaining the most qualified, experienced and motivated teachers. However, the findings reveal that the relationship between the independent variable and the dependent variable is low.

4.8 Agriculture Teachers' Interpersonal Work Relations and Student Performance

The factor was measured using 8 indicators. The scores on the Likert scale for the eight different interpersonal work relations indicators were added together to form a scale that ranged from 8 to 40 which was then divided into the five different levels of satisfaction and presented in frequencies and percentages. A terms and conditions of service mean index was computed by aggregating ratings from the 185 respondents and dividing with the eight indicators.

4.8.1 Level of Satisfaction with Interpersonal Working Relations

Agriculture teachers recorded good and close interpersonal work relations hence exhibited high satisfaction with their jobs. The results were as shown in Table 19.

Table 19: **Satisfaction with Interpersonal Working Relations**

Indicator	**Frequency**					**Mean**
Relationship with	**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**	
TSC	21	60	16	76	12	3.0
Students	83	57	0	22	23	3.8
BOM	33	129	13	8	2	4.0
School administration	46	133	3	2	1	4.2
Staff members	60	120	1	2	2	4.3
Parents	33	120	5	24	3	3.8
Community	32	134	8	9	2	4.0
Local leaders	7	23	18	79	58	2.2

n=185

Respondents were least satisfied with their relations with the local leaders (74.1%). However, indicated high level of satisfaction in interpersonal work relations with all the primary stakeholders in education; students (75.7%), BOM (87.5%), school administration (96.8%), staff members (97.3%), parents (72.6%) and community (89.7%). The findings revealed varied levels of satisfaction with the TSC where 43.8% and 47.6% were satisfied and dissatisfied. These results are consistent with previous research that employees who had good interpersonal work relations with co-workers and supervisors tended to report higher job satisfaction (Charoensukmongko, Moqbel & Gutierrez-Wirsching, 2016; Cho & Egan, 2013; Tang, Siu & Cheung, 2014). The nature and quality of teacher-student relationship are believed to support the development of students' emotional wellbeing and positive sense of self, motivational orientations for social and academic outcomes (Wentzel, 2016).

4.8.2 Relationship between Interpersonal Working Relations and Student Performance

Hypothesis four stated that "there is no statistically significant relationship between Agriculture teachers' satisfaction with interpersonal working relations and students' Agriculture performance in KCSE examination in Nyeri County". The mean of the 8 indicators of interpersonal work

relations was 3.66 and correlated with the mean performance index. The results were as presented in Table 20.

Table 20: **Interpersonal Working Relations and Students' Agriculture Performance Index**

		Interpersonal Work Relations
Students' Agriculture performance index	Pearson Correlation (r)	.095
	Sig. (2-tailed)	.200
	n	185

Correlation is not significant at the 0.05 level (2-tailed).

The results indicate that there is no statistically significant relationship between Agriculture teachers' interpersonal relations and the performance of students at KCSE. The study accepts the null hypothesis and rejects the alternative hypothesis that there is a statistically significant relationship between Agriculture teachers interpersonal work relations and students' performance in Agriculture. These findings are contrary with other studies by Charoensukmongkol, Moqbel and Gutierrez-Wirsching (2016), Kirimi, Gikunda, Obara and Kibett (2013), Salifu and Agbenyega (2013) and Sithole and Solomon (2014), that there is a positive correlation between interpersonal relations and the performance of Agriculture teachers in secondary schools. As the interpersonal relationships increases the performance of the teacher also increases since teachers strongly desire interaction with colleagues. This could be due to the interpersonal relations focusing on other objectives other than those of teaching Agriculture.

4.9 Agriculture Teachers' Career Development Programmes and Student Performance

The factor was measured using 9 indicators. The numbers in the Likert scale for the nine items were added to obtain a scale which was then put into categories that defined the five different levels of satisfaction with career development programmes. The ratings by 185 respondents on the nine indicators of satisfaction with career development programmes were aggregated to obtain frequencies, percentages and an overall career development programmes mean index.

4.9.1 Level of Satisfaction with Career Development Programmes

The respondents had varied responses on the extent to which they were satisfied with the measurable indicators as shown by Table 21.

Table 21: **Satisfaction with Career Development Programmes**

Indicator	Frequency					Mean
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
Subject related INSETs	21	74	8	63	19	3.1
Decision making	31	109	10	25	10	3.7
Course sponsorship	20	58	27	34	46	2.8
Further studies	24	81	16	54	10	3.3
Marking KCSE	40	66	11	41	27	3.3
Research work	32	33	10	96	14	3.5
Job creativity/innovation	34	100	10	34	7	3.6
Recognition	17	57	36	37	38	2.9
Marking Agric projects	18	44	10	56	57	2.5

n=185

Respondents were found to be satisfied with their involvement in democratic decision making (75.7%), the job enhancing creativity/innovation (72.5%), engagement in research work (69.2%), subject related INSETs (51.4%), opportunities for further studies (56.8%) and marking KCSE (57.3%). They expressed dissatisfaction in marking of agriculture projects (61.1%), course sponsorship (43.3%) and recognition (40.5%). Teachers were uncertain on course sponsorship due to financial constraints experienced by schools and that the employer had not stipulated sponsorship modalities or means of recognizing those who had undertaken further training.

The Kenya Vision 2030 aims at providing globally competitive and quality education, training and research. To turn Kenya to a regional centre of research and development in new technologies is dependent on quality teachers. Research studies have shown that individuals involved in continuous professional development often have a desire for career longevity and personal growth, a sense of moral obligation, to maintain and improve professional competence, enhance career progression, keep abreast of new technology and practice, or to comply with professional regulatory organizations (David & Bwisa, 2013). A strong positive correlation was found between career development programmes and job satisfaction among teachers in Chaudhary and Bhaskar (2016) study on training and development and job satisfaction in education sector.

4.9.2 Relationship between Career Development Programmes and Student Performance

Hypothesis five stated that "there is no statistically significant relationship between agriculture teachers' satisfaction with career development programmes and students' agriculture performance in KCSE examination in Nyeri County". The mean of the 8 indicators career development programmes was 3.28 and correlated with the mean performance index. The results were as presented in Table 22.

Table 22: Career Development Programmes and Students' Agriculture Performance Index

		Career development programmes
Students' agriculture performance index	Pearson Correlation (r)	.159*
	Sig. (2-tailed)	.030
	n	185

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

The result indicate that a statistically significant relationship exist between Agriculture teachers' career development programmes and the performance of students at KCSE (r = .159, n= 185 and Critical alpha= 0.05). The study rejects the null hypothesis and accepts the alternative hypothesis that there is a statistically significant relationship between Agriculture teachers interpersonal work relations and students' performance in Agriculture. This implies that there is a moderate positive relationship between career development programmes and academic performance in Agriculture. The findings are in agreement with previous studies (for example, Akhter, Raza, Ashraf, Ahmad & Aslam, 2016; David & Bwisa, 2013) which noted that continuous professional development leads to the improvement of school performance as well as the professional advancement of individuals. However, they are contrary with Wanyama, Zakayo and Nassiuma's (2014) study which noted that career development programmes are usually very intensive and therefore, the teachers cannot prepare the candidates adequately for the national examinations resulting in poor results.

4.10 Influence of Moderator Variables on the Relationship between the Independent and Dependent Variables

Moderator variables were categorized into two namely school factors and teachers' factors and were postulated that they could have some influence on the relationship between dependent and independent variables.

4.10.1 School Factors

School factors namely school category and school location were partially correlated with the independent and dependent variables. The school category was found to have some positive influence on the relationship between the dependent and independent variables except in the case of terms and conditions of service where it was negative. The influence varied from one school category to another. School location had some influence on the relationship between the dependent and independent variables except on interpersonal work relations. The influence was however negative in the relationship between dependent variable and terms and conditions of service. The level of influence of school location was equal in rural and urban schools. The results were as shown in Table 23.

Table 23: School Factors, Dependent and Independent Variables

Moderator variable		Working conditions	Work load	Terms and conditions of service	Interpersonal work relations	Career development programmes
School Category						
County	Correlation	.271	.314	-.171	.154	.170
	Sig(2tailed)	.000	.000	.020	.037	.021
Extra county	Correlation	.266	.285	-.168	.132	.181
	Sig(2tailed)	.000	.000	.028	.074	.014
National	Correlation	.219	.298	-.141	.107	.146
	Sig(2tailed)	.003	.000	.057	.147	.048
School Location						
Rural	Correlation	.223	.280	-.136	.095	.159
	Sig(2tailed)	.002	.000	.065	.200	.031
Urban	Correlation	.223	.280	-.136	.095	.159
	Sig(2tailed)	.002	.000	.065	.200	.031

4.10.2 Teachers' Factors

Teachers' factors categorized into gender of the respondents', years of service, academic qualification and current designation were each partially correlated with the independent and dependent variables. The gender and teaching experience of the respondents had some influence on the relationship between the dependent and independent variables. Their influence was however negative in the relationship between the dependent variable and terms and conditions of service. The degree of influence was similar in males and females. The influence was also found to be equal between teachers with low experience and those with high experience. As such there was no difference in the level of influence based on gender and teaching experience.

Academic qualification and designation of the respondents had some influence on the dependent and the independent variables except in interpersonal work relations. The influence was however negative in the relationship between the dependent variable and terms and conditions of service. The level of influence on the relationship of dependent and independent variables varied across the various academic qualifications and various designations. The results were as shown in Table 24.

Table 24: Teacher Factors, Dependent and Independent Variables

Moderator variable		Working conditions	Work load	Terms and conditions of service	Interpersonal work relations	Career development programmes
Gender						
Male	Correlation	.223	.279	-.138	.095	.159
	Sig(2tailed)	.002	.000	.061	.201	.031
Female	Correlation	.223	.279	-.138	.095	.159
	Sig(2tailed)	.002	.000	.061	.201	.031
Experience						
Low	Correlation	.229	.286	-.139	.093	.169
	Sig(2tailed)	.002	.000	.062	.212	.023
High	Correlation	.229	.286	-.139	.093	.169
	Sig(2tailed)	.002	.000	.0.62	.212	.023
Academic qualification						
S1 Cert	Correlation	.222	.280	-.131	.091	.159
	Sig(2tailed)	.002	.000	.076	.221	.031
Diploma	Correlation	.214	.278	-.122	.095	.140
	Sig(2tailed)	.003	.000	.100	.198	.059
Bachelor	Correlation	.215	.276	-.129	.097	.144
	Sig(2tailed)	.003	.000	.082	.192	.052
Masters	Correlation	.224	.280	-.138	.095	.160
	Sig(2tailed)	.002	.000	.062	.202	.030
Designation						
Principal	Correlation	.220	.273	-.138	.101	.156
	Sig(2tailed)	.003	.000	.062	.171	.034
D/principal	Correlation	.215	.272	-.127	.097	.161
	Sig(2tailed)	.003	.000	.085	.189	.029
HOD	Correlation	.219	.275	-.135	.090	.156
	Sig(2tailed)	.003	.000	.067	.223	.034
HOS	Correlation	.234	.266	-.148	.119	.185
	Sig(2tailed)	.001	.000	.045	.109	.012
Teacher	Correlation	.218	.271	-.141	.091	.159
	Sig(2tailed)	.003	.000	.056	.222	.031

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter outlines a summary of the study including the background, methodology and the main research findings. It also gives conclusions and recommendations made, based on the major findings.

5.2 Summary of Findings

The research problem addressed by this study was the low performance in KCSE Agriculture examination by public secondary-school students in Nyeri County over the past three years consecutively. The relationship between the low student performance in Agriculture and Agriculture teachers' job satisfaction was not well documented. This study sought to document the relationship between Agriculture teachers' job satisfaction and public secondary school students' Agriculture performance in the KCSE examination in Nyeri County, Kenya.

Specifically, the study examined the relationship between Agriculture teachers' satisfaction with working conditions, work load, terms and conditions of service, interpersonal working relations and career development programmes with students performance in Agriculture at KCSE. The study employed an ex-post facto survey research design. The study was a census involving 185 public secondary school teachers in the County. All the public secondary schools in Nyeri County which had presented candidates to KNEC since year 2012 were involved in the study. A structured self-administered questionnaire was used to collect data from Agriculture teachers.

The study revealed that a majority of the respondents were men. They had all trained to teach Agriculture. Over 98.9% of the teachers had attained a diploma and beyond. Their age ranged from 25 years to 58 years with mean age being 44. The teachers had been given extra responsibilities other than teaching. Majority of the respondents were drawn from county schools (81.6%). A majority of the schools 95.1% were situated in rural areas.

The five hypotheses were tested using Pearson Product Moment Correlation Coefficient; using SPSS version 22 software. On testing the null hypotheses it was found that, there was a statistically significant relationship between the selected teachers' job satisfaction factors (working conditions, workload, terms and conditions of service and career development

programmes) and students' performance in Agriculture at KCSE except in interpersonal work relations. An increase in an independent variable could lead to an increase in the dependent variable.

5.3 Conclusions

Based on the findings, the study concludes as follows:

i. An increase in Agriculture teachers' satisfaction with the working conditions can lead to an improvement in students' performance in Agriculture at KCSE.
ii. Agriculture teachers' satisfaction with their work load can lead to improved students' performance in Agriculture at KCSE.
iii. If Agriculture teachers' are satisfied with terms and conditions of service, performance of students' in Agriculture at KCSE would improve.
iv. It seems that Agriculture teachers' satisfaction with interpersonal working relations has no relationship with students' performance in Agriculture.
v. If Agriculture teachers' are satisfied with career development programmes, it can lead to improved students' performance in Agriculture at KCSE.

5.4 Recommendations

From the conclusions, the study recommends as follows:

i. School administrators in Nyeri County and at the national level should in consultation with other secondary school education stakeholders provide working conditions that improve Agriculture teachers' job satisfaction.
ii. The TSC should ensure that Agriculture teachers are provided with competitive terms and conditions of service to enhance, improve and maintain their job satisfaction.
iii. All education stakeholders should reinforce good interpersonal working relations especially the leader-member relationship so as to increase job satisfaction and enhance higher and more significant students' academic performance.
iv. Teachers should be allocated manageable workloads based on an acceptable curriculum based establishment.
v. The government should continue to organize and fund for regular in-service and refresher training of Agriculture teachers in order to augment the teacher's pedagogical skills and knowledge on subject matter so as to produce quality teachers of Agriculture.

5.5 Recommendations for Further Research

During the study, the following gaps were realized which if addressed would improve performance among students in Agriculture.

i. Investigate the role of interpersonal work relations on students' performance in Agriculture.
ii. Investigate Agriculture teachers' perception on the role of Agriculture project marks in the overall students' agriculture grade.
iii. Replicate the study in a different county.

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APPENDIX A

AGRICULTURE TEACHERS' QUESTIONNAIRE

Dear Respondent,

I am Virginia Virdianne Mwikali pursuing a Master of Science degree in Agricultural Education at Egerton University, Njoro Campus. My research is entitled: The relationship between selected Agriculture teachers' job-satisfaction factors and public secondary-school students' performance in Agriculture at KCSE in Nyeri County, Kenya. You have been identified as a key informant in this study. Please assist me complete this study by providing the information required in this questionnaire. The information you give will be treated as confidential and will only be used for the purpose of this study.

Instructions

Please respond to each item in the questionnaire.

Section A: Demographic information

1. Gender (Tick one)

Male [ ]

Female [ ]

2. Age in years…….

3. a) I am a professionally trained Agriculture teacher.

Yes [ ]

No [ ]

b) If Yes, indicate your academic qualification. If No, go to item 4(a).

S1 Certificate [ ]

Diploma [ ]

Bachelor's degree [ ]

Masters [ ]

Others (Please specify)…….

4. a) My current designation. (Tick one)

Principal [ ] Deputy Principal [ ] HOD [ ] HOS [ ] Subject Teacher [ ]

b) Other responsibilities (Tick all that apply)

Class Teacher [ ] House Master [ ] Games Master [ ] Club Patron [ ]

Guidance and Counselling [ ] Disciplinary Committee [ ] Others (please specify)……

…….

5. Number of years as an Agriculture teacher. …….

6. My school category. (Tick one)

County [ ] Extra-County [ ] National [ ]

7. Description of my school. (Tick one)

Boarding girls [ ] Boarding boys [ ] Mixed Day [ ] Mixed boarding [ ]

8. Location of my school? Rural [ ] Urban [ ]

Section B: Selected agriculture teachers' job satisfaction factors

This section has 6 major job satisfaction factors. Each factor is divided into a number of sub items. Kindly show your level of agreement with the statements provided by ticking one of the five choices given for each item.

The choices are:

1= Strongly Agree **(SA);** 2= Agree **(A);** 3= Undecided **(U);** 4=Disagree **(D);** 5= Strongly Disagree **(SD)**.

Working Condition	**SA**	**A**	**U**	**D**	**SD**
1. I am satisfied with the condition of the classrooms (This refers to space, cleanliness).					
2. I am satisfied with accessibility of my school.					
3. I am satisfied with the layout of the school compound.					
4. I am satisfied with the provision of clean water for use at school.					
5. I am satisfied with sanitary facilities.					
6. I am generally satisfied with the security at my school.					
7. I am satisfied with the facilities available for teaching Agriculture.					
8. I am satisfied with time tabling of my Agriculture lessons.					
9. Contribution of Agriculture project marks to students overall Agriculture score in KCSE is satisfactory.					

Work Load	**SA**	**A**	**U**	**D**	**SD**
10. I am satisfied with the size of my class (es).					
11. I am satisfied with the time assigned for co-curricular activities.					
12. I am satisfied with the number of lessons I handle.					
13. I have adequate time to prepare professional documents.					
14. I have enough freedom to evaluate my students.					
15. My students' KCSE mean scores in Agriculture are satisfactory.					
16. I have adequate instructional materials.					
17. My administration holds individuals accountable for being productive.					
18. Time for syllabus coverage in Agriculture is satisfactory.					
Terms and Conditions of Service	**SA**	**A**	**U**	**D**	**SD**
19. I am satisfied with my salary.					
20. My chances for promotion are satisfactory.					
21. My salary is sufficient for the job I do.					
22. I am satisfied with my house allowance.					
23. I am satisfied with my transport allowance.					
24. I am satisfied with the retirement benefits that am entitled to.					
25. I am satisfied with my medical allowance.					
26. I engage in alternative sources of income.					
Interpersonal Work Relations	**SA**	**A**	**U**	**D**	**SD**
27. My relationship with TSC is satisfactory.					
28. I rarely have a good relationship with the students I teach.					
29. My relationship with the Board of Management is satisfactory.					
30. I have a good relationship with the school administration.					
31. I have a good relationship with staff members in this school.					
32. My relationship with the parents I work with is often satisfactory.					
33. My relationship with the community is generally satisfactory.					
34. My relationship with the local leaders is often unsatisfactory.					
Career Development Programmes	**SA**	**A**	**U**	**D**	**SD**

35. I have adequate opportunities to participate in subject related seminars.					
36. I often participate in making democratic decisions in this school.					
37. I am likely to be sponsored by my school to attend professional courses. Usually, my students have good work habits.					
38. I have adequate opportunities for further studies.					
39. I have opportunities to participate in marking national exams.					
40. I am likely to be recognized after completing a professional course.					
41. My job enables me to learn new things through research in agricultural education.					
42. My job encourages me to be innovative.					
43. I am usually satisfied with marking Agriculture projects.					
Student Factors	**SA**	**A**	**U**	**D**	**SD**
44. My students' attitude towards me as a teacher is positive.					
45. My students usually perform well in class assignments.					
46. My students willingly engage in instructional activities in my classroom.					
47. My students' performance in Agriculture in relation to their KCPE marks is satisfactory.					
48. I am satisfied with the level of discipline exhibited by my students.					

Thank you for filling this questionnaire.

APPENDIX B

NYERI COUNTY PUBLIC SECONDARY SCHOOLS AGRICULTURE KCSE MEAN SCORES (2012-2014)

PUBLIC SECONDARY SCHOOL CATEGORY	NUMBER	KCSE Agriculture Mean Score per year			Average Mean Score
		2014	2013	2012	
National	2	11.08	8.56	9.15	9.60
County	25	8.53	7.80	8.09	8.14
Sub-County	154	4.43	4.28	4.54	4.44

KNEC; 2012, 2013, 2014

APPENDIX C

GRADUATE SCHOOL LETTER OF THE STUDY APPROVAL

EGERTON UNIVERSITY
Tel: Pilot: 254-51-2217620
254-51-2217877
254-51-2217631
Dir.line/Fax: 254-51-2217847
Cell Phone
Extension; 3606

P.O. Box 536 - 20115
Egerton, Njoro, Kenya
Email: bpgs@egerton.ac.ke
www.egerton.ac.ke

OFFICE OF THE DIRECTOR GRADUATE SCHOOL

Ref:..... **Date:**.....

EM11/2878/11 **15th March, 2016**

The Secretary,
National Commission for Science Technology and Innovation
P. O. Box 30623-00100,
NAIROBI.

Dear Sir,

RE: REQUEST FOR RESEARCH PERMIT – VIRGINIA VIRDIANNE MWIKALI REG. NO. EM11/2878/11

This is to introduce and confirm to you that the above named student is in the Department of Agricultural Education & Extension, Faculty of Education & Community Studies.

She is a bonafide registered Masters student in this University. Her research topic is entitled "**The Relationship Between Selected Agriculture Teachers' Job-Satisfaction Factors and Public Secondary-School Students' Performance in Agriculture at KCSE in Nyeri County, Kenya**

She is at the stage of collecting field data. Please issue her with a research permit to enable her undertake the studies.

Yours faithfully,

13 APR 2016
EGERTON UNIVERSITY P.O. Box 536, EGERTON

Prof. Michael A. Okiror
DIRECTOR, BOARD OF POSTGRADUATE STUDIES

MAO/ear

APPENDIX D

AUTHORIZATION LETTER BY THE NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email:dg@nacosti.go.ke
Website: www.nacosti.go.ke
when replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

NACOSTI/P/16/52231/11424

Date:

24th May, 2016

Virginia Virdianne Mwikali
Egerton University
P.O Box 536-20115
EGERTON.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"The relationship between selected Agriculture Teachers` job-satisfaction factors and public secondary school students` performance in Agriculture at KCSE in Nyeri County, Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **Nyeri County** for the period ending **23rd May, 2017.**

You are advised to report to **the County Commissioner and the County Director of Education, Nyeri County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

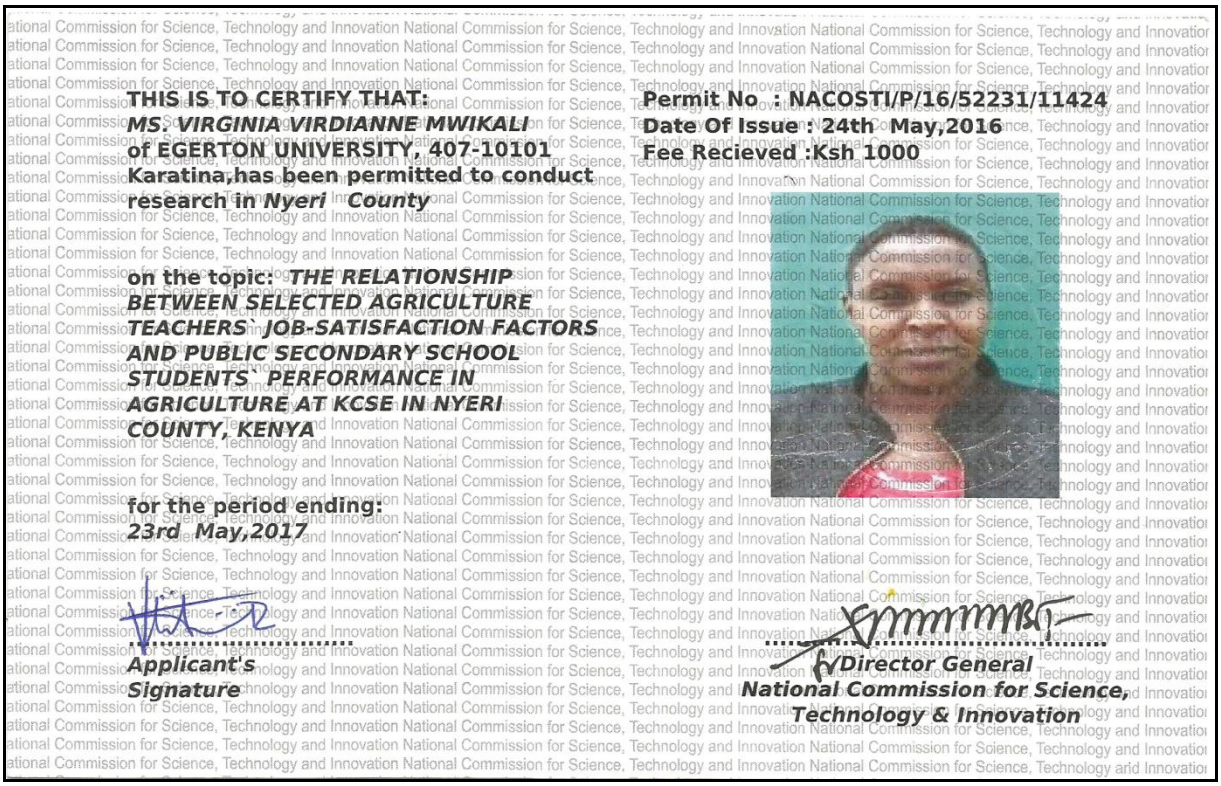
Copy to:

The County Commissioner
Nyeri County.

The County Director of Education
Nyeri County.

APPENDIX E

RESEARCH PERMIT



APPENDIX F

AUTHORIZATION LETTER BY NYERI COUNTY COMMISSIONER

THE PRESIDENCY

MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT

Telephone: 061 2030619/20
Fax: 061 2032089
E-mail: nyericountycommissioner@yahoo.com
When replying please quote

COUNTY COMMISSIONER
NYERI COUNTY
P.O. Box 33-10100
NYERI

REF: NYC/ADM I/57 VOL IV/106 **9th June, 2016**

Virginia Virdiane Mwikali
Egerton University
P.O. Box 536-20115
EGERTON

RE: RESEARCH AUTHORIZATION

Reference is made to your letter dated 9th June, 2016 on the above subject.

Approval is hereby granted to carry out a research on ***"The relationship between selected Agriculture Teacher's job-satisfaction factors and public secondary school students performance in Agriculture at KCSE in Nyeri County, Kenya"***

The period of study ends on 23rd May, 2019.

L. M. RUKWARO
FOR: COUNTY COMMISSIONER
NYERI COUNTY

APPENDIX G

AUTHORIZATION LETTER BY NYERI COUNTY DIRECTOR OF EDUCATION

MINISTRY OF EDUCATION SCIENCE & TECHNOLOGY
STATE DEPARTMENT OF EDUCATION

E-Mail –centralpde@gmail.com
Telephone: Nyeri (061) 2030619
When replying please quote

REPUBLIC OF KENYA

OFFICE OF THE COUNTY
DIRECTOR OF EDUCATION
P.O. Box 80 - 10100,
NYERI

CDE/NYI/GEN/23/VOL.II/66

9th June, 2016

The Sub county Directors of Education
NYERI COUNTY

RE: RESEARCH AUTHORIZATION

Reference is made to Secretary National Commission for Science, Technology and Innovation letter Ref. No. NACOST1/P16.52231/11424 dated 24th May, 2016 on the above subject.

Please note that **Virginia Virdianne Mwikali** of **Egerton University** has been authorized to carry out research on "***The relationship between selected Agriculture Teachers' job-satisfaction factors and public secondary school students performance in Agrculture at KCSE in Nyeri county".*** She has been authorized to undertake the research in Nyeri County for a period ending **23rd May, 2017.**

Kindly accord her the necessary assistance.

KABORA I. M.
FOR: COUNTY DIRECTOR OF EDUCATION
NYERI COUNTY

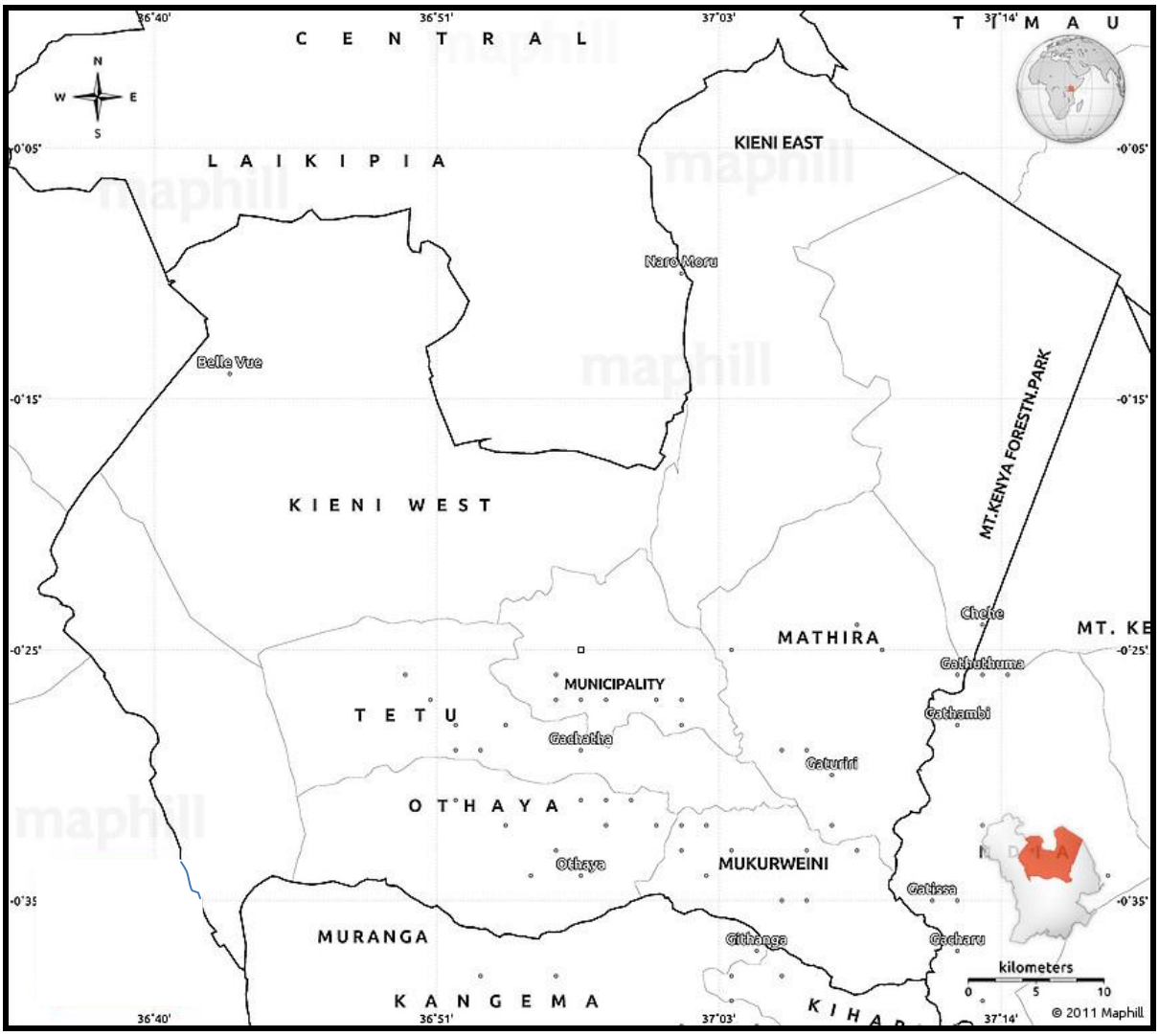
C.C.
The Principal Secretary,
Ministry of Education, Science & Technology,
State Department of Education,
NAIROBI.

The Secretary,
National Commission for Science, Technology & Innovation,
P.O. Box 30623-00100,
NAIROBI.

Virginia Virdianne Mwikali
EGERTON UNIVERSITY

APPENDIX H

MAP SHOWING NYERI COUNTY ADMINISTRATIVE BOUNDARIES



Source: Maphill, 2015