

**RELATIONSHIP BETWEEN TEACHERS' ADVERSITY QUOTIENT AND
STUDENTS' ACADEMIC PERFORMANCE IN PUBLIC SECONDARY
SCHOOLS IN KIAMBU AND NAIROBI COUNTIES, KENYA**

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DECLARATION

I confirm that this thesis is my original work and has not been presented in any other university for consideration of any certification. This research thesis has been complemented by referenced sources dully acknowledged. Where text, data, graphics, pictures or tables have been borrowed from other sources, including the Internet, these are specifically accredited and references cited using current APA system and in accordance with plagiarism regulations.

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DEDICATION

The thesis dedication goes to my parents Robert Kimonyi and Sabina Kanini, for their gift of education; my grandmother Terasia Syumutu, who inspired me to pursue higher education; my husband Noah Mwivanda and our children, Victor and Gloria, for working behind the scene while I worked on this document and encouraging and inspiring me when the journey became tough. I also wish to dedicate it to all the teachers in Kenya who teach all children with zeal and resilience regardless of the many adversities they face every day.

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ABBREVIATIONS AND ACRONYMS

ANOVA	:	Analysis of Variance
AQ	:	Adversity Quotient
ARP	:	Adversity Response Profile
BoM	:	Board of Management
CORE	:	Control, Ownership, Reach, Endurance
EQ	:	Emotional Quotient
IQ	:	Intelligence Quotient
KCSE	:	Kenya Certificate of Secondary Education
TSC	:	Teacher Service Commission
MOEST	:	Ministry of Education, Science and Technology

ABSTRACT

Studies in business and profit-making organisations indicate that Adversity Quotient has a positive influence on employee work performance. Few studies have been conducted to examine the role of Adversity Quotient in the field of education. The aim of this study was to determine teachers' response to adversity and the influence that response has on students' academic performance in Kenya Certificate of Secondary Education (KCSE). The objective of the study was to establish relationships between teachers' adversity quotient, its dimensions and students' academic performance. A correlation design was applied. Independent variables in this study were teachers' Adversity Quotient and its dimensions while the dependent variable was students' academic performance in KCSE, for each particular teacher in the subjects they teach. The locale of the study was Kiambu and Nairobi counties, in Kenya. The target population of this study was all secondary school teachers in the two aforementioned counties, with a total of 4470 teachers. The sample size was drawn through stratified random sampling for schools and systematic random sampling to select 447 teachers. The tools for data collection were adversity response profile questionnaire for teachers and KCSE results registered by the same teachers, in the subjects that they teach, for two years – 2015 and 2016. Data analysis was done quantitatively using both descriptive and inferential statistics. Descriptive statistics of frequencies mean and percentages were used. Inferential statistics of Pearson Product Moment Correlation Coefficient were used to test for relationships and regression analysis to test for the most significant dimension of Adversity Quotient. The results revealed that all the four dimensions of Adversity Quotient had positive and significant influence on students' academic performance: control ($r=.483$, $P<0.01$), ownership ($r=.392$, $P<0.01$), reach ($r=.407$, $P<0.01$) and endurance ($r=.341$, $P<0.01$). The overall teacher's AQ was also significant to students' academic performance ($r=.530$, $P<0.01$). Three groups emerged from the teachers overall Adversity Quotient: climbers, campers and quitters. To establish the most significant dimension, two-way regression analyses revealed that in the absence of experience and qualification, the dimensions of control, ownership and endurance were most significant in students' academic performance but in the presence of experience and qualification the dimensions of control, endurance and reach were more significant. The conclusion was that teachers' Adversity Quotient was significant, influencing students' academic performance positively. This study recommended that there was need to incorporate AQ in teacher training programmes, recruitment and teacher career development programmes in order to improve students' academic performance and enhance teacher efficiency in schools. Recommendations for further study include: comparing AQ of newly recruited teachers with seasoned teachers, correlating teachers AQ with their students' AQ, comparing teacher AQ with the principal's adversity, studying teachers AQ in relation to other teacher characteristics.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter presents introduction and background to the study, the statement of the problem, purpose of the study, objectives, research questions, significance of the study, limitations and delimitations, assumptions, theoretical framework, conceptual framework and operational definition of terms.

1.2 Background to the Study

The life of human beings is characterised by adversity. Wars, diseases, and natural disasters, increase in crime, poverty, and political and religious conflicts are adversities experienced in all cultures and countries of the world (Canivel, 2009). Adversities result in situations of constant worry and uncertainty among adults and children and this tends to demand tougher psychological skills in order to progress (Stoltz, 1997). In schools, adversity is experienced in situations such as child neglect, grief, rape, physical infirmity, parental separation, poverty, exposure to drugs abuse, lack of enough learning resources and facilities, wars and terrorism, negative effects of technology, indiscipline and peer pressure (Williams, 2003). Among the staff, adversities may stem from the need for higher salaries and other remunerations, promotions – in rank and grade, leadership, job insecurity, demand for better performance, technology, personal and family conflicts and workplace culture. Today, teachers face the tough task of ensuring students post excellent results while facing other countless challenges in their job. They are required to teach, protect and care for

their students. The subject content they teach is not the sole emphasis in the classroom – they are expected to ensure a complete formation of the student. How a teacher responds to these challenges affects the success of their students.

Stoltz (1997) defines Adversity Quotient as an indicator of how people withstand adversity, the ability to overcome or the capacity to deal with adverse situations in life. In other recent researches, it has been shown that Adversity Quotient may be a better index of achieving success than IQ (Zhou, 2009; Williams, 2003). Also, it has been found to be a better predictor of job performance (Stoltz, 2000). A study by Stoltz (2010) showed that children's response to adversity is formed through the influence from older members of the society like teachers and parents. As such, students' Adversity Quotient can be interrupted and permanently changed (Williams, 2003). Thus, discovering and measuring AQ and the factors that influence it allows one to understand how and why some people consistently exceed expectations of their intellectual ability in their work. Adversity Quotient is one of the cornerstones of the teaching and learning process, rooted in three sciences: psychoneuroimmunology, neurophysiology and cognitive psychology.

There are four sub-components of Adversity Quotient. The four components are control, ownership, reach and endurance, represented as CORE. The sum of these four scores is the person's Adversity Quotient. Although they are inter-related, they measure different aspects of AQ. An individual's AQ level can be quantitatively measured by taking the Adversity Response Profile (ARP), which is a questionnaire

developed by Stoltz intended to gauge an individual's pattern of responding to challenges or adversities. The higher a person's AQ score, the higher their ability to withstand adversity, which in turn is thought to translate into an improved performance. A person's level of AQ is said to predict job performance fairly well (Stoltz, 1997; Shen, 2013, Shen and Chang, 2009).

Adversity Quotient describes three personalities in the work place: the climbers, the campers and the quitters. Climbers are workers who seek continuous improvement and growth, and they want the best in life. They are self-driven, embrace challenges, are very visionary and inspire everyone they interact with. These are the ideal workforce institutions are looking for today. Stoltz (1997), described campers as workers who stopped advancing. They have become drained of challenges hence, settled for status quo. In the workplace, they invest only what is necessary and they produce only satisfactory results. In the 21st century where every institution is strategizing for the top, satisfactory performance is not enough (Stoltz, 1997). The quitters are workers with little drive, ambition or creativity. They don't like taking risks and they avoid challenges. Quitters invest minimal efforts at the place of work (Stoltz, 1997).

Adversity Quotient can be used to inform those concerned whether the workforce is able to accomplish and attain set goals and objectives or not. It can also be used to identify people who give up in the middle before accomplishing their goals and objectives or those who endure to the end to attain their objectives (Stoltz, 1997).

1.2.1 School Adversity

Teachers in schools are often faced with repeated internal and external tribulations in their functions. How these tribulations are handled in school depends on an individual teacher's ability to handle difficulties in life (Williams, 2003). Teachers play an important role in shaping students' personality and therefore, a resilient teacher models resilience for their students. For a very long time, researchers have been investigating variables that are associated with high academic performance in learners. They have grouped the variables as either internal or external to the individual student, such as: IQ, family issues affecting the student, school climate and culture, the school leadership and the teacher factors like teacher qualification, experience and self-efficacy (Crosnoe, Elder 2004). The teachers teaching effectiveness is usually determined by the performance of the students in examinations (Kamar, 2012; Bautista, 2015; Muhammed 2011). Success in the teaching profession just like all other professions brings joy to the individual teacher, the student and the public as well. However, what really predicts an individual's success in life and work has been an intriguing thought. In the 19th Century, IQ test scores were used to predict a person's success in school and their entire life (Williams, 2003) but with time, this has been proved untrue since individuals who excelled in school are not always the ones with the greatest careers (Stoltz, 2000). In the 1990s, Emotional Intelligence came up to explain the reason behind individuals' success in life and at work. However, EI is not the only predictor of success. Another breakthrough in understanding ways of

improving success was introduced in 1997 by Dr. Paul Stoltz as Adversity Quotient theory.

Most of the previous studies on Adversity Quotient have been done in the business and profit-making organization and they indicate positive influence of Adversity Quotient to work performance (Lazaro-capones, Antonnette, 2004). Lin (2001) correlated AQ and variable of gender of bank workers and found that males had higher AQ than females and that there was a positive relationship between bankers adversity quotient and work success. Shen (2014) studied AQ and the variables of age, educational level among nurses and found that they had significant effect on AQ and that their adversity quotient correlated positively with their success at work. Wei (2000) researched on effect of marital status and length of service on employee performance for insurance employees and found that they had significant effect on AQ. Wei (2008) studied the variable of age, seniority and level of education of elementary school teachers on their job and general performance at their work space, and found a substantial effect.

Educational researchers on adversity quotient tended concentrate on school principals and students (Williams, 2003; Souza, 2006; Raymon, 2016). Most of the correlated associate students' performance with the school principals' adversity quotient though their influence in students' performance is indirectly (Mirkamali, 1995). The principals' personality and way of leading affect the efficiency and the effectiveness of the school functions and other interconnected aspects such as the teachers'

psychological and social maturity at work and hence it is the teacher who directly impacts on the students' academic performance (Alageheband, 1997). Consequently studies that have correlated students' adversity quotient and their academic performance have found significant and positive correlation (Shen, 2014; Souza, 2006). Since school principals influence teacher and teachers influence their students, would be unfair to expect students be resilient to adversities they experience in school while the teachers who are their role models are not hence the need to study the adversity of the teachers as core influencers of students in their subjects.

A study by Williams (2003) looked for relationship between principals' Adversity Quotient and student's academic performance and the results indicated positive relationship. Other studies linking the school principal to students' academic achievement include those done by Sousa (2006), Villavier (2005) and they all established a positive relationship between principals' AQ and their students' academic performance. Principals with high Adversity Quotient can triumph over challenges in life while without it they fail. The problems students face both in their families, in their communities and sometimes in school can overwhelm them at times and cause them to fail in examinations. Together with the basic needs, students need love, trust, hope and autonomy which are normally imparted by the teachers. They also need safe environment, safe associations that promote friendship and loyalty. They require a loving adult to hold their hands, inspire self-confidence, trust in them and their world of schooling (Stotlz, 1997).

Scholars generally agree that the most critical school variable that accounts for students' academic performance is the teacher more than any other resource (Williams, 2003; Ali, 2009; Ahmed, 2015; Musili, 2015). The important role of the teachers in influencing student's behaviour in the classroom is unquestionable in accounting for students' academic performance. Teachers should possess and apply certain abilities to help students triumph over their challenges (Stoltz, 1997). Ali (2009) observes that there is a significant relationship between teachers' qualification, experience and students' achievement. Adesoji and Olatunbosun (2008) studied the impact of the teacher in achievement of senior secondary school students and found that teacher attitudes directly affected students' attitudes in Nigeria. Teachers play a crucial role in making the students believe that they are capable of achieving high content and performance standards. They assist students to set ambitious goals and assist them to overcome barriers that stand on their way to achieving those goals. It is, therefore, important for teachers to change learners' perceptions of their current level of achievement in order to enable them to conform to the expected standards of performance (Falaye, 2008). A study on the effects of adversity quotient on students achievement in Nigeria indicated that a significant relationship between students adversity and their academic performance and also a significant relationship between the teachers' adversity quotient and their students' adversity quotient (Bakare, 2015).

1.2.2 School Adversity and Students' Academic Performance in Kenya

Education system in Kenya is largely facing various adversities affecting both teachers and students and which affect students' academic performance negatively. Emerging

issues such as teacher shortage, provision of quality education, professionalizing teaching service, promotion of teachers, teachers conduct and performance, litigation, information, communication and technology, management of pandemics and HIV and AIDS and teachers industrial unrest all play a critical role in impacting students' academic performance (Jonjo , Owuor, and Odera, 2017). The eminence of education in Kenya is gaged in terms of students passing in National examinations where the teacher is a key actor (Musili, 2015). The many education adversities that teachers are supposed to handle in school and life in general affect their own teaching performance and hence impact on the students' academic performance. Educators in general and the public have occasionally expressed concern over deteriorating students' academic performance in public secondary schools from time to time (KNEC, 2016; MoEST 2016). There is growing concern in performance of students in Kenya certificate of secondary education warranting the teachers employer (TSC) to take drastic measures against its teachers teaching performance to improve students' academic performance through transfers, demotions and the implementation of a teacher performance appraisal development tool (TPAD) (TSC, 2016). Poor students' performance in Kenya has been attributed to several factors such as school factors, teacher factors, and government factors. Most of the dynamics affecting students' academic performance are not within the influence of the policy maker. However the teacher factors can be easily influenced through policy. Several studies in Kenya have indicated substantial relationship between teachers related factors and students' academic achievement (Musili, 2015; Miriti 2016, Weseka, Simatwa & Okwach, 2016).

1.2.3 The Role of Teachers in Students' Academic Performance

Teachers are employed to teach and this is their fundamental role and responsibility which they must execute effectively (KEMI, 2015). They model learners to become valuable community members and responsible citizens to the Nation hence the society expects a lot from the teacher (MoEST, 2016). The culture of continuous improvement especially in examination performance stems from the belief that mistakes can be avoided and defects can be prevented, it therefore requires teachers to continuously improve the academic results of their students in their trained subjects by continuously improving their own capability through seminars and higher trainings (KEMI, 2015).

Teachers in Kenya are facing many challenges that have impacted on their teaching duty negatively, including examination integrity, implanting reforms of free and compulsory basic education for all children and the teachers demand for better pay and welfare, all of which have negatively impacted on our students' academic performance (Digolo, 2006). School evaluations, formative and summative serve a noble function of supplying the teachers and the learners an objective source for appraisal development in mastery of attitudes and knowledge. Today's education quality in many nations is assessed and judged by exams and therefore students' academic performance is very critical to many education stakeholders (Maiyo, 2006). Schools are preoccupied with examination supremacy found in ranking grades, parents and the public demand high grades from teachers and students as shown through the contract performance appraisal introduced in schools (Teachers Service Commission, 2016). Teachers long for high mean grades for their subjects to earn rewards and promotions,

and school principals on the other hand gain status from high enrolment and revenue from high grades (Musili, 2015). The value placed on KCSE examination results has now turned schools into industries for manufacturing grades where the teacher is under stress. The general public, parents, students, and principals demand great grades from teachers by crook or hook. Such high examinational focused education system is at the centre of cheating, exam leakage corruption and untold stress for the teacher.

Since the implementation of free primary education in 2005 and the free tuition in secondary school in 2008, school enrolment in secondary schools has almost tripled but the performance of students in KCSE is worrying by the day. In the year 2013, only 27.5 % candidates got a mean grade of C+ and above, in 2014, 30.78 % of students attained C+ and above, in 2015 only 31.52 % attained a mean grade of C+ and in 2016 only 15.14% attained the university entry grade of C+ (MoEST, 2016; KNEC, 2016). The Kenya National Examinations Council, the Ministry of Education and the public blame the teachers for students' mass failures in National examinations in last decade. It is obvious from the statistics above, that less than half of the students sitting KCSE examinations each year manage the quality entry grade to the university which was previously B+ and later reduced to C+ in 2016. Poor performance in KCSE undermines students' progress to institutions of higher learning and minimizes their opportunities for competitive courses in the university, other institutions of higher learning and for job placement, consequently limiting their chances of participating in national development. Students' performance in Kiambu and Nairobi counties has been deteriorating in the last one decade despite of enjoying more amenities like

electricity and internet connectivity than those remote areas of the country. Nairobi County is cosmopolitan and the capital city of Kenya therefore the adversities experienced by its teachers are different from those of experienced by teachers in Kiambu which is a rural county hence the need for comparison teachers' adversity quotient.

Table 1.1: Students' performance in KCSE index 2014-2016 in Nairobi and Kiambu counties

Year	KCSENational index	KCSENairobi index	KCSEKiambu index
2014	30.8% C+	30.48% C+	25.5% C+
2015	31.5% C+	31.85% C+	27.9% C+
2016	10.5% C+	9.8% C+	8.4% C+

Source: KNEC Results 2014-2016

1.3 Statement of the Problem

One of the most disturbing challenges facing public secondary schools in Kiambu and Nairobi counties is the declining standards of students' academic performance in the last one decade. Many factors have been attributed to this decline among them is the many emerging challenges in education in general and the many adversities teachers have to handle in particular. One of the areas that is important in improving students' academic performance the ability of the teachers to handle adversities. Studies have shown that teachers' adversity can play a critical role in improving students' academic performance more than their experience and academic qualification. This study

therefore sought to establish the relationship between teachers' adversity quotient and students' academic performance in Kenya certificate of secondary education.

Educational adversities today are many and different from those experienced in the past decades. In the 19th Century, the issues of concern in schools in Kenya were about national unity, economic and cultural aspirations. In the 21st Century, the challenges facing education sector include: inadequate infrastructure, mismatch between education curriculum and the labour market, HIV and AIDS, drugs, anti-social behaviours, technology integration in education, teacher-student ratio and the teachers wage bill. In the past decade, strong emphasis has been placed on educational reforms focused towards the realization of Kenya's vision 2030 and rising up of students' academic performance based on grades and mean scores. It is inevitable for teachers to encounter difficulties of demand, complexities and adversities in life and work as they implement the curriculum. These adversities affect the teachers teaching duty and in long run affect students' academic performance. Many studies that have linked teachers with students' academic performance focused on teacher factors such as their academic qualification, experience and teaching methods. Teacher adversity quotient has also been also plays a role in improving teachers duty performance. Much of the recent focus by the teachers' employer in Kenya (TSC) is on teachers' performance measured by students' academic performance in Kenya certificate of secondary education (TSC, 2016). Teachers are now under pressure from the employer to increase students' academic performance in secondary schools. The Government and the public invest heavily in secondary school education but the outcome in terms of

students' academic performance does not seem to correspond with the input. Every year in Kenya, the number of students transiting to the university and other institutions of higher training is less than half of the total candidates sitting KCSE while the majority of the students fail. In Kiambu and Nairobi counties, the transition rate of students to the university from secondary school level is between 28 per cent and 30 per cent which is far below average (KNEC, 2017).

Most studies of Adversity Quotient and employee work performance have shown that adversity quotient is important in improving individual's work performance. Studies of Adversity quotient have shown positive connection between school principals' management styles and students' academic performance and also between students' adversity quotient and their own performance in different subjects. Studies done in Kenya indicate that the teacher factor plays a critical role in students' academic performance. Most of the studies linking general students' performance and AQ have been done outside Kenya and focused on students or school principals' adversity quotient in regards to students' school achievement. However, the study mainly focused on student's attainment in KSCE and secondary school teachers' adversity quotient and how it shapes students' performance.

1.4 Purpose of the Study

The purpose of this study was to determine levels of teachers' Adversity Quotient and the influence of those levels on students' academic performance in KCSE as measured by the teacher's subject mean score.

1.5 Research Objectives

- i To determine the teachers' overall adversity quotient by: school category, gender, professional qualification and length of service.
- ii To determine the relationship between teachers' Adversity Quotient dimension of control and students' academic performance measured by the subject mean score in KCSE.
- iii To determine relationship between teachers' Adversity Quotient dimension of ownership and students' academic performance as measured by the subject mean score in KCSE.
- iv To establish relationship between teachers' Adversity Quotient dimension of reach and students' academic performance measured by the subject mean score in KCSE.
- v To establish relationship between teachers' Adversity Quotient dimensions of endurance and students' academic performance measured by the subject mean score in KCSE.
- vi Establish the most effective dimension of the teachers' Adversity Quotient.

1.6 Hypotheses

The research was guided by the following null hypotheses:

- i There is no significant relationship between teachers' overall Adversity Quotient and students' academic performance
- ii There is no significant relationship between the teachers' Adversity Quotient dimension of control and students' academic performance.

- iii There is no significant relationship between teachers' Adversity Quotient dimension of ownership and students' academic performance.
- iv There is no significant relationship between teachers' adversity dimension of reach and students' academic performance.
- v There is no significant relationship between teachers' Adversity Quotient dimension of endurance and students' academic performance.

1.7 Significance of the Study

- i. Teachers themselves to understand their level of adversity quotient and how to improve it.
- ii. Teachers' employer; the teachers' service commission to include AQ in teacher recruitment, and career progression to maintain high performing teachers in schools.
- iii. Policy makers such the ministry of education to gain information on the role of teachers' Adversity Quotient in maintaining high standards of students' academic performance through quality assurance monitoring.
- iv. Curriculum developers in developing adversity quotient content for training teachers since adversity quotient can be learned.
- v. Universities and other teacher training institutions to incorporate adversity quotient as unit for teachers.
- vi. Kenya Education Management Institute (KEMI) could benefit from this study by developing short and long term courses for teachers in terms of workshops,

seminars and certificate courses for teachers in order for schools to maintain vibrant resilient teachers capable of handling adversities always.

1.8 Limitations of the Study

- i. A self-rating questionnaire was the adversity response profile tool that was utilized in the study. Comparable to any other instrument that supplicates information on a personal ability, the respondents may exaggerate their ability. Such reports may effect in the study indicating high score of Adversity Quotient for the teachers where prevailing evidence is to the contrary.
- ii. This study also was limited to teachers' adversity quotient in relation to students' academic performance and not any other aspects that may influence students' academic performance in school.

1.9 Delimitations of the Study

- i. The study utilized ARP questionnaire version 8 by Stoltz to evaluate respondents' response to adversity. The ARP instrument is highly validated and applied across cultures and tested in more than 51 counties and demonstrated strong applicability in education in testing Adversity Quotient. (Stoltz, 2000).
- ii. The researcher modified the wording of the questions of the adversity profile questionnaire in order to relate to education adversities in Kenya and to be understood by teachers.
- iii. The teachers' adversity response score was correlated with students' academic performance in KCSE as registered by each teacher in their subjects in the years

2015 and 2016. The scores were obtained from the teachers themselves through a section of the same questionnaire.

1.10 Assumptions of the Study

- i. The researcher assumed that, the selected respondents provided genuine answers to the items in the data collection instrument.
- ii. The study assumed the teachers that were among the selected sample had taught in those schools for two years to shape students' performance in their various subjects.
- iii. It was assumed that all teachers have faced some adversities in their schools and work in different ways.

1.11 Theoretical Framework

The study was underpinned on the AQ theory. Individuals who apply AQ effectively when facing challenges, big or small succeed (Stoltz, 1997). Adversity Quotient has been applied in corporate organizations. The end results have revealed that personnel with high-Adversity Quotient were transformed into innovative, competent, committed productive and motivated employees (Stoltz, 1997). Adversity Quotient theory is constructed upon research of many topmost scholars and studies exceeding 500,000 are consolidated. Typically, it borrows heavily from the three major sciences: cognitive psychology, psycho-neuroimmunology, and neurophysiology.

According to Stoltz (1997), AQ represents two important mechanisms in reality—scientific theory and real world application. Stoltz confirmed that there are individuals

who have a high Intelligence Quotient and Emotional Intelligence; nonetheless they fall terribly below their potential. Neither Intelligence Quotient nor Emotional Intelligence seems to explain one's success. Nevertheless, both play a role in someone's success. The major question is to why some people persist while others quit or fall short. Stoltz (2009), addresses this issue noting that individual success is mainly influenced by AQ compared to other human characteristics. This theory is related to the theories of: Self efficacy (Bandura, 1997) locus of control (Judge & Bon, 2001) and attribution theory (Seligman et al., 1993).

Thi (2007) did a study of comparing adversity quotient and the five factor model (also known as the big five) and the results of this study found that the overall adversity quotient score did not predict job performance better than the BFI, a measure of the big five, however the big five seemed to support the adversity quotient framework. According to Elizabeth, the CORE dimensions of ownership and endurance had a significant positive relationship with job performance while control and reach dimensions had no impact on job performance. The studies (Williams, 2003; D'Souza 2006, Carnival, 2010, Bautista, 2015) used adversity quotient theory to establish relationship between students' achievement and school principals' leadership styles and found that high adversity quotient score lead to high performance and low adversity quotient score was related to low academic performance among students.

An individual's Adversity Quotient (AQ) is made up of four elements- CO2RE. These elements are: C=Control; O2=Ownership and Origin; R=Reach; and E=Endurance.

CONTROL, is the perception that, something CAN be done. It regulates the level a teacher will act when confronted by adversity. ORIGIN tries to explain the cause of adversity in one's life while OWNERSHIP explains the degree at which the teacher is accountable for the results of adversity. REACH helps explain how the teacher can limit an adversity to being a problem or how he/she leaves the adversity influence other things they are doing in life or at school. ENDURANCE explains whether adversity or its cause is short-lived or will last forever. The four elements combine to form a teacher's Adversity Quotient. High score in all the four dimensions of adversity quotient results to high overall AQ of a teacher. High AQ score is hypothesized to result to high students' academic performance in Kenya certificate of secondary education (KCSE) and vice versa. The highest score according to Stoltz, 1997 is 200 while the lowest score is 40. Each of the CORE dimensions can be measured independently and the highest score of each single dimension is 50 while the lowest score is 10. Below are the indicators of adversity quotient.

Overall AQ Score Equivalent

A normative scale of was adopted with scores ranging from 40-200 and a descriptive equivalent of high to below average (Cando and Vallacistin, 2014).

High 176-200

Above Average 158-175

Average 136-157

Below Average 119-135

Low AQ scores range from 40-10

Table 1.2: Adversity quotient CORE indicators

Control –C		Ownership-O		Reach-R		Endurance-E	
High	48-50	High	48-50	High	43-50	High	44-50
Above Av.	43-47	Above Av.	47-49	Above Av.	38-42	Above Ave.	39-43
Ave.	36-42	Ave.	41-46	Ave.	30-37	Ave.	32-38
Below Av.	30-35	Below Av.	31-40	Below Av.	25-29	Below Av.	26-31
low	10-29	Low	10-30	Low	10-24	Low	10-25
C mean=41		O mean=45		R mean=32		E mean=36	

Source: (Stoltz, 2009; Cando and Vallacitin, 2014)

Adversity quotient is rooted in research of cognitive psychology. Though research literature on AQ, revealed a positive relation between administrators success, and among students and school principals, college students and tutors, it is not much literature connecting teachers adversity quotient and students’ academic performance and yet teachers play a critical role in influencing students’ academic performance. Therefore, the study’s interest was to examine teachers AQ and the influence it has on students’ academic performance in KCSE.

This theory is appropriate in this study because it explains why some people persist and succeed beyond their intelligence quotient and emotional intelligence. Through the four dimensions of Adversity Quotient, teachers can establish their weak dimension and work on it in order to strengthen their Adversity Quotient hence improving their students’ performance at work. The adversity quotient response

profile used in this study was adopted from Stoltz (2009) online, but the wording was changed to conform to emergent adversities in education in Kenya.

1.12 Conceptual Framework of Study

Independent variable

Dependent variable

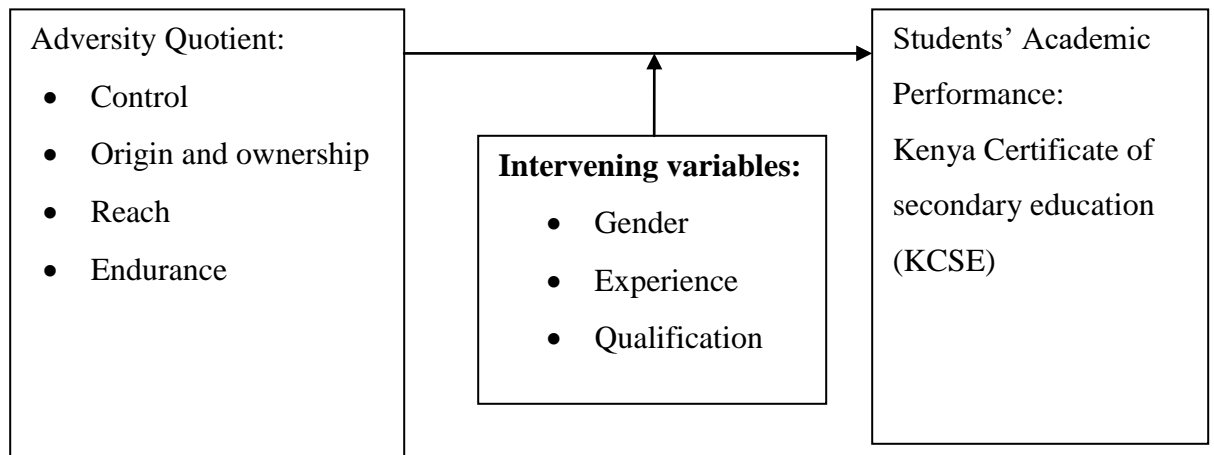


Figure 1.1: Conceptual framework

An individual's AQ consists of four dimensions which are represented by the acronym

CORE, which stand for:

C=control

O=ownership

R=reach

E=endurance

AQ is mathematically represented as: $C + O_2 + R + E = AQ$

$O_2 = O_r + O_w$

O_r = score of ownership scale (origin)

O_w = score on ownership scale (ownership)

In this conceptual framework, the researcher postulates that the teachers Adversity Quotient has four dimensions which are: control, ownership, reach and endurance as described by Stoltz (1997). The score of every dimension plays part in the teacher's overall score which determines their overall Adversity Quotient. Each dimension is measurable and can be explained and strengthened. Scores of each of the four dimensions range from 10-50, and the overall adversity score of a teacher can range from 40-200 according to Stoltz, 1997. The higher the score of a teacher's Adversity Quotient, the more effective he/she is in responding to adversity and the better they are likely to affect their students' academic performance positively. In relation to this study it was expected that teachers who record high scores in each of the four dimensions of adversity quotient also equals high scores in students' academic performance and vice versa. High score in each dimension of adversity quotient equals high score in overall adversity quotient score and in turn equals high score in students' academic performance (Stoltz, 2000). Teachers' adversity quotient can be influenced by other teachers' external dynamics that also influence the overall academic performance of students, such as their teacher's gender, teaching experience and professional qualification (Musili, 2015). Below are indicators of adversity quotient dimensions according Stoltz (2009) and students' academic performance according to KNEC (2016).

1.12.1 Indicators of Adversity Quotient Dimensions and Students' Performance

Indicators

The table below shows the indicators and their ranges of adversity quotient dimensions as borrowed from Stoltz (2009) the likert scale ranging from high to low was borrowed from Tigchelaar and Berkhet (2015), while the KCSE grades and rating was obtained from KNEC certificates of 2016.

Table 1.3: Indicators of adversity quotient dimensions and students' performance indicators

Variable	high	above average	average	below average	low
AQ	176-200	158-175	136-157	119-135	40-118
Control	48-50	43-47	36-42	30-35	10-29
ownership	48-50	47-49	41-46	31-40	10-30
reach	43-50	38-42	30-37	25-29	10-24
endurance	44-50	39-43	32-38	26-31	10-25
KCSE	12-11	10-8	7-5	4-2	1
Grades	A, A-	B+, B, B-	C+, C, C-	D+, D, D-	E

Stoltz (2009), KNEC (2016)

1.13 Operational Definition of Central Terms

Adversity is a state of privation and affliction: disaster, traumatic event, stressful or unfortunate occurrence or incident in life”. In this study, it will mean all the hardships and emerging challenges in schools today and which interfere in one way or the other with education process making it difficult for the teacher to deliver effectively.

Adversity Quotient (AQ) refers to total score obtained from adding the scores of the four dimensions that make up Adversity Quotient which are control, ownership, reach and endurance. It indicates which people withstand adversity; the capability to surmount it.

Adversity Response Profile (ARP) refers to a quantitative gauge of an individual’s response to hardship, measured by four dimensions: control, ownership, reach and endurance (Adopted from Stoltz (2009)).

Control score (C) refers to the degree to which a teacher believes he/she can manage unfavourable events. It is one of the elements of Adversity Quotient (AQ).

Endurance score (E) refers to the duration that a teacher believes an adversity and its consequences will last; short lived or long lived. It is an element of AQ.

Influence refers to the outcome or impact of a educator’s Adversity Quotient to his/her students’ results in KCSE.

Ownership score (O) refers to the level at which a teacher accepts and takes liability for the results of adversity. It is an element of AQ.

Reach score (R) refers to the extent to which a teacher believes adversity will or will not spread to other areas of their life. It is an element of AQ.

Students' academic performance refers to KCSE mean scores and grades registered by students in a particular subject in year 2014 and 2015 which is also taken to measure a teachers' performance.

Teachers' Adversity Quotient refers to the teachers' ability to manage personal and school adversity.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter presents related literature review on Adversity Quotient and academic performance. It focuses on: Adversity Quotient and its building blocks, the dimensions of Adversity Quotient, Adversity Quotient levels, Adversity Quotient and academic performance, teachers' effectiveness and the role of teachers in students' academic performance.

2.1.1 Adversity Quotient and Its Scientific Building Blocks

Adversity in this study denotes the challenges teachers encounter in work or life while Adversity Quotient is the gauge of an individual's response to adversity (Stoltz 1997; 2000). The world and the workplace are constantly changing and consequently, there is pressure to keep up with the changes and adapt to them. Those people who are not able to handle these changes eventually lose hope and become depressed. Despair is sucking vitality from institutions, workers, families and children. We are living in an age of adversity (Stoltz, 1997; Bautista, 2015). Stoltz has outlined three levels of adversity: societal, workplace and individual adversity. If these adversities are not sufficiently handled, they may become too much to handle especially in the workplace and can lead to depression making it difficult to perform optimally. AQ is a core foundation of learning and teaching functions (Bakare, 2015; Stoltz, 1997). It has been derived from three branches of science: Cognitive psychology, neurophysiology and

Psychoneuroimmunology. Nevertheless its facts can be utilized in other fields such as education. Psychoneuroimmunology is a science domain examining mind-body correlation; individual thoughts and feelings. Neuropsychology is concerned with explaining how individual brain learns and operates. The cognitive psychology focuses on the association between emotional state and mental health thoughts.

2.1.2 The CORE Dimensions of Adversity Quotient

Stoltz (2009), notes that AQ is computed from four elements truncated CORE. It stands for control, ownership, reach and endurance. The CORE re-joins how people respond to adversity; conflicts, setbacks, opportunities, injustices and how they handle strict deadlines. The CORE dimensions are as follows:

Control

The AQ control dimension answers how rational a person is and how individual thoughts affect a given situation. (Carnista & Macasault, 2013; Thi, 2007; Bautista, 2015). This the most critical aspect as it influences individual partiality to hang in between in times of adversity. The effects of this ingredient lie within enablement that shapes the other dimensions (Stoltz, 1997). An individual with high levels of control never gives up, is unwavering and is ever alert seeking solutions for challenges at hand. Furthermore, Control is about individual ability to improve situations in different spheres of life (Stoltz, 2000; Usha & Praseeda, 2014; Shen, 2014)). Control dimension draws its motivation from personality psychology; which may have inferences on job performance (Thi, 2007; Carnival, 2010; Cura & Gozum, 2011).

There are no many known studies that link the dimension of control with job performance; however, Bandura (1997) found that the belief of uncontrollability will lead to non-action and by that logic he concluded that people who perceive themselves as having no control over what they do easily lose motivation in their actions and in places of work this may lead to poor performance.

Control is the belief that an individual will overcome hard situations. (Usha & Preseeda, 2014; Shen 2014) found that individuals with high ability to control adversities in their work always register high scores in job performance evaluation. Such individuals handle hardships as tests to be mastered but not to be evaded (Bandura, 1995). Control serves as the gauge of people's capability to complete the duties assigned to them and achieve their organizational or individual goals. Human beings act according to their beliefs. Control shapes of one's effort (Bandura, 1997). By establishing people's beliefs of controlling hardships in life, it helps change their power to deal with adversities with ease and how they make their choices.

Individuals' knowledge, skills and attitudes encompass their self- system. It is this system that controls their belief on circumstances and the response behaviour on such circumstances. The fundamental thought about control is that achievement and inspiration is influenced by people's beliefs (Bandura, 1995). Teachers' knowledge of the control power is likely to affect their approach to school targets, objectives, duties and hardships (Williams, 2003; Carnival 2010; Shen & Ven (2014)). The manner in which students act and react to different situations, behaviour and academic

performance is largely influenced by what they observe from the teachers who take care of them. Research has established that people with high level of control (Bakare 2015):

- a. Look at hardships as responsibilities
- b. They pay attention to their work and duty
- c. They are very committed to their duties
- d. recuperate fast from any kind of frustration

On the other hand, people with low level of control:

- a. keep off from hardships
- b. Consider all kinds of hardships as beyond their abilities
- c. Focus on failures and negative energy
- d. Don't believe their personal abilities.

Positive and negative experience in their work can influence the ability of a teacher to teach well. In the event that a teacher has been achieving set targets and posting good grades and mean scores, such a teacher is liable to believe that he/she will continue posting similar scores in future given similar situations (Bandura, 1997; Bakare 2015). Conversely, when teachers consistently post low grades and means scores in their subject, their power to be in control also reduces. However, later if these failures are overcome, it raises their self-confidence and perseverance to perform well.

Teachers can increase the control power through other teachers' performances. When teachers observe and interact with successful teachers in their area of specialization

and given similar environment, their confidence to be in control is increased and they are likely to post good grades and mean scores as well (Musili, 2015).

An individual's control power operates in two levels of either low or high, which work together with two kinds of environments that is; responsive and unresponsive to create the following scenarios according to (Bandura, 1997; Bakere, 2015).

1. Achievement (H, R) – an individual who is high in control and is given a responsive environment (conductive) will achieve better results.
2. Hopelessness (L, R) - individuals who have low control level even when in a responsive environment may find themselves in despair.
3. Indifference and vulnerability (L, UR) – When individuals have low control level and they are in unresponsive environment (unconductive) such people become vulnerable and decide not to take any action.
4. Transformation (H, UR) – When individuals have high control level and is in unresponsive environment, they will try to enhance their hard work towards better results.

A study by Cura & Gozum (2011) on the relationship between students adversity quotient and mathematics achievement revealed that adversity quotient dimension of control, ownership and endurance had significant correction with students' achievement in mathematics. This study did not find significant correction based on gender, type of school the students had graduated and their social status.

Kuhnle, Hope, and Kilian (2011) did a study on the relationship between self-control, procrastination, and motivation as predictors of students' achievement and found that self-control was a predictor of students' academic achievement. Napire (2013), conducted a study of secondary school principals on the relationship between their leadership styles and adversity quotient and found that the dimension of control of AQ had positive interconnection with democratic style of leadership. Principals high in control had good relationship with their teachers and their students and their schools performed posted high students' performance compared with those with low score in control dimension of adversity quotient. Zubaidah et al. (2017), explored students' adversity in Mathematics and gender and found that there was no significant relationship between adversity quotient and performance of the two groups and there was no difference in performance based on gender. A study on by Uash & Praseeda (2015) on the connection between AQ and student teachers academic challenges in Karala – India, showed that dimension control had significant relationship with academic problems of student teachers.

In conclusion and in relation to this study, it appears that individuals who have high levels of control, whether they are in conducive or unconducive environments are most likely to produce better results in their work. However most of those studies have focused on students, principals and other others in different organizations. This study will establish the influence of secondary school teacher AQ dimension of control and how it shapes the academic performance of students.

Ownership

The element of ownership describes roles of accountability that measures how an individual escalates escapable blames. It identifies individual responsibility in a given situation and the outcomes of individual actions. Stoltz stresses that blaming is a destructive act that results to destruction of energy, self-worth and hope. Besides, it results to isolation and mistrust among colleagues or workers at work spaces. Since blaming is not productive, a better understanding of individual ownership results to genuine trust, health independence and alertness (Stoltz, 2000). The positive and welcoming working environment results to teamwork and greater innovation at work space. Stoltz, (2010) established that people who take responsibility of their actions are capable of solving the problems they are facing. Studies by Stoltz (2000, 2010) all indicate that workers who have a sense of responsibility have a high level of job performance. However there seems to be no empirical data that demonstrate the significance of ownership dimension of adversity quotient in order to support it. Studies on adversity that linked ownership to job performance include that of (Williams, 2003; Canival, 2010) which indicated that school principals with high ownership score had their students performing well academically compared with those with a low score of ownership dimension of AQ.

Another study by Cura et al., (2011) did a correlation study of Adversity Quotient and students' performance in mathematics among college students and established that the dimension of ownership was related to performance. Students with high ownership score had high achievement in mathematics and vice versa. Hassan, (2012) did a study

on the teaching quality and performance of teachers and found that the aspect of accountability being significant to teachers job performance. Teachers who are accountable and responsible in their duties always had high students' performance. Hema, (2015) studied Adversity quotient of prospective student for higher education and found that the ownership dimension of AQ was related to student higher academic performance. The study of Bautista, (2015) on the relationship between adversity and teaching performance of faculty members of university showed that there high scores in ownership dimension of AQ resulted to high performance of faculty members. However in secondary schools accountability of students' academic performance is normally left to the school management and principal. It is in this view that this study was to establish the ownership of the teachers on their students' academic performance.

Reach and Endurance

The two dimensions are closely related therefore they are explored together. Reach adjudge how people can allow adversity get into different spheres of life. It infers that the more a problem is perceived to be out of control the more chances of attracting reparations. This happens since an extensive problem tends to induce apathy, fear, inaction and helplessness (Stoltz, 2000).

Endurance on the other hand gauges how long adversities last together with their effects.

Misfortunes whose effects are perceived to have permanent effects are more depressing compared to those with temporary effects. Owning the capability to oversee the past misfortunes helps in strengthening individual response to future adversity. For example, failure to secure a preferment may be termed as short-lived if a person considers the denial was a result of their poor planning or unpreparedness and therefore, they perceive room for change. On the other hand it can be viewed as long-lasting if the abandonment is a result of appearance or intelligence. In relation to job performance, the study by Delon, Neil, and Merdiary (2019) indicates that there was a direct relationship between the dimensions of reach and endurance and job performance.

2.1.3 Adversity Quotient Levels

Adversity Quotient defines three types of personalities; climbers, quitters and the campers. Quitters are described as people with little ambition and minimal drive. They do not like to take risks, invest minimally in their work, rarely active and tend to avoid challenges. This lot of workers is referred to as the dead weight of the workforce in an organization. Quitters are bitter, depressed workers who have given up their dreams and chosen the comfortable and easy ways. They avoid challenges and are no longer excited by experience, learning, growth and creativity (Stoltz, 1997).

Campers are people that stopped making efforts of moving forward in life since they have been exhausted by life's many obstacles. They seldom take bigger challenges and have settled for good enough. Besides, they tend to let greater opportunities to pass

since they are contented with the current state of affairs. They only put much effort if it is necessary to produce satisfactory performance or keep things acceptable at work (Williams, 2003). Although most learning institutions contest to improve their students' academic performance, great performance is not good enough.

Climbers contrarily, are people who seek growth and improvement endlessly. They are self-motivated, live to get the greatest out of life, and are highly driven. They motivate others; they are visionary and clinch challenges (Stoltz, 1997; Le Thi, 2007; Shen, 2014). These are the ideal workforce for organizations and especially of schools of today.

People who respond to adversity as: long lasting, across-the-board, within them and not within their control end up suffering. Whereas persons, who react to it as transitory, short-lived and from outside, are able to deal with it and prosper. An individual's reaction to adversity affects all aspects of efficiency, achievement and victory. People react to adversity in unconscious and regular way. When unconstrained, such regular ways of reaction become their habit and way of life (Stoltz, 1997; Bautista, 2015; Bakare, 2015). Behaviour can be broken up and distorted. Therefore, a person's way of reaction to hardships can be broken up and changed and old ways replaced with new habits. Williams, (2003) when studying the interconnection between principles AQ and their students, achievement found that principle and teachers had an average in the reach dimension of adversity quotient and he concluded that sometimes they allowed adversities to spread to other areas of their

work and other times their did not. Raymon, (2016) did a research on adversity quotient and academic performance of selected students in MSU Marawi city and found a weak positive correlation between dimensions of reach and endurance. When students don't allow one adversity to spread and affect other areas of they thrive academically. Those students who view adversities as short lived also perform well. From the study of Raymon the four dimensions of adversity quotient reinforce on each other in making a student's adversity quotient. Where students are not in control they may limit and endure the adversity.

2.2 Adversity Quotient and Academic Performance

Adversity quotient can be a pointer as to the way individuals tackle challenges as well as the power they have to triumph over such challenges (Stoltz, 1997). That is the knowledge of human resilience. Scholars have devoted their time studying about Emotional Quotient (EQ) and Intelligent Quotient (IQ) as determinants of academic performance in school. In 1997, Stoltz introduced a new theory which he referred to as Adversity quotient (AQ) which measures an individual's resilience over adversity and therefore, added his voice over the earlier determinants of success.

Adversity can be viewed in three levels: community adversity, occupational adversity and personal adversity (Stoltz, 2000). Globally, economic crisis in many countries have affected communities and education systems. Learning institutions are unreliable and unstable for students. There is need to devise a new way of doing work. Cases of indiscipline, anti-social behaviours, drugs abuse, cybercrime and bullying are very

common today in our schools. The school environment now demands restructuring, reengineering, revitalization, rightsizing, decentralization and downsizing (Williams, 2003). An individual adversity is developed from hoarded burden from work and the society. These adversities sometimes are inspirational to some people while discouraging to others. To deal with societal adversity, we must begin with an individual change.

Researches done in profit making organizations such as business and industries have indicated that employees with high adversity quotient translated to super task performers (Lazaro-capones and Antonette, 2004). However, empirical studies in education among students have linked students' Adversity Quotient with achievement with great success. A study by Williams (2003) studied the relationship between principals Adversity Quotient and students' academic achievement. His findings indicated a connection between principals AQ and the academic performance of their students. Schools with principals who recorded high Adversity Quotient had also recorded high academic performance among its students and likewise those schools whose principals recorded low Adversity Quotient their students' academic achievement were also low. There was positive relationship between principal's Adversity Quotient and his/her teachers in schools with high academic performance. Another study by D'Sauza (2006) looked at students Adversity Quotient, school performance and school climate and found that there was a positive and significant relationship. Students who learned in schools with conducive climate and there was good inter relationships between teachers and students recorded high adversity levels

among its students and also recorded good academic performance. Bakare (2015) investigated students' Adversity Quotient and related factors as predictors of academic performance and his results indicated a positive correlation between students' academic performance and students' Adversity Quotient. A study by Gonzalez and Padilla (1997) investigated on factors that contributed to students' academic achievement among 133 resilient and 81 non resilient Mexican American high school students. The results of their study showed that resilient students recorded high grades of A's while non resilient students recorded poor grades of D's. The findings of these study revealed that high resilient students had significant high support from family, teachers and peers. They enjoyed positive school environment. On the other hand non resilient student lacked high support from their families, teacher and peers. They were in unconducive school environment and they dint have a sense of belonging.

Alva (1991) conducted a study on tenth grade Mexican American students and the findings indicated that high resilient students reported high levels of support from their teachers, they were more prepared to attend school, enjoyed being in school and were more involved in their school. Such student experienced less conflicts and difficulties among students and family members. Waxman and Huang (1997) carried out a study among city students in South and Central United States and found that students who recorded high scores in mathematics had high resilience levels. These students reported high level of task orientation, satisfaction and achievement motivation than their counterparts who had low resilience levels. A longitudinal study by Hanson and

Austin (2003) in California found that nearly every measure of Adversity Quotient was positively related to concurrent test scores. The highest increase of test scores occurred in schools which had reported high Adversity Quotient scores. However Adversity Quotient development proved to be equally beneficial to successive test scores improvement in low and high performing schools.

Research by Wasonga, Christman & Kilmaer (2000) examined factors that contributed to students' academic performance among urban high school students and his study findings showed a positive relationship between students' AQ levels and their general performance. In Kenya Mwangi (2015), establishing relationship between students' academic resilience and their resilience level and her findings also showed that there was a positive relationship between students' resilience and their academic performance. However there are studies that have shown the contrary a study by Hundson (2007) determined relationships between Adversity Quotient and academic performance among college students admitted under special admissions. The researcher had hypothesized that college students who had been admitted with high grades had high Adversity Quotient but his findings showed no significant relationship between Adversity Quotient and students grades.

Most common adversities in the world can be addressed by AQ (Stoltz, 2009). Accordingly AQ forms basic mechanisms that help people to deal with challenges and implement change in a changing world. Since Adversity Quotient can be learned gauging the teachers Adversity Quotient is important so that it can be improved and

strengthened for better performance on their work. Since the teacher also plays a critical role in students' academic performance, this study focused on correlating teachers' AQ and their students' academic performance in public secondary schools in Kiambu and Nairobi counties in Kenya.

2.3 Teacher Effectiveness and Students' Academic Performance

Teacher effectiveness plays a more important role towards students' academic performance than any other resource in school; students under effective teachers can perform better academically with less books and poor physical facilities like classrooms (Oviawe, 2016). Today teacher effectiveness in teaching is deteriorating due to the many emergent adversities in school indiscipline, technology, constant curriculum change, diseases and change of societal expectations (Mwangi, 2015). The intense pressure on schools from stakeholders to perform is usually implemented by the teachers. In most cases, teachers are required to respond to education transformations by changing their deeply held opinions about pedagogics, learning new skills and content, and applying these new ways to stimulate students' higher levels of performance (Newmann & Wehlage, 1995; Sykes, 1999). This adversity may explain why teachers are often leaving their profession as they feel out of control of their lives (Hill, 1995). Teachers' response to constant change and its inherent adversities has been characterized by resistance. The advent of new technology has proved this resistance to change.

Teachers' role in students' academic performance is real and is the main catalyst to the teaching-learning process; therefore, the teachers' role in changing students' self-concept is key to higher students' academic performance (Bandura, 1995). Teachers' self-confidence is much related to dimension of control. Previous researches have established that there is a positive correlation between teachers' perceived self-efficacy and students' academic performance. Scholars have established few reliable associations between teacher's attributes and the learning of students (Woolfolk & Hoy, 1990). The teachers' self-concept is a powerful determinant factor in the teaching activity. Students' academic performance is usually higher and their motivation to learn is completely changed with teachers' high adversity quotient. From the social cognitive theory, self-efficacy belief affects our options, hard work, and perseverance during adversity, and feelings. The concept of self-efficacy has become a common debate in current discussions of motivation due to its practical application in predicting behaviour at work.

Teachers' way of behaving at work is subject to their personal beliefs and the level of motivation. Teachers' beliefs are, therefore, important in planning and defining ways of understanding teachers. Their beliefs of mentoring students to perform well are good pointers of instructional effectiveness (Bandura, 1997.) Efficacious teachers control events upsetting their goals and objectives and tailor them towards their desired results, Bandura (1977). Teachers' beliefs that positively affect students' academic performance have been of interest to many researchers in education. Therefore, the effectiveness of teacher training in developing cognitive teacher

competencies is very important in shaping of teacher self-concept. Teachers, who are confident with the subject content they teach, influence positively their students' academic performance and they are not afraid of engaging their students in discussion.

Educationalists typically assume that an understanding of self-esteem and its characteristics are only essential if the main aim of education is to help students attain their highest possible potential (Mwamwenda (in Dambudzo, 2009). Besides, the awareness of individual self-belief is key in behavioural and human development. This knowledge helps the teachers to consciously devise ways of engaging learners while maximizing their self-belief. A stronger self-belief highly correlates with increased performance among students. This was confirmed by Marsh in (Areepattamannil & Freeman, 2008).

Scholars have started to reconnoitre the idea of collaborative efficacy in learning institutions. Since social cognitive model holds that "personal agency operates within a broad network of socio-structural influences" which outspreads mechanisms of human agency analysis to the exercise of collective agency (Bandura, 1997). Bandura explicated collective efficacy as "the groups' shared belief in its conjoined capabilities to organize and execute courses of action required in producing given levels of attainments". Collective efficacy takes self-efficacy to the social level. Applying Bandura's theory to teachers, Goddard et al., (2000) described collective teacher efficacy as a construct measuring teachers' beliefs about the collective (not individual) capabilities of all the teachers in a school to influence students' academic

performance; it refers to the perceptions of teachers that their efforts as a team will have a positive effect on students' academic performance. Research on collective teacher efficacy has been limited (Bandura, 1995, 1997; Goddard (2000); but the findings have been persuasive. School results come from collective efforts of all the teachers teaching in the same school (TSC, 2016)

2.3.1 The Teachers' Role in Students' Academic Performance

Teachers influence their students' academic performance through teaching, engaging and modelling students' behaviour daily. In schools students spend more time with the teachers compared to other adult figures like parents. This implies that the time spent by students in school is very critical. Teachers influence on the students' life is very critical (Nieto, 2003, Ovia, 2016).

Brewster and Railsback (2003); Duan, Du, & Yu (2018) in their studies of effects of school culture on the academic performance of students when the teacher is the mediating factor, found that school culture where trust is held highly between teacher and students and between teachers and the administration academic performance is very high. Trust enables both teachers and students to get involved in decision-making and problem solving in the school. When teachers are involved in the school reform process, they develop a sense of commitment and they can work with less supervision and pressure. This is supported by Adridge & Fraser (2016) who established that trust among members of a school community oils the functioning of the school routine. However, creating, developing and maintaining such large base of trust take many

years but can get lost in a moment (Walker, 2011; Malien & Sovolainen, 2016). Teachers take responsibility of those programmes and decision they have been involved in formulating and that involves the dimension of control and ownership.

Many variables seem to influence a student's academic performance such as level of their motivation to study, family background, and their relationship with the teachers and their previous performance and many more (Bakare 2015). For a student to succeed academically, he/she needs support from family, friends, teachers, and the community. A wide range of skills such as social, emotional, and academic must be imparted to the student to perform well academically, in addition to cognitive aspects, such as standardized test scores, and intelligence quotient (IQ) which have conventionally been associated with academic success (Duan et al., 2018). A teacher plays a critical role in imparting most of the skills in the students' academic excellence (Nieto, 2003; Musili, 2015; Skaalvic, 2017). Many students fail to join school with ample social skills or develop complements of emotional, social and academic capabilities without interventions. Globally, educators have had a concern on students' classroom behaviour, acknowledging that poor classroom adjustment might forecast later delinquency and poor academic performance (Poulou, 2005). In many instances, academic achievement is usually associated with cognitive factors but according to Piaget (in Reed, et al., 1996) cognitive factor cannot exist alone without the non-cognitive factors. Piaget also noted that human behaviour must always include both cognitive and affective aspects. He recognizes that non-cognitive factors are as important as the cognitive factors in the learning process and academic success.

Mwangi, (2015) did a study in Kiambu Kenya on the students' resilience and found that more academically resilient students performed better in examinations than those with little academic resilience.

Education stakeholders such as politicians, parents and the community at large believe that teachers should provide their students with the best education and that they are responsible for students' academic success (Sahlberg, 2010). Such kind of trust can only flourish where there is sincerity, self-belief, professionalism, and good leadership. The idea of trusting teachers and schools is subject to a well-functioning society. The relationship between all education stakeholders plays an important role towards students' academic performance. The institutional performance is subject to all networks and parties have interest in the school results and therefore educators are responsible to the public on matters concerning the overall students' performance (Putnam, 2000). This explains why there exist conflicts between teachers and other stakeholders who demand results for their children despite the many adversities the teachers have to deal with. Adversity quotient will try to interrogate teachers' ability of control of their work and accountability. Students' academic performance is one of measures of teachers' effectiveness in their work (TSC, 2016)

Many researchers have been concerned with factors that influence students' academic performance Bakare, (2015). Such studies focused on: Student-teacher relationship and other related factors like school environment and found that positive teacher-student relationship affected students' academic performance positively. The study by

Bakare found that teachers' adversity quotient correlated positively with students' academic performance in Mathematics subject. Isiugo-Abanihe & Labo-Popoola, (2004) did a study on the effects of school type and location on the English language and found that the type of school nor the location of the school, didn't affect students' performance in English. The study about gender difference in numerical ability in Geography by Falaye, (2006) did not find any difference between boys and girls; socio-psychological factors were found to affect students' academic performance in Chemistry (Osokoya, 1998). Cognitive ability (Rohde & Thompson, 2007) found that general cognitive ability continued to add to prediction of students' academic performance. Home and school factors as predictors of students' academic performance found that family type and size did not determine students' academic performance but schools factors such leadership style and caring teachers had effect on students' academic performance (Odinko, 2002).

Effects of school facilities and class size on students' academic performance as was revealed by (Owoeye, 2002) showed that, large class size affected students' negatively with teachers concentrating on the bright students at the expense of the slow learners, unlike a small class size where the teacher gave a personal attention to each student. On the contrast the study found that students who received attention of teachers whether in large classes or in small classes were able to perform well academically with poor school facilities like classrooms and laboratories. Teachers attitude and vocational variables as was studied by (Falaye & Okwilagwe, 2008) found that teachers positive attitudes to their students have positive influence on students'

academic performance. A study on students' Intelligence and creativity and their academic performance by (Aitken, 2004) found no association when assessing students' creativity, intelligence and their general academic performance. A study on effects of students' anxiety on their academic performance by (Osiki & Busari, 2002) established that high levels of students' anxiety and depression which is actually adversity can lead to low academic performance and poorer working memory function. However teachers play a great role in helping students cope with academic stress and anxiety enhance improving their academic performance. The research (Adeyegbe, 2005) on educational standards found that, the role of teachers in improving the quality of public education continued to receive considerable attention from economists and policy makers, high academic standards attract high pay in the work market. The placement of students' in schools, higher institutions of learning and future jobs is usually based on students' high academic standards. Educational policies and institutionalization as discussed by (Obemeata, 1995; Obanya, 2003) using multilevel analysis revealed that most aspects of national policies for teaching and examination positively associated with students' achievement in each subject. The findings further suggest that autonomy over decision making concerning students had positive effects on students' academic performance. The quality of students' academic performance improves as autonomy of teachers' decision making over their students' is increased. From the above discussion many varied factors are responsible for high students' academic performance in school but the teacher factor remains central to

them all. This study therefore focused on investigating the effects of teachers' AQ on their students' academic performance in public secondary schools.

When teachers appreciate their students, it covers their needs of fame, respect, status, domination and prestige and helps them get honoured and improve their self-esteem and image. Students on the other end need knowledge that they are recognized and are valued well by others. Such perceptions stimulate feelings of complacency, self-worth, and confident attitude, feeling useful, self-capability and feeling important in the world. This motivates them to work smart to achieve more. Contrarily, when students are frustrated by the unappeasable need for self-esteem, and attitudes of weak, inferiority, passive, awkward and are unable to manage the demands of life and their low self-esteem, they tend to give up the hard work (Alwisol, 2010). In a study by D'Souza (2006) where he related students' Adversity Quotient and their performance and school climate, he found students' AQ highly correlates with the academic performance of the students and the institution climate. A student's perception about his success is a contributing factor to their success and hence the teacher's role in influencing the student's positive and resilient perception cannot be underestimated.

Tschannen-Moran and Hoy (1998) argued learning institutions are the ultimate places in executing key interventions that are anticipated in promoting resilience in students facing with many challenges. The 21st Century children spend much of their time in school with teachers than they do with their parents and siblings and therefore, the

teacher is the right person to teach them resilience in life but he/she can only do that if they are resilient themselves. The learning institution provides an ample atmosphere that can lessen possible risk factors to students and enable learner's master skills that qualifies them to be competent adults (Brooks, 2006). According to Doll and Lyon (1998), found that many students that are at risk in the society in general found protection and care at school; imparting them with academic skills, individual talents, social competence, problem solving and other productive activities. This implies that teachers recognize these societal challenges as part of their teaching duties and that they are willing to reach out to their students.

The way the students relate with their teachers in school has a great impact on the students' academic performance. The basis for students' failure or success is founded from their experiences in class. The classroom teachers have an extraordinary influence on students' academic performance all through their contact in the learning and teaching experience. Classroom teachers significantly influence school regulation. Social support and problem solving has been found to cushion the consequences of stress in school students (D'Souza, 2006). Teachers support and model their students' behaviour which is consistent with expectations of the school and society.

Pearl & Campbell (1999) did a study on student - teacher relationship and their results indicated several common traits among teachers that were considered important by the students. It was established that good interpersonal relationship between a teacher and a student improved the student's academic performance. Good student -teacher

relation improves learning and sets climate for understanding of what is being taught. On the other hand, Dussilier, (2005) identified academic stressors, to students which include: a heavy course load and insufficient study space as well as failure to measure up to their expectations especially in examinations. Positive student-teacher relationship has been found to affect students' preparation, attentiveness in class and later affect their academic performance (Peart & Campbell, 1999; Sanders & Jordan, 2000). Successful teachers must pay attention to students' emotions, ideals, beliefs as well as their cognitive ability. Students perceive their teachers as very effective if they feel that they are concerned with their emotional and academic wellbeing (Peart & Campbell, 1999). Most students identify with a caring teachers and look unto them to set examples in character and leadership. In addition, a teacher's ability to motivate students improves their self-belief (Peart & Campbell, 1999).

A study by (Sanders & Jordan, 2000) about student –teacher relationship revealed great information concerning school behaviours, attitudes, and achievement of students. They studied students conduct in relation to academic performance and the results revealed that student-teachers relationship regulated students conduct and thus impacted positively on the students' academic success.

Calabrese, (2005) did a study on teachers' personality traits and attitudes towards vulnerable students in relation to students' academic performance. The results showed that teachers' attitudes and personality traits were associated with students' academic performance. This finding suggests that successful teachers motivated students,

developed significant relationships, and were concerned with the students' wellbeing while recognizing success in small steps. Un-encouraging attitudes of teachers reflected students' disappointment, blame of others, favouritism and lack of flexibility.

Despite many studies concerning factors affecting students' academic performance, the quality of educational achievement for many students still remains low in Kiambu and Nairobi counties Kenya (KNEC, 2016). Some scholars have looked beyond the aforesaid factors to other associated areas within the teaching-learning grid including psychosomatic and psychological constructs and cognitive structures (Bakare, 2015). Under alike psychological domain there are factors such as self-efficacy, self-concept, self-esteem, emotional quotient and intelligence quotient among others, that are concerned with dissimilar stimuli that drive the realisation of high quality educational achievement. An emergent variable within this dominion of psychological construct is Adversity Quotient. It has been stated that this variable is capable of bridging the gap in the attainment of success compared to previous quotients of intelligence quotient and Emotional quotient (Stoltz, 1997; 2010; Carnival, 2010).

Studies on students' resilience seem to reveal common factors regarding students' academic success (Reis et al., 2005; McClendon et al., 2000; Crosnoe & Elder, 2004; Condly, 2006). Most studies agree that the teacher-student relationship as the care-giver is the key to students' academic Excellency Stoltz (1997) developed the LEAD Sequence as a way of responding to adversity: (1) Assesses the adversity response through active listening (2) Explore and assess individual ownership and origins of the

results (3) Analysing the evidence and (4) Devise interventions that will enhance individual AQs.

The LEAD sequence was tested by several influential researchers rooted in Cognitive Psychology and has been used to help people assess, dispute and recognize their rejoinders to life events. Learning to disagree and alteration of these reactions can result in long-term change. Unlike most trainings which loss impact over time, one of the more powerful findings from Cognitive Psychology has been that the effect of cognitive disputation skills seems to take on a life of its own, expanding and growing long after the training is over. Taking into account the recent situation of adversity in high schools and the social environment, the students are growing up in. Actions need to be taken to promote development of the Adversity Quotient education among the teachers who can effectively socialize it to their students. Stoltz (1997, 2010) identified Adversity Quotient as one of the psychological variables that improve students' academic performance.

Students come from backgrounds with adverse conditions and seem to be stressed require at least an adult figure that provides them with unconditional support and in school that adult is the teacher. In the absence of positive parental support like it is in today's busy homes, the teachers have the capacity to foster resilience in students. When students are supported no matter their backgrounds, they are able to prosper despite many challenges in their lives. Most of them will not just overcome the challenge but will succeed academically and socially (Condly, 2006). Today's

students live in a world with many challenges such as poverty, drug abuse, a collapse in social norms and values, lack of social support systems, lack of discipline, and increased violence and abuse. The ability to overcome these difficult situations would not only be necessary but a must for all our students to succeed academically (Reis et al., 2005). The teacher remains the only person to model resilience in their students.

The idea of resilience is not new, but defining it accurately has remained a problem to date. Researchers have identified factors that support resilience among students such as trust, affection, sense of worth, independence, hope, risk taking, academic success and faith in God, morality and unreserved support by an adult. Resilience is universal and enables a person to avert reduce or surmount the detrimental effects of adversity. As people believe student's good performance in examination is a forecast of family background, and environmental factors, that belief can be untrue because of not giving consideration to resiliency. It has been proved that many students who are given the right support can be successful regardless of the circumstances. The common denominator for all victorious students is supportive and loving adult, be it a teacher, relative or parent (National Children's Home, 2007).

Students require a foundation in both extrinsic and intrinsic factors in order to develop resilience. Intrinsic attributes include a safe environment that provides security and sense of belonging, a sense of self-efficacy and self-esteem which are mastery and control and which are usually instilled by the adults in their lives. Extrinsic factors include at least one secure relationship of a supportive adult in which the teacher

becomes very vital (Levin, 2012). A well-synchronised system of support within a school helps to attain both protective and resilient factors leading to high performance of the students academically.

Johnson (1997) studied students' resiliency and asked their teachers to describe experiences with resilient students. These teachers identified several factors that contributed to the success of resilient students: relationships with their teachers, personality of the student, family background, environment they lived in, and school culture and climate all proved to be important. The most prevalent factor was the involvement of a supportive teacher, positive role models and good peer relationships. Those supported students' development qualities, such as confidence, enthusiasm and the ability to set realistic goals and be accountable. All those factors facilitated academic success and were the responsibility of the teacher. Lastly, the participation of a parent in their child's academic wellbeing was crucial to success of the students. It is, therefore, evident from this study that the support of the teacher and more so when the parent is not frequently available in today's world is very crucial in the academic success of the student.

Nurturing students' resilience requires a well-established school structures with defined roles, high student discipline, students' involvement in decision making, students' involvement in community activities and religious matters. Howard (1999), outlined several practices "best" for stimulating agility in students. Their ultimate classroom background replicates the learning environment whereby class activities

must be purposefully organized to facilitate emotional and social development of the student. Although it is accurate and fair to say that most students labelled crooks by virtue of related stressors or poverty status are not asocial. Some students join learning institutions bearing risk factors exceeding resilience that therefore need immediate intervention of developing protective processes. According to Bandura (1997) Students' self-confidence, optimism and stamina to endure challenges directly related to students' ability to overcome adversities in school today. He concluded that endurance is predictor factor of physical and mental health when facing adversities.

2.4 Appraisal of Literature and the Gaps in the Literature

Researches reviewed have established that there is relationship between Adversity Quotient and employee effectiveness in the business world. It has also revealed a positive relationship between principals' Adversity Quotient and students' achievement as well as positive relationship between students' Adversity Quotient and their academic performance. Teachers are key drivers of students' academic performance in school. Most researches that have linked teachers with students' academic performance have focused on teachers' demographic factors such as experience and teacher's qualification in relation to students' academic achievement as well as teacher motivation and teaching methods in relation to students' achievement. This study however, looked at teacher's adversity quotient and its relationship with students' academic performance in KCSE based on results of registered by the teachers' in their teaching subjects.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The chapter presents the research methodology to be used to achieve the objectives of the study. The chapter presents the research design, locale of the study, target population, sample techniques and sample size, the data collection instruments, reliability, validity, data analysis and ethical considerations.

3.2 Research Design

This study adopted a correlation research design. Kothari (1985) defined correlation design as a statistical test to establish patterns for variables. Correlation research design method examines difference between the characteristics of the study group. Orodho (2005) noted that the purpose of a correlation design is to establish whether two or more variables are related in this study. This design was considered appropriate in this study because it would help determine relationships among variables. The study sought to determine significant relationship between adversity quotient dimensions of control, ownership, reach and endurance and students' academic performance in KCSE. The independent variables in this study were the four dimensions of adversity quotient scores of: control, ownership, reach, endurance and the overall adversity quotient score while the dependent variable was the average score of students' academic performance recorded by the teachers in their subjects in KCSE in 2015 and 2016.

3.2.1 Research Variables

The independent variable is teachers' Adversity Quotient. It has four dimensions, namely: control, ownership, reach and endurance. The teachers' response to adversity was determined by addition of the scores from the four dimensions whereby the highest scores according to Stoltz (1997) is 200 and the lowest score is 40. Each dimension had five questions in the questionnaire. Each dimension was measured independently and discussed. There were three levels of Adversity Quotient that emerged: high, middle and low. Teachers' adversity responses were measured using Stoltz's Adversity Response profile questionnaire but the questions were modified by the researcher to suit this study within the contest of the school and the teacher (Stoltz, 1997). The researcher did not conduct the author of the adversity response profile tool after modification. The same questions were rephrased in line with adversities encountered in teachers in school.

The dependent variable was students' academic performance in KCSE as standardized test score. The schools were categorized into national schools, extra-county schools, county schools and sub-county schools because of their students' entry behaviour. Academic performance was measured by examining the mean grades in KCSE for the sampled teachers in the years 2015 and 2016. In Kenya, the highest mean score rating according to Kenya National Examinations council is 12 with grade A and the lowest is 1 with grade E (KNEC, 2016).

Table 3.1: KNEC Grading

Grade	Category
12 A	very Good
11 A-	
10 B+	Good
9 B	
8 B-	
7 C+	Average
6 C	
5 C-	
4 D+	Weak
3 D	
2 D-	
1 E	Poor

Source: KNEC, 2016

3.3 Location of the Study

The researcher carried out the study in Nairobi and Kiambu County Kenya. The choice of these two counties was informed by the fact that Nairobi being the capital city of Kenya is cosmopolitan in population and Kiambu County enjoys the spillover effect from Nairobi; some teachers leave in Nairobi and teach in Kiambu while others teach in Nairobi and leave in Kiambu. The cosmopolitan nature of teacher population of the two counties makes it more representative of all Kenya secondary schools and

adversities they face in the 21st century. The explosion of technology use has been more pronounced in Nairobi and its environs where Kiambu falls, more than other counties in Kenya due to the network and electricity connectivity (Republic of Kenya, 2012). Drug use and abuse, anti - social Behaviour are on the rise in the city and its environs than the rural areas (Republic of Kenya, 2012). Furthermore Nairobi as urban centre has its own teacher adversities that may be different from those of Kiambu in the rural setting. Students’ performance in KCSE in both counties compare relatively well with the national KCSE results whereby less than of half of candidates registered for KCSE score C+ above grade which is the minimum grade for university entry (MoEST,2005). The table below shows a summary of KCSE performance in the two counties compared to the national results. In addition, no such study has been undertaken in these two counties.

Table 3.2: KCSE Performance in 2014 – 2016

	National index		KCSE Nairobi KCSE index		Kiambu KCSE index
2014	30.84% above	C+ and	30.49% C+ and above	and	26.16% C+ and above
2015	31.53% above	C+ and	31.86% C+ and above	and	27.91% C+ and above
2016	10.81% above	%C+ and	9.81% C+ and above	and	8.43% C+ and above

Source: KNEC results 2014, 2015, 2016

3.4 Target Population of the Study

According to Mugenda and Mugenda (2003), a target population comprises of inclusive events or individuals with similar characteristics. The studies target population comprised all the teachers in public secondary schools in Nairobi and Kiambu County. The statistics of public secondary school enrolment reveals that there are 70 (Public) secondary schools and 213 (Public) secondary schools in Kiambu County. In total, the two counties have an average of 283 (Public) secondary schools with total teacher population of 4471 formed the target population, where the sample was drawn.

3.5 Sampling Technique and Sample Size

3.5.1 Sampling Technique

The researcher adopted stratified random sampling techniques to sample schools. The teachers were sampled utilizing the systematic random sampling. According to Orodho (2010), stratified sampling technique is utilized in cases where the target sample is not a homogenous group. The sample size was divided into strata's. The schools were then divided into categories of sub county, county, extra county and national school. Simple random sampling was later used in picking elements in the different stratum. It was done independently to give the members unbiased chance of participation (Gay, 1992).

According to Mugenda and Abel (1998) systematic random sampling ensures that the population is evenly sampled and therefore, in this study the researcher sampled only

6 teachers from every category of school who taught an examination class in the years 2015-2016. The mean scores registered by the teachers were used as the standard measure of students' performance in KCSE in the subject taught by that teacher, and was correlated with the teachers' Adversity Quotient level.

Mugenda (1998), notes that a study sample size of 10-30% is adequate. The researcher used a sample size of 30% in the region. The study sample size was made of 21 public secondary schools in Nairobi and 64 schools from Nairobi. The selected sample size was distributed to each stratum equally. This technique was applicable for the current study since the selected schools have unique adversities. National schools are few as well as extra county schools while majority of the schools are the county and the sub-county (category) schools.

3.5.2 Sample Size

Generally the two counties (Nairobi and Kiambu), have a population of 4471 (Public school) teachers (source is education county offices in Nairobi and Kiambu). The sample comprised 447 (10%) of teachers who have taught and presented students for KCSE between 2015-2016 academic years. Since 85 schools were included in the study, systematic random sampling was utilized in selecting 6 teachers randomly from each school.

3.6 Sampling Frame

Table 3.3 shows the number of teachers that were sampled and used in this study in the two counties that were under study. A total of 447 teachers were selected from 283 public schools from Kiambu and Nairobi counties as respondents in this study.

Table 3.3: Sampling frame

County	No. of public sec schools	Percentage 30%	No. teachers	Percentage 10%
Kiambu	213	64	3457	346
Nairobi	70	21	1014	101
Total	283	85	4471	447

Source: county of education office (Kiambu and Nairobi)

3.6.1 Return Rate of Questionnaires

Table 3.4 shows the return rate of the questionnaires distributed to the respondent teachers in this study. The researcher visited the schools and through the permission of the school principals' questionnaires were left behind to be collected after one day. The blow table indicates the number of distributed questionnaires by school category and the number of questionnaires returned in both counties Kiambu and Nairobi.

Table 3.4: Return rate of questionnaires

School Category	Sample Size	Return Rate	%
National	111	110	97.1
Extra-county	111	108	97.3
County	112	111	99.1
Sub-county	113	112	99.1
TOTAL	447	441	98.6

Schools in Kenya are categorized into different groups and students are placed in those categorized by different entry scores (Republic of Kenya, 2012). There was need to sample the schools in categories because due to students' entry behaviour in these schools it is expected that the teachers may be experiencing different adversities and also performance is varied dependent of form one entry scores. Stratification of sample into different schools also was to ensure equal representation of the challenges experience in all the schools in Kenya (Mugenda and Mugenda, 1999).

Questionnaire return rate is the proportion of the questionnaires returned after they have been issued to the respondents. In this study, 447 questionnaires were distributed to various schools as per the sample size and 441 were completely filled and returned. This was a return rate of 98.6 % and the researcher deemed it adequate for data analysis as recommended by Mugenda and Mugenda (2003).

The table below shows the number of teachers who participated in this study by county.

Table 3.5: Return rate of questionnaires by county (N=441)

County	N	%
Kiambu	343	99.1
Nairobi	98	97.0

The sample of teachers was drawn from two different counties for the purpose of comparison and representation of adversities experienced by teachers in the city and those in the rural settings so as to infer the results to a larger population (Orodho,

2005). Table 3.4.1 shows the number of respondent teachers from each county. In Kiambu county 346 questionnaires were distributed to teachers and 343 (99.1%) were collected back completely filled, while in Nairobi county 101 questionnaires were distributed and 98 (97.0%) were returned. In both counties return rate was deemed perfect for data analysis and for comparison purpose.

3.7 Research Instruments

This study used Adversity Quotient (AQ) response questionnaire to collect data. This (AQ) was appropriate for the study because it measures an individual's resilience capacity when faced by challenges and hard times. A questionnaire was appropriate in this study because the researcher intended to amass a lot of information within a short time. Furthermore, the researcher settled on questionnaire since it tends to reduce bias that is instinctive in interviews (Orodho, 2005). The questionnaire had two sections, section A comprises demographic data of the respondents including school category, educational background, gender, length of service, years served in the present school and the KCSE mean scores recorded in 2015 and 2016. Since students are enrolled in different categories of schools by performance, the researcher devised criteria of categorizing performance of students as presented in the table below.

Table 3.6: KCSE performance rating

Category of schools	Below average	Average	Above average
National	8	8-9	9+
Extra-county	6	6-7	7+
County	5	5-6	6+
Sub-county	4	4-5	5+

Source: KNEC grading system 2016

Section B consisted of 20 scenarios of assessing the individual teachers' response to adversity followed by five Likert response answers.

3.7.1 Adversity Response Profile Questionnaire for the Teachers

The study used ARP version 8 by Dr. Paul G. Stoltz. This questionnaire was developed, tested, and validated by Peak Learning with over 7,500 participants from diverse organizations (Stoltz, 2009). The researcher adjusted the items that were included in the questionnaire to relate to difficulties in education in Kenya and made it easy for the respondents to understand and relate to those scenarios in the questionnaire. Modification in this questionnaire did not affect its original interpretation because it only involved use of different words that relate to teacher's work. This is a self-rating tool measuring individual way of response to challenges, difficulties and also one's adversity level. The questionnaire presents 20 events or scenarios, each of which is followed by five responses on Likert scale. The questions are arranged according to the four dimensions. Below is the descriptive interpretation of the scores by Stoltz, (2009).

Overall AQ Score Equivalent

High 176-200

Above Average 158-175

Average 136-157

Below Average 119-135

Low AQ scores range from 40-118

The CORE equivalents were interpreted as follows:

Table 3.7: CORE score equivalents

Control –C		Ownership-O		Reach-R		Endurance-E	
High	48-50	High	48-50	High	43-50	High	44-50
Above Av.	43-47	Above Av.	47-49	Above Av.	38-42	Above Ave.	39-43
Ave.	36-42	Ave.	41-46	Ave.	30-37	Ave.	32-38
Below Av.	30-35	Below Av.	31-40	Below Av.	25-29	Below Av.	26-31
low	10-29	Low	10-30	Low	10-24	Low	10-25
C mean=41		O mean=45		R mean=32		E mean=36	

(Stoltz, 2009)

The highest score is 200 while the lowest score is 40.

3.8 Piloting the Instrument

According to Kothari (1985), after adopting or constructing a research tool, it is appropriate to carry out a pilot study to countercheck whether methods of analysis and the items included in the test tool are appropriate for the study. Adversity response

profile (ARP) questionnaire was piloted in Kiambu County in 3 schools of different categories; boys' schools, girls' schools and mixed schools. The reason for categorizing the schools was because teachers face different adversities among different school environments, climates and cultures as was observed by Hassan (2012). The reason why only schools from one county were used for piloting was because the purpose of the pilot study was to investigate the feasibility of the study, detect possible deficiencies and flaws in the data collection instrument due to modification and that was possible even with teachers from one county only. The schools in the pilot study were not included in the research sample for the purpose of eliminating reactivity of the respondents in the first test (Orodho, 2005). Eighteen teachers were used in the pilot study, 6 teachers from each school category. The respondents took Adversity Quotient test using the modified questionnaire. Data was then analysed and any errors revealed were corrected.

3.9 Reliability and Validity of Research Instruments

3.9.1 Reliability

Reliability as defined by Mugenda and Mugenda (2003) is the degree at which a test tool provides consistent data or results after similar trials. According to Stoltz (2010) the adversity quotient response profile questionnaire has proved to be highly reliable with most professionals and students. The questionnaire for teachers contained questions each on a 5 point likert scale and arranged according to the four dimensions of adversity quotient. Cronbach alpha was run on a sample of 48 teachers and each adversity quotient dimension. The results of this pilot study were correlated with the

ARP scale and were found to be positively and statistically significant. Orodho (2005), notes that a correlation of 0.8 is generally adequate. A value of below 07 can be expected for psychological constructs due to the diverseness of the construct being measured. The Adversity Quotient instrument consisted of various psychological constructs thus a value of 0.732 was accepted as the reliability coefficient (Cronbach's alpha $\alpha = 0.732$).

Table 3.8: Reliability test

Adversity dimension	Cronbach's alpha
Control	.638
Ownership	.734
Reach	.747
Endurance	.793
Adversity Quotient	.732

3.9.2 Validity

Validity according to Mugenda and Mugenda (1999), it's the degree to which a test instrument measures the phenomena it was intended to measure or represent in the study. Validity of the test instrument was enhanced through expert judgement (Orodho, 2005). The researcher sought help of supervisors, who are experts in research, to improve the content validity of the instrument.

3.10 Data Collection Techniques

The researcher visited the sampled schools armed with a research license from NACOSTI. She introduced herself and sought further permission from the principals to collect data for academic purpose. She requested to leave the questionnaires to the teachers who had previously presented candidates for KCSE to complete within a period of one week. This period was given so that the respondents could have humble time to complete the questionnaire and return it to the school principal where the researcher was to collect them back after expiry of the one week. This method enabled the researcher to distribute questionnaires to many schools since she did not have research assistants.

3.11 Data Analysis

Table 3.9: Data analysis summary

Quantitative analysis	Presentation	Variable
descriptive statistic	Mean, frequency distribution Standard deviation, and percentage.	Demographic variables: school category, gender, highest education attainment, gender, years in service, years served in current station, subject mean.
inferential statistics	Pearson product-moment correlation(r) regression	objective 1-5 objective 6

Raw data obtained from the field were difficult to analyze hence the researcher had to clean, code, key-punch the data into the computer and analyzed (Mugenda, 2009). Data collected in this study were quantitative and therefore, quantitative methods of data analysis of descriptive and inferential statistics were employed. Descriptive

statistics involved: Mean, percentages used for the demographic data analysis, the Adversity Quotient dimensions and the teachers' Adversity Quotient in objective 5 was presented in frequency tables and figures. Inferential statistics used included: Pearson Product Moment Correlation Coefficient; was used in objectives 1-5. Regression analysis model was used to test for the most effective dimension of Adversity Quotient on students' academic performance in the presence of intervening variable of professional qualification and years of service and also in the absence of the intervening variables.

The Following null Hypothesis were Tested:

Five null hypotheses were tested in this study. The first hypothesis tested on the relationship between the independent variables which were teachers' AQ and its dimensions of: Control, ownership, reach and endurance against the dependent variable. Test used was Pearson correlation moment. The level of significance adopted in this study was 0.01. This was because the adversity response profile measures a psychological construct and therefore it was necessary to apply a more strict level of significant so as to avoid a situation of rejecting the null hypothesis when it is true (Mugenda and Mugenda,1999).

H₀₁: There is no significant relationship between teachers' overall Adversity Quotient and students' academic performance. Test: Pearson product moment correlation. The results for the test yielded significant and positive relationship.

H₀₂: There is no significant relationship between teachers' dimension of Control and students' academic performance.

H₀₃: There is no significant relationship between teachers' Adversity Quotient dimension of Ownership and students' academic performance. Pearson correlation moment test was used to test this hypothesis

H₀₄: There is no significant relationship between teachers' Adversity Quotient dimension of Reach and students' academic performance. Pearson correlation moment test was done to test the hypothesis.

H₀₅: There is no significant relationship between teachers' Adversity Quotient dimension of Endurance and students' academic performance. Pearson correlation moment was used in this test.

3.12 Logistical and Ethical Considerations

This sub section presents the logistical and ethical considerations and the data collection methods. The researcher got an introduction letter from Kenyatta University graduate School. She then obtained a research permit and authorization from National Commission of Science Technology and Innovation (NACOSTI). Later she proceeded to obtain further authorization with the Regional Directors of Education in Nairobi and Kiambu counties (Appendix 2-5). The researcher thereafter visited the selected schools and explained the purpose of conducting the study in the schools and then sought permission to collect data from their schools.

When collecting data, the researcher distributed the questionnaires to the respondents and gave them one week to respond to the items adequately. Confidentiality was taken into consideration. The respondents were asked not to give any clue pertaining their identity. Besides the obtained information was treated with utmost anonymity. Every questionnaire contained a letter informing the respondent about the purpose of the study and assuring them of confidentiality and therefore informed consent was sought first from the school principal and also from the teachers involved prior to the collection of data.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the study, interpretation and discussions given as per the study objectives and hypotheses. The study aimed at determining secondary school teacher's response to adversity and the influence of that response on students' academic performance in KCSE as was measured by the teacher's subject mean score in KCSE, in public secondary schools in Nairobi and Kiambu counties, Kenya. The study was guided by six main objectives as follows: 1 to establish the relationship between teachers' overall adversity quotient and students' academic performance, 2 to establish the relationship between teachers' AQ control dimension and students' academic performance, 3 to establish the relationship between teachers' adversity quotient dimension of ownership and students' academic performance, 4 to establish the relationship between teachers' AQ dimension of reach and students' academic performance, 5 to determine the relationship between teachers' adversity quotient dimension of endurance and students' academic performance, 6 to establish which of the four dimensions of adversity quotient is most effective in relating to students' academic performance. The chapter is divided into five sections: section A general and demographic information of the respondents, KCSE performance of the students for the years 2015 and 2016 as was recorded by every teacher in their subjects, section B the teachers' Adversity Quotient scores arranged according to the four dimensions of Adversity Quotient: dimension of control, ownership, reach and endurance as per the objectives and the hypotheses of the study, then the teachers overall Adversity

Quotient in general and in relation to the demographic data of category of school, teachers highest qualification, gender and length of service. Then the groups of teachers that emerged from the Adversity Quotient analysis. Lastly, regression analysis was done to establish the most effective dimension of Adversity Quotient on students' academic performance.

4.2 Section A: Demographic Information

4.2.1 Sampling Units: Distribution of Teachers according to Schools category

Teachers (Respondents), were asked to specify their school category. The schools were categorized into four groups according to the students' entry behaviour that is likely to affect their academic performance and again teachers in different categories experience different kind of adversities in their execution their duty. The schools were categorized into National, extra county, county and sub-county schools.

Table 4.1: Distribution of teachers by school category

School category	<i>f</i>	%
National	110	24.9
Extra-county	108	24.5
County	111	25.5
Sub-county	112	25.4
Total	441	98.6

National school teachers were 110 (24.9%) of the total sample, Extra county school teachers were 108 (24.5 %), county school teachers were 111 (25.2%), sub-county school teachers were 112 (25.4%). Schools in Kenya are categorized in four clusters

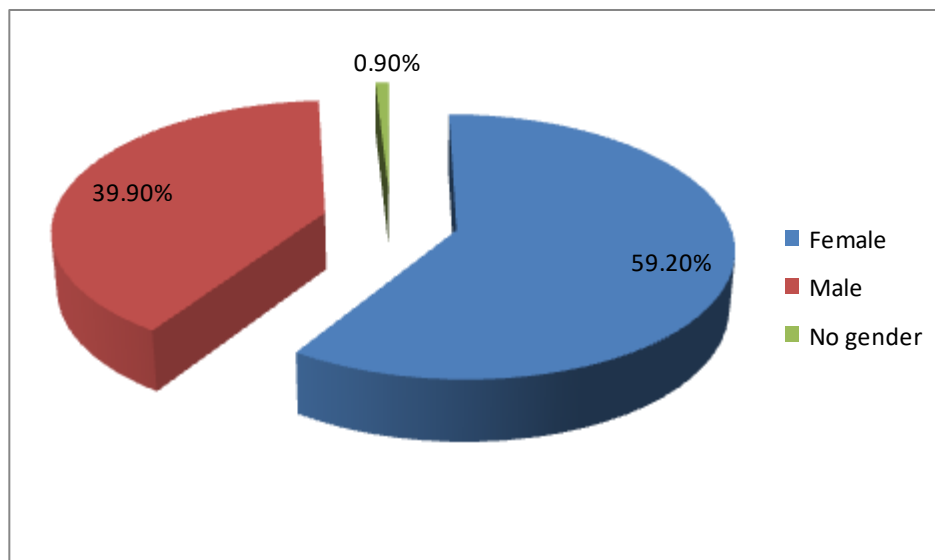
for the purpose of admitting students to public secondary schools (MoEST, 2012). Categorization of schools is the purpose of placing students with same academic ability together for ease learning and instruction (MoEST,2012). National schools are best performing public secondary schools with a mean index of 8.5 and above and admit students from all over the country for the purposes of national integration. The extra county schools also referred to as Centre's of Excellence. These are boarding high performing schools with a mean index of 6.5 and above; they complement the national schools in promoting integration and improving education standards. They admit 40 percent students across the country and 60 percent from the host county. County schools are public secondary schools which have always maintained average performance of mean index of 5. Most of them have well established infrastructure and are centres of excellence in the counties. Mostly they admit students from their home counties. The sub-county schools are the current day schools and they admit students from their host districts. Every student who has not been admitted to the other school categories must join the sub-county school as a means of realizing the 100 percent transition from primary school level to secondary regardless of the performance (MoEST, 2017).

4.2.2 Gender of Teachers

Studies have shown that teacher gender can affect students' academic performance. A study by Sanders (2000) showed that girls had negative attitudes toward female teachers and that effected their academic performance. Girls taught mathematics by male teachers tended to performance batter than those taught by female teachers. In

another study by Shen (2014) found that there was no relationship between gender and adversity quotient of a worker. The studies by Stoltz (1997; 2000) did not also find any significant relationship between gender and adversity quotient. In this study therefore the researcher was interested in teachers' gender in relation to students' academic performance and teacher's adversity quotient.

Figure 4.1: Gender of teachers

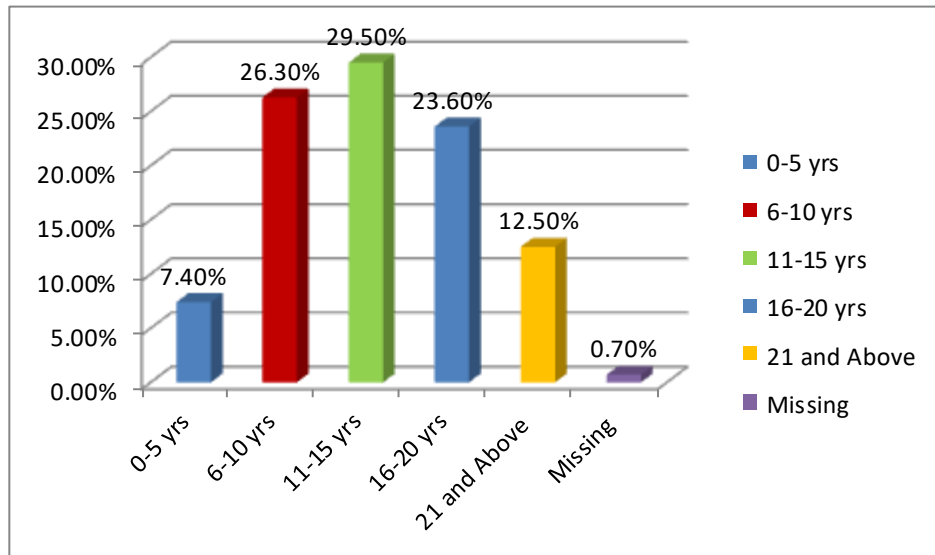


Gender of teachers in the study was considered important in determining teachers' Adversity Quotient in relation to performance of learners in their respective subjects in KCSE. Out of 441 teachers in the study, 261(59.2%) were female, 176(39.9%) were male and 4(0.9%) did not specify their sex. The study's gender distribution in figure 4.1, showed that there was a gender disparity in favour of females in the general composition of teachers. This may be explained by the population of women versus men in the country and it seems that female gender preferred the teaching career more than men.

4.2.3 Teachers' Number of Years of Service (Experience)

Teachers experience is an important variable that affects students' academic performance. In a study by Musili (2015) in Nairobi University found that teachers with a longer teaching experience of 10 years above posted better results in their subjects than those with less experience. Bautista (2015) did a study on university lecturers and found lecturers who had worked for longer period of time were more effective than those with less years of experience. Wandera (2019) while studying on the effects of teachers experience on students' performance in English in Kenya found that teachers with long experience in teaching the subject posted better results than those with less experience. Past studies have shown that teacher experience influences students' academic performance positively (Guskey, 1988). Teachers who have served for many years have better classroom management approaches and adequate teaching methods that encourage students' autonomy and take responsibility for students learning as well as manage classroom problems effectively. This study therefore sought to establish if there was any relationship between teachers experience in teaching and their adversity quotient. Shen (2014) found that there a significant positive relationship between workers job experience and their adversity quotient. Bautista (2015) also found a significant relationship between lecturers' length of service and their adversity quotient. Long serving lecturers and professors had higher adversity quotient than those with less years of experience. Stoltz (2000) and Williams (2003) all agree that more experience equals higher resilience in the job.

Figure 4.2: Teacher's years of service



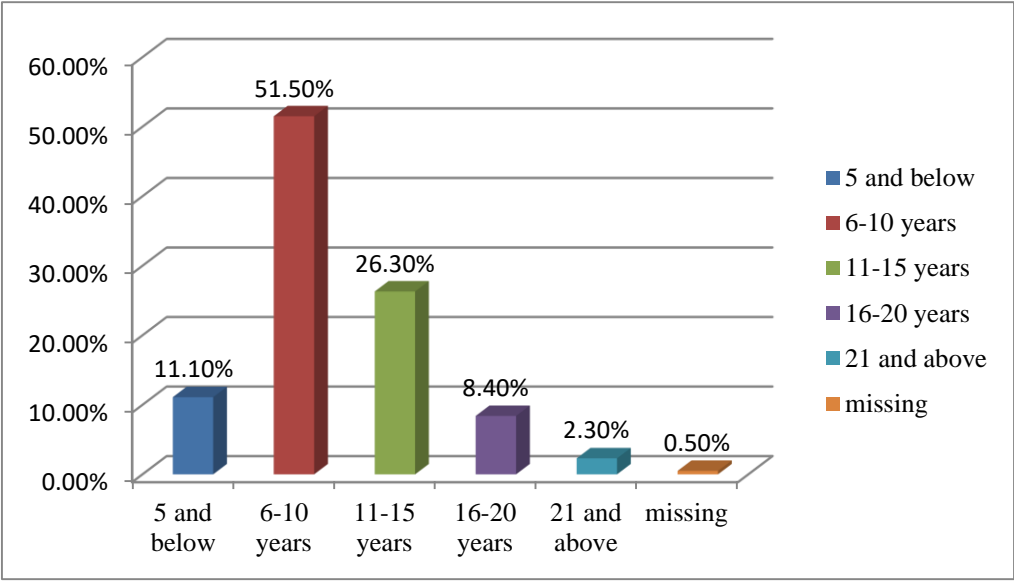
Majority of teachers 130(29.5%) had served between 11-15 years, 116 (26.3%) had served between 6-10 years, 104 (23.6%) had served between 16-20 years. The most experienced in terms of years of service were 55(12.5%) who had 21 and above years in service. Those with the least experience were 33 (7.4%) who had served for 5 years and below. Three teachers (0.7%) did not indicate their years of experience. The findings show that a good number of respondents had a fairly reasonable number of years of teaching experience to be able to influence students' academic performance positively.

4.2.4 Respondents' Years of Service in Current School

The years a teacher had worked in the present station was important in this study because it was to assist the researcher in understanding their impact in the students' results that were being correlated with the teacher's adversity quotient. According to

Musili (2015) and Williams (2003) a teacher’s stay in a school of more than two years is enough to affect students’ academic performance.

Figure 4.3: Years of service of teachers in the current school



Majority of teachers 227(51.5%) had served in their current schools for between 6-10 years, 116 (26.3%) had served for between 11 – 15 years, 37(8.4%) between 16-20 years while 49(11.1%) had served 5 years and below. Minority 10 (2.3%) had the longest number of years of 21 and above years of service in their present schools. Years of service in the current station was important in this study because it was to inform the researcher if the teachers had an impact on the students’ results for the years between 2015 and 2016. Given that majority of the teachers in the study had served for 5 years and above in their current school meant that they were part and parcel of the results of their students in the years under study.

4.2.5 Distribution of the Respondents According to Educational Attainment

Teacher qualification plays an important role in influencing students' academic performance since qualification gives a teacher the confidence and mastery of concepts being taught at this level problem solving and critical thinking skills. According to Musili (2015) and Bautista (2015) teachers with higher academic qualification are better influencers of students' academic performance. Those teachers with first class honors were better in terms of students' performance than those with second class lower division and pass. Musili (2015) also found that majority of teachers with masters' degrees and PhDs were teaching in National schools and less likely to teach county and sub county schools. Studies that linked workers adversity quotient and their professional qualification showed that there was positive and significant relationship. Bautista (2015) found that professors had higher adversity quotient than lecturers. Lin (2000) did not find any significant relationship between workers qualification and their adversity quotient. Lee (2008) found that teachers with diploma qualification had higher adversity quotient compared to bachelor holders.

Table 4.2: Teachers educational levels

Educational attainment	(f)	(%)
Ph.D	-	-
Masters degree	27	6.1
B.Ed	400	90.7
Diploma in education	14	3.2
Total	441	100

Table 4.2 presents the distributions of teachers according to their educational attainment. Twenty-seven teachers (6.1%) had attained masters' degree, 400 (90.7%) teachers had a bachelor's degree in education and 14 (3.2%) teachers had diploma certificates in education. A diploma certificate in education is considered as the fundamental qualification for teaching in secondary school in Kenya (TSC, 2012). All the teachers in this study were qualified to teach in secondary school level.

4.2.6 KCSE Scores Recorded by Teachers per School Category

Kenya certificate of secondary education is the standardized summative test done by all students in Kenya regardless of the category school they were admitted after Kenya certificate of primary education. It is highly regarded by the government and the public as well as it opens the gates for a students' future in career and life (Musili, 2015; Mwangi, 2015). Teachers are commissioned with the duty of ensuring their students perform well in their subjects failure to which warrants punishment by their employer (TSC, 2016). A teacher's results of their students merit them to be promoted during career progression interviews, stagnation in one job group or transfer from a performing school to non performing one. In Kenya, secondary education certificate is regarded highly in job recruitment and career progression and therefore good academic performance of students at this level is key to the many opportunities in the labour market in Kenya (MoEST, 2015). In a country, where certificates come first before skills, there is need to increase students' academic performance in order to leverage them. In this study each respondent teacher was asked to indicate their students KCSE performance in their various subjects. A mean of all the teachers in all

the school categories was calculated regardless of the subject and was rated according to the KNEC grade rating 12-10 Good, 9-7 Above Average, 6-5 Average, 4-2 Below Average and 1 poor.

Table 4.3: KCSE scores recorded by the teachers in 2015 and 2016

School category	KCSE 2015 MEAN	KCSE 2016 MEAN	(2015/2016 MEAN	Rating
National	10.2	9.7	9.95	Above average
school	8.88	7.08	7.98	Above average
Extra-county	4.61	3.36	3.98	Average
County	2.91	2.14	2.52	Below average
Sub-county				

KCSE results recorded by the teachers in their subjects in the years 2015 and 2016 were analyzed and presented in table 4.3. The results were rated according to the Kenya national examinations council (KNEC) rating and grading scale where 12 points is the highest grade A and 1 point is the lowest grade E (KNEC, 2016). The results indicate that the teachers in National and extra county schools recorded above average results of 9.95 points grade B+ (plus) and 7.98 points grade B (plain) respectively according to their entry behaviour rating. The county schools recorded an average score of 3.98 points grade D+ while the sub- county schools recorded a below average score of 2.52 points grade D (plain). Generally, the performance displayed by every school category indicated that there was little value added to the students and that most of the students were not able to transit on to higher institutions of learning or benefit from quality training since all trainings are based on KCSE grades.

Table 4.4: Students KCSE performance by County in 2015 and 2016

Year	Kiambu county	Nairobi county
2015	6.5 C	6.3 C
2016	4.8D+	4.9D+

Table 4.4 shows KCSE results recorded by the teachers in this study in their various subjects in 2015 and 2016 as was indicated by the teachers in teachers' questionnaire. The results show that in both counties the students recorded better results in 2015 than in 2016. The mean scores and the grades in both counties are revealing and confirming the poor students' academic performance in these counties (KNEC, 2016).

4.3 Objective One: Determine Teachers Overall Adversity Quotient

The statistical analyses used in this objective were: frequencies, percentages, mean and Pearson correlation moment. Table 4.5 shows teachers' adversity profile in the four dimensions of Adversity Quotient and the overall Adversity Quotient when the scores of the four dimensions have been added together. It shows the distribution of teachers in this study in the adversity quotient dimensions and the overall adversity score for the teachers in this study.

Table 4.5: Teachers' adversity quotient profile (N=441)

Adversity Quotient	<i>f</i>	%
Control Dimension:		
high	138	31.3
above average	158	35.8
average	83	18.8
below average	48	10.9
low	14	3.2
Ownership Dimension:		
high	103	23.4
above average	138	31.3
average	133	30.2
below average	48	10.9
low	19	4.3
Reach Dimension:		
High	77	17.5
above average	121	27.4
average	143	32.4
below average	72	16.3
low	28	6.3
Endurance Dimension:		
High	103	23.4
above average	118	26.8
average	118	26.8
below average	78	17.7
low	24	5.4
Overall AQ		
high	123	27.9
above average	123	27.9
average	153	34.7
below average	14	3.2
low	28	6.3

The Adversity Response Profile is a scenario based-survey instrument that measures an individual's response to adversity. Adversity Quotient is made up of four sub-components represented by the letters C, O, R, and E. C is the perceived *control* one has over a given situation. O is the *origin* and/or *ownership* of the adverse event or situation. R is a measure of *reach* that a particular event has into other areas of life. E is the measure of *endurance*, which assesses how long an adversity lasts. A resulting numerical score called Adversity Quotient (AQ) was given to each respondent based upon reported answers. Scores were also generated for each of the four sub-components. Each sub-section had a maximum score of 50 and minimum of 10. It was measured on Likert scale where 1 represented low, 2 below average, 3 average 4 above average and 5 high. A teacher's overall Adversity Quotient was calculated by adding the scores of the four dimensions: $(C+O+R+E) = AQ$. The maximum score for Adversity Quotient is 200 and the minimum score is 40 (Stoltz, 1997).

A study by Stoltz (2010) revealed that there are people who have high IQ and poses attributes of Emotional intelligence; nonetheless they fall terribly below their potential. Neither Intelligence Quotient nor Emotional Intelligence seems to explain one's success. Nevertheless, both play a role in someone's success. The Adversity Quotient answers the key question of why some people tend to persist when experiencing challenges while others quit yet they are valued as brilliant. Stoltz stresses that generally, individual success is influenced by AQ compared to individual characteristics.

4.3.1 Overall Adversity Quotient of the Respondent Teachers

The overall Adversity Quotient of respondents is derived from the summation of their scores in the four dimensions of control, ownership, reach and endurance ($C+O+R+E=AQ$). The lowest score is 40 and the highest score is 200 for an individual teacher. The interpretation of the scores was done according Stoltz, (2009) tabulation as follows: 176-200=high, 158-176=above average, 136-157=average, 119-135=below average, 40-118 low Adversity Quotient. According to Stoltz (1997), AQ represents two important mechanisms in reality– scientific theory and real world application. Stoltz confirmed that there are individuals who have a high Intelligence Quotient and Emotional Intelligence; nonetheless they fall terribly below their potential. Neither Intelligence Quotient nor Emotional Intelligence seems to explain one's success. Nevertheless, both play a role in someone's success. The major question is to why some people persist while others quit or fall short. Stoltz (2009), addresses this issue noting that individual success is mainly influenced by AQ compared to other human characteristics. There are people who are highly classified in terms of IQ and emotional intelligence nonetheless they fall terribly below their potential. Neither Intelligence Quotient nor Emotional Intelligence seems to explain one's success. Nevertheless, both play a role in someone's success. The question remains, however, why do some people persist while others – perhaps equally brilliant and well-adjusted – fall short and still others quit? Adversity Quotient answers this question.

Table 4.6: Distribution of teachers by overall adversity quotient

Description	Score Range	<i>f</i>	%
High	176-200	123	27.9
Above Average	158-175	123	27.9
Average	136-157	153	34.7
Below Average	119-135	14	3.2
Low	40-118	28	6.3

From table 4.6, the distribution of the respondents by their Adversity Quotient was as follows: One hundred and fifty three (34.9%) of the respondents had an average overall adversity quotient, 123 (27.9%) scored high, another 123 (27.9) above average while 28 (6.3%) scored low and 14 (3.2%) of the teachers scored below average. This implies that 246 (55.7%) teachers who participated in this study were able to overcome challenges they faced in their work effectively. Being high or above average in Adversity Quotient score means that others can completely or to a greater extent deal with all challenges and difficulties they encounter in their daily operations of teaching including those related to educational reforms. These are the teachers we can refer to as climbers (Stoltz, 2000). Thirty-four per cent (34%) of the teachers were neutral or average as to whether they were able to deal with the challenges in their schools and modern day education. This is the group according to Stoltz who are campers. It implies that such teachers are not ready to embrace any change and they stand for status quo. They are satisfied with the way things are, they are ready to move with the current up or down either way. Twenty-five per cent (25%) of the respondents

were below average and low. This implies that they perceived challenges in education as a way beyond their capacity to handle and they have no hope of solving those problems they are facing at work. From this analysis, three groups of teachers emerged; those who scored high and above average were combined to form one group of climbers, those teachers who scored average formed the middle group of campers and those teachers who scored below average and low formed the third group of quitters. According to Stoltz (2000), the higher the persons' Adversity Quotient, the better their ability to withstand and overcome adversity.

Higher Adversity Quotient is expected to translate to high job performance and better results for the students in KCSE. The overall Adversity Quotient of persons explains how well they are suited to deal with adversities in their everyday life. Those individuals with low Adversity Quotient are deemed not able to handle challenges. Due to constant changes in the world of work including school institutions adversities are inevitable. In today's world, the teacher is expected to do more than preparing a lesson plan and delivering it in class because the child is already more informed or is not interested in the learning process. Therefore, the teacher should be ready to meet the demands of the ever changing world. Schools prepare students for the world of work and life generally and therefore, a teacher is the most important person in the life of a student (Williams, 2003). Many factors contribute to a student's academic success but the teacher factor sums them all because it is one of the factors within the power of the policy makers to change as compared to changing students' characteristics and home backgrounds. The teacher is directly involved with the students as compared to

the school principal and school management. Students' academic performance is more inclined to the ability, capacity and the attitude of the teacher than any other stakeholder in school (Falaye, 2008).

Unlike family background of the students, their personal characteristics and school factors, the teacher factor is the main focus for the policy makers. It is easier to improve on teacher characteristics than changing students' socio-economic backgrounds or environments. When teachers face so many adversities in their workplace, they can easily despair especially when they lack sufficient capacity to deal with the adversities. School daily routines can lead to depression, making it difficult for the teacher to perform optimally and end up seriously undermining students' good academic performance. Low Adversity Quotient among teachers can eventually lead to resistance to change, helplessness and stagnation in students' academic performance.

According to Bandura (1996; 1998), ordinary social life is full of difficulties, impediments, failures, frustrations and inequities. Therefore people must have a robust sense of personal control to sustain the resilient effort needed to succeed. Self-doubt can set in quickly after failures hence one needs Adversity Quotient to bounce back. Adversity arouses self-doubt but the speed of recovery from perceived self-doubt usually requires sustained effort. Thus a strong sense of self belief is an essential component for a teacher hence the importance of Adversity Quotient in the teaching profession. Teachers must believe in themselves and their abilities to change live especially that of their students.

Table 4.7: Teachers overall adversity quotient by county

County	N	mean	std deviation	description
Kiambu	341	148	4.00	average
Nairobi	100	137	3.00	average

Table 4.7 shows that teachers from both counties recorded average overall Adversity Quotient implying that there was no difference in teachers adversity when analyzed by county, although teachers in the urban areas may experience different school adversities when compared with adversities experienced in rural areas there was no difference in the way the teachers handled those school adversities. This may be explained by the fact that Adversity Quotient is made of different dimensions which if well mastered may reinforce each other to increase an individual's success at their work.

Table 4.8: Teachers AQ profile (N=441)

Scale	Control	Ownership	Reach	Endurance	AQ®
Mean	38.14	24	40.42	39.5	142.22
Standard Dev.	5.38	6.5	4.7	6.14	22.72
Minimum	26	10.00	26.00	20.00	82
Maximum	50	50	50	50	200

Table 4.8 presents statistical analysis of teachers Adversity Quotient profile® by mean and standard deviation. From the analysis, it was observed that the overall mean of all

the respondents in this study is 142.22 and a standard deviation of 22.72. According to Stoltz (1997), the range for individuals' adversity score is distributed as follows: 176-200 high, 158-175 above average, 136-157 average, 119-135 below average, 40-118 low. The mean score of 142.22 for the teachers in this study fell in the middle group of campers (136-157). This implies that the teachers have been generally burdened by the many adversities they face in school and that they stopped moving forward and being enthusiastic about their teaching duty due to too many obstacles brought about by education reforms and other societal and financial changes. This means that most of the teachers have been bogged down by the challenges they face in their work and decided to accept the *status quo* as long as everything is going on smoothly, they are no longer struggling to better results for their students. These results support the results of (Singh & Sharma, 2017) who that there was a significant relationship between occupational stress of IT managers and adversity quotient in India in that those managers with low adversity quotient exhibited high occupational stress and vice versa. In this study teachers with average adversity quotient suffer unnecessarily from big challenges that are out of their control emanating from policy issues, and get downcast by accumulated burdens at school. Most education policies are usually passed down to the teachers from top; ministry of education their employer or school administrators. Teachers' duty is to implement those policies sometimes without conceptualizing them. In the study by Skedsmo & Huber (2017), assessing the need of valid measures and increase of teachers involvement in policy making, confirmed there is a need to involve teachers in those policies they are supposed to implement as way motivating them in the implementation process.

Decision makings that are not inclusive of the implementers are bound to meet passive resistance hence the need for the policy makers to consider the voice of the implementers all the time. Inclusivity in any decision making be it at school level or at any other level buys the loyalty of the employee by making them feel reorganized and part of the decision hence making him/her work hard towards the success of the decision (Kiumi & Macharia, 2014). To improve teacher's Adversity Quotient, we need to analyze each of the four dimensions of the Adversity Quotient so as to strengthen the weak ones.

From the analysis of table 4.29 above, the strongest dimension among the teachers in this study is reach with above average mean of 40.42 and standard deviation of 4.7 which is above average. Teachers are able to let go any challenge they face in their work fairly quickly. This is strength for the teachers as caregivers; this helps them to stop focusing on the hardships. The second best dimension of the teachers in this study is endurance with above average mean of 39.5 and standard deviation of 6.14. These teachers are able to withstand to a great extent the stresses brought about in education by constant reforms. The two dimensions of reach and endurance are within the power of each individual teacher to influence because they are internal. The decision to let an adversity spread affecting other areas of a teacher's work is at his will. Also the ability and decision to let adversities pass quickly is personal and within the individual teacher. Despite the fact that teachers in this study scored above average in this study, there is room to improve to a high score. High scores in this two dimensions will help a lot in improving teachers overall Adversity Quotient. According to Fredrickson in

Gu (2013) resilience is a psychological construct fuelled by positive emotions. He noted that psychological resilience is an enduring personal resource that broadens the scope of attention and cognition enabling creative thinking among individuals. Such positive emotions are durable and help transform individuals to become more creative, knowledgeable, resilient, and socially integrated and healthy. The above argument can contribute to understanding and encouraging resilience among teachers because teaching is emotional in nature and involves such emotions like love and empathy.

On the other hand, the poorly performed dimensions of Adversity Quotient in this study were those of control and ownership. Control had an average mean of 38.14 and a standard deviation of 5.38 while ownership was the weakest with a low mean score of 24 and standard deviation 6.5. This is an indication that much of adversities in schools today are perceived by the teachers to be out of their control and influence and outside their ability to deal with. Most challenges in education are as a result of constant policy changes and reforms as a result of ever changing societal needs and globalization. These policies are usually passed down to the teacher to implement. Since the teachers are never involved in the deliberations and are rarely inducted on the implementation process properly, they perceive them as hard, and out of their control. They will blame the other stakeholders for the failure of those policies; they are not accountable. They have not been made to own the decision or the process despite being very important for the success of those policies. This means that the challenges and problems in education are foreign to the teachers and so the teachers remain outside the problems affecting their work and their students. There is need for

teachers to be in control of their work so that they can offer solutions to their students' academic success. The contemporarily realities of teaching in Kenya in the last two decades have been dominated by successive and persistent government reforms and policy reforms (TSC, 2016). These government initiatives and the environment under which teachers teach have combined to make the teachers work very stressful. This explains to a greater extent the average score in control dimension in this study, because the control rested with the policy makers not the teachers. Since the teachers in this study didn't have control of the adversities they faced, they exhibited low ownership and accountability. It may be argued that it is this lack of control and accountability that may be associated with low students' academic performance in the counties under study of Nairobi and Kiambu.

Table 4.9: Teachers AQ profile by school category

Category of School	Control	Ownership	Reach	Endurance	AQ [®]
Nation	44.4	35.9	39.7	38.2	158.2
Ext. county	38.2	28.6	40.5	38.8	ab.av
County	37.5	25.3	39.9	39.4	146.2 av.
Sub-county	35.4	24.6	39.8	40.7	141.1 av
					139.5 av

NB (Control=48-50 high, 43-47 above av., 36-42 av., 30-35 below av., 10-29 low)
 (ownership=50 high, 47-49 above av., 41-46 av., 31-40 below av., 10-30 low)
 (reach= 43-50 high, 38-42 above av., 30-37 av., 25-29 below ave., 10-24 low)
 (Endurance= 44-50 high, 39-43 above av., 32-38 below av., 10-25 low)
 (AQ=176-200 high, 158-175 above av., 136-157 av., 119-135 below av., 40-118 low)

Table 4.9 shows teachers' Adversity Quotient profile mean scores by school category. Public secondary schools in Kenya are categorized according to students' entry behaviour. Therefore, the researcher felt that there was need to establish teachers

Adversity Quotient by school categories because environment and client may have an impact on an individual's resilience and that may affect students' academic performance. The schools were divided into four categories depending on students' entry behaviour. National schools admit top performing pupils from primary school level and from all over the country. Their entry marks are usually 390 marks and above out of the possible 500 marks. They are well endowed with physical resources and human resources. Category two are the extra county schools; they admit students after national schools with a range of 350-380 marks from the whole country ; extra county schools are high performing boarding schools with an index mean of 6.5 and above. Category three was the county schools that admit after the extra counties schools and mostly their students are from within their counts. The last category is the sub- county schools which are mostly day schools and admit all other students within the county who have not joined the other three categories. The government requires 100% transiting from primary level to secondary. The entry mark can be anything ranging from 50-250. Teachers are employed in all these schools by one employer; Teachers Service Commission (TSC) with equal qualification, regardless of the category of school and they can be transferred at will to any school because they are equally qualified (MoEST, 2013).

The analysis of teachers Adversity Quotient by school category according to table 4.43 was as follows: National school teachers had overall Adversity Quotient of 158.2 which was above average and were best in the control dimension with above average of 44.4 out of the possible 50 and scored worst in the ownership dimension 35.9 which

was below average. The extra county school teachers had overall Adversity Quotient of 146.2 which was average, their best dimension was reach with above average score of 40.5 and their poorest was ownership 28.6 which was low. County school teachers had overall Adversity Quotient of 141.1 which was average and were best in dimension of endurance 39.4 which was above average and worst was ownership dimension 25.5 which was low. The sub-county school teachers had overall Adversity Quotient of 138.5 which was average and were best in the dimension of endurance 40.7 and worst in the dimension of ownership.

From the above analysis, the teachers from extra county schools to sub-county schools recorded an average Adversity Quotient between 139 and 146. While the national school teachers recorded above average Adversity Quotient score of 158.2. This may imply that teaching environment and the type of students teachers teach has impact on a teacher's resilience level at work. Fair school environment with enough physical and human resources together with students with higher entry marks from primary schools, experience fewer adversities and hence teachers are able to be in control, this in turn increase the teachers Adversity Quotient level. Conducive school environment brings about good working climate and relationships where freedom and trust thrive among all stakeholders. On the contrary, unconducive school environment with inadequate physical and human resources and with students of low entry marks, experience many hardships and challenges which the teachers have to handle. This may explain why teachers recorded average Adversity Quotient in the county and sub county school categories as well as poor students' academic performance in these school categories.

Teachers AQ seem to match students' academic performance in this study, where by National school teachers have above average AQ and above average performance among the students in KCSE in 2015 and 2016. Consequently the extra county schools, county schools and sub county school teachers recorded average Adversity Quotient and their students' academic performance was also average.

The results in this study therefore seem to indicate that teachers Adversity Quotient can be influenced by the teaching environment. On the other hand, the fact that extra county school teachers scored the same in Adversity Quotient as county schools and sub-county school teachers imply that a resilient teacher will thrive at any school environment; no matter where they are and the circumstance that surround them. The students' entry behaviour did not define the teacher's resilience level in the three school categories because despite having students with different entry marks the teachers Adversity Quotient remained the same.

There was a difference in AQ dimensions with regard to school categories. National school teachers had their best dimension as control, the extra county had their best dimension as reach, the county and sub-county schools had their best dimension as endurance. It should be noted that the National schools in Kenya admit the best students academically from primary schools and they are well-endowed and given first priority by the government and policy makers in all their needs hence they may have advantage of being in control of their adversities over the other schools; they have less or very little adversities to encounter unlike the other category of schools with less resources.

All the categories of schools indicated their worst dimension as ownership implying that teachers were not ready to take responsibility and be accountable of the challenges they encountered in schools since they perceived them to be out of their control. At the same time, public schools teachers are less accountable for their teaching duties unlike in private schools where tenure of service of a teacher is largely dependent on their students' academic performance (Musili, 2015). All accountability in public schools is directed to the school principal and school management. When students perform poorly, the blame is directed to only one person and yet each teacher is supposed to be responsible for their subject. We may attribute lack of accountability of the teachers in this study to the low KCSE performance by the students in the two counties as evidenced in 2015 and 2016 KSCE results.

Table 4.10: Students KCSE performance by County in 2015 and 2016

Year	Kiambu county	Nairobi county
2015	6.5 C	6.3 C
2016	4.8D+	4.9D+

When teachers are accountable for their subject and for every student in their subject, they become more conscious about their teaching. On the other hand, if they know nobody holds them accountable, they settle for *status quo* just going through motions and blaming all other stakeholders in education. These other school stakeholders are not within the powers of the policy maker to change them therefore the only school stakeholder who can turn the balance towards improving students' academic performance is the teacher. If teachers are involved in the many reforms in education

which they perceive as adversities, they become part of the change agents, own the reforms and become responsible and accountable for their implementation and the success of their students.

According to Gu and Day (2013), teachers capacity to sustain their resilience is moderated by their professional phases and the environments in which they operate. The management and interaction between these two factors in school is said to be key to teachers’ sustained capacity of resilience. According to Gu and Day these factors are not static and change of even one affects teachers resilience. The school organizational support is crucial in this respect in terms of structure and culture while the employer take care of the teachers’ professional growth and progress. In schools where teachers have control over their teaching and are held responsible over their students’ academic performance, their Adversity Quotient is high and so is their performance of the teaching duty (Bautista, 2015).

4.3.2 Teachers’ Adversity Quotient and Professional Qualification

Table 4.11 shows teachers’ adversity quotient when the teachers were grouped according to their professional qualifications.

Table 4.11: Teachers’ adversity quotient and professional qualification

Highest Qualification	N	Mean	Std. Deviation	Description
Master’s degree	27	164	10.2	Above Av.
B.Ed	400	155	9.1	Average
Diploma in education	14	160	4	Above Av.

From the analysis of table 4.11, teachers with higher academic qualification recorded above average Adversity Quotient together with those with diploma certificates. This implies that they were able to handle difficult situations much better than those with bachelor's degrees. On the contrary the diploma teachers had better Adversity Quotient than those with bachelor's degree. This is explained by Shen (2014) who argued that Adversity Quotient is accumulated through life experience therefore; teachers with diploma certificates may have been exposed to societal hardships earlier becoming more resilient to adversities compared to bachelor degree holders. Higher qualifications of master's degree enable teachers to become problem solvers through critical thinking and research, bridging any gap in their work and life. They are equipped with relevant strategies that may help them cope with different intricacies through innovations and research. These are teachers who are planning their career path and progress through hard work and perseverance hence they are already resilient. Their daily experiences have exposed them to the vulnerabilities of tension, stress and depression in their own lives. Majority have earned these higher qualifications by studying part time. A study by Bautista (2015) on the relationship between university faculty members' Adversity Quotient and their teaching performance found that professors had better Adversity Quotient than instructors. These results confirmed that higher academic qualification influences teachers' Adversity Quotient.

Education generally enables a person to command the attention of others and earn a person better working environment than those with lower education qualification

(Tian & Fan). However, people with lower qualification when given time to accumulate work experience they are better work performers as was evidenced in this study. Teachers with diploma certificates had better Adversity Quotient than degree holders which is deemed to translate to better students' academic performance. Another study by Musili (2015) on factors influencing teacher motivation in Kenya found that teachers with higher qualification like masters' degree and first class honours' in under graduate studies, tended to work in high performing schools mostly in National schools and extra county schools. This is due to the challenge of handling brilliant students in these schools forcing most of the teachers to acquire higher academic qualifications. Hassan (2012) found that teachers with higher education qualification had better control over their work and required less supervision compared to those with less educational qualification. These results seem to differ with those of Shen (2014) who found that educational qualification of workers did not affect their adversity quotient. Shen argued that Adversity Quotient is accumulated through life experience and hence individuals with lower levels of education may become exposed to societal hardships earlier and accumulate more work experience than individuals who have continuously acquired high education qualification. This argument of Shen seemed to agree with the results of this study where teachers with diploma qualification in education recorded higher Adversity Quotient than teachers with bachelor's degree.

A study by Dsouza (2006) examined the extent to which AQ or its CORE dimensions predicted sales performance in adverse times. It also assessed the extent to which

training improved AQ and CORE. The study used two methods to measure performance — a general rating scale and sales as a percentage of quota. It involved 120 account executives and sales managers from the Western U.S. of Sun Microsystems. The results indicated that AQ is a robust predictor and driver of performance and sales resilience. It further found workers training on Adversity Quotient substantially improved their overall AQ and CORE profiles. She concluded that AQ helped drive sales results, especially in demanding markets/industries.

4.3.3 Teachers’ Adversity Quotient and Gender

Table 4.12 shows teachers’ adversity quotient score when grouped according to gender.

Table 4.12: Teachers’ Adversity Quotient and gender

Gender	N	Mean	Std. Deviation	Description
Male	126	150	8.3	Average
Female	261	162	11.1	Above AV.
Others	4	145	2	Average

Female teachers had a mean score of 162 and standard deviation of 11.1 in Adversity Quotient which is above average Adversity Quotient. Male teachers recorded a mean score of 150 and a standard deviation of 8.3 which is average Adversity Quotient implying that there was a difference of Adversity Quotient between male and female teachers in this study. This implies that female teachers are better in handling adversities in education than the male teachers. Females are more resilient to

challenges than males. They may be explained by the fact that that psychologically women are better wired to deal with stress issues better than men (Singh& Sharma, 2017). These results differ with those of Williams (2003) Stoltz, (1997; 2000) who found that males had higher Adversity Quotient than female workers. They also differ with those results of Shen (2014) who found no gender differences in Adversity Quotient of male and female workers. Shen argues that Adversity Quotient is a psychological test hence cannot be determined simply by a physiological construct of gender. Explaining Adversity Quotient from masculine or feminine traits should better be confined to contemporary environment.

4.3.4 Teachers’ Adversity and Length of Service

Table 4.13 shows teachers’ Adversity Quotient in relation to their length of service as teachers.

Table 4.13: Teachers’ adversity and years in service

Years in service	F	Mean	Std.	Account
5 year and below	33	156	4	Average
6-10	116	158	6	Above average
11-15	130	161	4	Above average
16-20	104	160	6	Above average
21 and above	55	163	3	Above average

The teachers in this study, who had served for 6 years and above, recorded above average Adversity Quotient compared to those with less experience of 5 years and below. These results imply that seniority / experience had a positive impact on

teachers' adversity quotient. The young teachers in the profession recorded an average Adversity Quotient implying that they had difficulties in coping and handling adversities in their work while their seniors had mastered ways of handling the changes in their work much better. These results are in conformity with those of Mary (2015) who found that university professors had higher Adversity Quotient than instructors. They are also the same as the results by (Williams 2003; Stoltz 2010; Hassan, 2012) that indicated that those who had served for longer period in work had higher Adversity Quotient compared to the junior workers. Experience therefore strengthens individual's resilience and a predictor of excellent work performance. Hassan (2012) argues that length of service is expected to toughen individuals and expose them to better skills of problem solving. Shen (2014) argues that doing a routine job for above 10 years gradually improves teachers' ability to face adversity. He also found that doing the same job for many years above 20 years can make teachers become complacent and their Adversity Quotient decline. Therefore, he recommends constant training of workers on Adversity Quotient to keep it high throughout the working period. According to Musili (2015), teachers experience influences students' achievements in several ways. Teachers with long experience use better classroom management approaches and adequate teaching methods that encourage students autonomy and reduce custodial control thus taking responsibility for students learning needs, managing classroom problems and keeping students on task (Guskey, 1988). In this current study in Nairobi and Kiambu counties teachers Adversity Quotient increased with the increase in length of service. Teachers' length of service influences their Adversity Quotient positively which in turn influence their

students' academic performance because high Adversity Quotient equals high work performance and success.

4.3.5 Teachers' Overall AQ and Students' Academic Performance by School Category

Table 4.14 below shows the teachers' adversity quotient when they were grouped according to the category of schools they taught since different categories have different entry behaviours depending on students' academic ability in primary schools.

Table 4.14: Teachers' overall AQ and students' academic performance by school category

School Category	Teacher AQ	KCSE score 2015	KCSE score 2016	KCSE Av. Mean
National	158.2	10.2	9.7	9.95
Extra-CO.	146.2	8.88	7.08	7.98
Country	141.1	4.61	3.36	3.98
Sub-county	139.5	2.91	2.14	2.52

From table 4.14, Adversity Quotient of the teachers was analyzed by school category and the results compared with students' academic performance in KCSE recorded by the teachers in their different subjects in the years 2015 and 2016. It is the average means score for the two years that was compared against the teachers Adversity Quotient mean. National school teachers had above average Adversity Quotient of 158.2 and their students' performance in KCSE was also above average of 9.95 points which is grade B plain; rating according to the Kenya National Examination Council

(KNEC) ratings: 12-10 high, 9-7 above average, 6-5 average, 4-3 below average, 2-1 low. The extra county school teachers' Adversity Quotient was average 146.2 and their students KCSE results 7.98 which were also above average, grade B-. The county school teachers recorded average AQ of 141.1 and average KCSE students' performance of 3.98, grade D+ depending on their students' entry marks. The sub-county teachers AQ was average 139.5 and their students KCSE performance was below average of 2.52, grade D- also based on their students entry marks. Despite all the teachers recording average Adversity Quotient, there was a difference in students' academic performance. Students' academic performance was low in the county and sub county schools and this may be attributed to the students low entry marks in Kenya certificate of primary education (KCPE). Teachers Adversity Quotient decreased as the students' academic performance decreased from National schools to sub county schools implying that the school environment and the entry marks of students had a positive or negative impact on teacher's Adversity Quotient. Teachers who taught brilliant students in conducive school environment had higher Adversity Quotient and high students' academic performance compared with teachers who taught less brilliant students and in unconducive school environment.

Many factors account for students' academic performance including teacher qualification, teacher experience, school environment, school leadership and students' characteristics (Nieto, 2003). From the teachers' demographic data, the researcher ascertained that the teachers in this study were well-qualified to teach in secondary schools. According the teachers employer in Kenya, the minimum qualification to

teach in a secondary school is Diploma certificate in Education (TSC, 2016). Most of the teachers who participated in the study had a teaching experience of beyond five years and therefore, they were well-grounded and conversant with their subject content matter and yet students' academic performance remained low in Kiambu and Nairobi. Hansen (1995) observed that the professional and personal experiences by teachers are usually reflected within their context of operations. He argued that all teachers were confronted by professional and personal pressures, tensions and challenges in their daily operations of teaching. According to him teachers are able to build upon unfavourable influences and positive opportunities available to them to overcome difficulties in their environments especially those of being in different school set ups. Generally the teacher's internal values enable them to mitigate the challenges of the changing environment in school (Tian & Fan, 2014).

Another study by Henderson and Milstein (2003) on the effect of school environment on the teachers' resilience, found that the school environment impacts on a teacher's resilience in two ways; the changing expectations about schools and the composition of the student population; these are key to teachers' effectiveness in their teaching. Environmental factors such as lack of physical facilities and poor relationships among stakeholders affect teachers' sense of effectiveness and well-being and therefore, adversely affect students' academic performance. This may explain the poor academic performance of the county and sub counties schools in Nairobi and Kiambu counties.

The factors that assist an individual in being resilient in the face of adversity are often found in their environment and their internal self-motivation (Bakare, 2015). These

two (the environment and self-motivation) contribute in shifting the balance of the person from dysfunction to resiliency. Gu et al., (2013) in his study about the impact of school leadership, staff collegiality and teacher student relationship in sustaining teacher resilience found that teachers who worked under caring democratic principals were more resilient in the face of adversity. They gave more time to their students in their personal spare time than those who worked under authoritarian uncaring principals. According to Gu et al., (2013), teachers effectiveness is dependent on the context of relationships with all school stakeholders. Schools where teachers' efforts were appreciated, students' academic performance was high. He observed that when teachers moved from one station to another, their effectiveness shifted depending with new context, sometimes forcing some to train or work longer hours to meet their new goals. Relationship between the principal and the teachers, between the teachers themselves and teachers and students creates a conducive and supportive environment for the teachers to give their all to their students in terms of attention and care. Teachers who enjoy support from other school stakeholders are not only friendly, approachable but also devoted to their work. They treat each student as an individual and special hence increasing their students' academic performance.

Mwangi et al., (2015) did a research on effects of students' resilience on their own academic performance in Kiambu County in Kenya and found that students resilience correlated positively with their academic performance; high resilient students performed well academically and vice versa. She established that the poor academic performance in Kiambu correlated positively with the students' resilience level. It

would therefore be unfair to expect students to be resilient if the teachers who are their immediate mentors and role models are not. It is evident from the results of this study that the school environment affected teachers Adversity Quotient and also affected the students' academic performance. The researcher therefore concluded that teachers working in conducive school environment had high Adversity Quotient and modelled students with high Adversity Quotient who eventually performed well in examinations and life and vice versa.

4.3.6 Pearson Correlation Moment between Teachers Overall AQ and Students' Academic Performance

Table 4.15 below shows the connection between teachers' AQ score and their students' performance generally in the two counties.

Table 4.15: Pearson correlation moment between teachers overall adversity quotient and students' academic performance

		Adversity Quotient Mean	Subject
Adversity Quotient	Pearson Correlation	1	.530**
	Sig.(2-tailed)		.000
	N	441	441
Subject mean	Pearson Correlation	.530**	
	Sig. (2-tailed)	.000	1
	N	441	441

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

The effect of teachers' Adversity Quotient levels on students KCSE performance in the year 2015 and 2016 mean average score was established using Pearson Moment Correlation Coefficient. The average mean for the two years was correlated with the

teachers' adversity quotient. A correlation was found to exist between teachers AQ and students' general academic performance ($r = .530, P < 0.01$). As teachers Adversity Quotient increased and so was their students' academic performance and vice versa. The results in this study compared with those by Williams (2003) and Stoltz (2010) that teacher's Adversity Quotient is related to students' academic performance. The study by Bautista (2015) that looked at correlation between university faculty members Adversity Quotient and their teaching performance found also a significant positive relationship. Hassan (2012) did a study on the effects of Adversity Quotient on quality teaching and performance among experienced teachers in Malaysia and established that teachers Adversity Quotient a good predictor of teacher performance.

Teachers with high Adversity Quotient are able to overcome most of the adversities they face in their work and mentor their students in increasing their adversity quotient for the benefit of high academic performance (Kuhun, 2020). Even when all other conditions for good performance are availed minus adversity quotient students' high academic performance may remain mirage. Hence Adversity Quotient is an important tool of improving students' academic performance (Bakare, 2015). Adversity Quotient can be learned and improved by accessing its four dimensions to find out the one that needs to be improved through training in order to strengthen the overall adversity quotient (Stoltz in Singh & Sharma, 2017). It is important schools and the teachers' employer carry out annually evaluation of teachers Adversity Quotient in order to keep their labour force prudent to the education adversities that affect students' academic performance.

4.3.6.1 Hypothesis Five: H_{01} : There is no Relationship between Teachers' Overall Adversity Quotient and Students' Academic Performance

Hypothesis one tested the relationship between the teachers overall Adversity Quotient and students' academic performance. The results from Pearson product moment correlation analysis was presented in table 4.15, above and the null hypothesis was rejected because a strong positive relationship was established between teachers overall Adversity Quotient and students' academic performance ($r=.530$, $P<0.01$) and the reverse was accepted as the truth that there is a significant strong and positive relationship between teachers overall Adversity Quotient and students' academic performance. This implies that teachers Adversity Quotient increased as students' academic performance increased and vice versa. This result agrees with those of Williams, (2013); Bautista, (2015); and Bakare, (2015).

4.3.7 Teachers Adversity Quotient Levels

Table 4.16 shows the different levels of adversity quotient for the teachers in this study.

Table 4.16: Teachers' adversity quotient levels

Tukey HSD^{a,b}						
AQ score	Subset for alpha = 0.05					
	N	1	2	3	4	5
43-133	28	122.8305				
134-144	14		139.0500			
145-164	153			152.7692		
165-176	123				171.1765	
177-200	123					184.0690
Sig.		1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

- a. Harmonic mean sample size= 42.890.
- b. The group sizes are unequal.
- c. The harmonic mean of the group sizes is used.

Type I error levels are not guaranteed.

According to Stoltz (1997), depending on the Adversity Quotient score of individuals, there are three distinct groups of worker force that can emerge from Adversity Quotient test. Those teachers who scored high scores of adversity quotient ranging from 165-200 in Adversity Quotient score formed the group of climbers. Those teachers who scored 145-164 in Adversity Quotient profile formed the group referred to as campers and those who score 43-144 in Adversity Quotient profile formed the group of quitters. Table 4.16, above shows the adversity quotient groups among the teachers as they emerged in this study:

4.3.7.1 Climbers

Two hundred and forty-six teachers (55%) level 5 and 4 as shown in table 4.16 above had Adversity Quotient score 165-200 hence they formed the group of climbers. According to the Adversity Quotient theory, these are the kind of teachers who seek continuous improvement of their work through research, further trainings seminars and workshops. They do a lot of networks with their colleagues from other schools and always benchmarking from those better than them. They are highly motivated and self-driven. They are ready to embrace challenges and change. They relate well with their students inspiring them to perform well academically. They are able to continuously learn new methods and content in their subjects in line with emerging trends in education and upgrade teaching methods that are in line with modern day technology. According to Stoltz (2010), such are the kind of teachers required to move schools forward in an ever changing world. Bakare, (2015) and Kuhon (2020) found that learners who were climbers required little effort and supervision to perform well in their exams compared to campers and quitters. The study by Hastuti, Sari & Riyadi (2017) on the profile of high adversity quotient in mathematics learning found that students with high adversity quotient are able to face the learning of mathematics in various materials and models. There was a significant positive relationship between students' high adversity quotient and excellent performance of mathematics.

4.3.7.2 Campers

The second group is that of campers, in this study, 153 teachers (34%) who scored between 145-164 of AQ score; in level 3 as shown in table 4.16 were campers. This is

usually the middle group of workforce in the teaching profession. These are teachers who have stopped moving forward in their work and have become weary of the many challenges they face in their work. They have decided to settle for whatever is available and don't want to take challenges. They are satisfied with any results they get. They do what is necessary to keep things satisfactory. In class, they give the bare minimum covering the syllabus as scheduled by their employer regardless of whether their students understand or not. They may report on duty at the right time attend lesson and leave at the right time. As long as there are students to be taught and they are paid for their service that is enough. These teachers are capable of being creative and taking risks to improve if challenged to do so. According to the teachers employer (TSC, 2017) in the 21st century satisfactory results from our teachers are not good enough. They cannot propel students to better course in institutions of higher learning, rendering majority of the secondary education graduates less or with little chances of training (KUCCP, 2017). In 2016, students who scored D plain and below were about 300,000 out of a total population of 521,658 who sat KCSE according to (KNEC, 2016) and so that is what this study refers to as minimum results. In the study of Kuhon (2020), confirmed no difference between climbers and campers in English language performance.

4.3.7.3 Quitters

The third group is of teachers were the quitters. In this study 42 teachers (9.5%) who are indicated in level 1 and 2 and scored adversity quotient score between 43-144 in table 16 above, fell in this group. The theory of Adversity Quotient describes quitters

as individuals with little ambition and minimal drive in their work space. According to Stoltz, 1997 the Quitters are a “dead weight of any organization”. They avoid challenges; they rarely take risks or are creative. In this study, a small group of 9.5 % of the teachers is quitters. However their influence may be detrimental and therefore, should never be assumed. These teachers dislike hard work, fear risks and avoid challenges by all means possible; such teachers if found in a school, they do very little to inspire their students to work hard and may be a bad influence on the other teachers. These teachers pose a threat to students’ academic performance considering the many adversities in our schools in the modern world. In a study by Kuhon, (2020) on students’ adversity and academic performance of the English language she found that the group quitter in the English language had negative attitude toward the subject and scored low grades however none of them quit the subject and they endured until they completed the course.

4.4 Objective Two: Determine the Relationship between Teachers’ Adversity Quotient Dimension of Control and Students’ Academic Performance

Objective two aimed at establishing the relationship between teachers’ adversity quotient dimension of the control and students’ academic performance. The statistics that were used to analyse the control dimension were descriptive statistics of frequencies, percentages, means and standard deviation to explain if the teachers had the capacity to control adversities in their school for benefit of their students’ academic performance. It showed the distribution of the teachers in the control dimension in general then according to school categories, gender teachers’ academic

qualification and length of service. Pearson Product moment correlation was used to test for relationship between the control dimension and students' academic performance.

The control dimension had presented five items in the teachers questionnaire seeking to establish to what extent individual teachers could positively influence adversarial situations in school; the questions focused on adversities around the teachers, classroom delivery to the students, policy issues affecting their work, professional development of teachers, conflicts with school management especially to do with students' academic performance and personal work conflicts that impact negatively the educational performance of students. The items assessing this dimension were labelled from 8-12 and arranged on a likert scale from 1-5. The respondent was to show to what extent they could alter or change the challenges they faced in school. 1 represented not at all and 5 represented they could completely change the difficult situation. In the analysis according Stoltz (1997), the maximum score in this dimension is 50 and the minimum is 10. The higher the score, the better for the respondents as it indicates that they are in a position to control the challenges they face on their daily life and at work. The coding of the score was from 1-5; 1 presented strongly disagree (low), 2 disagree (for below average), 3 neutral (stands for average), 4 agree (for above average) and 5 completely agree (high)

4.4.1 Distribution of the Teachers according to Dimension of Control

Table 4.17 presents the distribution of respondents' Adversity Quotient dimension of control in terms of frequency and percentage.

Table 4.17: Distribution of the teachers according to dimension of control

Description	Score Range	(f)	(%)
High	48-50	138	31.3
Above average	43-47	158	35.8
Average	36-42	83	18.8
Below average	30-35	48	10.9
low	10-29	14	3.2

From the analysis 158 (35%) of the teachers recorded a score of above average, 138 (31.3%) of the teachers recorded a high score in control, 83 (18.8%) of the teachers were average in control dimension, 48 (10.9%) were below average and 14 (3.2%) were low in the control dimension of adversity quotient.

Two hundred and ninety six (67.1%) teachers in this study (believe that they are able to influence positively emerging adversities in school and generally in education. Teachers are able to overcome most of the difficulties that come with constant changes of curriculum from time to time and resolve any challenges they face with the school management as well as dealing with personal and work conflicts in their lives without compromising on teaching. Being in control over what one does enables him/her to not only do more than what is just scheduled but also to go an extra mile to ensure that their students are attended to regardless of the type of the student and the type of the school they find themselves in. Control is the fuel that drives teachers to teach outside the allocated time, attending to students according to their abilities outside the normal routine school schedule and personalize everything they do in school and in class; freedom is so powerful. Most teachers own their students, think deeply about them and

care for them like their own children. Control is the energy behind the teacher's passion to teach in an extra ordinary manner. The control dimension is deemed to be the most critical since the impact of control lies within its empowerment whether or not any meaningful action takes place; it has a strong influence in the other CORE dimensions of adversity quotient.

Control gives the ability to always find ways of improving performance. Lack of control on the other hand leads to loss of hope and decreased willingness to take any action. Teachers who are high in this dimension are considered determined, unrelenting and do not easily give up. One is responsive in finding solutions to any emerging challenge and they stay focused on the things that need to be improved. They know that change is constant therefore they sharpen their tools of trade on a daily basis and they are always on the move searching for new ways of doing their work better (Stotlz, 2010). They use methods that help their students to improve their performance; waking up early and going to bed late for the sake of students' academic performance. When teachers are in control of their work, they can work better. They set their own targets and attain them because they are at liberty to work their own success and that of their students; they are their own managers of time and results.

4.4.2 Teachers' Adversity Quotient Dimension of Control by County (N=441)

The table 4.18 shows the distribution of teachers in the dimension of control according to counties.

Table 4.18: Teachers' adversity quotient dimension of control by County (N=441)

County	N	Mean	Std deviation	Description
Kiambu	341	47	4.00	above
Nairobi	100	45	3.00	average above average

The school environment includes students, teachers, support staff in school and the neighbourhood of the school. These factors interact, either positively or negatively to influence students' learning outcome (Papp, Mrkkanen & Von Bonsdorf, 2003). These factors combine to shape a sense of belonging (Sedgwick & Rougeau, 2010). Teachers teaching in the city experience different kind of adversities compared to those in the rural areas (Zhu & Li, 2005).

From the table 4.18 teachers from both counties recorded above average control over the adversities they faced at school. This implies that they believed that they could alter those negative adversities that are likely to reduce their students' academic performance. No matter the environment a teacher works they are in control of adversities affecting students' performance. These results contradict those Pettigrew, Dienger, and O'brien King (2011) who found that nurses operating in different environments had different adversity levels.

4.4.3 Distribution of Teachers by Adversity Quotient Control Dimension and School Category

Table 4.19 displays teachers' scores in the dimension of control when grouped according to school categories.

Table 4.19: Distribution of teachers by adversity quotient control dimension and school category

School Category	N	mean	std. dev.	Description
National	110	44.40	2.01	Above AV.
Extra county	108	38.20	4.13	Average
County	11	37.52	6.00	Average
Sub-County	112	35.43	5.30	Average
Overall	441	38.14	5.11	Average

The overall mean score for all the respondent in the dimension of control was 38.14 with a standard deviation of 5.11. This was an average mean score for the teachers in this dimension. It implies that generally the teachers in different school categories found it difficult to handle adversities in education under their school categories. They were not able change or alter the challenges they faced in their schools. This average score in control of adversity by teachers may be due to different school cultures and school climates; some are accommodative while others are restrictive. The mean score distribution by school category showed that the national school had an above average mean score in the control dimension of 44.40 compared to the rests of the teachers in

other schools. This implied that they were able to a greater extent to alter and change challenges they faced in these schools; in national school are control of adversities in their classrooms and schools. The extra county school teachers had an average mean of 38.20, the county schools 37.52 and the sub-county schools had a mean of 35.43 and all average. The implication of these mean scores of control dimension under different school categories is that, National school teachers are facing fewer challenges because most government policies favour them, they enrol the best students and they are the focus of the nation in terms of receiving resources, monetary, physical and human. It also implies that the teachers are flexible and are in control of adversities facing their students hence solving them amicably. The other categories of schools are entirely at the hands of the parents and the community and hence teachers are most likely to experience many challenges and which they cannot control hence these adversities affect students' academic performance negatively beyond the teachers' control.

The school culture and school environment was found to influence students' academic performance by Williams (2003). Each school has its own culture under which they operate and shapes the behaviour of both students and teachers (Musili, 2015). Effective schools have a sense of shared responsibility between all stakeholders therefore teachers in control of situations affecting their students. Learning is student centred and the school climate is conducive to teachers to be control of their teaching methods and students' academic performance (Isiugo et al., 2004). Conducive school

environment when paired with a teacher who ‘has high control of adversity equals excellent students’ academic performance (Shen, 2014).

4.4.4 Teachers’ Adversity Quotient Dimension of Control and Gender

The below shows the distribution of teachers scores in the dimension of control when they were grouped according to gender.

Table 4.20: Teachers’ adversity quotient dimension of control and gender

Gender	N	Mean	Std deviation	Description
Male	126	48.0	4.02	High
Female	261	47.4	3.00	Above Av.
Others	4	45.6	2.03	Average

***others are respondents who did not show their gender**

From table 4.20, when the dimension of control was distributed alongside the variable of gender, it showed that male teachers had a high mean score 48 and standard deviation of 4 meaning that they were able to control adverse situations they faced at their schools better compared to the female teachers. The female teachers recorded an above average score in the dimension of control with a mean of 47.4 and standard deviation of 3 and therefore to some great extent they were also able to control challenges they faced in their work. From the differences between the two genders, it may be argued that culturally men have been socialized to believe in themselves as being in control of difficulty situations than women.

The variable of gender was found to have effect of students' performance whereby certain students preferred certain gender teaching them in certain subjects (Musili, 2015). In relation to adversity quotient Stoltz, (2000) found no significant relationship between workers gender and their adversity quotient. Shen & Chang (2009) found gender difference in relation to adversity quotient where by male workers were found to be high in control of adversity than female workers especially to do with work pressure and satisfaction.

4.4.5 Teachers' Adversity Quotient Dimension of Control and Academic Qualification

Table 4.21 show distribution of teachers scores in the dimension of control when grouped according to their academic qualification.

Table 4.21: Teachers' adversity quotient dimension of control and academic qualification

Academic attainment	N	Mean	Std deviation	Description
Master's degree	27	49.0	6.11	high
B.Ed	400	48.0	6.03	high
Diploma in education	14	46.3	2.22	above Av.

From the analysis of table 4.21, the distribution of teachers in the dimension of control according to their highest academic qualification, the results show that higher academic qualifications help an individual to be able to alter and change difficult

situations at work and in life. The teachers with the higher qualification of masters' degree recorded a high mean score in control dimension 49 followed by those teachers with bachelor's degrees in education 48 and lastly those with diploma certificates in education 46. This implies that teachers with higher education qualification were better placed in influencing adversities in their work than those with lower qualification. Higher professional qualification increases confidence and hence control.

Studies have shown higher professional qualification has impact on students' academic performance and enables teachers to become problem solvers in a more critical manner (Revkin, Hanushek & Kain, 2005). Study by Bautista, (2015) on university faculty members found a significant difference between professors and lectures (Muhammed, 2011). Williams (2003) found that there was a significant relationship between head teachers professional qualification and adversity quotient; head teachers with masters' degrees had higher adversity quotient than those with bachelors' degrees. Hassan (2012) found that there was significant and positive relationship between the adversity quotient and workers professional qualification. Musili (2015) found a relationship between teacher's qualification and students' academic performance; teachers with first class honours' in their bachelors' degrees had their subjects recording high scores in KCSE.

4.4.6 Teachers' Adversity Quotient Dimension of Control and Length of service

Table 4.22 shows teachers' scores in the dimension of control when they grouped according to length of service.

Table 4.22: Teachers' adversity quotient dimension of control and service years

Years of service	F	Mean	Std	Account
5 years & below	33	47.4	4.02	Above Av.
6-10 years	116	46.1	6.00	Average
11-15 years	130	46.0	5.22	Average
16-20 years	104	46.6	4.41	Average
21 & above years	55	48.2	3.00	High

When teachers' dimension of control was analyzed alongside the teachers' length of service in table 4.22, the results indicated that the teachers who had served for 21 years and above showed that they had more control to adversity than those with fewer years in employment. Teachers who had served for 21 years above recorded a high score in control dimension of 48.2 surprisingly were followed by those who had served for 5 years and below 47.4 with above average score while the rest had an average mean score in the control dimension. This implies that experience plays an important role in control dimension in helping teachers handle those challenging situations at school. The young teachers in the profession recorded above average score in the control dimension when compared with those who had served for years between 6-20 years. This may be an indication that young professionals were enthusiastic about the profession and willing to learn and find solutions to the problems they encountered in their teaching work. Most of the young teachers are well-versed with the modern day technology and internet and usually use it to find solutions to the challenges they face (Khaushik Bhakta and Nabinita Dutta, 2016).

This is an indication that modern day technology if well utilized in education can enhance problem solving to adversities encountered in education. Teacher training and teacher recruitment should incorporate the practical aspect of ICT use and application.

Teachers teaching experience has been found to correlate positively to students' academic performance (Musili, 2015). The study by Williams (2003) found that there was a positive significant relationship between teachers teaching experience and their adversity quotient. Bautista (2015) found a positive significant relationship between faculty members teaching experience and their adversity quotient. Thi (2007) did not find significant relationship between adversity and individuals work experience.

4.4.7 Pearson Product Moment Correlation between Teachers' Adversity Quotient Dimension of Control and Students' Academic Performance in KCSE

Table 4.23 illustrates the connection between teachers' score in the control dimension and the general educational performance of students in KCSE.

Table 4.23: Pearson product moment correlation between teachers' adversity quotient dimension of control and students' academic performance in KCSE

		Control score	Subject mean
Correlation score	Pearson correlation	1	.482**
	sig.(2-tailed)		.000
Subject mean	Pearson correlation	.482**	1
	sig.(2-tailed)	.000	

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

To find out if there is impact of teachers' AQ control dimension on student's educational performance, a correlation of Pearson product was computed. Students' performance was measured by the subject mean score of 2015 and 2016 KCSE results as recorded by each respondent teacher in the subjects they taught. Each individual teacher was asked to indicate the subject performance personally and not obtained from school documents. This was done to ensure that the performance was by that teacher and not another teacher who taught the subject in another class or previously. The correlation was made to evaluate individual teacher performance against their adversity quotient. The average mean score of the two years was computed and correlated with the teachers' Adversity Quotient control dimension score. Overall control dimension mean against the students' performance average mean in 2015 and 2016 showed that, there was a connection between teachers AQ control dimension and students' educational performance ($r = .482, P < 0.01$). High score in teachers control dimension meant high students' academic performance and vice versa. This confirms the results by (Bautista, 2015; Bakare, 2015) that people who believe to be in control of whatever they do in life, are likely to take action in improving any negative situation faced at any one time, while those who believe in not having control over unfavourable situations end up not taking any action. Therefore, teachers who perceive themselves as having little or no control over their work lose motivation and end up demonstrating disruption in their thoughts and actions and this eventually leads to poor students' academic performance in KCSE.

According to Stoltz (1997), the dimension of control brings about commitment to goals and objectives in one's work. Commitment speaks to how deep one is involved in his/her daily routine duties. Persons who are committed in their goals and objectives are highly involved while those with little commitment go through motions. Those who are high in control dimension will confront tough situations in their work and find solutions to the challenges or alternatives ways of reaching their goals. Control enables a person to believe that, it is possible to come up with solutions of any type of problem. Evidence from previous researches by: Williams (2003); Elizabeth (2007); Stoltz (2010); Bautista (2015); Shen, (2012) shows that the control dimension of Adversity Quotient predicts high work performance. According to Stoltz, control enables individuals to take initiatives in their work and adapt to adverse environments.

If teachers believe that they are unable to gather the necessary behavioural, cognitive and motivational resources to carry out their duties, they are likely to lose hope and willingness to take action. But if teachers are empowered to be in control of what they do in school and in their subjects in terms of: planning, organizing, deciding and implementing the teaching process then, they are likely to take necessary and proper actions in dealing with situations affecting their students' academic performance. Control enables teachers to become managers of their subject goals and their students' academic performance. The teachers are in charge and responsible for their teaching process and students' academic results. Thus they can teach at the pace of their students' ability because they are responsible to every student. Teachers who have control over their work choose teaching methods and content suitable to their students

at every stage and follow up on each one of them. Control motivates the teacher to appreciate one's work and take it seriously. Control is the driving force to do exceedingly more than what is expected because it arouses the internal motivation of an individual. Control makes an individual feel that they count, they are important and they are valued.

4.4.7.1 Hypothesis Two: H₀₁: There is no Relationship between Teachers' Adversity Quotient Dimension of Control and Students' Academic Performance

Hypothesis two of this study was related to the Adversity Quotient dimension of control. It was tested to ascertain the relationship between Adversity Quotient dimension of control and students' academic performance, using the Pearson correlation moment. Pearson product moment correlation coefficient is a measure of strength of a linear association between two variables that are measured on interval, ratio or ordinal scale. It indicates the strength and direction of the relationship. This statistic was chosen in this study because it sought to investigate relationship between the independent variables and the dependent variable. The independent variables were Adversity Quotient and its four dimensions of: control, ownership, reach and endurance. These variables were measured using a Likert scale with ordinal scale. The dependent variable was students' academic performance obtained from Kenya certificate of secondary education results recorded by the respondent teachers in their various subjects in the academic years of 2015 and 2016 in Kenya. The reason why the results were obtained from the individual teacher and not the school examination

records was to ascertain that those results were for the said teacher for the academic years in question. The researcher believed that two years were enough to show the impact of that teacher on the students' academic results. The results were in mean scores hence interval scale. Teachers' performance of their teaching duty is usually measured by their students' academic performance in their subjects and especially in summative examinations like KCSE which is the summative examination for secondary school level in Kenya. KCSE is a standardized examination.

When teachers Adversity Quotient dimension of control score was correlated with students' academic average mean score for the years 2015 and 2016, the null hypothesis was rejected and the reverse was as shown in table 4.22 above. This was a significant, positive and strong relationship. This result implies that teachers' ability to be in control of what they do in school influences students' academic performance in a positive way, hence students' performance increases with teachers increased control and freedom in their work; teachers with high score in Adversity Quotient control dimension had their students posting high academic scores in their subjects. Those teachers who have control over what they do in class and how they implement the curriculum have their students performing better academically than those who have no or little control and have to adhere to strict laid down procedures of curriculum implementation; under strict supervision and threats of disciplinary action for any bend of law or rule (TSC, 2016). The results of this study are in conformity with the students' academic performance in Kiambu and Nairobi counties where students'

performance in 2015 and 2016 was average. As teachers control of their teaching duty increase so does their students' performance.

According to Williams (2003), most schools are overcrowded and teachers are expected to handle these student. Since the teaching lesson plans do not provide for extra hours, teachers are limited to innovation opportunities. Such teachers get burn out. When teachers are given autonomy over their work, this increases their motivation to incorporate their valuable insights in the teaching process. Teachers are lifelong learners and hence if empowered to be in control of their work and provided with opportunities to collaborate and work together for greater benefit of their students; there is hope for better students' academic performance (Stoltz, 2010). The incorporation of technology in schools and classes for instance the use of SMART boards and tablets increases the engagement rates between the students and teachers in classes.

4.5 Objective Three: Determine Relationship between Teachers' Adversity Quotient Dimension of Ownership and Students' Academic Performance

Objective three aimed at establishing the influence of teachers' Adversity Quotient dimension of ownership on students' academic performance. Statistics used were frequencies, percentages, means and standard deviation and Pearson product moment correlation to test the relationship between teachers' Adversity Quotient dimension of ownership and students' academic performance.

The Dimension of Ownership explains the role of accountability, which measures the extent to which a person is able to rise above excessive blame, whether it is excessive blame on oneself or on others. However, the critical point is a person's added ability to grasp his or her share of responsibility, regardless of its cause, so that initiative can be taken in order to address the situation. In other words, recognizing one's share of responsibility in a situation leads to action.

According to Venkatesh et al., (2015) blaming is none-productive and at its worst can even be destructive. They further argue that blame has effects of destroying a person's energy, hope and self-worth. In addition, not only does it sidetrack from constructive action, but can also lead to mistrust and alienation. Among teachers, this can prove particularly devastating for any school. In contrast, demonstrating good comprehension of Ownership creates healthy interdependence, greater agility and authentic trust as (Lo & Khaled, 2015). This positive environment in turn leads to better teamwork and greater innovation. The Ownership dimension of the Adversity Quotient however, does not present any empirical data that demonstrates its significance in order to support this claim (Thi, 2007). Ownership dimension of Adversity Quotient highlights the importance of accountability; the capacity to see your own role in a given situation in order to take initiative and improve it. It is an important element in instilling a sense of responsibility.

Believing that you are responsible, often reflects self-internal control, and not caused by uncontrollable others or unknown factors. This dimension was measured using five items in the questionnaire seeking to establish a teacher's belief of accountability on

matters of policy, students' failure, school management issues, goals, targets and their own career development. It sought to find out how responsible the teachers were concerning their career progression, improving their students' academic performance, setting their work targets and improving relations with the other stakeholders. The items for this dimension in the questionnaire were 13-16. The respondents were required to indicate how they perceived their accountability for various situations in school. The coding of the items was that 5 represented completely responsible (high), 4 responsible (above average), 3 represented neutral (average), 2 less responsible (Below average), 1 not responsible (low).

4.5.1 Distribution of Teachers by Adversity Quotient Dimension of Ownership (N=441)

The table below shows the distribution of teachers the scores of teachers in the adversity quotient dimension of ownership. The maximum score in this dimension is 50 and the minimum is 10 according to the scale of Stoltz (2010).

Table 4.24: Distribution of teachers by adversity quotient dimension of ownership (N=441)

Description	ownership Score	<i>f</i>	%
High	49- 50	103	23.4
Above average	47-48	138	31.3
Average	41-46	133	30.2
Below average	31-40	48	10.8
Low	10-30	19	4.3

One hundred and thirty eight (31.3%) of the respondents scored above average in ownership, 103 (23.4%) scored high while 133 (30.2%) scored average, 48 (10.8%) below average and 19 (4.3%) were low in the ownership dimension. Majority of the teachers in the study; those who scored high combined with those who scored above average indicated that they took responsibility of the adversities they faced in their work. The ownership dimension explains how a teacher can continuously rise above blames directed to them in case or when failure occurs (Williams, 2003). It is the teachers' ability to grasp their share of responsibility to improve the challenges they are facing and to avoid blaming others. Blaming is non-productive and destructive in the workplace (Stoltz, 2010). Blame can drain energy, hope and self-worth from the teacher. In schools, it leads to mistrust and a feeling of alienation (Shen, 2014).

When teachers become accountable of the challenges in their schools, they stop blaming policy makers, parents or their students. They are able to relate well with their colleagues and all other education stakeholders with trust. Where there is trust, people

can engage in constructive dialogue for the benefit of the student. Teamwork of all stakeholders gives the teacher greater motivation to be innovative and to use whatever resources are available and within their power and capacity, the greater good of the student. The teacher is able to work effectively and efficiently. When teachers own the challenges in their country, county or school, they will become solutions providers to the challenges in their schools. Ownership is the first step towards finding a viable solution to any problem. The Ownership dimension is very much related to the control concept. When teachers feel that they are in control over their daily work, they become in charge and take responsibility.

Teachers in most cases have the solutions to problems affecting their students' academic performance and they can fix them if empowered to do so. To ignore the teachers' role on challenges affecting their students' academic performance only complicates the probability of getting a viable solution. A problem owned is half solved. In school, the concept of accountability and responsibility has been bestowed in the school principal. Every success and failure in school is usually associated with the school head. Teachers have been left out when it comes to students' accountability and yet they are the ones who do the real teaching. Teachers need to be empowered so as to be accountable in their subjects because it is the only way to demand more results from them. Responsibility is power and the school head teachers need to share this power with their teachers as a way enhancing their effectiveness. When teachers become accountable and responsible for their work, integrity is instilled and examination malpractices will become a thing of the past.

**4.5.2 Teachers’ Adversity Quotient Dimension of Ownership by County
(N=441)**

Table 4.25 shows the mean of scores of teachers in the adversity quotient dimension of ownership in the two counties to gauge if different school locations where teachers operate work from; rural and urban affect teachers adversity quotient.

**Table 4.25: Teachers’ adversity quotient dimension of ownership by County
(N=441)**

County	N	Mean	Std .deviation	Description
Kiambu	341	43	4.00	average
Nairobi	100	45	2.00	average

From table 4.25, all the teachers were average in the Adversity Quotient dimension of ownership. It implies that teachers’ perception to take responsibility of the adversities they faced in school was not affected by environment of urban and rural. Teachers in both counties are dormant about adversities affecting their students’ academic performance.

In the study of Canival (2010) there was not significance difference in principals’ ownership of adversities due to environmental difference, regardless of where their school was found they had a responsibility over their students’ academic performance. They all indicated high ownership scores. Unlike teachers, school principals are held responsible for their schools students’ academic performance as indicated in the study by (Williams 2003). This may explain the reason of the average score on ownership dimension by the respondents in both counties in this study. Teachers don’t feel

responsible for solving the problems in their schools affecting students' academic performance because it is the responsibility of the head teacher in the school and yet teachers are the masters of their own subjects. When students' perform poorly the school principal is punished through transfer or demotion Musili, (2015), TSC, (2016) and teachers who are responsible for the actual teaching of their subjects are left untouched, this may account for lack of accountability on the part of teachers.

4.5.3 Distribution of Teachers by Adversity Quotient Dimension of Ownership and School Category

The table below shows the mean scores of teachers in the adversity quotient dimension of ownership by school categories to determine of school leadership, environment, culture and climate affect teachers' adversity quotient.

Table 4.26: Distribution of teachers by adversity quotient dimension of ownership and school category

Sch. Category	N	Mean	Std. deviation	Description
National	110	35.9	6.3	Below Av
Extra county	108	28.6	4.0	Low
County	111	28.6	8.1	Low
Sub County	112	24.6	3.0	Low
Total	441	29.4	4.2	Low

The mean score for this dimension was 29.4 with a standard deviation of 4.2, minimum. This was a low mean score in the dimension of ownership. It implies that teachers did not take responsibility of the challenges they faced in school and therefore they blamed other stakeholders for those challenges. It is difficult to change a situation

when we blame other people and feel that the problem is external rather than internal. Change must start by accepting that we have challenges and we have the ability to solve our challenges. Sometimes those being blamed do not interact with the problem directly and therefore, they are not of great help in finding a solution. If teachers accept these challenges, they can devise solutions for the benefit of their students.

In most cases, teachers do not take responsibility of the failures of their students in examinations. They blame the head of school, the parents, the students, the school management and the government for not supporting them with different kinds of resources; the school principal not leading well, the students being of poor entry behaviour or the Kenya examination council for setting hard examinations. Teachers cannot run away from their students' performance because results are the products of a teachers work. Nieto (2003) did a study on the impact of teachers resilience on students' academic performance and argued that although students personal and home background accounts for about 7-8 times for students' academic performance, policy makers are concerned about the teacher variable in students' academic performance because it is easier to change teacher characteristics than to change students characteristics and home backgrounds. Resilience is related to adversity quotient. Resilience is the capacity to quickly recover from difficulties while adversity quotient is the score to measure a person's ability to deal with adversities. Hence, adversity quotient is commonly known as the science of resilience.

According to TSC (2016) the decline in students' academic performance in Kenya in the last one decade was attributed to teachers' non-commitment to duty and absenteeism. However many research on factors responsible for students poor performance in National examination in Kenya indicate that many factors such school facilities, students home factor, students motivation and school management (Kangangi, 2017). Following those allegations levelled against teachers the employer implemented stringent measures through the teachers performance appraisal and development document (TSC, 2016). The Ministry of Education in conjunction with KNEC implemented strict rules of administering and supervising all summative examinations in Kenya (Kenya certificate of primary school and Kenya certificate of secondary education) to curb examination malpractices that had crippled the educational sector for the last one decade (KNEC, 2016). Fear of failure lures students to involve them in examination cheating. Accountability of the student starts with the accountability of the teacher. If teachers become accountable for their work and are responsible for the results of their students, examination malpractices become a problem of the past. If teachers have taught all that needs to be taught and they have used the time allocated to them well, their students can be sure of success. The teachers themselves are sure of students' success; they inspire and affirm them as being successful. Students gain trust of themselves and their abilities. Every success in life is tied to a strong belief of self-accountability.

Bandura (2006) has shown that self-belief is a crucial predictor to students' high performance in examinations. The need to raise teachers' level of accountability and

responsibility in school is crucial in improving students' academic performance. Mwangi C.N., Okacha F.M., Kinai T.K., & Ileri A.M. (2015) did a study on the relationship between students' resilience level and academic performance in Kiambu and established that students' resilience level correlated positively to their academic performance. Students with low resilience level performed poorly while those with high resilience level posted high academic performance. It would be therefore unfair to expect students to be resilient if their teachers who are their first role models and mentors in school are not resilient themselves. Additionally, it would be unfair to expect students to be accountable if their teachers are not. Therefore, it is right to conclude that accountable and responsible teachers will model responsible students. Students learn more through observation than telling and therefore, the need to increase teachers' Adversity Quotient dimension of ownership.

4.5.4 Teachers' AQ Dimension of Ownership and Gender

Table 4.27 below shows the scores of teachers in the adversity quotient dimension of ownership when grouped according to their gender in order to ascertain if there was gender difference in terms of scores of ownership of adversity faced in their schools.

Table 4.27: Teachers' AQ dimension of ownership and gender

Gender	N	Mean	Std Deviation	Description
Male	126	45.0	4.00	Average
Female	261	46.6	4.32	Above average
Others	4	45.8	1.21	Average

The dimension of ownership when analysed according to gender, the results in this study showed that females had a mean of 46.6 which can be described as above average and a standard deviation of 4.32 compared to male teachers who had average mean of 45. This implies that they were good in taking responsibility and owning the challenges they faced in their teaching career than the male teachers. Owning the challenges they faced means that they are willing to solve the problems affecting their academic performance. Male teachers felt helpless before the challenges they faced in schools that affected their students' academic performance and did not know how to handle them. When an individual feels helpless when facing an adversity they lose hope and motivation to change the situation and give up.

The study by Bautista (2015) on university faculty members' adversity quotient did not find significant difference of gender in relation to the dimension of ownership. Both male and female faculty members had high ownership scores adversities in their work. The study of Canivel (2010) there was difference between male and female principles in the adversity quotient dimension of ownership; they all had above average score implying that they were responsible for the challenges they faced in their different schools. However, Shen in (2014) found gender difference in the dimension of ownership; female workers had high score in ownership while male workers had moderate ownership.

4.5.5 Teachers' Adversity Quotient Dimension of Ownership and their Academic Qualification

Table 4.28 shows the distribution of teacher respondents according to adversity quotient dimension of ownership alongside the teachers' educational / professional qualification.

Table 4.28: Teachers' adversity quotient dimension of ownership and their academic qualification

Education Attainment	N	Mean	Std Deviation	Description
Master's degree	27	48.00	4.00	High
B. Ed	400	45.00	8.22	Average
Diploma in education	14	44.00	3.04	Average

The distribution of teachers by the Adversity Quotient dimension of ownership and their educational qualification showed that teachers with qualifications of masters' degree had a high mean score of 48.0 and a standard deviation of 4 in the dimension of ownership. This implies that high academic qualification was important in being responsible and accountable in a teacher's career. Teachers with higher academic qualification were able to accept the challenges facing them in school and therefore, they were ready to find solutions to challenges that affected negatively their students' academic performance. They are not afraid of challenges because they have the tools to find solutions. Furthermore, they have already taken a responsibility to further their education. These are teachers who believe in changing the situations they faced in life or at work; they are go getters. They do not have to wait for their employer to better

their wages rather they set their career progression path. According to Shen (2014), higher education equips teachers with self-confidence that energizes them, gives them courage to stretch, take risks and achieve bigger dreams. Teachers with bachelors' degrees in education and those with diploma certificates in education had an average mean score in the dimension of ownership. This implies that they were less able to be accountable for challenges that faced their schools and instead they blamed other school stakeholders when their students recorded poor academic grades in their schools.

4.5.6 Teachers Adversity Quotient Dimension of Ownership and Length of Service

Table 4.29 shows the mean scores of teachers' AQ ownership alongside the teachers' length of service.

Table 4.29: Teachers' AQ dimension of ownership and years of service

Service	F	Mean	Std	Account
5 year & below	33	45.00	3.00	Average
6-10 years	116	44.00	6.00	Average
11-15 years	130	44.32	4.00	Average
16-20 years	104	44.08	4.00	Average
21 & above	55	44.00	3.00	Average

The teachers who had served for 5 years and below had the highest mean of 45.00 and standard deviation 3 while all other teachers recorded a mean of 44. According to the

Stotlz, (1997) all the teachers in this study are average in the ownership dimension of Adversity Quotient ranging from (44-45). When the teachers dimension of ownership was analyzed alongside the teachers length of service in the profession, the results showed that there was no difference among the teachers, those who had served for many years and those who had served for less than 5 years had an average mean score in ownership. Therefore, teachers' ability to be accountable and be responsible for challenges is not subject to experience; any teacher can be or fail to be responsible regardless of his/her experience. According to Shen (2014), a person can be mature at any age and immature too. He argues that traits that indicate that a person has grown up are the ability to withstand heat, handle stress and setbacks. These results contradict the results of Bautista (2015). Bautista study findings established that professors were more responsible and accountable to the challenges they faced in their work than instructors.

4.5.7 Pearson Correlation Moment between Teachers' Adversity Quotient Dimension of Ownership and Students' Academic Performance

Table 4.30 shows the connection between the general students' academic performance in 2015 and 2016 KCSE and their teachers' adversity quotient dimension of ownership. The KCSE scores were provided by the respondent teachers in the questionnaire.

Table 4.30: Pearson correlation moment between teachers' adversity quotient dimension of ownership and students' academic performance

		Ownership Score	Subject Mean
Correlation score	Pearson correlation	1	.392**
	sig.(2-tailed)		.000
Subject Mean	Pearson correlation	.392**	1
	sig.(2-tailed)	.000	

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

To determine the influence of teachers AQ ownership Dimension on students' educational performance in KCSE 2015 and 2016, a Pearson correlation moment analysis was computed against a teacher's ownership score and the students' performance in 2015 and 2016 average score, as recorded by that teacher in his/her subject. The results in table 4.29 above showed that there was a positive connection between teachers AQ ownership dimension and students' educational performance ($r = 0.392$, $P < 0.01$). The results implied ownership dimension shaped the overall educational performance in a positive way. The results are a true reflection of the students' academic performance for the two counties under study. Teachers dimension score was low and so was the students' academic performance. Low The dimension of ownership is a predictor of students' academic performance in Kiambu and Nairobi counties. Teachers who are high in ownership dimension will enable their students to perform highly academically. When teachers accept the challenges in their work, they take responsibility and are able to change the circumstances that may derail their students' academic performance; they do something about the adversities. Most

challenges in our schools today are global and brought about by globalization hence unavoidable. Most education and government policy reforms that form the bulk of adversities in schools today are as a result of globalization and therefore, acceptance by the teachers will help in lessening their stress about them and handling them from an informed perspective (MoEST, 2012).

One of the most recent reforms in schools in Kenya is teachers performance appraisal document (TPAD) introduced by the teachers employer in order to improve students' performance and teacher effectiveness (TSC, 2013). This document will now form the basis by which teachers are rewarded and promoted by their employer in Kenya. One of the components of the document lays emphasis on students' performance in terms of mean scores and mean grades for every teacher, as the basis of their promotion. Hence, students' academic performance outweighs all other duties teachers do at school. It includes strict monitoring methods bestowed upon the teachers and the administration.

According to Falaye (2006) in his research on teachers and vocational variables as correlates to teachers' attitudes towards social studies, he found that taking responsibility of whatever kind emanates from being in control. Responsible teachers create their own success through positive thinking and networking. They are committed to their goals. Teachers with positive energy just love work. When teachers are trained to be accountable for the challenges they face in their work, they influence their students with that positive energy. Accountability leads to positive actions towards change for the better. Teachers need to take responsibility of their teaching

and the results of their students. When they know they are accountable, they will defend every action they take in teaching. They will set realistic goals and they will work towards achieving them. Accountability is key to sustained elimination of examination malpractices and other social vices in schools today (TSC, 2016).

4.5.7.1 Hypothesis Two: H_{02} : There is no Relationship between Teachers' AQ Ownership Dimension and Students' Academic Performance

Hypothesis two in this study explored if there was a relationship between teachers Adversity Quotient dimension of ownership and students' academic performance. It was done using Pearson product moment correlation. From the results in table 4.23, the null hypothesis was rejected. The results showed that there was a positive and strong association of ($r=.392$, $P<0.01$). This result implies that teachers' Adversity Quotient dimension of ownership influenced students' academic performance in a positive way. As teachers dimension of ownership score increased, so was their students' academic performance score as recorded by the respondent teachers. Teachers who scored high in the dimension of ownership had their students performing highly in their subjects. It is evident that teachers' accountability in their teaching will improve students' academic performance if given prominence in teacher appraisal and teacher management.

4.6 Objective Four: Establish Relationship between Teachers' AQ Reach Dimension and Students' Academic Performance

Objective four of this study was to establish the influence of teachers' AQ reach dimension on students' educational performance. Statistical analyses used were: frequencies, percentages, means, Pearson correlation moment to test if there was a relationship between teachers Adversity Quotient dimension of reach and students' academic performance.

Reach, accounts for how far a person will let an adversity reach into other areas of his or her life. Its logic implies that the larger a problem is perceived to be, the greater its potential damage. Apparently, according to Stoltz (2000), this is because a widespread problem more easily induces fear, apathy, helplessness and inaction. This dimension had five questions seeking to assess how the respondents allow adversity spread and it affects other areas of their work. The questions related to challenges of professional stagnation, exam malpractices, teacher supervision, classroom management practices and challenges related to teachers' pay. The questions were to establish if the teacher allowed challenges they faced related to these areas affecting their teaching work. The items were from 17-20 and were coded as 1 affected all aspects of my work (low), 2 affected some aspects of my work (below average), 3 neutral (Average), 4 limited to some aspects of my work (Above average) 5 limited to this situation (high).

4.6.1 Distribution of Teachers by the Dimension of Reach

Table 4.31 shows the distribution of teachers in the adversity quotient dimension of reach.

Table 4.31: Distribution of teachers by the dimension of reach

Description	Score Range	<i>F</i>	%
High	43-50	77	17.5
Above average	38-42	121	27.4
Average	30-37	143	32.4
Below average	25-29	72	16.3
Low	10-24	28	6.3

One hundred and forty three (32.4 %) of the teachers indicated that they were average in the reach dimension, 121 (27.4%) were above average, 73 (17.5) were high, 72 (16.3%) were below average and 28 (6.3%) were low in the reach dimension. When we combine those who were high and above average in the reach dimension, we get 44.9 %. The researcher concluded that close to half of the teachers in this study did not allow the adversities they faced in their work or in their personal life to spread and affect their teaching work. Whatever fate befell them, they handled it separately from their work. Neither their wars with their employer nor their personal challenges found their way to their classrooms. This implies that no matter the challenges and difficulties teachers faced in their work they still braved themselves to teach their students with zeal and determination. Teachers high in reach dimension are able to separate work with non-work issues. They treat their students with utmost care while dealing with other stakeholders in education.

A study by Nieto (2003) among the American teachers, found that what kept teachers going in their profession amidst many adversities was the “emotional stuff”. She argues that in the contemporary context of teaching the student is the incentive that keeps the teacher going; the teacher’s love to help others succeed. Teachers consolidate a sense of belonging and shared responsibility from their work, which enhances their morale and effectiveness. This is what makes them thrive socially and professionally. Nieto also observed that students’ progress and growth fuelled teachers’ satisfaction in their work and motivated them more than any other factor. Hassan (2012) found that teachers who developed personal interest in their students’ personal problems helped them improve their academic performance regardless of them the adversities they faced in their life. Williams (2003) found that teachers who are able to limit adversities and surrender those adversities that are beyond their control they have their schools performing well academically. The dimension of adversity quotient helps individuals to surrender that which they cannot control in their work so that they can move ahead with easy with what is within ability and power.

4.6.2 Teachers' Adversity Quotient Dimension of Reach by County

Table 4.32 showed the distribution of teachers score in the dimension of Reach by county

Table 4.32: Teachers' adversity quotient dimension of reach by County

County	N	mean	std deviation	description
Kiambu	341	40	4.00	above average
Nairobi	100	42	2.00	above average

All the teachers from the two counties under study recorded a mean score of above average in the dimension of reach as shown in table 4.32, implying that they did not let adversities from teachers, students or other stakeholders to spread from one area to another affecting their teaching and their students' academic performance; if there was a challenge concerning teachers and administration or their employer it did not find its way to the classroom. This is confirmed by the results (Stoltz 2000; Shen, 2014) that the dimension of reach is not affected by environmental difference because it emotional and within the power of the individual. On the contrary the results of (Tian & Fan, 2014) shows that learning environment of student nurses was positively associated with their adversity quotient and career adoptability. According to Nieto (2003) the power to surrender to adversity is an emotional power within the individual and within the environment they operate from. Therefore it can be affected by both the teachers' emotions concerning their work and also the environment they operate from. When school the environment is conducive it affects teachers' way of dealing with adversity positively and vice versa (Bakare, 2015).

4.6.3 Dimension of Reach According to School Category

Table 4.33 shows the reach scores of teachers in the adversity quotient dimension of reach according to school categories.

Table 4.33: Dimension of reach according to school category

Sch. Category	N	Mean	Std. deviation	Description
National	110	39.7	4.0	High
Extra county	108	40.5	3.0	High
County	111	39.9	3.2	High
Sub county	112	39.8	4.1	High
Total	441	40.0	3.1	High

The mean score for all the respondents in this study in the dimension of reach was 40.0 with a standard deviation of 3.1. This was a high mean score from the description of Stoltz (1997), implying that teachers did not let challenges with other school stakeholders and personal life affect their teaching in the classroom. Challenges with their employer for example did not spread to affect their classroom work. The problems teachers experience in school with their colleagues, administration, parents and even with the students themselves did not affect the teachers teaching duty. Any adversity remained limited to where it was found. All the teachers in this study regardless of their school category recorded a high score in the reach dimension. This analysis implies there was no difference in teachers' Adversity Quotient reach dimension with regard to their school category. It shows that environment did not

change a teachers' way of containing adversities and keeping them away from their classroom (Hassan, 2014; Williams, 2003). Though teachers experienced different challenges in their different schools, they behaved the same in limiting adversity from spreading to other areas of their work; adversities did not define teachers in class among their students, no matter the hardships they faced in their work in class they remained professional. The results in this study agree with those of (Stoltz, 2000; Thi, 2015). The two researchers established that there was no association between individual work environment and adversity quotient. Furthermore, the results in this study differed with those of Nieto, (2003) that showed that family issues, conflicts with other school stakeholders like administrators and colleagues affected teachers' performance of their duties and had negative impact on students' academic performance.

4.6.4 Teachers Dimension of Reach and Gender

Table 4.34 shows the distribution of teachers scores in the adversity quotient dimension of reach when the teachers were grouped according to gender.

Table 4.34: Teachers dimension of reach and gender

Gender	N	Mean	Std Deviation	Description
Male	126	46	4.00	high
Female	261	45	4.00	high
Others	4	45	2.00	high

When the dimension of reach was analyzed according to gender, all the teachers had high mean score in the reach dimension. The high score in reach dimension implies that teachers are able to limit adversities they experience in their daily work from spreading to other areas of their work. These results also implied that there was no difference in teachers' Adversity Quotient reach dimension between male and female teachers. All teachers regardless of gender were able to limit an adversity from spread to their teaching duties. This implies that a problem at home did not find its way to their classrooms. Even the challenges with their employer, the school administration or with their colleagues did not extend to their students. These results differ from those of Falaye (2008) who found that there was a significant difference between female and male teachers on adversity variables as correlates to attitudes of teaching at the basic education level but they are the same with those of Shen (2014) who did not find a significant difference between male and females in adversity quotient. He argued that gender is physiological variable which cannot be associated with adversity quotient is a psychological construct. Therefore, to limit the spread of adversity from one area of work to another is not subject to ones gender.

4.6.5 Teachers Dimension of Reach and Qualification

Table 4.35 shows the scores of teachers in the adversity quotient dimension of reach when the teachers were grouped according to their academic qualification.

Table 4.35: Teachers dimension of reach and qualification

Highest Qualification	N	Mean	Std Deviation	Description
Masters degree	27	47.00	4.00	High
B.Ed	400	46.05	8.00	high
Diploma education	14	46.00	3.23	high

Teachers' dimension of reach when analyzed according to the teachers' academic qualification showed that all teachers in this study regardless of their educational qualifications were high in the reach dimension. This implies that the ability to contain an adversity from spreading is not subject to educational attainment. These results conform to those of Bautista (2015) who found no significant difference between university professors and instructors in the dimension of reach.

4.6.6 Teachers Dimension of Reach and Length of Service

Table 3.36 displays the scores of AQ reach dimension when the teachers were grouped according to their length of service.

Table 4.36: Teachers dimension of reach/service

Service	F	Mean	Std	Account
5 years & below	33	43	4.00	Above Av.
6-10 years	116	43	6.00	Above AV.
11-15 years	130	45	8.00	High
16-20 years	104	46	6.00	High
21 & above years	55	47	4.00	High.

When the dimension of reach was analysed alongside the teachers length of service, the teachers who had served for 11 years and above, recorded the high mean of 45-47, those teachers who had served between 5 years and below had average mean in the reach dimension of adversity quotient. This analysis implies that there was a significant difference in the reach dimension between those teachers who had served for long and those who served for fewer years. The more experience a teacher had, the better they were at containing and limiting adversities in their work from spreading to their teaching duty. Those with less experience allowed adversities to spread probably in the search for solutions. According to (Thi, 2007; Williams, 2003), young teachers with less experience are very ambitious in life and work but the many challenges in education coupled with low remuneration easily kill their high ambition. Research by Shen (2014) showed that most young people are likely to quit their job at the slightest provocation compared to experienced workers.

4.6.7 Pearson Correlation Moment between Teachers' Adversity Quotient Dimension of Reach and Students' Academic Performance

The table below displays the relationship between AQ reach dimension and students' academic performance.

Table 4.37: Pearson correlation moment between teachers’ adversity quotient dimension of reach and students’ academic performance

	Pearson score	Subject Mean
Reach Score Pearson Correlation	1	.407**
Sig.(2-tailed)		.000
Subject Mean Pearson Correlation	.407**	1
Sig.(2-tailed)	.000	

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

Determination of the influence of teachers’ AQ reach dimension on students’ educational performance was established by correlating students’ subject average mean score in KCSE 2015 and 2016 and teachers score in the dimension of reach. Pearson product moment correlation was computed between teachers’ AQ dimension of reach score against the average mean score of students’ performance in 2015 and 2016. The results showed that, there was a strong relationship of Reach ($r = 0.407$, $P < 0.01$) as shown in table 4.35 above.

The implication of these results is that the reach dimension shapes students’ educational performance in a positive manner. Not allowing one problem to spread to other areas of the teachers’ work helps them to concentrate in attending to their students effectively. Attending and focusing on each student individually improves students’ academic performance. When teachers separate their personal issues with their work, they are able to teach effectively to meet their students’ needs and their set goals hence their students are able to perform well in the examinations. The results of this study confirm the results by (Stoltz 1997; Williams 2003; Shen, 2014) that

showed that there was a significant relationship between individual's Adversity Quotient dimension of reach and work performance. Dimension of reach affected workers performance at work. According to Stoltz the dimension of Reach empowers individuals in dealing with their past with wisdom. Past adversities allow individuals to learn on what not to repeat in the future and not to struggle dealing with painful past. Instead, they should make the necessary changes and move on.

Challenges at work serve as opportunities to learn from. At the workplace, challenges are inevitable and therefore being able to let adversities go, gives us courage to tackle future challenges easily. Letting those things we cannot change go, is the only way to move forward successfully. According to Thi (2007), reach is the dimension that opens doors to our next chapter in life, as we let the past go and open our arms to embrace that which is within our capacity with courage. Letting go is the only answer to usher in change. Many people do not like change because it brings about painful learning and doing things in a new way that disrupts peace and comfort. Change is the only sure way to success. Reach requires that you leave things that are disrupting success and come up with new strategies that have been proved to work.

4.6.7.1 Hypothesis Three: H_{03} : There is no Significant Relationship between Teachers' AQ Reach Dimension and Students' Academic Performance

Hypothesis three was about establishing the relationship between teachers Adversity Quotient reach dimension and students' academic performance. It was tested using Pearson correlation moment, and stated as follows: This null hypothesis was rejected because the Pearson correlation moment results in table 4.31 showed that there was a

positive relationship between the two aspects ($r=.4071$, $P<0.01$). The reverse was accepted as the truth. As the teacher's reach score increased and so was their students' academic performance.

4.7 Objective Five: Establish Relationship between Teachers' Adversity Quotient Dimension of Endurance and Students' Academic Performance

Objective five in this study was to establish the relationship between teachers' Adversity Quotient dimension of endurance and students' academic performance. The statistical analysis used were; frequencies, percentages, means and Pearson product moment correlation to test for the relationship between the teachers endurance score and overall students' academic performance.

Endurance, measures how long an adversity lasts. In addition, it also measures how long the cause of the adversity will last. An adversity perceived as being permanent is thought to be far more devastating than the same adversity perceived as short-lived. Possessing the ability to see past adversities that would otherwise be thought of as long-lasting or enduring, and instead reinterpreting them as something short-lived will according to (Stoltz 2000; Thi, 2007), help in strengthening the teachers response to adversity.

The respondents were presented with five questions seeking to establish how long they perceived adversities they faced in their work to last. The dimension of endurance is very much related to the dimension of reach. The questions in this dimension were related to challenges of students' failures, stagnation in their career, lack of

infrastructure, and big classes, conflicts between teachers and management. The items were from 22-26. They were coded as follows 1 last forever (low), 2 take long time (below average), 3 neutral (average), 4 take short time (above average), 5 pass quickly (high).

4.7.1 Distribution of Teachers in the Dimension of Endurance

Table 4.38 shows the distribution of teachers' scores of adversity quotient dimension of endurance.

Table 4.38: Distribution of teachers in the dimension of endurance

Description	Score Range	<i>f</i>	%
High	44-50	103	23.4
Above average	39-43	118	26.8
Average	32-38	118	26.8
Below average	26-31	78	17.7
Low	10-25	24	5.4

From Table 4.38 the respondents in this study, indicated that 118 (26.8%) of the teachers were above average in the endurance and another 118 (26.8%) were average, 103 (23.4%) were high, 78 (17.7%) were below average and 24 (5.4%) were low. Two hundred and twenty one teachers in this study 50.2 % (those who scored high and above average) perceived and interpreted adversities in their work as short-lived and therefore, they endure them. If teachers' stagnation in their career is perceived to emanate from things beyond their ability to change, this becomes long lasting. On the

other hand, if the teacher interprets it as lack of proper preparation for the interview, it becomes short-lived, and he/she is able to take action by preparing adequately for the next job interview. Seligman et al., (1993) argue that, people find meaning in their experiences therefore, the meaning they attach to certain situations affect their thoughts and actions. Supportive leadership, school environment and good relationship with their peers enhance teachers’ endurance level and make the adversities they face at school less threatening. According to Neito, (2003), it is the internal motivation of teachers combined with their moral purpose that underpin their professional values and ideology, giving them strength to face everyday challenge in their work with pride. Teachers endure stressful work, uncondusive work environment, and unsupportive administrators all for sake of the student. Hassan (2012) and Bautista (2015) argues that, in contrast to other professions which emphasize on recognition and high monetary rewards, teachers content with inward reward of students’ progress in their hearts. The dimension of endurance is the teachers’ greatest strength towards their effectiveness.

4.7.2 Teachers’ Adversity Quotient Dimension of Endurance by County

Table 4.39 shows teachers scores in adversity quotient dimension of endurance when the teachers were grouped according to their counties.

Table 4.39: Teachers’ adversity quotient dimension of endurance by County

County	N	Mean	Std deviation	Description
Kiambu	341	45	4.00	high
Nairobi	100	43	3.00	above average

In table 4.39 teachers from Kiambu County had a high endurance score while those from Nairobi County recorded above average endurance score. Hence there was a difference between teachers' endurance dimension between teachers from Nairobi and those from Kiambu. This may imply that the different adversities from different environment affect teachers' endurance differently. Teachers in urban areas seem to be more overburdened by adversities compared to those in rural setting. However, teachers from both counties let adversities pass quickly, thus giving them time to focus at their core business of teaching.

4.7.3 Dimension of Endurance and School Category

Table 4.40 shows teachers scores in adversity quotient dimension of endurance when they were grouped according the category of schools.

Table 4.40: Dimension of endurance and school category

Sch. Category	N	Mean	Std Deviation	Description
National	110	38.2	6	High
Extra County	108	38.8	3	High
County	111	39.8	5	High
Sub County	112	40.7	4	High
	441	39.4	4	High

The mean score in this dimension was 39.4 with a standard deviation of 4, minimum. All the teachers were high in this dimension. It implies that, it took teachers short durations to forget about the adversities they faced in various areas in their schools and moved on with their work for example adversities of expanded classes with is

beyond their capacity to handle. It may be interpreted to mean that most of school challenges lasted shortly for teachers to find ways of adapting. From the analysis of table 4.28, all the teachers regardless of the category of school were able to let adversities pass quickly. Teachers' ability to endure hardships in their work was not affected by their school environment, whether they work in national schools with bright students and better resources or they work in sub-county schools with underperforming students and many challenges, they all overcome challenges easily. The results of this student agree with those of Tian and Fan (2014) who found that student nurses took short time to adapt to adversities within their environment. However they disagreed with the results of (Phoolka & Kaur, 2012) who established a negative relationship between the AQ and student nurse career adaptability.

4.7.4 Teachers Dimension Endurance and Gender

Table 4.41 shows teachers scores of adversity quotient dimension of endurance when the teachers were grouped according to gender.

Table 4.41: Teachers dimension endurance and gender

Gender	N	Mean	Std Deviation	Description
Male	126	46	6.00	Above AV.
Female	261	48	6.00	High
Others	4	45	2.00	Average

When the dimension of endurance was analyzed according to gender, the researcher found that female teachers were better in the endurance dimension with a mean of 48

and standard deviation of 6 than the male teachers. The male teachers scored above average score of 46 in endurance. It implies that female teachers are able to let challenges pass quickly than the male teachers. It is the nature of women to forget hurting things faster than men. Men hung on a little longer in the hope that things may change to their favour. There was a difference in the Adversity Quotient endurance dimension in favour of female teachers. The results seem to agree with those of Tian & Fan (2014) where they found that there a significant difference between male and female student nurses in adapting to adversities in career environment. Conversely, the results differ with those of Shen (2014) and also those of Bautista (2015) who found no significant difference in the in endurance of adversity between men and women as endurance is a psychological construct rather than physiological.

4.7.5 Teachers Dimension of Endurance and Qualification

Table 4.42 shows teachers scores of adversity quotient dimension of endurance when the teachers were grouped according to their education / professional qualification.

Table 4.42: Teachers dimension of endurance and qualification

Education Attainment	N	Mean	Std Deviation	Description
Master Degree	27	48	2.00	High
B.Ed	400	46	10.00	Above Average
diploma in education	14	46	8.00	Above average

Teachers with master’s degrees were better in endurance of adversities with a mean of 48 and a standard deviation of 2 compared to those with bachelor’s degrees in

education and those with diploma certificates in education. However, all the teachers showed that they had the ability to endure hardships in education because they scored above average score in the endurance dimension. The implication of this analysis is that high academic qualification is important in handling challenges and hardships at work or life. Higher academic qualifications enables teachers to view difficult situations as temporary and less threatening because they have the capacity to analyze the situation critically and come up with proper interventions to the challenge. This result concurs with those of Bautista (2015) who found there was significant difference between professors and instructors in adversity quotient. These results differ with those of Shen (2014) who found that workers with diploma qualifications having higher adversity quotient than Bachelor holders and explained this by saying that diploma qualifications were exposed to adversity earlier in life and acquired the skills of handling adversities compared to those who continuously pursued education to higher qualifications before joining their careers.

4.7.6 Teachers Dimension of Endurance and Length of Service

The table below shows the distribution of teachers scores in the endurance dimension of adversity quotient when the teachers were grouped according to their length of service from less than one year to 20 years above.

Table 4.43: Teachers dimension of endurance/service

Experience/Service	F	Mean	Std	Account
5 years and below	33	38	2.43	Above
6-10 years	116	42	4.00	Average
11-15 years	130	44	6.00	Above
16-20 years	104	46	8.00	Average
21 years & above	55	48	2.00	High
				High
				High

Teachers with long teaching experience between 11-21 years and above showed that they were better in the dimension of endurance than those who had less experience in the profession. Generally, all the teachers regardless of their experience showed that they were good in enduring hardships in education. These results imply that experience is important to enduring adversities. Experience hardens persons by exposing them to adversities. The more experience teachers gain in the professions the more exposed they become to adversities and the better they become in letting them pass quickly. These results confirm those of (Bautista, 2015 and Shen, 2014) who found that more experienced people were better in enduring adversities in their work than less experienced ones because of the many challenges they have encountered in their career and developed resilience.

4.7.7 Pearson Product Moment Correlation between Teachers' Adversity Quotient Dimension of Endurance and Students' Academic Performance

The table below shows the relationship between teachers' AQ endurance dimension and students' academic performance in Kenya certificate of secondary school education.

Table 4.44: Pearson product moment correlation between teachers' adversity quotient dimension of endurance and students' academic performance

	Endurance Score	Subject Man
Pearson Correlation	1	.341**
Sig.(2-tailed)		.000
Subject Mean Pearson Correlation	.341**	1
Sig. (2-tailed)	.000	

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

Determination of the influence of teachers AQ endurance dimension on students' educational performance was computed by correlating the subject average mean score in KCSE 2015 and 2016 and the teachers' Adversity Quotient endurance score. Pearson product moment correlation showed that, there was a significant and positive relationship ($r = .341, P < 0.01$). These results imply that teachers' Adversity Quotient dimension of endurance influences students' academic performance positively. As teachers' endurance level increased the students' educational performance improved. Educators with high endurance level had students with high academic performance. Endurance enables teachers to deal with challenges beyond their capacity by letting them pass quickly. Most challenges in education and schools today are beyond the teachers' capacity to change them because they are policies and directives to be

implemented from either their employer or their government. All that a teacher can do is to endure them. Endurance provides the teacher with the stamina to continue doing that which is within his/her power.

Teachers who are high in endurance will persist without losing hope. High endurance teachers put their goals above those adversities; experienced or less experienced. Endurance is the only option left for the teachers especially when control and ownership are bestowed upon the heads of schools and managers. Education policies flow from top to bottom (top down development models). The results of this study are in consistence with those of (Bautista, 2015). She found that there was a significant relationship between faculty members' endurance and their work performance. According to her, people who are optimistic in life are less prone to motivational deficit. Consequently, pessimistic people are likely to be helpless at the face of adversity.

4.7.7.1 Hypothesis Four: H₀₄: There is no Significant Relationship between Teachers' Adversity Quotient Dimension of Endurance and Students' Academic Performance

The fourth hypothesis of this study was about testing the relationship of endurance dimension of Adversity Quotient with students' academic performance. This null hypothesis was tested using Pearson product moment correlation in table 4.33 above and was rejected because a positive and strong correlation was established between teachers Adversity Quotient dimension of endurance and students' academic performance ($r=.341, P<0.01$). It implies that as teachers endurance score increased so

was the students' educational performance. Educators with high endurance levels had their students performing well academically. These results agree with those of (Dorji & Singh, 2019) who found a positive relationship between students' self-directed learning, readiness and adversity quotient.

4.8 Objective Six: Establish the Most Effective Dimension of Teachers' Adversity Quotient

Objective six aimed at establishing the most effective dimension in influencing students' academic performance. Since the researcher established in hypothesis 1-4 that all the four dimensions of Adversity Quotient had an influential impact on students' educational performance, there was need to further find out which of the four Adversity Quotient dimensions was most effective on students' academic performance in the absence of the intervening variable and also in the presence of the intervening variables. To establish the most effective dimension of Adversity Quotient on students' academic performance two regression models were tested in this study.

4.8.1 Model 1

The first model was to establish the most effective Adversity Quotient dimension of the four dimensions of control, ownership reach and endurance on the students' academic performance in the absence of intervening variables

$$\text{Model 1: } Y = \text{constant} + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y = performance,

X_1 = Control, X_2 = Ownership, X_3 = Reach, X_4 = Endurance, ε = error term

Table 4.45: Regression Model 1

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.181	.493		-2.397	.017
	Control score	.248	.026	.421	9.703	.000
2	(Constant)	-1.973	.544		-3.627	.000
	Control score	.204	.029	.346	7.144	.000
	Endurance score	.082	.025	.159	3.274	.001
3	(Constant)	-1.867	.543		-3.440	.001
	Control score	.170	.032	.288	5.329	.000
	Endurance score	.073	.025	.140	2.871	.004
	Ownership score	.061	.025	.124	2.402	.017

a. Dependent Variable: Subject Mean

Model Summary

Model	R	R Square	Adjusted R Square	R Std. Error of the Estimate
1	.421 ^a	.177	.175	1.44478
2	.443 ^b	.197	.193	1.42901
3	.455 ^c	.207	.202	1.42127

a. Predictors: (Constant), Control score

b. Predictors: (Constant), Control score, Endurance score

c. Predictors: (Constant), Control score, Endurance score, Ownership score.

A stepwise linear regression model was used to test this first model. The results from this study showed that in the absence of other intervening variables of teachers' qualification and experience, student academic performance was significantly affected mainly by control, endurance and ownership dimension. The dimension of reach was kicked out during computation and was not significant in the absence the intervening variables. Using standardized beta coefficient therefore;

Model 1 therefore becomes: $Y = -1.867 + 0.288X_1 + 0.140X_4 + 0.124X_2$

4.8.2 Regression Model 2

In the presence of intervening variables, a second model was tested. This included teachers' demographic variables of: gender, experience and professional qualification.

The second model was;

$$\text{Model 2: } Y = \text{constant} + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \varepsilon$$

Where Y = performance,

X_1 = Control, X_2 = Ownership, X_3 = Reach, X_4 = Endurance, X_5 = gender, X_6 = education, X_7 = years in service, ε = error term

Table 4.46: Regression Model 2

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	-1.255	.499		-2.515	.012
	Control score	.251	.026	.425	9.721	.000
2	(Constant)	-2.051	.551		-3.720	.000
	Control score	.208	.029	.351	7.181	.000
	Endurance score	.083	.026	.158	3.236	.001
3	(Constant)	-2.279	.554		-4.110	.000
	Control score	.197	.029	.333	6.796	.000
	Endurance score	.080	.025	.153	3.141	.002
	Years in service as a teacher	.157	.060	.115	2.623	.009
4	(Constant)	-3.083	.648		-4.758	.000
	Control score	.159	.033	.268	4.781	.000
	Endurance score	.068	.026	.130	2.639	.009
	Years in service as a teacher	.168	.060	.123	2.811	.005
	Reach score	.087	.037	.127	2.364	.019

a. Dependent Variable: subject mean

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	-1.255	.499		-2.515	.012
	Control score	.251	.026	.425	9.721	.000
2	(Constant)	-2.051	.551		-3.720	.000
	Control score	.208	.029	.351	7.181	.000
	Endurance score	.083	.026	.158	3.236	.001
3	(Constant)	-2.279	.554		-4.110	.000
	Control score	.197	.029	.333	6.796	.000
	Endurance score	.080	.025	.153	3.141	.002
	Years in service as a teacher	.157	.060	.115	2.623	.009
4	(Constant)	-3.083	.648		-4.758	.000
	Control score	.159	.033	.268	4.781	.000
	Endurance score	.068	.026	.130	2.639	.009
	Years in service as a teacher	.168	.060	.123	2.811	.005
	Reach score	.087	.037	.127	2.364	.019

The Model Summary

The Model	R	The R Square	R Adjusted Square	R Std. Error of the Estimate
1	.425 ^a	.181	.179	1.45001
2	.448 ^b	.200	.197	1.43423
3	.462 ^c	.213	.208	1.42445
4	.473 ^d	.223	.216	1.41685

a. Predictors: (Constant), Control score

b. Predictors: (Constant), Control score, Endurance score

c. Predictors: (Constant), Control score, Endurance score, Years in service as a teacher

d. Predictors: (Constant), Control score, Endurance score, Years in service as a teacher, Reach score.

In the presence of the intervening variables, students' academic performance was significantly affected by AQ dimension of control, endurance, years in service and reach score. Other variables were kicked out in the computation (educational qualification and ownership). From the above analysis looking at both models (1 and 2), it can be concluded that all the four CORE dimensions of Adversity Quotient are critical and significant in influencing students' academic performance. They reinforce each other in building a teacher's Adversity Quotient. There is always interplay among the dimensions in influencing a teacher's overall Adversity Quotient profile. Since studies have shown that Adversity Quotient can be learned, a teacher's response to adversity can be interrupted and changed through training to strengthen the weak dimension or dimensions and wire their brain for success. Based on the findings of this study, teachers Adversity Quotient is an important factor in influencing students' academic performance. This is a new method which educationist can use to improve students' academic performance and increase teacher efficiency in teaching. Adversity Quotient is going to add value to the many factors of improving students' academic performance in schools and proving practical ways of improving teacher effectiveness in tutoring. The result harmonizes with Sigit, Suryanda, Supriyanda and Ischan (2019), established that the four dimension of AQ were significant to the learning outcomes based on the students' learning levels. However a study by Baroa (2015) that determined relationship between adversity quotient and leadership styles in relation to demographic profile of school administrators found no significant relationship between the four dimensions of adversity quotient and leadership skills.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study findings on the influence of teachers Adversity Quotient on students' academic performance in public secondary schools in Kiambu and Nairobi counties in Kenya. It provides the, conclusions, recommendations and further areas of research.

5.2 Summary

This study was designed to investigate the relationship between teachers adversity quotient and students' academic performance in Kenya certificate of secondary education in Kiambu and Nairobi counties in Kenya. The first objective aimed at establishing the relationship between the overall teachers' adversity quotient and students' academic performance based on teachers' gender, professional qualification and teachers' experience in teaching. The overall teachers' Adversity Quotient score was average and correspond to the average students' performance in both counties of Kiambu and Nairobi. No difference was detected in teachers overall AQ based on counties. Both counties responded teachers recorded average AQ and also their students' educational performance in 2015 and 2016 was average.

In terms of the four Adversity Quotient dimensions, Reach was the best for teachers in terms of scores followed by Endurance, Control and Ownership in that order in both counties of Nairobi and Kiambu. Teachers were able to limit adversities they faced in school from spreading and affecting their students' academic performance. Teachers

endured school adversities and believed that they were short term instead of long lasting. Teachers are not accountable to adversities in school as they believed that it was the responsibility of school management and school principals managed with school adversities. School adversities are short lived as opposed to long term. When the teachers were grouped into school categories, all responded teachers from National schools to sub county schools recorded average Adversity quotient despite their students recording different academic performance hence teachers' adversity quotient is not affected by the school category they taught. There was a difference in teachers' adversity Quotient score when they were grouped by gender in favour of female teachers in this study. Female teachers had high adversity quotient score compared to male teachers. There was dissimilarity in teachers' adversity quotient when grouped to their professional qualification, teachers with masters degrees and those with diploma qualifications recorded higher adversity quotient compared to those with bachelor's degrees. Teachers with more years in work experience of 6 years and above were found to have higher Adversity Quotient compared with those teachers who had served for 5 years and below. More teacher experience equaled high teacher adversity quotient and translated to a high students' educational performance. The Pearson correlation moment between teachers' adversity and students' academic performance showed that there was significant and positive relationship between teachers' Adversity Quotient score and students' academic performance.

From the teachers overall adversity quotient three groups of teachers emerged in this study; the climbers were the teachers who had high and above average in adversity.

Fifty five percent of the teachers in this study fell in this group. This is the type of workforce that moves schools and students to post better academic results. They are ready to embrace challenges, inspire their students, and continue learning and re-learning in order to match with current times and situations. The tutors believe that their learners are brilliant and can learn anything. Educators' expectations of their students shape their students' academic outcomes. The second groups of teachers were of campers. Thirty four percent of the teachers in this study fell in this group. This is a group of teachers who are worn out by challenges and have stopped seeking growth and development in their work. It is this group that needs inspiration and training to tap from their inner power that has gone down to increase their capacity to handle challenges inherent in education today in order to increase students' academic performance. The last group in this study was of quitters and formed ten percent of the respondents in this study. These are teachers who have lost hope and have very minimal drive towards change. This group of teachers can be risky to students' academic performance if not sampled out in school and attended to as a matter of urgency because negative energy is easily transferable than positive one. One teacher of this kind can easily destroy the work of the many with positive drive. Students need role models who give them hope and inspiration even when they are facing tough times. Today, students spend most to the time spent at home with parents. This implies that the impact of the teacher to the academic success of the students cannot be ignored. If a teacher thinks that his/her students cannot achieve much or are not bright, she/ he may be inclined to teach simple stuff and give simple assignments. Predominant attitudes of teachers towards students if not controlled become

institutional norms. If teachers in a school have low Adversity Quotient students cannot learn and every new comer is pressured to assent to low expectations sense of efficacy. It would be unfair to expect students to be resilient if their teachers are not. There is need to take swift measures to restore lost hope and inspiration to the teachers so as to become better role models to their students and influence their academic performance positively and also resilient individuals in life which is full of adversities.

Objective two aimed at establishing the relationship between adversity quotient dimension of control and students' academic performance. Majority of the teachers in this study scored above average in the control dimension. There was no difference in the control dimension score for teachers in the two counties of Kiambu and Nairobi. Teachers from both counties are in control of school adversities and are able to navigate adversities and thus impacting positively their students' academic performance. When Teachers were grouped according to school category, teachers teaching in National schools recorded high score AQ dimension of control compared to teachers in extra county schools and sub county schools who recorded average scores. The difference may be due to the students' entry behaviour and placement by ministry of education in Kenya. Male teachers were better in the control dimension than female teachers. Teachers with higher professional qualifications of masters' degrees had higher score in AQ control dimension compared to those with bachelors' degree and diploma certificates. More experienced teachers who had served for above 11 years and above were better in the AQ control dimension compared to those who

had served for 10 years and below hence experience enhances individual control over adverse situations at work. Pearson product moment correlation showed that there was a positive and significant correlation ($r=.483, P<0.01$).

Objective three was to establish the relationship between teachers' AQ dimension of ownership and students' academic performance. The findings showed that most of the teachers; fifty-four point six of the responded teachers in this study recorded above average score in the ownership dimension and that they were responsible and accountable to adversities in their schools that affected students' educational performance. No difference was detected in teachers' scores of ownership dimension when grouped under counties; both counties recorded average. There was also no difference in teachers AQ dimension of ownership scores when the teachers were grouped according to school category and teachers length of service. Teachers with higher professional qualification of masters' degree had higher scores in ownership dimension compared to bachelors and diploma qualifications. Pearson product moment correlation between teachers' Adversity Quotient dimension of ownership and students' academic performance showed that there was a positive and significant relationship between teachers' Adversity Quotient dimension of ownership and students' academic performance ($r=.392, P< 0.01$).

Objective four examined the relationship between teachers' adversity quotient dimension of reach and students' academic performance. The findings on the dimension of reach indicated that One hundred and ninety eight (44.9%) of the teachers in this study do not allow adversities they faced in life or in school spread

and interfere with their teaching duties. There was no difference in the reach dimension score when teachers were grouped according to counties of Nairobi and Kiambu; both recorded average score. Every adversity was treated on its own merit and solved independently wherever it occurred within the schools. There was no difference in the reach dimension score in when teachers were grouped under school categories. Male teachers were found to be better in the reach dimension than female teachers implying that male teachers were able to limit adversity in school compared to female teachers. It is easier for females to share problems of their work or even personal life and hence spreading adversities from one area of their career to another as compared to male teachers. Spreading adversity causes fear and anxiety that affect students' academic performance. Teachers with higher educational qualification of masters' degrees in education were better in limiting adversity compared to those with bachelors and diploma qualifications. Pearson product moment correlation between teachers' Adversity Quotient dimension of reach and students' academic performance established a strong association between the two variables.

Objective five was to establish relationship between teachers' adversity quotient dimension of endurance and students' academic performance. The findings on endurance dimension showed that teachers in this study perceived school adversities as short lived as opposed to long lived. There was a difference in teachers' Adversity Quotient endurance dimension when teachers were grouped by counties; Kiambu teachers recorded high endurance score while Nairobi teachers recorded an average endurance score. This implies that urban adversities were perceived to take long to

deal with compared to those in rural schools. There was no difference in endurance score when teachers were grouped according to school categories. Therefore endurance is not affected by school culture and climate. Female teachers were found to be better in endurance dimension of adversity quotient than male teachers. Teachers' with higher professional qualification of masters' degrees and bachelor's degree were better in endurance dimension of adversity quotient than those with diploma certificates in education. Teachers with more years of experience of 6 years and above were better in endurance than those who had served for 5 years and below. Experienced teachers are less threatened by school adversities. Pearson product moment correlation was computed between teachers' adversity quotient endurance dimension and the students' general academic performance. It implies that, as teachers' endurance level increased thus shaping students' performance.

Objective six sought to establish which one of the dimensions of AQ was better in impacting students' academic performance. The researcher used multiple regression analysis to determine whether the group of independent variables together could predict dependent variable. Two models of regression were tested in this study. The first model was to establish the most effective AQ dimension on the student mean subject performance. A stepwise linear regression model was used to test this first model. The result showed that in the absence of other intervening variables, student mean subject performance was significantly affected mainly by control, endurance and ownership dimensions. The second model tested the effects of the Adversity Quotient dimensions in the presence of intervening variables. This included the effect of the

demographic variables of experience, gender and qualification of the teachers. In the presence of these intervening variables, students' academic performance was significantly affected by Adversity Quotient dimensions of: control, endurance, and reach plus teachers' experience. The ownership variable was kicked out in the computation in the presence of intervening variables. From the two models it is clear that all the four dimensions of adversity quotient work together for a teacher to exhibit a high adversity quotient and that they affect teachers work which further affects students' academic performance. When reinforced by other intervening teacher factors that impact on students' academic performance it was found that teacher' work experience can replace the ownership dimension of adversity quotient which in this study was found to be low among the teachers.

5.3 Conclusion

The study results back the perception that a teacher's response to adversity has a great effect on the overall performance of the student. Therefore students who are lucky to be taught by teachers who have great levels of AQ then to perform better compared to their counterparts. This study found that as teachers Adversity Quotient increased so was students' academic performance and vice versa. Therefore, no matter the category of school, teachers with high Adversity Quotient influence their students' academic performance positively. There was a statistically significant and strong relationship between students' educational performance in KCSE and teachers' AQ ($r = 0.530$, $P < 0.01$). These data indicate that teachers Adversity Quotient has a positive influence on students' academic performance.

The results were further analyzed by school category. They indicated that teachers teaching in national school had above average Adversity Quotient and their students' academic performance was above average. The Extra county school teachers recorded average Adversity Quotient and their students recorded average KCSE results for the years 2015 and 2016 ganging by their students' entry behaviour and the fact that high adversity quotient translates to high performance. However county and sub-county school teachers' AQ was average and their students' performance in KCSE was below average. This difference between AQ and students' general performance in county and sub county schools may be attributed to low entry marks of students. There was a difference in students' academic performance in means scores but not in teachers Adversity Quotient across the school categories implying that teachers' adversity is not affected by the school they teach. The reasons for this difference in students' academic performance is attributed to differences in students' entry marks to different school categories.

Teachers' demographic variables were found to be suitable enhancers of adversity quotient. The demographic variables that were considered were teacher's professional qualification, length of service and gender. Teachers with higher professional qualifications of masters' degrees were found to be high in adversity quotient, implying they were better in handling adverse situations at school and finding solutions to the problems in education. Therefore there was a positive and significant relationship between teacher professional qualification and teacher's adversity quotient. Likewise there was a positive and significant relationship between teacher's

length of service and teacher's adversity quotient. The teachers who had served for over 20 years proved to have a high Adversity Quotient when compared to those that are new in the field. Hence teachers experience and professional qualification was affirmed as a good way of developing quality skills to handle difficult situations at work. When the variable of gender was considered against teachers adversity quotient there was a significant gender difference in teachers Adversity Quotient. Female teachers in this study recorded higher adversity quotient than their male colleagues. This implied that female teachers were better in handling adverse situations at school compared to male teachers.

In determining the influence of Adversity Quotient dimensions, on students' academic performance, the results of this study showed all the four dimensions of Adversity Quotient were important in influencing students' academic performance. When correlated with students' academic performance, they the four adversity quotient dimensions of: control, ownership, reach and endurance showed a significant and positive relationship with students' academic performance. When they were tested in the absence of intervening variables of teachers' gender, academic qualifications and experience, the dimensions of control, ownership and endurance were found to be significant in influencing students' academic performance. In the presence of the intervening variables of teachers' demographics of gender, academic qualification and experience, they were still found to be significant although the dimension of ownership was replaced by experience. The researcher then concluded that the four Adversity Quotient dimensions reinforce each other in maintaining a teacher's

adversity quotient. They are all critical in predicting how teachers handle adversity in school which affects students' academic performance hence predicting students' academic performance.

Given the prominence of teacher accountability by the teachers' employer and the government reliance on empirical evidence to inform policy decisions on how to shape the students' success and their academic performance in the current era, the findings of this study are critical in understanding the importance of teachers AQ and how it shapes students' performance. These results provide a holistic representation on how to measure teachers' Adversity Quotient and how we can improve it by strengthening its dimensions. The results lay emphasis on importance of teachers' AQ when handling school adversities that interfere with students' academic performance. It is evident that the endeavours to improve students' academic performance through teachers' Adversity Quotient are likely to be effective. This may mean that if education stakeholders' focus on improving the teachers' AQ then students' performance can be improved.

5.4 Recommendations

- i. Teachers Adversity Quotient plays a critical role in students' academic performance; it is recommended that it should be incorporated in the in-service training courses for all the teachers.
- ii. The need to train teachers in adversity quotient requires training materials on adversity quotient for teachers hence it is recommended that the Kenya Institute

of Curriculum Development (KICD) should consider developing support materials for teachers on adversity quotient.

- iii. The concept of Adversity Quotient is important in the identification and recruitment of teachers to ensure that they have right attitudes for success therefore it is recommended that the Teachers Service Commission which is mandated to recruit teachers for public schools should include adversity quotient in its recruitment and promotion manuals in order to maintain high performing professionals in schools.
- iv. Teachers service commission (TSC) should consider incorporating adversity quotient in teachers' appraisal document (TPAD) for teachers to identify gaps for in-service training in order to ensure teachers are up to date on emerging adversity trends in schools.
- v. Teachers need to be well grounded in the knowledge of adversity quotient to be transferred to their students therefore it is recommended that teacher training colleges and universities should include adversity quotient content in the core units of education
- vi. Adversity quotient is an important skill for high performance hence there is need for regular in service training since adversities never end in life therefore there is need for Kenya Education of management institute (KEMI) to offer constant short courses in- service training for teachers.
- vii. Quality Assurance and standards officers in the Ministry of Education should be trained on AQ competencies and incorporate those skills when monitoring

implementation of school programme to ensure that the concept is deeply rooted among educators.

5.4.1 Recommendations for Further Research

- i. There is need to study the Adversity Quotient of newly recruited teachers compared to seasoned teachers.
- ii. There is need to correlate teachers Adversity Quotient with their students Adversity Quotient.
- iii. There is need to correlate the teachers Adversity Quotient with the adversity of the school principal.
- iv. Compare teachers Adversity Quotient and other education stakeholders in school such members of Board of Management, Parents, Sub-County and County Directors of Education.

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4. Gender

- a) Male []
- b) Female []
- c) Any Other []

5. Years you have serviced as a teacher

- a) 5 years and below []
- b) 6-10 []
- c) 11-15 []
- d) 16-20 []
- e) 21 and above []

6. Years you have served in the current school

- a) 5 and below []
- b) 6-10 []
- c) 11-15 []
- d) 16-20 []
- e) 21 and above []

7. What was your subject mean score/grade in K.C.S.E in 2015.....

8. What was your subject mean score/grade in K.C.S.E in 2016.....

Section Two: Adversity Response Profile

Picture the events narrated below then go ahead and circle a number you think best suits your answer. The scale runs from 1-5.

Key: interpretation

In questions (8-26) 1 Strongly disagree 2 Disagree, 3 Neutral, 4 Agree 5 completely agree.

Control dimension of AQ

9. You suffer a professional setback. You can completely influence this situation for better?

Strongly disagree 1, 2, 3, 4, 5 completely agree

Your students respond unfavourably to your lesson presentation.

10. You can influence this situation positively?

Strongly disagree 1, 2, 3, 4, 5 completely agree

11. Your personal and work obligations are out of balance. You can influence this situation favorably?

Strongly disagree 1, 2, 3, 4, 5 completely agree

12. You are not giving your students regular tests and feedbacks as required even though you know this can improve their academic results. You can influence this situation positively?

Strongly disagree 1, 2, 3, 4, 5 completely agree

13. You have registered a drop in mean score of your subject in K.C.S.E for the third time in a row. You influence this situation positively?

Strongly disagree 1, 2, 3, 4, 5 completely agree

Ownership dimension of AQ

14. You are overlooked for a promotion. You feel liable for improving the situation.

Completely agree 5, 4, 3, 2, 1 Strongly disagree

15. The principal/ BOM ignores your attempt to discuss with you, your students' low academic performance in KCSE. You feel liable for improving this situation?

Completely agree 5, 4, 3, 2, 1 Strongly disagree

16. You teaching subject is understaffed and your big workload is affecting effective content delivery. You feel liable for improving this situation.
Completely agree 5, 4, 3, 2, 1 Strongly disagree
17. Your school is not meeting its yearly set goals/targets in terms of K.C.S.E mean scores and grades expected by the BOM /students/ parents. You feel liable for improving this situation.
Completely agree 5, 4, 3, 2, 1 Strongly disagree
18. You have held several meetings with the school management on improving your students' academic performance but it all seems like a waste of time. You feel responsible for improving the situation.
Strongly disagree 1, 2, 3, 4, 5 completely agree

Reach dimension of AQ

19. You are criticized for the school drop in K.C.S.E means score even though you worked as hard as you could. The consequences of this situation will be limited to this situation
Strongly disagree 1, 2, 3, 4, 5 completely agree
20. The first time your subject records high students' performance, your schools' results are cancelled. The consequences of situation will be limited to this situation.
Strongly disagree 1, 2, 3, 4, 5 completely agree
21. You meet every bad luck on your way to the next job group promotion interview. The consequences of this situation will be limited to this situation.
Strongly disagree 1, 2, 3, 4, 5 completely agree
22. You miss an important appointment by you employer. The consequences of this situation will be limited to this situation.
Strongly disagree 1, 2, 3, 4, 5 completely agree
23. The quality assurance officer visits your class in the course of lesson delivery and at end of the lesson asks you for your teaching documents, unfortunately your have not prepared them. The consequences of this situation will be limited to this situation.
Strongly disagree 1, 2, 3, 4, 5 completely agree

Endurance dimension of AQ

24. You accidentally delete students' examination data entry for other teachers from the computer before it had been processed and the other teachers must repeat the exercise all over again. The consequences of this situation will quickly pass.

Strongly disagree 1, 2, 3, 4, 5 completely agree

25. You are unable to take a much needed leave because the principal feels that you hold the key to the subject's performance. The consequences of this situation will quickly pass.

Strongly disagree 1, 2, 3, 4, 5 completely agree

26. After an extensive search you cannot find your professional documents you require to take an interview to the next job group. The consequences for situation will quickly pass.

Strongly disagree 1, 2, 3, 4, 5 completely agree.

27. You lost your class notes which had taken you years to prepare them. The consequences of this situation will quickly pass.

Strongly disagree 1, 2, 3, 4, 5 completely agree

28. Your salary seems not to fit your budget not matter the government's efforts to increase teachers' salary. The consequences of this situation will quickly pass.

29. Strongly disagree 1, 2, 3, 4, 5 completely agree.

Scoring: control 8-12= total

Ownership 13-17= total

Reach 18-22= total

Endurance 23-27= total

ARP SCORE= (C+O+R+E)*2 =

APPENDIX II: APPROVAL LETTER FROM GRADUATE SCHOOL



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

OUR REF: E83/CE/11190/08

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Date: 29th November, 2017

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

Dear Sir/Madam,

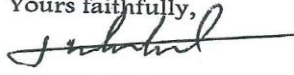
RE: RESEARCH AUTHORIZATION FOR MS. MARYCASTA MWIVANDA REG. NO. E83/CE/11190/08

I write to introduce Ms. Mwivanda who is a Postgraduate Student of this University. She is registered for Ph.D. Degree programme in the Department of Educational Management Policy & Curriculum Studies in the School of Education.

Ms. Mwivanda intends to conduct research for Ph.D. Thesis entitled, entitled "Influence of Teachers' Adversity Quotient on Students' Academic Performance in Public Secondary Schools in Kiambu and Nairobi Counties, Kenya"

Any assistance given will be highly appreciated.

Yours faithfully,

for 
MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

RM/cao

Committed to Creativity, Excellence & Self-Reliance

**APPENDIX III: RESEARCH AUTHORIZATION LETTER FROM
MINISTRY OF EDUCATION, NAIROBI**



**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone: 020 400 7000,
0713 788787,0735404245
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. **NACOSTI/P/18/52637/20715**

Date: **22nd January, 2018**

Mary Casta Malinda Mwivanda
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Influence of teachers’ adversity quotient on students’ academic performance in public secondary schools in Kiambu and Nairobi Counties, Kenya”* I am pleased to inform you that you have been authorized to undertake research in **Kiambu and Nairobi Counties** for the period ending **8th January, 2019.**

You are advised to report to **the County Commissioners and the County Directors of Education, Kiambu and Nairobi Counties** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

G P Kalerwa

**GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO**

COUNTY DIRECTOR OF EDUCATION
KIAMBU COUNTY
P.O. Box 2300-00900
KIAMBU

Copy to:

The County Commissioner
Kiambu County.

The County Director of Education
Kiambu County.

**APPENDIX IV: RESEARCH AUTHORIZATION LETTER FROM
MINISTRY OF EDUCATION, KIAMBU**



**Republic of Kenya
MINISTRY OF EDUCATION
STATE DEPARTMENT OF BASIC EDUCATION**

Telegrams: "SCHOOLING", Nairobi
Telephone: Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

**REGIONAL COORDINATOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI**

When replying please quote

Ref: **RCE/NRB/GEN/1 VOL. I**

DATE: **22nd January 2018**

Mary Casta Malinda Mwivanda
Kenyatta University
P O Box 43844-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on "**Influence of teachers' adversity quotient on students' academic performance in public secondary schools**".

This office has no objection and authority is hereby granted for a period ending **8th January, 2019** as indicated in the request letter.

Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

A handwritten signature in black ink over a circular official stamp. The stamp is blue and contains the text 'REGIONAL COORDINATOR OF EDUCATION' around the perimeter and 'NAIROBI' at the bottom. In the center of the stamp, the date '22 JAN 2018' is stamped in red.

**MAINA NGURU
FOR: REGIONAL COORDINATOR OF EDUCATION
NAIROBI**

c.c

Director General/CEO
Nation Commission for Science, Technology and Innovation
NAIROBI

APPENDIX V: AUTHORIZATION LETTER FROM NACOSTI



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: 020 400 7000,
0713 788787,0735404245
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. **NACOSTI/P/18/52637/20715**

Date: **22nd January, 2018**

Mary Casta Malinda Mwivanda
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Influence of teachers’ adversity quotient on students’ academic performance in public secondary schools in Kiambu and Nairobi Counties, Kenya”* I am pleased to inform you that you have been authorized to undertake research in **Kiambu and Nairobi Counties** for the period ending **8th January, 2019**.

You are advised to report to **the County Commissioners and the County Directors of Education, Kiambu and Nairobi Counties** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GP Kalerwa

**GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner
Kiambu County.

The County Director of Education
Kiambu County.

National Commission for Science, Technology and Innovation is ISO9001:2008 Certified

APPENDIX VI: RESEARCH PERMIT FROM NACOSTI


THIS IS TO CERTIFY THAT:
MISS. MARY CASTA MALINDA MWIVANDA
of KENYATTA UNIVERSITY, 0-1000 THIKA, has been permitted to conduct research in Kiambu County

on the topic: INFLUENCE OF TEACHERS' ADVERSITY QUOTIENT STUDENTS' ACADEMIC PERFORMANCE IN PUBLIC SECONDARY SCHOOLS IN KIAMBU AND NAIROBI COUNTIES, KENYA

for the period ending:
8th January, 2019

.....
Applicant's Signature


Permit No : NACOSTI/P/18/52637/20715
Date Of Issue : 22nd January, 2018
Fee Received :Ksh 2000




J.P. Kalewa
Director General
National Commission for Science, Technology & Innovation

CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.


REPUBLIC OF KENYA


National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No.A 17190
CONDITIONS: see back page