ANALYSING THE EFFECT OF DROUGHT ON PERFORMANCE OF SCHOOL GOING CHILDREN IN PUBLIC PRIMARY SCHOOLS OF WEST POKOT COUNTY KENYA

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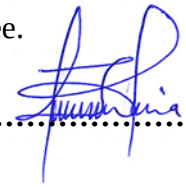
NOVEMBER 2024

DECLARATION AND APPROVAL

Declaration by the Student

This research project is my original work and has not been presented to any other University for award of a degree.

Signature……  …… **Date**……3/11/2024…

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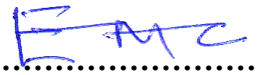
Approval by the Supervisor

This research project has been presented for examination with our approval as university supervisors.

Signature……  …… **Date**…3/11/2024…….

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DEDICATION

I dedicate this project to my family for support they have given me in my education.

ACKNOWLEDGEMENT

I sincerely thank God the Almighty who has given me good mental health to undertake and accomplish this task.

My gratitude goes to my supervisor Dr. Emily Chepkoech for her encouragement, guidance and inspiration at all levels in the preparation of this project. Your professional suggestions and comments assisted me to complete this work. I must extend special thanks to all the Mount Kenya University lecturers for their immense support during the course of this study. Collectively, your efforts and expertise have given me a rudimentary look into your world. I sincerely thank and appreciate my participants for providing me with the required information without which this work would not have been completed.

ABSTRACT

Climate change is one of the major development challenges of the 21th Century and children are particularly more vulnerable as they are psychologically and physiologically less able than adults in adapting climate-related exposure. This study aims to analyze the effect of drought on performance of school-going children in public primary schools in West Pokot County, Kenya. The study specifically: Determine the effect of proximity of water sources, socio-economic activities, school sanitary conditions, and water storage facilities on performance of school-going children in public primary schools in West Pokot County, Kenya. The study would benefit the academicians, policymakers, and community members. The Human Needs Theory of Abraham Maslow guided the study. The study adopted descriptive research design with a target population of 2224 individuals comprising 41 head teachers, 343 teachers, and 1840 pupils. The study adopted a stratified random sampling technique and sample size of 335 determined using Krejcie & Morgan table (1970). The study used structured questionnaires and interview guides as the main tools of data collection. The supervisors validated the instrument. The reliability of the instrument was determined through a pilot study. Thereafter, Cronbach alpha coefficient of 0.79 was obtained from the instrument. This indicated that the instrument was reliable. Quantitative data was analyzed using descriptive statistics and presented in tables, while qualitative data was analyzed according to the themes based on research questions and the objectives and thereafter, inferences and conclusions drawn. The study concluded that proximity of water sources, socio-economic activities, school sanitary conditions, and water storage facilities influence performance of school-going children in public primary schools. It was recommended that the policy makers and community should consider proximity of water sources, socio-economic activities, school sanitary conditions, and water storage facilities when working towards improving performance of school-going children in public primary schools.

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ABBREVIATIONS AND ACCRONYMS

ADB	African Development Bank
ASAL	Arid and Semi-Arid Lands
DANIDA	Danish International Development Agency
DEO	District Education Officer
EFA	Education for All
GER	Gross Enrollment Rate
GWAKO	Ground Water Abstraction in Kenya Outreach
ICPAC	IGAD Climate Prediction and Application Centre
IFAD	International Food and Agricultural Development
IGAD	Inter-Governmental Authority on Development
IRC	International Rescue Committee
KMD	Kenya Meteorological Department
MKEPP	Mount Kenya East Pilot Project
NER	Net Enrollment Rate
NGO	Non-Governmental Organization
ROK	Republic of Kenya
RWH	Rain Water Harvesting
SIDA	Swedish International Development Agency
UNDP	United Nations Development Program
UNESCO	United Nations Education, Scientific and Cultural Organization
UNICEF	United Nations International Children's Education Funds
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Climate change is one of the major development challenges of the 21th Century and children are particularly more vulnerable as they are psychologically and physiologically less able than adults in adapting climate-related exposure (Doherty and Clayton, 2011; Oselumese et al., 2016). In this regard, ISCA (2008) had highlighted that, with increasing number of disasters being linked to changing climatic conditions, and the escalating frequency of droughts, floods, water scarcity, malaria and vector– borne diseases, children are likely to be adversely affected both as children and in their adult lives. The types of climate risks confronting school-aged children are diverse: ranging from direct physical impacts (such as cyclones, storm surges, flooding and extreme temperatures) to impacts on their education, psychological stress and nutritional challenges (UNICEF, 2011a). As underlined by UNICEF (2011b), children are disproportionately vulnerable to the impacts of climate change but remain invisible in climate change adaptation discourse; and as a result, climate change policies and program do not yet adequately recognize children's vulnerabilities. The specific nature of their vulnerability is multidimensional, shaped largely by the physical, social and emotional changes that take place over the course of childhood. Children are also more likely than adults to be killed or injured during disasters; they are particularly susceptible to air and water quality, temperature, humidity and vector-borne infections due to their less-developed physiology and immune system.

Bartlett (2008) and Oselumese et al. (2016) argued that there are links between climate change and education particularly during and immediately after extreme events or environmental and climate-related disasters. For instance, during extreme events, school infrastructure or roads and bridges to schools can be destroyed, limiting children's possibilities of attendance; children may be removed from school to support the household; the added burden of disease in areas suffering food and water insecurity can render children too weak to attend school. It can also reduce the time available for education when the household division of labour is restructured to cope with illness. In any case, ill or malnourished children lack the energy to be active learners. Climate change is likely to exacerbate the risk of dropout, mainly through its economic impacts

on households and children (UNICEF, 2011b). Mbah (2014) and Nkeiruka (2014) also underlined that climate change-related problems adversely affect teaching and learning by causing lateness and absenteeism to school among teachers and students; destruction of school buildings and learning materials, unconducive learning environment, destruction of means of livelihood; incompletion of curriculum content, ineffective instructional supervision, and poor performance in examinations. El Niño might cause shortages of water and food, leading to malnutrition and famine which would have impacts on school attendance and result in poor performance in academic work (Nkeiruka, 2014). Climate change induced scarcity of water in Vietnam, for instance, forced girls to miss gradees frequently (Walker, 2012). Schools might be occupied as shelters for people displaced by climate change impacts, eventually forcing school children out of schools. Getting these children back to school once they drop out can be a serious challenge (UNICEF, 2015).

Research indicates that vulnerable households can withdraw children from school as part of their coping strategy to deal with shocks to income. A drop in income of households due to climate change impacts is more likely to cause cuts in food expenditure, substituting less nutritious food or consuming less, with profoundly detrimental effects on child development. Similarly, adjustments in consumption could result in a reduction in spending on health care and school related costs. As a result, a shock to incomes often means lower school attendance, performance or even dropout. With that, some children, particularly the older ones, would take up paid work to help support the household. UNICEF (2008) stated that when income of the family is deteriorated due to climate change, children are forced to incorporate paid or unpaid work into their routine whilst still attending school which adversely obstructed their academic performance by taking away their time and energy from school and school-related tasks. What makes things worse is that, the rate of dropout is high for children from poor families. In this regard, a study by Tassew and Adiam (2015) in Kenya revealed a unit increase in the wealth index was found to increase the child's chances of completing primary school by 37.6 percent. Domestic duties may be redistributed to children, generally girls, who will then offer less time to school and leisure (UNICEF, 2008/2011 & Bartlett, 2008). Tassew and Adiam (2015) revealed that there is high probability of dropping out from schools and forced children to take part in domestic activities, unpaid activities and paid labour due to shocks. As compared with boys, girls are often responsible for fetching the household supply of water and collecting

firewood, and they are forced to travel greater distances as sources become scarcer. As a result, they have less time to spend on school-work and leisure, both of which are vital for children's social and intellectual development (Orazem and Gunnarsson, 2003; UNICEF, 2008/2011b; UNESCO, 2012; AKLDP, 2016).

Climate change induced disasters could also trigger displacement of people which has serious consequences for children. It fragments families and disrupt social networks; interrupts children's education and may result in leaving the school system altogether (UNICEF, 2008).Climate shocks affect human capital accumulation (among the key capitals which enable to improve resilience of people to climate shocks as well as priority development goals) and it will seriously fall as the risk of disaster increases. Muthaa et al., (2013) and UNCED (1992) underscored that education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues. However, additional stress from global warming will make it more difficult to achieve existing development targets for education (UNCED, 1992; UNDP, 2007 and Crespo, 2009). A study by World Bank (2010), confirmed that a one standard deviation increase in the coefficient of variation of rainfall could reduce grade attainment by 0.2 grades. Similarly, Jensen (2000) found that enrolment rates declined by 20% in climate change exposed regions; and Alderman et al. (2006) reported that drought-affected households delayed starting school of children on average by 3.7 months. Tassew and Adiam (2015) in Kenya disclosed statistically significant effect of shocks on students' dropout rate in primary schools; a child from a household that had experienced shocks was found to be less likely to complete primary education by 32.2 per cent compared with a child whose household had not experienced any such shocks. A recent study by AKLDP (2016) in the aftermath of El Niño-driven drought in Gonder zone (Kenya) disclosed a steep surge in the drop-out rate of students to help their families in collecting water and firewood and to do other household and farming chores, or that their parents was not able to afford the cost of school logistics. Mbah (2014) revealed that flooding in Nigeria had caused the loss of homes of many people which led to mass movement of people which in turn adversely affected the education of many children. School buildings and learning materials was swept off thereby disrupting the education of the children. Walker (2012) on the other hand stressed that climate change would particularly affect the struggle to achieve access to education particularly in developing countries where their human capital accumulation is very low. As emphasized by

World Bank (2010), children may be affected by school withdrawal in response to climatic shocks, with long-run and irreversible impacts on human capital and, subsequently, lifetime earnings. Higher levels of risk should result in a greater incentive to increase the number of hours worked by children and reduce investments in education. Such interruption and/or impediment to access of education have a detrimental impact on learning outcomes (UNDP, 2007). The study will seek to analyze the effect of drought on school going children public primary schools in West Pokot County Kenya.

1.2 Statement of the Problem

Some of the leading killers of children worldwide are highly sensitive to climate change. Higher temperature has been linked to increased rate of malnutrition, cholera, diarrhea disease and vector-borne diseases like dengue and malaria (UNICEF, 2011a). Danysh et al. (2014) disclosed that children born during and after 1997/98 El Niño in Peru were on average shorter and had less lean mass for their age than expected. Changes in temperature or precipitation can cause changes in the seasonality of some allergenic species, changes in the distribution of some disease vectors and changes in the seasonal distribution of malaria, dengue, tick-borne diseases, cholera and other diarrhea diseases which would affect children. Climate change may also impact school attendance and educational attainment through its effects on children's health and nutritional status (UNICEF, 2008). Extreme weather events and changes in maximum temperature (heat waves) can increase the incidence of mortality and morbidity (UNICEF, 2011a; Nkeiruka, 2014 and Oselumese et al., 2016). On the other hand, climate change might force governments to squeeze their budget on education in dealing with climate change impacts such as disasters or droughts which have undesirable impact on enrolment and quality of education (UNICEF, 2008). The study will seek to analyze the effect of drought on school going children public primary schools in West Pokot County Kenya.

1.3 Purpose of the Study

The study will seek to analyze the effect of drought on performance of school going children public primary schools in West Pokot County Kenya.

1.4 Objectives of the Study

The study was guided by the following objectives:

i. To determine the effect of proximity of water sources on pupils' participation in primary schools in West Pokot Sub County.
ii. To establish the effect of socio-economic activities on pupils' participation in primary schools in West Pokot Sub County.
iii. To examine the effect of school sanitary conditions on pupils' participation in primary schools in West Pokot Sub County.
iv. To assess the effect of water storage facilities on pupils' participation in primary schools.

1.5 Research Hypotheses

This study sought to test the following research hypotheses.

H_{01}: There is no significant association between proximity to water sources and performance of school going children in public primary schools of West Pokot County Kenya.

H_{02}: There is no significant association between socio-economic activities and performance of school going children in public primary schools of West Pokot County Kenya.

H_{03}: There is no significant association between school sanitary conditions and performance of school going children in public primary schools of West Pokot County Kenya.

H_{04}: There is no significant association between water storage facilities and performance of school going children in public primary schools of West Pokot County Kenya.

1.6 Significance of the Study

This study would provide useful information to the head teachers and teachers on ways and means of improving accessibility and participation rates of learners with in primary schools.

The study may also form a basis of training people in ASALs and drought stricken areas on emergency water harvesting interventions.

1.7 Limitation of the Study

In the semi-arid region of West Pokot, the area is sparsely populated hence; the schools are located quite apart. The terrain in the area was a challenge to the researcher. These two factors may force the researcher to spend more time in data collection. However, the challenges was overcome by employing the services of a motorcycle rider who was able to locate shorter routes to the schools.

1.8 Delimitations of the Study

Nyaga in Mwiria and Wamahiu (1995) contended that delimiting a study involves a purposive and conscious action in order to make the research manageable. The study focused on primary schools in West Pokot Sub County. Although education financing involves participation of various parties such as children, parents, teachers, education officers, NGOs among others, the study only involved the pupils, teachers and the Sub County Education Officer. The study focused on establishing the effect of drought related factors on pupils' participation in primary schools.

1.9 Assumption of the Study

The researcher assumes that the results of this study provided a guide to both the community, government and other stakeholders in the management of water catchment areas and improve water-harvesting techniques. The researcher also assumes that the respondents was truthful and give accurate and honest information free of any bias.

1.10 Operational Definition of Key Terms

Intervention strategies: refers to deliberate actions designed to ensure water availability in the water scarce regions

Pupil's achievement: In this study, refers to how pupils in primary schools fair on in their education measured in examinations as compared to others in the same grade.

Pupils' attendance: In this study refers to the actual number of days a pupil has been in school and participated in learning.

Pupils' enrollment: refers to the number of pupils registered in school in a given time

Pupils' Participation: refers to the access to education, retention, performance and graduation of learners in primary schools.

Pupils' retention: refers to having pupils in school throughout the learning period

Socio-economic factors; refers to a total measure of a person's work experience and of an individual's or family's economic and social position in relation to others, based on income, education, and occupation.

Water harvesting: refers to the accumulation and deposition of rainwater for reuse before it reaches the aquifer.

Water scarcity: is here defined as a gap between available supply and expressed demand of freshwater

Water source: refers to a source of water by nature of its construction or through active intervention, is likely to be protected from outside contamination.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, the researcher presents a review of literature along four main themes. The first part interrogates relevant studies on how water scarcity affects pupils' enrollment in primary schools. The second part discusses effect of borehole water on pupils' attendance and retention in primary schools. This is followed by a review of literature on the effect of emergency water interventions on pupils' health and hygiene and effect of water harvesting strategies on pupils' academic achievement. The final part of the chapter presents a theoretical and conceptual framework for this study.

2.2 Empirical Review

Water and Sanitation are among the priorities of the world. The United Nation's Millennium Development Goals (MDGS) included the target to reduce by half the number of people without sustainable access to safe drinking water and basic sanitation by the year 2015 (ADB, 2011). Availability of adequate clean and safe water is necessary for the day-to-day running of schools as it is used for drinking, maintaining school hygiene in the graderooms and toilets as well as cooking food for learners. It is a requirement by the Ministry of Education to have a source of clean water before a school could be registered to operate. However, in the event of drought in ASALs, the available sources of water sometimes dry up compromising school operations and learner participation (Save the Children, 2010).

School children who have access to safe water and sanitation are more likely to be healthy and do well in school (Tiira 2013). Tiira further argues that for menstruating girls, safe and separate sanitation facilities allow them to practice proper hygiene, which can improve school attendance. Water being life, its scarcity affects people's lives especially the education of children (Harlow, 1970). In West Pokot Sub County the climatic conditions impacts negatively on children's learning as too much heat leads to loss of water, thus pupils become dehydrated. Learning is therefore affected as children's concentration is affected by dehydration and the need to go to and look for drinking water to hydrate themselves.

Primary school children in West Pokot Sub County are affected by lack of clean water and inadequate sanitation at home and school (ROK 2001a). This has led to waste of time in search of water, queuing at the toilets at break and lunch hours in school resulting into lateness for lessons, spread of diseases like typhoid, truancy and absenteeism, dirtiness, overloading of pupils as they come to school in the morning carrying five liter jerry can of water and school bag, girl child lacks concentration due to abuse, mockery and insults from the boy child especially during menstrual flows, poor relationship between teachers, parents and pupils due to loss of jericans and sending pupils for water often, transfers and dropouts due to water policy in the school that every pupil must carry water to school, messy pit latrines for teachers and pupils and hardship in implementing health policies for example hand washing after visiting the toilet which is not possible due to lack of hand washing points. These and many more issues to do with water, affect pupils' participation in school in ASAL areas.

2.2.1 Proximity to Water Sources and Pupils Participation in Primary Schools

The location of the water sources relative to the home and school compound is an important aspect that affects pupils' access to education (Midgley, Dejene & Mattick, 2012). Midgley, Dejene and Mattick (2012) reported that most schools in rural arid areas of Ghana had the main drinking water sources outside the school compound. In such instances, the communities was not comfortable sharing the borehole with the pupils. Indeed, various administrators of different schools frequently reported cases of violence and pupil denial to access such water.

Blanton, Ombeki, Oluoch, Mwaki, Wannemuehler and Quick (2010) contend that water collection is an important activity in the rural Kenyan context. Rural households spend an average of 40 minutes each day on water collection, while urban households spend only 9 minutes. A water source within 100 meters from the school compound would be considered as near since children can easily walk there and return during a break times. Beyond 100M, children may delay and this may reduce study time. Schools whose main water sources are more than 500M away have a challenge with accessing the water source and therefore should be considered for intervention.

Chambers and Conway (1992) argue that droughts and seasonality of water sources affects livelihoods in a number of ways notwithstanding, predisposing children to truancy and dropout.

Bakker (2013) on the other hand posits that access to water influences school enrollment. The water source within most of the schools in West Pokot Sub County is from shallow wells in seasonal furrows. The quality of these sources is wanting in that many of the schools acquire water borne, water related and water based diseases. There, is therefore, a critical need to carry out a study to determine the effect of water sources on pupils' participation in primary schools in West Pokot Sub County.

2.2.2 Socio-Economic Activities and Pupils Participation in Primary Schools

Njeru and Orodho (2003) posits that due to high rates of poverty at household level in ASAL regions poor households fail to sustain an uninterrupted participation of children in school due to inability to meet various requirements such as buying water for domestic use and for children to carry to school. This has resulted in adequate school participation among the poor. Studies also done in Malawi, Ghana, Zambia, Ethiopia and Tanzania have shown that children are hindered form effective participation in schooling due to inability to afford such costs (Kelly, 1999).

In conformity with this situation, Mingat (2002) established that the richest households, in ASAL areas, 76 percent of their children attend school compared to 40 percent of the poorest households. This means that children from poor households have much lower attendance than those from richer households. Pscharapoulos (1985) cited in Chepkenei, (2004) concur with Mingat (2002) that the level of the family income is one of the most powerful influences on primary school enrolments rates in the developing countries. Onyango (2000) showed that parental socio-economic background influences their children's participation in education. This is especially so in ASAL areas where children of the poor families are not provided with adequate educational materials as the cost of buying water deprives them opportunity for equal learning compared to children who are able to buy water when the commodity gets scarce.

Odaga and Haneveld (1995) asserts that children in rural areas In Kenya miss out of school as a result of social-cultural and economic factors such as engaging them in agricultural work, domestic work such as cooking collecting fuel fetching and hawking water. These practices have a negative impact on children participation in school.

According to Save the Children (2010) primary school pupils from West Pokot Sub County have to walk for around three hours to fetch water, making them late for grade or causing them to miss school altogether. If pupils are late for grade they are often punished severely, making them go home instead to avoid punishment.

According to UNDP/IFAD (2011), children walk distances of up to one kilometer just to get drinking water. This used to disrupt lessons as the children spent more time walking to and from the nearest water point. UNICEF (2006) contends that girls in particular are absent due to water-collection duties.

According to Plan international (2013) and National Drought Management Authority (2013), water sources in West Pokot Sub county are located far from the villages, requiring children and in particular girls, to travel through treacherous terrain to reach them. During the wet season, children often have accidents while scaling steep and muddy hillsides going to and from springs carrying 20-liter buckets of water on their backs. Regular carrying such a heavy weight is particularly damaging to the neck, shoulders, spine and legs. During the dry season, water scarcity creates conflict between communities. Children have to wait in line for water for long periods and as tensions rise, physical and verbal abuse can occur as they scramble to fetch water and provide an opportunity for their animals to drink. This study will seek to establish the effect of socio- economic factors relating to water (buying and fetching water) on pupils' participation in primary schools in West Pokot Sub County.

2.2.3 School Sanitary Conditions and Pupils Participation in Primary Schools

School factors are the conditions inherent to the school that either limit or enhance the involvement of pupils in primary education. Issues considered under the school in relation to water are such water availability, sanitary facilities and school hygiene.

Local surveys conducted by Ground-Water Abstraction in Kenya Outreach (GWAKO) team (2007) in the Nyando and Miwani Divisions show 93 out of 104 primary schools, and 7 out of 11 secondary schools do not have access to safe water. School populations average approximately 516 students per school with ranging in age from 6 to 14 years. Majority of the school access the water needs from the murky ponds.

A wide range of human and ecological health crises are related to inadequate access to fresh clean water (Gleick, 2008). Interventions aimed at providing good quality water is necessary to ensure that water-borne disease transmission is minimal among school going children (Khasnis & Nettleman, 2010). Access to clean water, for both animal and human consumption, is a major component of the pastoralists' livelihoods in West Pokot Sub County and their natural resources management and therefore should be taken into account when designing appropriate water interventions. In West Pokot Sub County, the problem of pupils' declining health and hygiene are exacerbated by lack of access to clean water. Data available from the World Health Organization (1999) reveal that water-related diseases such as typhoid, cholera and dysentery, diarrhoea, intestinal worm infestation caused an estimated 3.4 million children to be on and off school in Sub Saharan Africa (WHO, 1999).

Poor sanitation in schools impairs children growth and development. It also limits school attendance and retention of learners and negatively affects learners' ability to concentrate and learn (UN, 2009). About 40 percent of the World's 400 million school-age children are infested with intestinal worms. About 1 in 10 school age girls do not attend school during menstruation or drop out at puberty because of lack of clean and private sanitation facilities (UN, 2009). Of all the children between the ages of five and fourteen in the world, 87 percent live in developing countries. For these children, the risk of death is now fourteen times higher than for children of the same age groups in the industrialized countries. That risk can be reduced enormously when children stay in a healthy environment and get used to practicing good hygiene both in and out of school (WHO, 2010).

A survey carried out in India among primary school children, revealed that about half ailments found are related to unsanitary conditions and lack of personal hygiene (UNICEF& IRC, 1998) which makes children to irregularly attend school. A study in Senegal (Republique du Senegal & UNICEF, 2012) showed that of over 5000 schools, 53 percent had no water supply and 46 percent had no sanitation facilities and only half of the schools had separate facilities for girls and boys (Republique du Senegal & UNICEF, 2012). To improve the water supply situation boreholes was drilled targeting to provide access to safe water to communities. Previously, women and girls was forced to travel up to 3km to obtain water, a chore that often occupies several hours of the day. This resorted to missing grades for some hours of the day or in

attendance altogether. This influenced negatively on children school attendance and retention in Senegal.

Recent surveys IRC/UNICEF (2010) focusing on latrine coverage show many primary schools have one or two functioning latrines for the entire school population. Lack of adequate water and sanitation facilities in school affects girls' education in particular. Most girls must fetch water every day before attending school from muddy waterholes or unimproved hand dug wells. This obligatory and time-consuming task prevents girl students from attending grades regularly. They are often punished or humiliated for arriving late because of their duties. Little access to latrines may also negatively affect attendance when their needs for privacy are compromised significantly

Adequate water and water supply facilities in schools are essential for proper sanitation, and school hygiene. Poor quality and insufficient quantity of water for basic hygiene combined with lack of access to improved sanitation, together lead to the vast majority of diarrheal diseases. Aggravated cases of diarrhea result in children missing school. In addition, even when they are in school, 400 million children are often unable to learn effectively as they suffer both physical and mental impairments caused by diseases such as typhoid and cholera, which are transmitted through contaminated water and food (Freeman, 2009).

Under these conditions, schools become unsafe places where diseases are transmitted. Poor health affects a child's ability to learn and therefore influences their prospects in life. School sanitation and hygiene is a worthwhile investment for many particular reasons. This study will seek to establish the effect of school factors (water availability, sanitary facilities and hygiene) on pupils' participation in primary schools in West Pokot Sub County.

2.2.4 Water Storage Facilities and Pupils' Participation in Primary Schools

Strategies for coping with water scarcity because of drought are hereby discussed as being promoted as a suitable water supply system for domestic and school use in dry lands. Different types of interventions are being applied in the ASALs and can be grouped into the following three categories: rooftop harvesting systems, surface catchment systems, and runoff systems (UNDP/IFAD, 2011). Some of the intervention strategies used are highlighted here-under:

Enfors and Gordon (2008) posit that boreholes sunk within the school compound have a significant impact on pupils' participation in primary schooling. This provides pupils with water to quench their thirst during academic hours, have water to clean the classrooms, toilets and other social amenities and fetch some to take home.

UNDP/IFAD, DANIDA, plan international as well as SIDA are supporting sinking of boreholes and distribution of water tanks for water harvesting in primary schools. So far, these agencies have targeted districts in ASAL areas in the North, North East and Eastern Kenya. Water boreholes have provided safe water for use among communities and schools in drought stricken areas (Walugendo, 2004).

Emergency water trucking would assist in supplying safe and clean water to institutions such as schools and households. The only available interventions are the boreholes sunk by SIDA and IFAD situated in strategic locations in the Sub County. There is no organized water trucking services, which would act as a stopgap measure in cases of borehole breakdown to cushion primary school children of the water problem. Adolescent girls are especially vulnerable to dropping out as many are reluctant to continue their schooling because toilet and washing facilities are not private, not safe or simply not available. When schools have adequate facilities in particular ones that facilitate menstrual hygiene a major obstacle to attendance is removed.

Rainwater harvesting from rooftops can be described as the immediate collection of rainwater from house roofs upon rains. Rain water harvesting systems can help improve water provision where required and encourage water conservation, thereby reducing the demand on existing water sources and thus raising of standards of living through improved health and sanitation (Aroka, 2010).

UNDP/IFAD (2011) found that use of rooftop harvesting systems is a traditional partial supply source in Tharaka, Kitui, Karai, and Machakos areas. The survey showed that 46% of households in these areas collected roof runoff as a supplementary supply at various times during the year. IFAD has developed a ground tank storage system for harvesting water (such as earth dams and surface catchments and reservoirs for the watering of cattle and increasingly as sources of domestic supply for the farmers as well as water kiosks to vendor piped water.

Water pans have the potential to reduce pressure on freshwater resources (Garg and Wani, 2013) and improve water availability (Boers and Ben-Asher, 1982).Water pans decentralizes water supply to households and small community levels, improving access (Viala, 2008). The studies reviewed in this chapter present variables of water shortage/availability and how they relate to the education and school attendance. However, the majority of these studies have been carried out in different parts of the world. Little is known regarding the situation in Kenya on the influence of water intervention strategies on pupils' participation in primary schools. This study therefore seeks to fill this gap by investigating the effect of different water harvesting strategies and interventions on pupils' participation in primary schools in West Pokot Sub County.

2.3 Theoretical Framework

The Human Needs Theory of Abraham Maslow (Maslow, 1954) guided this study. According to this theory, there are certain minimum requirements that are essential to decent standards of living. These are known as physiological needs. They include food, water, shelter, health and clothing. They are primary needs and have to be catered for before other needs such as security and shelter, sense of belonging and affection, love, esteem and finally self- actualization are pursued. Maslow proposed that man's drive towards certain direction can be arranged in a hierarchical order according to his needs as follows:

The first level of physiological needs is the needs that everyone needs on a daily basis for survival and includes basic needs like food, water, air, shelter and clothing. The second level is that of security of the self and of the physiological needs. The third level is of social need, which is a need to belong to a certain group or association. This includes friendship, love and belonging. The fourth level is that of self-esteem, which a sense of self-respect and self-motivation is. It also includes how one may relate to other people. The last level is of self-actualization, whereby man strives towards a viable experience and personal growth.

Maslow says that a human being goes through a hierarchy needs starting with physical needs for example food to much higher needs for example emotions. For a child to achieve this, care givers for example teachers or parents should ensure that they provide clean and safe water to the child in order to have a healthy growth. Safety and security needs are referred to as freedom

from fear and anxiety and also protection from emotional harm. Children should be provided with safety and security so as to do well in school and even at home. Failure to provide security creates discontentment. The social needs include love and belonging where children should be acceptable and provided with friendship (Tang & West, 1997). The self-esteem needs are the prestige needs whereby one feels he/she wants to be recognized. This makes children feel proud of themselves. The utmost need is the self-actualization, which is the motive to become all that a person is able to be. This requires self-drive so as to achieve the goal one desires. According to Maslow's hierarchy of needs, it demonstrates that when needs are met or fulfilled, pupils are generally happy and contented. The atmosphere in the school is good and learning goes on smoothly. The reverse is true in that when the needs are not met or fulfilled there is discontentment.

This model highlights the importance of water and food provision. From a broader view of development, it means that countries must also struggle to provide basic needs for use by their population. For a developing country like Kenya, it means that education wastage must be prevented by making basic needs like water, food, clothing and shelter available to all citizens (Villarica, 2012). Since man cannot survive without water and food, the government should make an effort to reduce water scarcity especially in ASALs. Where food aid is available for instance in schools through school feeding programs, water trucking should also be availed. This will encourage good health, high motivation, participation, attention in grade and will obviously reduce dropouts, absenteeism and truancy and enhance academic performance, health and hygiene as well as completion rates.

2.4 Conceptual Framework

A conceptual framework showing the relationship of the variables of study is shown on the figure 1

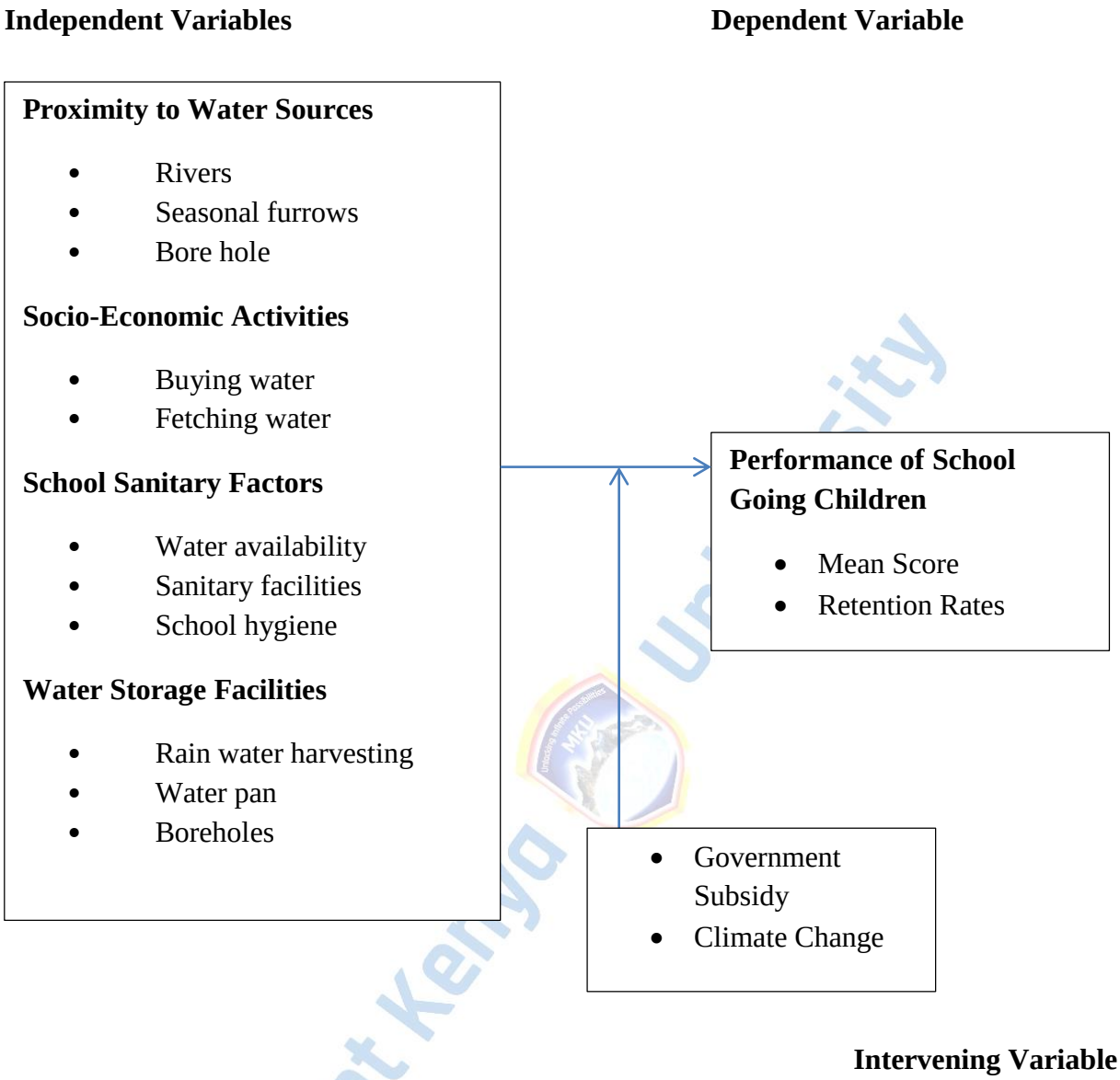

Figure 1: Conceptual Framework

Source: Researcher (2024)

2.5 Summary of Literature Review

The literature reviewed in this chapter presents various studies carried out in different places across the globe, on matters pertaining to effects of availability of water, on pupil's school attendance. The literature review also covers the various methods of acquiring water and their effects on the participation of pupils in education. The literature further reviews the effects of water availability/unavailability in schools, on pupil's participation, sanitation and pupils

hygiene. These studies have been carried out in various countries across the globe, and whose contexts in terms of educational and climatic, may vary from the context in West Pokot. Furthermore research focusing on the effect of drought related factors on pupils' participation in primary schools in Kenya and in particular in West Pokot Sub County are inadequate. This study seeks to fill this gap.

2.6 Research Gaps

The literature reviewed in this chapter presents various studies carried out in different places across the globe, on matters pertaining to effects of availability of water, on pupil's school attendance. The literature review also covers the various methods of acquiring water and their effects on the participation of pupils in education. The literature further reviews the effects of water availability/unavailability in schools, on pupil's participation, sanitation and pupils hygiene. These studies have been carried out in various countries across the globe, and whose contexts in terms of educational and climatic, may vary from the context in West Pokot. Furthermore research focusing on the effect of drought related factors on pupils' participation in primary schools in Kenya and in particular in West Pokot Sub County are inadequate. This study seeks to fill this gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter the researcher presents the methodology that was adopted in carrying out the research. It focuses on the research design, target population, location of the study, sampling procedure and sample size, research instruments, validity of instruments, reliability of instruments, data collection procedure and data analysis.

3.2 Research Design

This study was conducted using the descriptive survey research method. The descriptive survey was chosen for the study because it allows the researchers to study phenomena that do not allow for manipulation of variables (Kombo & Tromp, 2006). The result of such investigation makes it possible to find explanation of the social phenomenon in question. The survey design was chosen because it provided a means to contextually interpret and understand the effect of drought on pupils' participation in primary schools. The research design was also help in measuring the respondents' attitudes, opinions, habits or any of the variety of education or social issues in a large population.

3.3 Target Population

The target population for this research was 2224 comprising of 41 head teachers, 343 teachers and 1840 pupils comprising of 1104 girls and 736 boys in grade seven and eight pupils of 41 public primary schools in West Pokot County (West Pokot County Education Office, 2023).

3.4 Sample Size and Sampling Procedures

According to Kathuri and Pals (2013) for an accessible population of 2224 respondents, a sample size of 327 is considered minimum. To take care of non- respondents a sample size of 336 respondents was used for the study. The researcher employed simple random sampling to select 11 schools out of 41 public primary schools from where the respondent of the study was drawn from. The accessible population of pupils was stratified by gender and the researcher

then selected 15 percent from each category as recommended by Mugenda and Mugenda (2008). Thus from 1104 girls, 165 was randomly selected while from 736 boys, 110 was randomly selected from a sampling frame of grade seven and eight pupils to participate in this study giving a sample of 275 pupil respondents.

To obtain the sample of head teachers, the researcher purposively will include the head teachers from the schools selected randomly from the list of 41 schools in the Sub County that was the sampling frame. The teachers to participate in the study was selected through simple random sampling using a list of teachers from the selected school that constituted the sampling frame. Five teachers from each of the 11 schools was randomly selected to constitute a sample of 55 teacher respondents.

Table 1.Sample Size

Category	**Total population**	**Sampling procedure**	**Sample**
Headteachers	41	Purposive sampling	11
Teachers	343	Random sampling	55
Pupils : Girls	1104	Stratified random	162
Boys	736	sampling	107
Total	**2224**		**335**

Source: Researcher, (2024)

3.5 Data Collection Instruments

The study utilized three sets of data collection instruments, which are questionnaires, interview schedule and observation schedule.

The data for this study was collected using two questionnaires namely; questionnaire for teachers and pupils. The questionnaire was used for data collection because they offered considerable advantage in administration and gave respondents freedom to express their views or opinion. This view was supported by as Kiess and Bloomquist (1985).

3.6 Validity of Research Instruments

According to Connaway and Powell (2010), validity of the instrument is the accuracy and meaningfulness of inferences, which are based on the research results. Results obtained from the analysis of the data actually represent the phenomenon under study to the degree. To enhance content validity, the questionnaires was pre-tested before the actual research and inconsistencies corrected. In addition, the researchers consulted the experts in the field of research in order to ascertain and clarify that the test instruments can measure what they are intended to measure. This helped the researcher to rectify and come up with good reliable instruments and to ensure credibility of the results.

3.7 Reliability of Research Instruments

Reliability of the research instrument is its level of internal consistency over time (Connaway & Powell, 2010). A reliable instrument therefore, is the one that constantly produces the expected results when used more than once to collect data from two samples drawn from the same population. Reliability was tested through test-retest method. Individuals who was randomly selected was asked to fill the questionnaire and then fill the same questionnaire again after two weeks. The results from the two tests was then correlated using the Pearson r (Pearson Product Moment Correlation) to produce a stability coefficient. A correlation coefficient of at least 0.88 for pupils and 0.96 for teachers was obtained and therefore the instruments was deemed reliable.

3.8 Data Collection Procedure

To carry out the study, permission and authority was sought from the National Council for Science Technology and Innovation. Subsequent clearance to carry out the study was obtained from the District Education Officer (DEO) in West Pokot County. The researcher then paid a visit to the participating schools to inform the respondents of the intended study and create some rapport. The pilot study was then conducted and corrections made to the questionnaires. The researcher booked appointments to with the respondents and administered the questionnaires personally to the respondents in each school at different times. The filled questionnaires was collected immediately.

3.9 Data Analysis Procedures

Kerlinger, (2006) defines data analysis as categorizing, manipulating and summarizing of data in order to obtain answers to research questions. This study employed descriptive statistics to analyze the data obtained. Gay (2012) asserts that descriptive survey data was commonly represented through use of frequencies and percentages. Data from the field was collected, cleaned, coded and recorded. Data collected by use of the questionnaire, was coded, and analyzed, using Statistical Package for Social Scientists (SPSS 26). Quantitative analysis entailed analyzing numbers about a situation by choosing specific aspects of that situation. Descriptive statistics was used to analyze the quantitative data obtained. This specifically included percentages and frequency counts. On the other hand, qualitative analysis entailed analyzing in words or pictures by collecting data, recording peoples' experiences not selecting any pre-chosen aspect. The qualitative data obtained in this study was analyzed by organizing them into similar themes and tallying the number of similar responses. The results of data analysis was presented using frequency distribution tables.

3.10 Ethical considerations

Having been cleared by the Ethical Review Commission and the school of postgraduate of Mount Kenya University, the researcher will proceed to acquire a research permit from the National Council of Science, Technology and Innovation (NACOSTI). The research permit was then used to seek permission from the County Education/Commissioner offices. The nature and purpose of the study was explained to the respondents before embarking on data collection.

Four main areas were addressed throughout the study as ethical concerns: avoiding harm to participants, informed consent, privacy and confidentiality and avoiding deception. The researcher will respect the individuals' rights to safeguard their personal integrity. No names or personal identification numbers was reflected in the questionnaires except the numbering of the questionnaires, which is for the purposes of identification of data during data editing. In this case the researcher assured them that the information given in the questionnaires and, in the interview, or conversation would only be used for the purpose of research and all was done to ensure their anonymity and collected data was not be modified.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

This chapter presents data analysis, interpretation and presentation of the study. This study evaluated the effect of drought on performance of school going children in public primary schools of West Pokot County Kenya**.** The chapter is divided into numerous sections namely, response rate, the demographic information of the respondents and the study objectives specifically to: determine the effect of proximity of water sources on pupils' participation in primary schools in West Pokot Sub County, establish the effect of purchasing water on pupils' participation in primary schools in West Pokot Sub County, assess the effect of school sanitary conditions on pupils' participation in primary schools in West Pokot Sub County and to examine the effect of water storage facilities on pupils' participation in primary schools. The chapter starts with the response rate and next demographic information of the respondents.

4.2 Response Rate

A total of 335 questionnaires were sent out to the respondents to fill. 252 questionnaires were returned for analysis. The returned 252 questionnaires accounted for 75.22% response rate. A response rate of 70% and above is adequate (Mugenda & Mugenda, 2003), accordingly, a response rate of 75.22% was acceptable for data analysis. Table 2 shows the response rate.

Table 2: Response Rate

Category	Frequency	Percentage
Administered	335	100.0
Returned	252	75.22

Source: Researcher, (2024)

4.3 Demographic Characteristics of the Respondents

Among the demographic information sought was gender and age. These variables were considered to influence the relationship between droughts and performance of school going children in public primary schools.

4.3.1 Gender of the Respondents

The respondents were asked to indicate their gender. The results are presented in Table 3.

Table 3: Gender of the respondents

Category	Frequency	Percent
Male	106	42.0
Female	146	58.0
Total	**252**	**100.0**

Source: (Researcher, 2023)

As shown in Table 3, majority 146(58.0%) of the respondents were female while minority 106 (42.0%) were male. This implies that the composition is mostly school going children in public primary schools.

4.3.2 Respondents Age

The study sought to establish the age of all the respondents in the study. The outcomes were as presented in Table 4.

Table 4: Respondents Age

Age	Frequency	Percentage
Between 10 years and 20 years	203	80.55
Between 21 and 30 years	29	11.51
Between 31 and 40 years,	13	5.16
Between 41 and 50 years	5	2.00
Over 51 years	2	0.40
Totals	**252**	**100.00**

Source: Field data (2024)

The study established that majority (203; 80.55%) of the respondents are of the age of between 10 years and 20 years. Only a few (49; 19.45%) are of the age of 21 years and above 51. This implies that majority of the respondents are pupils.

4.3.3 Level of Education

The researcher was also interested in the level of education of the respondents who participated in the study. The results were as shown in Table 5.

Table 5: Respondents' level of Education

Level of Education	Frequency	Percentage
Primary level education	203	80.55
College level education (P1/Diploma)	42	16.67
Graduate level education	5	2.00
Post graduate level education	2	0.40
Totals	**252**	**100.00**

Source: Field data (2024)

From Table 5, it is discovered that, a total of 203 (80.55%) had primary level education, 42 (16.67%) had college level education (P1/Diploma) and 7 (2.40%) graduate degree level of education, and post graduate degree level of education respectively. This means that most of the Respondents were still school going pupils.

4.3.4 Work Experience

The study sought to determine the respondents' work experience, which was categorized into four levels as; below 1 year, between 1 and 5 years, between 5 and 10 years, between 10 and 15 years and over 15 years. The results were as shown in Table 6.

Table 6: Respondents' Work Experience

Work Experience	Frequency	Percentage
Below 1 year	2	2.00
Between 1 and 5 years	27	10.71
Between 5 and 10 years,	18	7.14
Between 10 and 15 years	203	80.55
Over 15 years	2	2.00
Totals	**252**	**100.00**

Source: Field data (2024)

According to Table 6, the highest percentage 203(80.55%) of the respondents have between 10 and 15 years of school experience. Only a few of them (49; 19.45%), have working experience of between 1year and 10 years. The findings imply that the majority of the respondents were school going pupils.

4.4 Proximity to Water Sources and Pupils Participation in Primary Schools

The study adopted descriptive and inferential statistical analysis. This helped to establish the influence of proximity to water sources on performance of school going children in public primary schools of West Pokot County Kenya**.** For analysis, descriptive statistics (frequency, percentage, and mean distribution) for the level of agreement on a five-point Likert scale of the variable, proximity to water sources was determined and summarized in Table 7.

Table 7: Proximity to Water Sources and Pupils Participation in Primary Schools

Statements		SD	D	U	A	SA	MEAN
That communities share the borehole with the pupils	F	14	18	16	107	97	**4.01**
	%	**5.6**	**7.1**	**6.3**	**42.5**	**38.5**	
Water source within most of the schools is from shallow wells in seasonal furrows	F	3	32	16	99	102	**4.05**
	%	**1.2**	**12.7**	**6.3**	**39.3**	**40.5**	
Pupils living in areas proximal to water sources have better health and hygiene	F	6	11	34	81	120	**4.18**
	%	**2.4**	**4.4**	**13.5**	**32.1**	**47.6**	
Rivers are several kilometers from the schools	F	31	4	16	98	103	**3.94**
	%	**12.3**	**1.6**	**6.3**	**38.9**	**40.9**	

Source: Researcher, (2024)

Table 7 shows that 107(42.5%) of the respondents agreed that communities share the borehole with the pupils, 97(38.5%) strongly agreed, 18(7.1%) disagreed, 16(6.3%) were undecided and 14(5.6%) strongly disagreed with the statement. The study findings suggested that the respondents agreed (Mean=4.01) that communities share the borehole with the pupils. An interviewee who had the following to say supported this-

"…the communities are not comfortable sharing the borehole with the pupils. Indeed, cases of violence and pupil denial to access such water was frequently reported by various administrators of different schools…Male Participant, 50 years, Head Teacher..."

This is in line with the findings of Midgley, Dejene and Mattick, (2012) that location of the water sources relative to the home and school compound is an important aspect that affects pupils' access to education. They reported that most schools in rural arid areas of Ghana had the main drinking water sources outside the school compound. In such instances, the communities was not comfortable sharing the borehole with the pupils. Indeed, various administrators of different schools frequently reported cases of violence and pupil denial to access such water.

Similarly, 102(40.5%) of the respondents strongly agreed with the statement that water source within most of the schools is from shallow wells in seasonal furrows, 99(39.5%) agreed, 32(12.7%) disagreed, 16(6.3%) were undecided and 3 (1.2%) strongly disagreed with the statement. It emerged from the study that the respondents agreed (Mean=4.05) that that Water source within most of the schools is from shallow wells in seasonal furrows.

On whether pupils living in areas proximal to water sources have better health and hygiene, 120(47.6%) of the respondents strongly agreed with the statement, 81(32.1%) agreed, 34(13.5%) were undecided, 11(4.4%) disagreed and 6(24%) strongly disagreed with the statement. The study findings suggested that the respondents agreed (Mean=4.18) that pupils living in areas proximal to water sources have better health and hygiene to staff.

Lastly, 103(40.9%) of the respondents strongly agreed with the statement that rivers are several kilometers from the schools, 98(38.9%) agreed, 31(12.3%) strongly disagreed, 16(6.3%) were undecided and 4(1.6%) disagreed with the statement. It emerged from the study that the respondents tended to agree (Mean=3.94).

These findings are in agreement with recent studies performed by Midgley, Dejene and Mattick, (2012) that the location of the water sources relative to the home and school compound is an important aspect that affects pupils' access to education Midgley, Dejene and Mattick (2012) reported that most schools in rural arid areas of Ghana had the main drinking water sources outside the school compound. In such instances, the communities was not comfortable sharing the borehole with the pupils. Indeed, various administrators of different schools frequently reported cases of violence and pupil denial to access such water.

Blanton, Ombeki, Oluoch, Mwaki, Wannemuehler and Quick (2010) contend that water collection is an important activity in the rural Kenyan context. Rural households spend an average of 40 minutes each day on water collection, while urban households spend only 9 minutes. A water source within 100 meters from the school compound would be considered as near since children can easily walk there and return during a break times. Beyond 100M, children may delay and this may reduce study time. Schools whose main water sources are more than 500M away have a challenge with accessing the water source and therefore should be considered for intervention.

Chambers and Conway (1992) argue that droughts and seasonality of water sources affects livelihoods in a number of ways notwithstanding, predisposing children to truancy and dropout. Bakker (2013) on the other hand posits that access to water influences school enrollment. The water source within most of the schools in West Pokot Sub County is from shallow wells in seasonal furrows. The quality of these sources is wanting in that many of the schools acquire water borne, water related and water based diseases. There, is therefore, a critical need to carry out a study to determine the effect of water sources on pupils' participation in primary schools in West Pokot Sub County.

These descriptive statistics of objective one was followed by a Chi-square test of association. The Chi-square test at $p \leq 0.05$ significance level illustrating statistically significant association between proximity to water sources and performance of school going children in public primary schools of West Pokot County Kenya is as summarized in Table 8. To achieve this, the hypothesis below was tested.

H_{01}: *There is no significant association between proximity to water sources and performance of school going children in public primary schools of West Pokot County Kenya.*

Table 8: Chi-Square Test of Association between Proximity to Water Sources and Pupils Participation in Primary Schools

Chi-Square Tests

	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	543.352[a]	133	.000
Likelihood Ratio	285.079	133	.000
Linear-by-Linear Association	87.708	1	.000
N of Valid Cases	252		

a. 152 cells (97.05%) have expected count less than 5. The minimum expected count is .01.

Source: Researcher, (2024)

Table 8 shows that the p value (p=0.000) for criteria used in proximity to water sources was less than 0.05. Therefore, the hypothesis, "there is no significant association between proximity to water sources and performance of school going children in public primary schools of West Pokot County Kenya*"* was rejected. This implies that there is statistically significant association between proximity to water sources and performance of school going children in public primary schools of West Pokot County Kenya.

4.5 Socio-Economic Activities and Pupils Participation in Primary Schools

The study adopted descriptive and inferential statistical analysis. This helped to examine the influence of socio-economic activities on performance of school going children in public primary schools of West Pokot County Kenya. For analysis, descriptive statistics (frequency, percentage, and mean distribution) for the level of agreement on a five-point Likert scale of the variable, socio-economic factors were established and summarized in Table 9.

Table 9: Socio-Economic Activities and Pupils Participation in Primary Schools

Statements		SD	D	U	A	SA	MEAN
That water is bought for domestic use and for children to carry to school	F	28	7	5	85	127	**4.10**
	%	**11.1**	**2.8**	**2.0**	**33.7**	**50.4**	
Children in rural areas miss out of school as a result of social-cultural and economic factors	F	17	30	21	76	106	**3.90**
	%	**6.8**	**12.0**	**8.4**	**30.4**	**42.4**	
Children spent more time walking to and from the nearest water point.	F	6	29	5	86	126	**4.18**
	%	**2.4**	**11.5**	**2.0**	**34.1**	**50.0**	
The cost of buying water deprives them opportunity for equal learning	F	22	31	17	78	104	**3.84**
	%	**7.1**	**11.9**	**8.7**	**31.0**	**41.3**	

Source: Researcher, (2024)

Table 9 shows that 127(50.4%) of the respondents strongly agreed that water is bought for domestic use and for children to carry to school, 85(33.7%) agreed, 28(11.1%) strongly disagreed, 7(2.8%) disagreed and 5(2.0%) were undecided on the statement. The study findings

suggested that the respondents agreed (Mean=4.10) that water is bought for domestic use and for children to carry to school. An interviewee who had the following to say supported this;

> *"…There is high rates of poverty at household level in ASAL regions where poor households fail to sustain an uninterrupted participation of children in school due to inability to meet various requirements such as buying water for domestic use and for children to carry to school. ……."Female Participant, 49 years, TSC Teacher..*

This is in line with the findings of Njeru and Orodho (2003), posits that due to high rates of poverty at household level in ASAL regions poor households fail to sustain an uninterrupted participation of children in school due to inability to meet various requirements such as buying water for domestic use and for children to carry to school. This has resulted in adequate school participation among the poor. Studies also done in Malawi, Ghana, Zambia, Ethiopia and Tanzania have shown that children are hindered form effective participation in schooling due to inability to afford such costs (Kelly, 1999).

In conformity with this situation, Mingat, (2002) established that the richest households, in ASAL areas, 76 percent of their children attend school compared to 40 percent of the poorest households. This means that children from poor households have much lower attendance than those from richer households. Pscharapoulos (1985) cited in Chepkenei, (2004) concur with Mingat (2002) that the level of the family income is one of the most powerful influences on primary school enrolments rates in the developing countries. Onyango (2000) showed that parental socio-economic background influences their children's participation in education. This is especially so in ASAL areas where children of the poor families are not provided with adequate educational materials as the cost of buying water deprives them opportunity for equal learning compared to children who are able to buy water when the commodity gets scarce.

Additionally, 106 (42.4%) of the respondents strongly agreed that children in rural areas miss out of school as a result of social-cultural and economic factors, 76(30.4%) agreed, 30(12.0%) disagreed, 21(8.4%) were undecided and 17(6.8%) strongly disagreed with the statement. It emerged from the study that the respondents tended to agree (Mean=3.90) that children in rural areas miss out of school because of social-cultural and economic factors.

On whether children spent more time walking to and from the nearest water point, 126(50.0%) of the respondents strongly agreed, 86(34.1%) agreed, 29(11.5%) disagreed, 6 (2.4%) strongly disagreed and 5(2.0%) were undecided on the statement. The study findings suggested that the respondents agreed (Mean=4.18) that children spent more time walking to and from the nearest water point.

Lastly, 104(41.3%) of the respondents strongly agreed that the cost of buying water deprives them opportunity for equal learning, 78(31.0%) agreed, 31(11.9%) disagreed, 22(7.1%) strongly disagreed and 17(8.7%) were undecided on the statement. It emerged from the study that the respondents tended to agree (Mean=3.84) that the cost of buying water deprives them opportunity for equal learning. This is in line with the findings of Odaga and Haneveld (2015) who asserts that children in rural areas in Kenya miss out of school because of social-cultural and economic factors such as engaging them in agricultural work, domestic work such as cooking collecting fuel fetching and hawking water. These practices have a negative impact on children participation in school.

According to Save the Children (2010) primary school pupils from West Pokot Sub County have to walk for around three hours to fetch water, making them late for grade or causing them to miss school altogether. If pupils are late for grade they are often punished severely, making them go home instead to avoid punishment.

According to UNDP/IFAD (2011), children walk distances of up to one kilometer just to get drinking water. This used to disrupt lessons as the children spent more time walking to and from the nearest water point. UNICEF (2006) contends that girls in particular are absent due to water-collection duties.

Socio-economic factors are aspects within a child's family, which have an influence on schooling such as repetition, drop out and poor boy child retentions. Socio-economic factors are like poverty, child labor and income level of the parents. Socioeconomic factors of an individual include individual or family income, social status, education, and occupational background. Social and economic factors affect how well and how long we live. Social and economic factors include factors such as income, education, employment, community safety and social support. The choices that are available in a community are influenced by social and

economic factors. These choices include our abilities to afford medical care and housing and to manage stress.

Socio-economic factors influence an individual learner's level of motivation to attend and progress smoothly through primary education. Repetition of learners increases the chances of dropout's hence low retention rate. The learners who dropped out of school end up in activities like household chores, waged labor or even idling which leads to bad company (Theuri 2004).

In Malaysia, Hoolamally and Ahmed (2010) the perception is that parents' boys' capacity to secure a job without having a high level of education, whereas girls need more education to improve her chances of getting a job. Thus, girls are kept in school longer, labor force participation rates demonstrate this. In 2009, 79% of men aged 15 and over participated in labor force compared to only 44% of women, these issues compound the disadvantages due to gender specific factors, increasing the trend of boys leaving school. Therefore, the researcher came up with this topic to address the problem of boy child who is given a lower priority of retention in education as compared to girl child Marthez (2011). Poverty and economic challenges of the time contribute to the lack of motivation, positive self-concept in terms of academic abilities, failure at school, domestic violence, delinquency and higher dropout rates Prinsloo, (2004). The changing nature of the family affects schooling access, Edet and Ekegre, (2010).

A boy child education is more endangered with more girls enrolling in schools than boys in West Pokot Sub County. Most young men in formal business popularly known as Boda boda, selling of honey, chicken, goats and sand harvesting are school dropouts leading to a decline in number of male learners in schools.

Statistics reveal that candidates registered for the Kenya Certificate for Primary Examination (KCPE) 2019, the number of girls was 2723 above that of boys, which was 2660. This statistics are enough evidence that if no action is taken towards a boy child education, eventually the number of educated men will drop. It is a great concern because it is likely to influence positively in the future since there is shortage of educated men from this region.

Consider boys more useful outside school due to their potential higher wages. Traditional gender notions mean that boys are considered stronger and more independent. These attributes

are considered useful in manual roles and in Agrarian societies, the roles being typically filled by boys OECD (2013).

According to Plan international (2013) and National Drought Management Authority (2013), water sources in West Pokot Sub County are located far from the villages, requiring children and in particular girls, to travel through treacherous terrain to reach them. During the wet season, children often have accidents while scaling steep and muddy hillsides going to and from springs carrying 20 liters buckets of water on their backs. Regular carrying such a heavy weight is particularly damaging to the neck, shoulders, spine and legs. During the dry season, water scarcity creates conflict between communities. Children have to wait in line for water for long periods and as tensions rise, physical and verbal abuse can occur as they scramble to fetch water and provide an opportunity for their animals to drink. This study will seek to establish the effect of socio- economic factors relating to water (buying and fetching water) on pupils' participation in primary schools in West Pokot Sub County.

A survey carried out in India among primary school children, revealed that about half ailments found are related to unsanitary conditions and lack of personal hygiene (UNICEF& IRC, 1998) which makes children to irregularly attend school. A study in Senegal (Republique du Senegal & UNICEF, 2012) showed that of over 5000 schools, 53 percent had no water supply and 46 percent had no sanitation facilities and only half of the schools had separate facilities for girls and boys (Republique du Senegal & UNICEF, 2012). To improve the water supply situation boreholes was drilled targeting to provide access to safe water to communities. Previously, women and girls was forced to travel up to 3km to obtain water, a chore that often occupies several hours of the day. This resorted to missing grades for some hours of the day or in attendance altogether. This influenced negatively on children school attendance and retention in Senegal.

Recent surveys IRC/UNICEF (2010) focusing on latrine coverage show many primary schools have one or two functioning latrines for the entire school population. Lack of adequate water and sanitation facilities in school affects girls' education in particular. Most girls must fetch water every day before attending school from muddy waterholes or unimproved hand dug wells. This obligatory and time-consuming task prevents girl students from attending grades regularly.

They are often punished or humiliated for arriving late because of their duties. Little access to latrines may also negatively affect attendance when their needs for privacy are compromised significantly

Adequate water and water supply facilities in schools are essential for proper sanitation, and school hygiene. Poor quality and insufficient quantity of water for basic hygiene combined with lack of access to improved sanitation, together lead to the vast majority of diarrheal diseases. Aggravated cases of diarrhea result in children missing school. In addition, even when they are in school, 400 million children are often unable to learn effectively as they suffer both physical and mental impairments caused by diseases such as typhoid and cholera, which are transmitted through contaminated water and food (Freeman, 2009).

These descriptive statistics of objective two were followed by a Chi-square test of association. The Chi-square test at $p \leq 0.05$ significance level illustrating statistically significant association between socio-economic activities and performance of school going children in public primary schools of West Pokot County Kenya is as summarized in Table 10. To achieve this, the hypothesis below was tested.

H_{02}: *There is no significant association between socio-economic activities and performance of school going children in public primary schools of West Pokot County Kenya.*

Table 10: Socio-Economic Activities and Pupils Participation in Primary Schools

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	481.623[a]	133	.000
Likelihood Ratio	421.034	133	.000
Linear-by-Linear Association	116.171	1	.000
N of Valid Cases	252		

a. 153 cells (98.1%) have expected count less than 5. The minimum expected count is .01.

Source: Researcher, (2024)

Table 10 shows that the p value (p=0.000) for socio-economic activities was less than 0.05. Therefore, the hypothesis, "there is no significant association between socio-economic activities and performance of school going children in public primary schools of West Pokot County Kenya was rejected. This implies that there is statistically significant association between socio-economic activities and performance of school going children in public primary schools of West Pokot County Kenya.

4.6 School Sanitary Conditions and Pupils Participation in Primary Schools

The study adopted descriptive and inferential statistical analysis. This aided to assess the influence of school sanitary conditions on performance of school going children in public primary schools of West Pokot County Kenya. For analysis, descriptive statistics (frequency, percentage, and mean distribution) for the level of agreement on a five-point Likert scale of the variable, school sanitary conditions were assessed and results summarized in Table 11.

Table 11: School Sanitary Conditions and Pupils Participation in Primary Schools

Statements		SD	D	U	A	SA	MEAN
Majority of the schools access water from the few murky ponds.	F	30	14	8	82	118	**3.97**
	%	**11.9**	**5.6**	**3.2**	**32.5**	**46.8**	
Access to clean water, for both animal and human consumption, is a major component of the pastoralists' livelihoods	F	26	13	14	82	117	**4.00**
	%	**10.3**	**5.2**	**5.6**	**32.5**	**46.4**	
The problem of pupils' declining health and hygiene is exacerbated by lack of access to clean water.	F	6	10	18	84	134	**4.31**
	%	**2.4**	**4.0**	**7.1**	**33.3**	**53.2**	
Poor sanitation in schools impairs children growth and development. It also limits school attendance and retention of learners and negatively affects learners' ability to concentrate and learn	F	25	14	13	80	120	**4.02**
	%	**9.9**	**5.6**	**5.2**	**31.7**	**47.6**	

Source (Researcher, 2023)

Table 11 shows that 118(46.8%) of the respondents strongly agreed with the statement that majority of the schools access water from the few murky ponds, 82(32.5%) agreed, 26(10.3%) strongly disagreed, 14(5.6%) were undecided and 13(5.2%) disagreed with the statement. The study findings suggested that the respondents agreed (Mean=4.00) that majority of the schools access water from the few murky ponds. An interviewee who had the following to say supported this;

> *"…Access to clean water, for both animal and human consumption, is a major component of the pastoralists' livelihoods in West Pokot Sub County. The problem of pupils' declining health and hygiene are worsened by lack of access to clean water"…Female Participant, 52 years, Headteacher.*

Similarly, 117(46.4%) of the respondents strongly agreed with the statement that access to clean water, for both animal and human consumption, is a major component of the pastoralists' livelihoods, 82(32.5%) agreed, 26(10.3%) strongly disagreed, 14(5.6%) were undecided and 13(5.2%) disagreed with the statement. It emerged from the study that the respondents agreed (Mean=4.00) that access to clean water, for both animal and human consumption, is a major component of the pastoralists' livelihoods.

Additionally, 134(53.2%) of the respondents strongly agreed with the statement that the problem of pupils' declining health and hygiene is exacerbated by lack of access to clean water, 84(33.3%) agreed, 18(7.1%) were undecided, 10(4.0%) disagreed and 6 (2.4%) strongly disagreed with the statement. The study findings suggested that the respondents agreed (Mean=4.31) that the problem of pupils' declining health and hygiene is exacerbated by lack of access to clean water

Lastly, 120(47.6%) of the respondents strongly agreed with the statement that poor sanitation in schools impairs children growth and development. It also limits school attendance and retention of learners and negatively affects learners' ability to concentrate and learn, 80(31.7%) agreed, 25(9.9%) strongly disagreed, 14(5.6%) disagreed and 13(5.2%) were undecided on the statement. It emerged from the study that the respondents agreed (Mean=4.02) that poor

sanitation in schools impairs children growth and development. It also limits school attendance and retention of learners and negatively affects learners' ability to concentrate and learn.

These findings agree with Gleick, (2008) that a wide range of human and ecological health crises are related to inadequate access to fresh clean water. Interventions aimed at providing good quality water is necessary to ensure that water-borne disease transmission is minimal among school going children (Khasnis & Nettleman, 2010). Access to clean water, for both animal and human consumption, is a major component of the pastoralists' livelihoods in West Pokot Sub County and their natural resources management and therefore should be taken into account when designing appropriate water interventions. In West Pokot Sub County, the problem of pupils' declining health and hygiene are exacerbated by lack of access to clean water. Data available from the World Health Organization (1999) reveal that water-related diseases such as typhoid, cholera and dysentery, diarrhoea, intestinal worm infestation caused an estimated 3.4 million children to be on and off school in Sub Saharan Africa (WHO, 1999).

A wide range of human and ecological health crises are related to inadequate access to fresh clean water (Gleick, 2008). Interventions aimed at providing good quality water is necessary to ensure that water-borne disease transmission is minimal among school going children (Khasnis & Nettleman, 2010). Access to clean water, for both animal and human consumption, is a major component of the pastoralists' livelihoods in West Pokot Sub County and their natural resources management and therefore should be taken into account when designing appropriate water interventions. In West Pokot Sub County, the problem of pupils' declining health and hygiene are exacerbated by lack of access to clean water. Data available from the World Health Organization (1999) reveal that water-related diseases such as typhoid, cholera and dysentery, diarrhoea, intestinal worm infestation caused an estimated 3.4 million children to be on and off school in Sub Saharan Africa (WHO, 1999).

Poor sanitation in schools impairs children growth and development. It also limits school attendance and retention of learners and negatively affects learners' ability to concentrate and learn (UN, 2009). About 40 percent of the World's 400 million school-age children are infested with intestinal worms. About 1 in 10 school age girls do not attend school during menstruation or drop out at puberty because of lack of clean and private sanitation facilities (UN, 2009). Of

all the children between the ages of five and fourteen in the world, 87 percent live in developing countries. For these children, the risk of death is now fourteen times higher than for children of the same age groups in the industrialized countries. That risk can be reduced enormously when children stay in a healthy environment and get used to practicing good hygiene both in and out of school (WHO, 2010).

School factors are the conditions inherent to the school that either limit or enhance the involvement of pupils in primary education. Issues considered under the school in relation to water are such water availability, sanitary facilities and school hygiene.

Local surveys conducted by Ground-Water Abstraction in Kenya Outreach (GWAKO) team (2007) in the Nyando and Miwani Divisions show 93 out of 104 primary schools, and 7 out of 11 secondary schools do not have access to safe water. School populations average approximately 516 students per school with ranging in age from 6 to 14 years. Majority of the school access the water needs from the murky ponds.

Poor sanitation in schools impairs children growth and development. It also limits school attendance and retention of learners and negatively affects learners' ability to concentrate and learn (UN, 2009). About 40 percent of the World's 400 million school-age children are infested with intestinal worms. About 1 in 10 school age girls do not attend school during menstruation or drop out at puberty because of lack of clean and private sanitation facilities (UN, 2009). Of all the children between the ages of five and fourteen in the world, 87 percent live in developing countries. For these children, the risk of death is now fourteen times higher than for children of the same age groups in the industrialized countries. That risk can be reduced enormously when children stay in a healthy environment and get used to practicing good hygiene both in and out of school (WHO, 2010).

A survey carried out in India among primary school children, revealed that about half ailments found are related to unsanitary conditions and lack of personal hygiene (UNICEF& IRC, 1998) which makes children to irregularly attend school. A study in Senegal (Republique du Senegal & UNICEF, 2012) showed that of over 5000 schools, 53 percent had no water supply and 46 percent had no sanitation facilities and only half of the schools had separate facilities for girls and boys (Republique du Senegal & UNICEF, 2012). To improve the water supply situation

boreholes was drilled targeting to provide access to safe water to communities. Previously, women and girls was forced to travel up to 3km to obtain water, a chore that often occupies several hours of the day. This resorted to missing grades for some hours of the day or in attendance altogether. This affected negatively on children school attendance and retention in Senegal.

Recent surveys IRC/UNICEF (2010) focusing on latrine coverage show many primary schools have one or two functioning latrines for the entire school population. Lack of adequate water and sanitation facilities in school affects girls' education in particular. Most girls must fetch water every day before attending school from muddy waterholes or unimproved hand dug wells. This obligatory and time-consuming task prevents girl students from attending grades regularly. They are often punished or humiliated for arriving late because of their duties. Little access to latrines may also negatively influence attendance when their needs for privacy are compromised significantly

Adequate water and water supply facilities in schools are essential for proper sanitation, and school hygiene. Poor quality and insufficient quantity of water for basic hygiene combined with lack of access to improved sanitation, together lead to the vast majority of diarrheal diseases. Aggravated cases of diarrhea result in children missing school. In addition, even when they are in school, 400 million children are often unable to learn effectively as they suffer both physical and mental impairments caused by diseases such as typhoid and cholera, which are transmitted through contaminated water and food (Freeman, 2009).

Under these conditions, schools become unsafe places where diseases are transmitted. Poor health affects a child's ability to learn and therefore influences their prospects in life. School sanitation and hygiene is a worthwhile investment for many particular reasons. This study will seek to establish the effect of school factors (water availability, sanitary facilities and hygiene) on pupils' participation in primary schools in West Pokot Sub County.

These descriptive statistics of objective three were followed by a Chi-square test of association. The Chi-square test at $p \leq 0.05$ significance level illustrating statistically significant association between school sanitary conditions and performance of school going children in public primary

schools of West Pokot County Kenya is as summarized in Table 12. To achieve this, the hypothesis below was tested.

H_{03}: *There is no significant association between school sanitary conditions s and performance of school going children in public primary schools of West Pokot County Kenya*.

Table 12: School Sanitary Conditions and Pupils Participation in Primary Schools

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	554.578[a]	143	.000
Likelihood Ratio	311.651	143	.000
Linear-by-Linear Association	99.231	1	.000
N of Valid Cases	252		

a. 171 cells (94.6%) have expected count less than 5. The minimum expected count is .01.

Source: Researcher, (2024)

Table 12 shows that the p value (p=0.000) for school sanitary conditions was less than 0.05. Therefore, the hypothesis, "there is no significant association between School Sanitary Conditions and performance of school going children in public primary schools of West Pokot County Kenya" was rejected. This implies that there is statistically significant association between school sanitary conditions and performance of school going children in public primary schools of West Pokot County Kenya.

4.7 Water Storage Facilities on Pupils' Participation in Primary Schools

The study adopted descriptive and inferential statistical analysis. This helped to determine the influence of water storage facilities on performance of school going children in public primary schools of West Pokot County Kenya. For analysis, descriptive statistics (frequency,

percentage, and mean distribution) for the level of agreement on a five-point Likert scale of the variable, water storage were examined and summarized in Table 13.

Table 13: Water Storage Facilities and Pupils Participation in Primary Schools

Statements		SD	D	U	A	SA	MEAN
That boreholes sunk within the school compound have a significant impact on pupils' participation in primary schooling	F	19	27	10	102	94	**3.89**
	%	**7.5**	**10.7**	**4.0**	**40.5**	**37.3**	
Water boreholes have provided safe water for use among communities and schools in drought stricken areas	F	6	19	23	99	105	**4.10**
	%	**2.4**	**7.5**	**9.1**	**39.3**	**41.7**	
Emergency water trucking would assist in supplying safe and clean water to institutions such as schools and households.	F	13	3	19	66	149	**4.34**
	%	**6.0**	**1.2**	**7.5**	**26.2**	**59.1**	
Rain water harvesting systems can help improve water provision where required and encourage water conservation, thereby reducing the demand on existing water sources	F	7	6	19	91	129	**4.31**
	%	**2.8**	**2.4**	**7.5**	**36.1**	**51.2**	

Source: Researcher, (2023)

Table 13 shows that 102(40.5%) of the respondents agreed with the statement that boreholes sunk within the school compound have a significant impact on pupils' participation in primary schooling, 94(37.3%) strongly agreed, 27(10.7%) disagreed, 19(7.5%) strongly disagreed and 10(4.0%) were undecided on the statement. The study findings suggested that the respondents tended to agree (Mean=3.89) that boreholes sunk within the school compound have a significant impact on pupils' participation in primary schooling. An interviewee who had the following to say supported this;

> *"…Emergency water trucking would assist in supplying safe and clean water to institutions such as schools and households. The only available interventions are the boreholes sunk by SIDA and IFAD situated in strategic locations in the Sub County. There is no organized water trucking services which would act as*

a stop gap measure in cases of borehole breakdown to cushion primary school children of the water problem..." Female Participant, 52 years, Headteacher.

Additionally, 105(41.7%) of the respondents strongly agreed with the statement that water boreholes have provided safe water for use among communities and schools in drought stricken areas, 99(39.3%) agreed, 23(9.1%) were undecided, 19(7.5%) disagreed and 6 (2.4%) strongly disagreed with the statement. It emerged from the study that the respondents agreed (Mean=4.10) that water boreholes have provided safe water for use among communities and schools in drought stricken areas,

On whether the emergency water trucking would assist in supplying safe and clean water to institutions such as schools and households, 149(59.1%) of the respondents strongly agreed with the statement, 66(26.2%) agreed, 19(7.5%) were undecided, 13(6.0%) strongly disagreed and 3 (1.2%) disagreed with the statement. The study findings suggested that the respondents agreed (Mean=4.34) that emergency water trucking would assist in supplying safe and clean water to institutions such as schools and households.

Lastly, 129(51.2%) of the respondents strongly agreed with the statement that rain water harvesting systems can help improve water provision where required and encourage water conservation, thereby reducing the demand on existing water sources, 91(36.1%) agreed, 19(7.5%) were undecided, 7(2.8%) strongly disagreed and 6(2.4%) disagreed with the statement. It emerged from the study that the respondents agreed (Mean=4.31) that rain water harvesting systems can help improve water provision where required and encourage water conservation, thereby reducing the demand on existing water sources

These findings agree with strategies for coping with water scarcity because of drought are hereby discussed as being promoted as a suitable water supply system for domestic and school use in dry lands. Different types of interventions are being applied in the ASALs and can be grouped into the following three categories: rooftop harvesting systems, surface catchment systems, and runoff systems (UNDP/IFAD, 2011). Some of the intervention strategies used are highlighted here-under:

Enfors and Gordon (2008) posit that boreholes sunk within the school compound have a significant impact on pupils' participation in primary schooling. This provides pupils with water

to quench their thirst during academic hours, have water to clean the classrooms, toilets and other social amenities and fetch some to take home.

UNDP/IFAD, DANIDA, plan international as well as SIDA are supporting sinking of boreholes and distribution of water tanks for water harvesting in primary schools. So far, these agencies have targeted districts in ASAL areas in the North, North East and Eastern Kenya. Water boreholes have provided safe water for use among communities and schools in drought stricken areas (Walugendo, 2004).

Emergency water trucking would assist in supplying safe and clean water to institutions such as schools and households. The only available interventions are the boreholes sunk by SIDA and IFAD situated in strategic locations in the Sub County. There is no organized water trucking services, which would act as a stopgap measure in cases of borehole breakdown to cushion primary school children of the water problem. Adolescent girls are especially vulnerable to dropping out as many are reluctant to continue their schooling because toilet and washing facilities are not private, not safe or simply not available. When schools have adequate facilities in particular ones that facilitate menstrual hygiene a major obstacle to attendance is removed.

Rainwater harvesting from rooftops can be described as the immediate collection of rainwater from house roofs upon rains. Rain water harvesting systems can help improve water provision where required and encourage water conservation, thereby reducing the demand on existing water sources and thus raising of standards of living through improved health and sanitation (Aroka, 2010).

UNDP/IFAD (2011) found that use of rooftop harvesting systems is a traditional partial supply source in Tharaka, Kitui, Karai, and Machakos areas. The survey showed that 46% of households in these areas collected roof runoff as a supplementary supply at various times during the year. IFAD has developed a ground tank storage system for harvesting water (such as earth dams and surface catchments and reservoirs for the watering of cattle and increasingly as sources of domestic supply for the farmers as well as water kiosks to vendor piped water.

Water pans have the potential to reduce pressure on freshwater resources (Garg and Wani, 2013) and improve water availability (Boers and Ben-Asher, 1982).Water pans decentralizes water supply to households and small community levels, improving access (Viala, 2008). The

studies reviewed in this chapter present variables of water shortage/availability and how they relate to the education and school attendance. However, the majority of these studies have been carried out in different parts of the world. Little is known regarding the situation in Kenya on the influence of water intervention strategies on pupils' participation in primary schools. This study therefore seeks to fill this gap by investigating the effect of different water harvesting strategies and interventions on pupils' participation in primary schools in West Pokot Sub County.

Bartlett (2008) and Oselumese et al. (2016) argued that there are links between climate change and education particularly during and immediately after extreme events or environmental and climate-related disasters. For instance, during extreme events, school infrastructure or roads and bridges to schools can be destroyed, limiting children's possibilities of attendance; children may be removed from school to support the household; the added burden of disease in areas suffering food and water insecurity can render children too weak to attend school. It can also reduce the time available for education when the household division of labour is restructured to cope with illness. In any case, ill or malnourished children lack the energy to be active learners. Climate change is likely to exacerbate the risk of dropout, mainly through its economic impacts on households and children (UNICEF, 2011b). Mbah (2014) and Nkeiruka (2014) also underlined that climate change-related problems adversely affect teaching and learning by causing lateness and absenteeism to school among teachers and students; destruction of school buildings and learning materials, unconducive learning environment, destruction of means of livelihood; incompletion of curriculum content, ineffective instructional supervision, and poor performance in examinations. El Niño might cause shortages of water and food, leading to malnutrition and famine which would have impacts on school attendance and result in poor performance in academic work (Nkeiruka, 2014). Climate change induced scarcity of water in Vietnam, for instance, forced girls to miss grades frequently (Walker, 2012). Schools might be occupied as shelters for people displaced by climate change impacts, eventually forcing school children out of schools. Getting these children back to school once they drop out can be a serious challenge (UNICEF, 2015).

These descriptive statistics of objective four were followed by a Chi-square test of association. The Chi-square test at $p \leq 0.05$ significance level illustrating statistically significant association

between water storage facilities and performance of school going children in public primary schools of West Pokot County Kenya is as summarized in Table 14. To achieve this, the hypothesis below was tested.

H_{04}: *There is no significant association between water storage facilities and performance of school going children in public primary schools of West Pokot County Kenya.*

Table 14: Water Storage Facilities and Pupils Participation in Primary Schools

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	577.435[a]	132	.000
Likelihood Ratio	317.519	132	.000
Linear-by-Linear Association	109.456	1	.000
N of Valid Cases	252		

a. 152 cells (97.4%) have expected count less than 5. The minimum expected count is .01.

Source: Researcher, (2024)

Table 14 shows that the p value (p=0.000) for water storage facilities was less than 0.05. Therefore, the hypothesis, "there is no significant association between water storage facilities and performance of school going children in public primary schools of West Pokot County Kenya*."* was rejected. This implies that there is statistically significant association between water storage facilities and performance of school going children in public primary schools of West Pokot County Kenya.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study evaluated the influence of drought on performance of school going children in public primary schools of West Pokot County Kenya. This chapter summarized the findings, gave conclusions and recommendations. It also suggested areas for further research in the following sub themes.

5.2 Summary of the Study Findings

Based on the data and information analyzed in chapter four. The findings are summarized in this section.

5.2.1 Proximity to Water Sources and Pupils Participation in Primary Schools

The study findings suggested that 107(42.5%) of the respondents agreed that communities share the borehole with the pupils, 97(38.5%) strongly agreed, 18(7.1%) disagreed, 16(6.3%) were undecided and 14(5.6%) strongly disagreed with the statement. The study findings suggested that the respondents agreed (Mean=4.01) that communities share the borehole with the pupils. Similarly, 102(40.5%) of the respondents strongly agreed with the statement that water source within most of the schools is from shallow wells in seasonal furrows, 99(39.5%) agreed, 32(12.7%) disagreed, 16(6.3%) were undecided and 3 (1.2%) strongly disagreed with the statement. It emerged from the study that the respondents agreed (Mean=4.05) that that Water source within most of the schools is from shallow wells in seasonal furrows.

On whether pupils living in areas proximal to water sources have better health and hygiene, 120(47.6%) of the respondents strongly agreed with the statement, 81(32.1%) agreed, 34(13.5%) were undecided, 11(4.4%) disagreed and 6(24%) strongly disagreed with the statement. The study findings suggested that the respondents agreed (Mean=4.18) that pupils living in areas proximal to water sources have better health and hygiene to staff. Lastly, 103(40.9%) of the respondents strongly agreed with the statement that rivers are several

kilometers from the schools, 98(38.9%) agreed, 31(12.3%) strongly disagreed, 16(6.3%) were undecided and 4(1.6%) disagreed with the statement. It emerged from the study that the respondents tended to agree (Mean=3.94).

Chi-square test of association revealed that there is statistically significant association between proximity to water sources and performance of school going children in public primary schools of West Pokot County Kenya.

5.2.2 Socio-economic Activities and Pupils Participation in Primary Schools

The study findings suggested that 127(50.4%) of the respondents strongly agreed that water is bought for domestic use and for children to carry to school, 85(33.7%) agreed, 28(11.1%) strongly disagreed, 7(2.8%) disagreed and 5(2.0%) were undecided on the statement. The study findings suggested that the respondents agreed (Mean=4.10) that water is bought for domestic use and for children to carry to school. Additionally, 106 (42.4%) of the respondents strongly agreed that children in rural areas miss out of school as a result of social-cultural and economic factors, 76(30.4%) agreed, 30(12.0%) disagreed, 21(8.4%) were undecided and 17(6.8%) strongly disagreed with the statement. It emerged from the study that the respondents tended to agree (Mean=3.90) that children in rural areas miss out of school because of social-cultural and economic factors.

On whether children spent more time walking to and from the nearest water point, 126(50.0%) of the respondents strongly agreed, 86(34.1%) agreed, 29(11.5%) disagreed, 6 (2.4%) strongly disagreed and 5(2.0%) were undecided on the statement. The study findings suggested that the respondents agreed (Mean=4.18) that children spent more time walking to and from the nearest water point. Lastly, 104(41.3%) of the respondents strongly agreed that the cost of buying water deprives them opportunity for equal learning, 78(31.0%) agreed, 31(11.9%) disagreed, 22(7.1%) strongly disagreed and 17(8.7%) were undecided on the statement. It emerged from the study that the respondents tended to agree (Mean=3.84) that the cost of buying water deprives them opportunity for equal learning.

Chi-square test of association revealed that there is statistically significant association between socio-economic activities and performance of school going children in public primary schools of West Pokot County Kenya.

5.2.3 School Sanitary Conditions and Pupils Participation in Primary Schools

The study findings suggested that 118(46.8%) of the respondents strongly agreed with the statement that majority of the schools access water from the few murky ponds, 82(32.5%) agreed, 26(10.3%) strongly disagreed, 14(5.6%) were undecided and 13(5.2%) disagreed with the statement. The study findings suggested that the respondents agreed (Mean=4.00) that majority of the schools access water from the few murky ponds. Similarly, 117(46.4%) of the respondents strongly agreed with the statement that access to clean water, for both animal and human consumption, is a major component of the pastoralists' livelihoods, 82(32.5%) agreed, 26(10.3%) strongly disagreed, 14(5.6%) were undecided and 13(5.2%) disagreed with the statement. It emerged from the study that the respondents agreed (Mean=4.00) that access to clean water, for both animal and human consumption, is a major component of the pastoralists' livelihoods.

Additionally, 134(53.2%) of the respondents strongly agreed with the statement that the problem of pupils' declining health and hygiene is exacerbated by lack of access to clean water, 84(33.3%) agreed, 18(7.1%) were undecided, 10(4.0%) disagreed and 6 (2.4%) strongly disagreed with the statement. The study findings suggested that the respondents agreed (Mean=4.31) that the problem of pupils' declining health and hygiene is exacerbated by lack of access to clean water. Lastly, 120(47.6%) of the respondents strongly agreed with the statement that poor sanitation in schools impairs children growth and development. It also limits school attendance and retention of learners and negatively affects learners' ability to concentrate and learn, 80(31.7%) agreed, 25(9.9%) strongly disagreed, 14(5.6%) disagreed and 13(5.2%) were undecided on the statement. It emerged from the study that the respondents agreed (Mean=4.02) that poor sanitation in schools impairs children growth and development. It also limits school attendance and retention of learners and negatively affects learners' ability to concentrate and learn.

Chi-square test of association revealed that there is statistically significant association between school sanitary conditions and performance of school going children in public primary schools of West Pokot County Kenya.

5.2.4 Water storage Facilities and Pupils Participation in Primary Schools

The study findings suggested that 102(40.5%) of the respondents agreed with the statement that boreholes sunk within the school compound have a significant impact on pupils' participation in primary schooling, 94(37.3%) strongly agreed, 27(10.7%) disagreed, 19(7.5%) strongly disagreed and 10(4.0%) were undecided on the statement. The study findings suggested that the respondents tended to agree (Mean=3.89) that boreholes sunk within the school compound have a significant impact on pupils' participation in primary schooling. Additionally, 105(41.7%) of the respondents strongly agreed with the statement that water boreholes have provided safe water for use among communities and schools in drought stricken areas, 99(39.3%) agreed, 23(9.1%) were undecided, 19(7.5%) disagreed and 6 (2.4%) strongly disagreed with the statement. It emerged from the study that the respondents agreed (Mean=4.10) that water boreholes have provided safe water for use among communities and schools in drought stricken areas,

On whether the emergency water trucking would assist in supplying safe and clean water to institutions such as schools and households, 149(59.1%) of the respondents strongly agreed with the statement, 66(26.2%) agreed, 19(7.5%) were undecided, 13(6.0%) strongly disagreed and 3 (1.2%) disagreed with the statement. The study findings suggested that the respondents agreed (Mean=4.34) that emergency water trucking would assist in supplying safe and clean water to institutions such as schools and households. Lastly, 129(51.2%) of the respondents strongly agreed with the statement that rain water harvesting systems can help improve water provision where required and encourage water conservation, thereby reducing the demand on existing water sources, 91(36.1%) agreed, 19(7.5%) were undecided, 7(2.8%) strongly disagreed and 6(2.4%) disagreed with the statement. It emerged from the study that the respondents agreed (Mean=4.31) that rain water harvesting systems can help improve water provision where required and encourage water conservation, thereby reducing the demand on existing water sources

Chi-square test of association revealed that there is statistically significant association between Water storage facilities and performance of school going children in public primary schools of West Pokot County Kenya.

5.3 Conclusion

From the findings, the study concludes that drought influence performance of school going children in public primary schools of West Pokot County Kenya. It is concluded that there is a statistically significant association between proximity to water sources, socio-economic activities, school sanitary conditions and water storage facilities and performance of school going children in public primary schools of West Pokot County Kenya.

Further, the Chi-square test of association revealed that there is statistically significant association between proximity to water sources and performance of school going children in public primary schools of West Pokot County Kenya. A further conclusion was made, going by the results of the Chi-square test that the relationship between proximity to water sources and performance of school going children in public primary schools was positive meaning that an increase in proximity to water sources would lead to significant improvement in performance of school going children in public primary schools

Additionally, the Chi-square test of association revealed that there is statistically significant association between socio-economic activities, and performance of school going children in public primary schools of West Pokot County Kenya. A further conclusion was made, going by the results of the Chi-square test that the relationship between socio-economic activities, and performance of school going children in public primary schools was positive meaning that an increase in socio-economic activities, would lead to significant improvement in performance of school going children in public primary schools.

Similarly, the Chi-square test of association revealed that there is statistically significant association between school sanitary conditions, and performance of school going children in public primary schools of West Pokot County Kenya. A further conclusion was made, going by the results of the Chi-square test that the relationship between school sanitary conditions, and performance of school going children in public primary schools was positive meaning that an

increase in school sanitary conditions, would lead to significant improvement in performance of school going children in public primary schools.

Lastly, the Chi-square test of association revealed that there is statistically significant association between water storage facilities, and performance of school going children in public primary schools of West Pokot County Kenya. A further conclusion was made, going by the results of the Chi-square test that the relationship between water storage facilities, and performance of school going children in public primary schools was positive meaning that an increase in water storage facilities, would lead to significant improvement in performance of school going children in public primary schools.

5.4 Recommendations

The study recommends that the headteachers, parents, and the management of the public primary schools of West Pokot County adopts the drought mitigation strategies as it has established the positive effect in performance of school going children in public primary schools. This study adds greater comprehensiveness of the drought and enhances the understanding of the drought mitigation strategies and their effect on performance of school going children in public primary schools.

i. From the findings, the study recommends that proximity to water sources such as rivers, seasonal furrows and boreholes are necessary for enhanced performance of school going children in public primary schools. Therefore, the management of public primary schools of West Pokot County should strive to embrace effective proximity to water sources to improve performance of school going children in public primary schools.
ii. Guided by findings and conclusions on socio-economic activities, the study recommends an enhanced mitigation of buying water costs, time spend by children looking for water and social cultural activities that affects performance of school going children in public primary schools. The application of socio-economic activities and when mitigated well would build a strong and continuous management collaboration platform to enhance performance of school going children in public primary schools.
iii. With regard to school sanitary conditions (murky ponds, access to clean water, pupils' health/hygiene and poor sanitation that has impaired some children), the study

recommends and appeals to schools stakeholders, policy makers and management of public primary schools of West Pokot County to embrace on the strategies that improves school sanitary conditions. These include; access to clean water through digging of boreholes, spraying of the areas infested by mosquitoes, and procuring of enough community public health workers. When all these strategies are well adhered to, school sanitary conditions, will then improve hence academic performance of school going children in public primary schools of West Pokot County Kenya would be realized.

iv. Finally, with regard to water, storage facilities (sunk boreholes, emergency water trucking and rainwater harvesting systems), the study recommends and appeals to schools stakeholders, policy makers and management of public primary schools of West Pokot County to embrace on the water storage facilities and many others in order to improve academic performance of school going children in public primary schools of West Pokot County Kenya

5.4 Suggestions for Further Study

The researcher suggests the following further areas of research.

i. Research should be carried out on the influence of other different drought on performance of school going children in public primary schools of West Pokot County Kenya.

ii. Further research should be done on the mediating effects on the relationship between drought such as proximity to water sources s, socio-economic activities, school sanitary conditions and water storage and performance of school going children in public primary schools of West Pokot County Kenya.

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APPENDICICES

Appendix I: Consent Form

I am **Joseph Nawar Lomuria** a masters Student at Mount Kenya University. Am conducting a study on the **effect of drought on performance of school going children in public primary schools of West Pokot County Kenya.** I kindly wish to inform you that the study is in partial fulfillment of my master degree program. I recruit you conveniently to participate in this study and am seeking your consent. Confidentiality was maintained by using visit numbers rather than names and information gathered will not be revealed to anybody without your consent. Participation in this study is a voluntary. The research poses no any risks to the participants.This study will provide knowledge and act as part of reference points to the scholars who will want to further research in the same area or related field or for teaching in universities and other institutions of learning.

Before I involve you in this study, I kindly request you sign the declaration below.

I have read the purpose and I hereby agree/disagree to participate in this study.

Respondent

Sign……..…...Date……

Principal Investigator

Sign……..

Mobile Number 0728990065

Ethics Review Committee Office

The Chairman

Mount Kenya University, Ethics Review Committee

P O Box 342 – 01000-**THIKA**

Appendix II: Consent Form for Students/Minors

I am **Joseph Nawar Lomuria** a masters Student at Mount Kenya University. Am conducting a study on the **effect of drought on performance of school going children in public primary schools of West Pokot County Kenya.** By preventing any injury or violations to students/minors, the information that was gathered on them, and their environment was protected at all costs .The study was able to ensure data security, keep participant names confidential throughout, and limit the use of the respondents' responses to academic research.

Please sign the following declaration before participating in this study.

I have read the aim of the research project and I thus agree/disagree to take part in it. I understand that I can stop at any time I want to and it was OKAY if I want to stop.

Respondent (coded)

Sign…… Date……

Principal investigator

Name: … **Joseph Nawar Lomuria** ……

Sign……

In case of any complaints or further clarification, kindly contact the;

The Chairman

Mount Kenya University,

Ethics Review committee (MKU-ERC)

P.O Box 342-0100

THIKA

Appendix III: Questionnaire

Introduction

Please respond to each question by ticking the appropriate response in the spaces provided. Your responses was completely confidential and was used by the researcher for the purpose of this study only. Therefore, do not write your name anywhere in this questionnaire. You are kindly requested to respond to all items applicable to you.

Section A: Background information

Please answer the following questions by either ticking (√) or filling the spaces provided where applicable.

1. What is your gender?
    a. Male [ ]
    b. Female [ ]
2. What is your age bracket?
    25 - 30 years [ ] 31 - 40years [ ] 41 and above [ ]
3. What is your highest professional qualification?
    Ph. D [ ]
    M. Ed [ ]
    B. Ed [ ]
    Dip [ ]
    P1 [ ]
4. What is your teaching experience?
    a) As a grade room teacher: 1 – 5 years [ ] 6 - l0 years [ ] 11- 15 years [ ] 15 years and above [ ]
    b) As head teacher: 1 – 5 years [ ] 6 - l0 years [ ] 11- 15 years [ ] 15 years and above [ ]
5. How many years have you been to the present station? 1 – 5 years [ ] 6 - l0 years [ ] 11- 15 years [ ] 15 years and above [ ]

6. How often do you experience water scarcity within the school vicinity? Frequently [ ] Occasionally [ ] Seldom [ ] Never [ ]
7. During what season do children mostly drop out of school...?
8. a) Do you normally have children who leave school due to water scarcity? Yes [] No []

   b) If the answer to 8 a is Yes, do they ever come back……..……

   c) If the answer to 8 b is Yes, how many days do they take before they resume grades...

   d) Who between boys and girls are more affected if the answer to 8 a is Yes…

   Section B: Effect of proximity of water sources on pupils' participation in primary schools
9. What is the most common source of water used by households in this area? Dam [ ] Tap [ ] Well [ ] River [ ] Tank [ ] borehole
10. Please react to the statements on how access to water by households has affected pupils' participation in your school by indicating whether you strongly agree (SA) Agree (A) Undecided (UN), Disagree (D) or strongly disagree (SD). Please tick (√) against each statement your best opinion.

Statement	**SA 5**	**A 4**	**UN 3**	**D 2**	**SD 1**
Scarcity of water has led to decreased enrollment of pupils in schools.					
Proximity to water sources has enabled regular school attendance					
Pupils living in areas proximal to water sources have better health and hygiene					
Proximity to water sources has enabled improved performance					
Schools near water sources have higher pupil retention, than those that are far.					
Schools near water sources have higher transition rates, than those that are far					

Section C: Effect of purchasing water on pupils' participation in school

11. Do you think the income levels of household members have an influence on the family's ability to buy water in times of drought? Yes [ ] No [ ]
12. Does the occupation of parents of the children in your school influence their participation in schools? Yes [ ] No [ ]. Explain how…….
13. Do parents in your school provide children with water to bring to school in times of drought? Yes [ ] No [ ] If yes, do they buy or what is the source of the water?
    If no, give a reason?…….

Section D: Effect of Sanitary conditions on pupils' participation in school

14. How would you describe the availability of water in your school? [ ] Excellent [ ] Very good [ ] Good [ ] Fair [ ] Poor
15. How would you describe status of the toilets in your schools? [ ] Excellent [ ] Very good [ ] Good [ ] Fair [ ] Poor
16. Are there water points for pupils to wash their hands after visiting the toilet? Yes [ ] No [ ]
17. Do you have special sanitary facilities for girls and children with special needs in your school? Yes [ ] No [ ]. If yes how would you describe status of these facilities in meeting the children's, needs? [ ] Excellent [ ] Very good [ ] Good [ ] Fair [ ] Poor

Section E: Effect of water storage, on participation of pupils.

18. i) What forms of water storage facilities do you have in your school?

1. ……
a) ……
b) ……
c) ……

    ii) Is the storage adequate for all the pupils in the school? Yes [ ] No [ ].

19. Who takes charge of the water storage facilities you have mentioned in 18 above? Government [ ] Churches [ ] Individuals [ ] NGOs [ ]
20. Do you think that the water storage have positively enhanced pupils participation in your school? Yes [ ] No [ ].

Appendix IV: Work Plan

PERIOD – MONTH	TIME (MONTH)	ACTIVITY
May – June , 2023	2	Project writing.
June – July , 2023	1	Developing tools and piloting.
August - September 2023	2	Collection of data, organizing, analysis and interpretation.
October – November 2023	1	Typing and editing/report writing.

Appendix V: Budget

NO	ITEM	AMOUNT IN SHILLINGS
1	Stationary 5 reams of photocopying papers	15,000/=
2	Transport	12,000/=
3	Typing and printing	5,000/=
4	Binding	30,000/=
5	Writing materials (foolscaps)	9,000/=
6	Lunch	30,000/=
7	Data analysis	60,000/=
8	Miscellaneous	15,000/=
	TOTAL	**189,000/=**

Appendix VI: ERC Letter

Mount Kenya University

REF: **MKU/ISERC/3603**
TO: **JOSEPH NAWAR LOMURIA**

Date: 11 April 2024

REG: **MED/2019/60865**

Dear Sir/Madam,

RE: ANALYSING THE EFFECT OF DROUGHT ON PERFORMANCE OF SCHOOL GOING CHILDREN IN PUBLIC PRIMARY SCHOOLS OF WEST POKOT COUNTY KENYA

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **2647.** The approval period is **11/04/2024 - 10/04/2025.**

This approval is subject to compliance with the following requirements;

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

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

The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box 342 - 0100, Thika

Yours sincerely,

Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

Appendix VII: Introduction Letter

Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MED/2019/60865

11th April, 2024

National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki Way, Upper Kabete,
P.O Box 30623- 00100
NAIROBI, KENYA

Dear Sir/Madam,

RE: JOSEPH NAWAR LOMURIA – REGISTRATION NO. MED/2019/60865

The purpose of this letter is to introduce the above named student who is pursuing **Master of Education in** the Department of **Educational Management and Curriculum Studies** in the school of **School of Education.**

The title of the research is **"Analyzing the Effect of Drought of Performance of School Going Children in Public Primary Schools of West Pokot County Kenya."** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **April 2024, and June 2024.**

Any assistance accorded to the student will be highly appreciated.

Thank you.

Mount Kenya University
P.O. Box 342 - 01000, THIKA
Office of the Director,
Graduate Studies

Dr. Samuel M. Karenga, Ph.D
Director, Graduate Studies
Enc.

Main Campus, General Kago Road, P.O. Box 342-01000 Thika.
Cell: +254 709 153 000 | +254 709 153 200
Email: info@mku.ac.ke, Web: www.mku.ac.ke
Chartered and ISO 9001 : 2015 Certified Institution.
Unlocking Infinite Possibilities

Appendix VIII: NACOSTI Letter

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **119676**

Date of Issue: **23/April/2024**

RESEARCH LICENSE

This is to Certify that Mr.. JOSEPH NAWAR LOMURIA of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Westpokot on the topic: ANALYSING THE EFFECT OF DROUGHT ON PERFOMANCE OF SCHOOL GOING CHILDREN PUBLIC PRIMARY SCHOOLS IN WEST POKOT COUNTY KENYA. for the period ending : 23/April/2025.

License No: **NACOSTI/P/24/34903**

119676

Applicant Identification Number

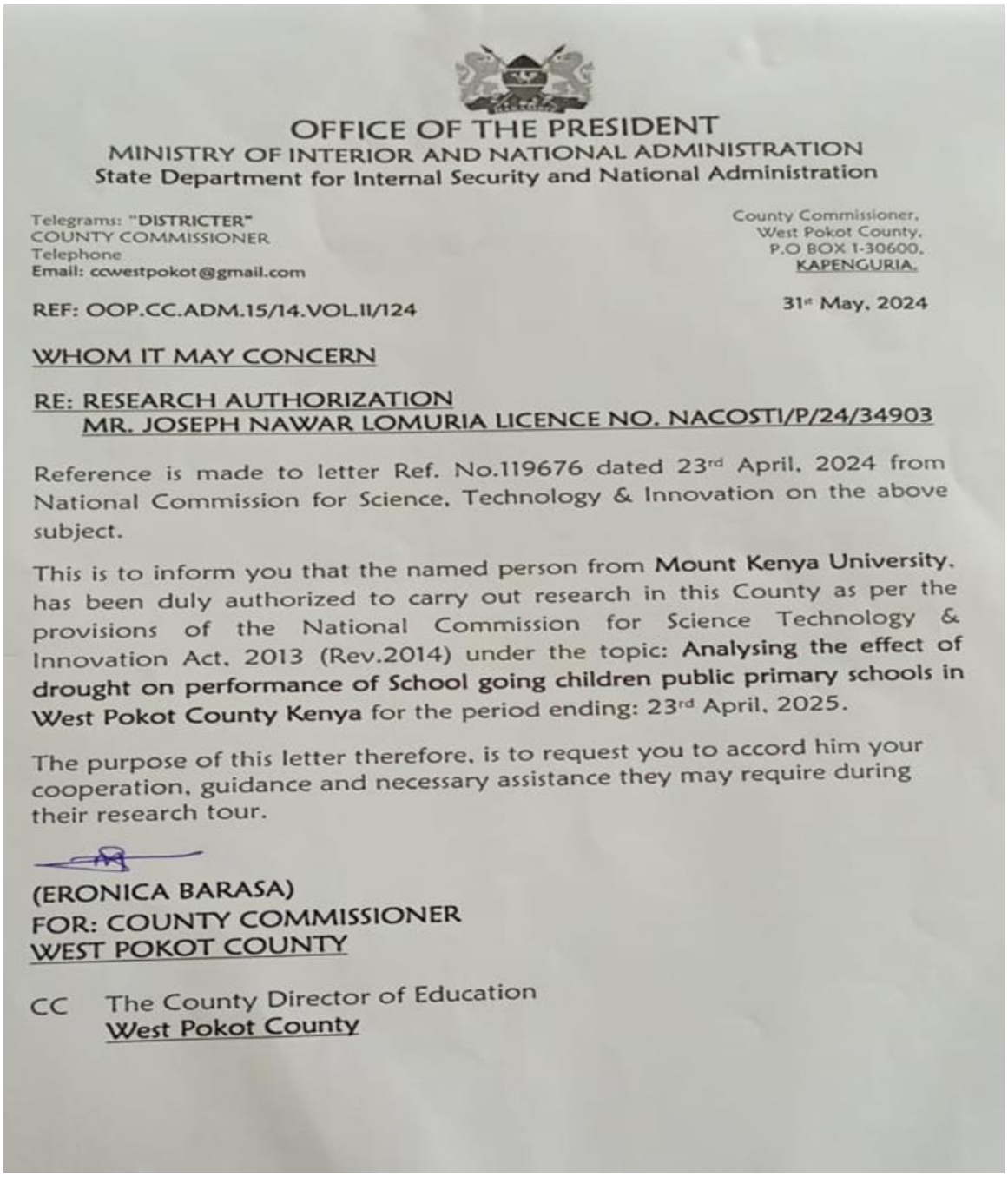
Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix IX: County Commissioner Authorization Letter



OFFICE OF THE PRESIDENT
MINISTRY OF INTERIOR AND NATIONAL ADMINISTRATION
State Department for Internal Security and National Administration

Telegrams: "DISTRICTER"
COUNTY COMMISSIONER
Telephone
Email: ccwestpokot@gmail.com

County Commissioner,
West Pokot County,
P.O BOX 1-30600,
KAPENGURIA.

REF: OOP.CC.ADM.15/14.VOL.II/124

31st May, 2024

WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION
MR. JOSEPH NAWAR LOMURIA LICENCE NO. NACOSTI/P/24/34903

Reference is made to letter Ref. No.119676 dated 23rd April, 2024 from National Commission for Science, Technology & Innovation on the above subject.

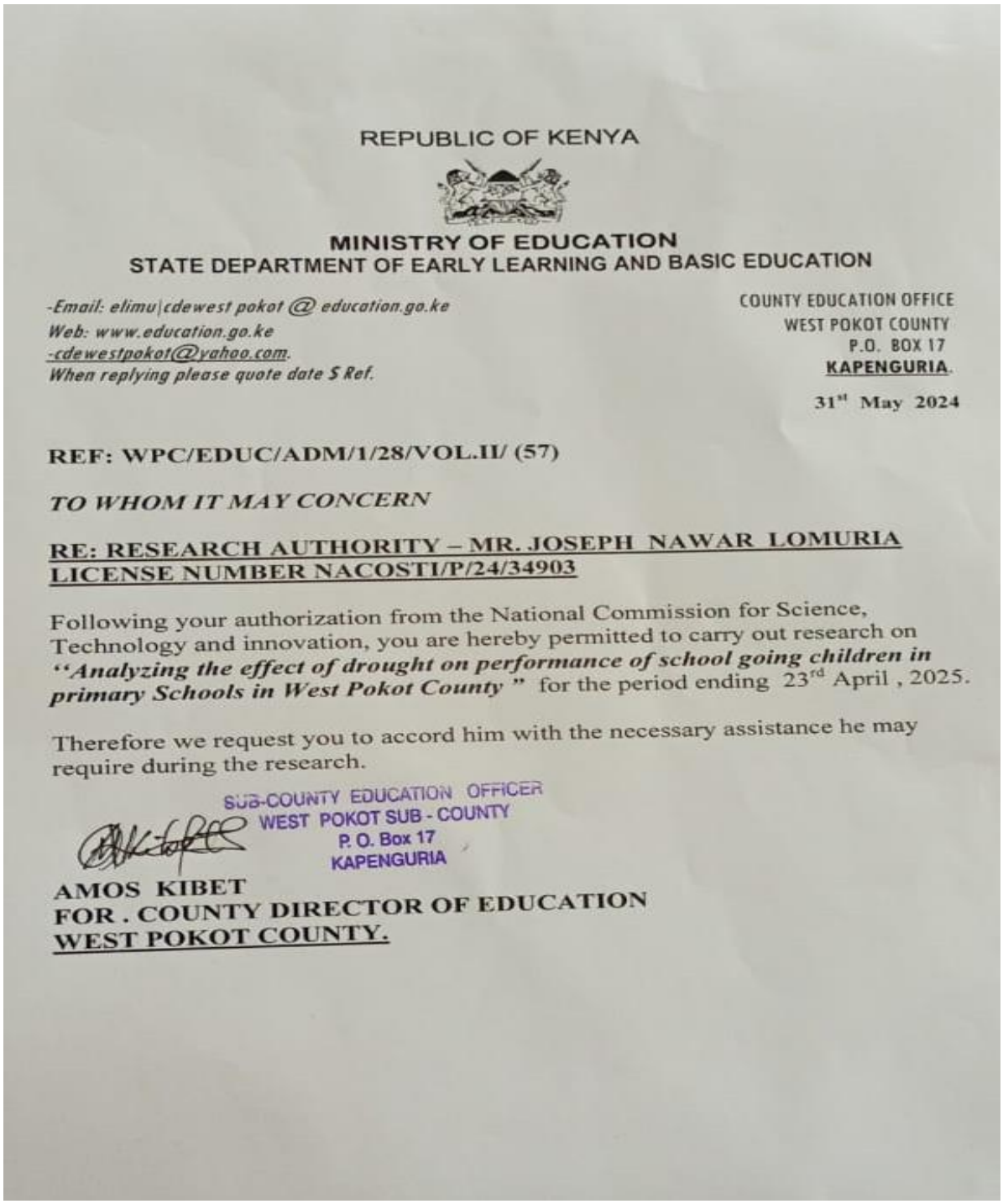
This is to inform you that the named person from **Mount Kenya University**, has been duly authorized to carry out research in this County as per the provisions of the National Commission for Science Technology & Innovation Act, 2013 (Rev.2014) under the topic: **Analysing the effect of drought on performance of School going children public primary schools in West Pokot County Kenya** for the period ending: 23rd April, 2025.

The purpose of this letter therefore, is to request you to accord him your cooperation, guidance and necessary assistance they may require during their research tour.

(ERONICA BARASA)
FOR: COUNTY COMMISSIONER
WEST POKOT COUNTY

CC The County Director of Education
West Pokot County

Appendix X: County Education Office



REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

-Email: elimu|cdewest pokot @ education.go.ke
Web: www.education.go.ke
-cdewestpokot@yahoo.com.
When replying please quote date & Ref.

COUNTY EDUCATION OFFICE
WEST POKOT COUNTY
P.O. BOX 17
KAPENGURIA.

31st May 2024

REF: WPC/EDUC/ADM/1/28/VOL.II/ (57)

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORITY – MR. JOSEPH NAWAR LOMURIA
LICENSE NUMBER NACOSTI/P/24/34903

Following your authorization from the National Commission for Science, Technology and innovation, you are hereby permitted to carry out research on ***"Analyzing the effect of drought on performance of school going children in primary Schools in West Pokot County"*** for the period ending 23rd April , 2025.

Therefore we request you to accord him with the necessary assistance he may require during the research.

SUB-COUNTY EDUCATION OFFICER
WEST POKOT SUB - COUNTY
P. O. Box 17
KAPENGURIA

AMOS KIBET
FOR . COUNTY DIRECTOR OF EDUCATION
WEST POKOT COUNTY.