

**RELATIONSHIP BETWEEN INTERNAL ENVIRONMENTAL
FACTORS AND ACADEMIC PERFORMANCE OF PUPILS IN
PUBLIC PRIMARY SCHOOLS IN MANDERA EAST SUB-
COUNTY, KENYA**

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**Research Project (Thesis) Submitted to the School of Education and Social Sciences In
partial Fulfillment of The Requirements for the award of the Degree of Master of
Educational Management and Planning of Lukenya University**

OCTOBER, 2022

DECLARATION AND APPROVAL

Declaration

This research project is my original work and has not been presented for an award in any university.

Sign..



1st June 2022

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Approval

This research project has been submitted for examination with our approval as University Supervisors.

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DEDICATION

I dedicate this project to my wife Saadia Mohamed for the support, encouragement and bearing with me in all odds. I also dedicate this project proposal to my children, Aziza, Simran, Adam, Abdul Bari, Asia, Hamza, Abdul Rahim and the last born Amina. Above all I dedicate this project to my Mother who educated me alone without the assistance of any man.

ACKNOWLEDGEMENT

I am grateful to God for giving me grace and strength to be able to progress this far in my academic pursuit. Special thanks to my lecturers Prof. Imteyaz Ahmad and Dr. Ongoncho for his guidance. I am grateful to Lukenya University for granting me the platform to further my studies.

I appreciate the faculty members in the Department of Educational Management and Planning at Lukenya University for offering a favorable environment for learning and achieving my dreams.

I thank the staff at the school of education for their support and responding positively whenever I need their help. I thank my colleagues for sharing ideas on proposal writing.

ABSTRACT

In this era of globalization and technological revolution, education plays a vital role in the development of human capital and is linked with an individual well-being and opportunities for better living. This study aimed at determining the relationship between internal environmental factors and academic performance of pupils in public primary schools in Mandera East Sub-County. The specific objectives were; to determine the relationship between teaching staff availability, availability of pedagogy materials, teachers' pedagogical skills, and to determine the relationship between conducive learning environment and academic performance of pupils in public primary schools in Mandera East Sub-County. The study was guided by three theories; institutional theory, path-goal theory and systems theory. This study employed descriptive survey research design. The study targeted 200 class teachers in public primary schools in Mandera East Sub-County. Stratified sampling was used to sample 132 class teachers. The study used questionnaires to collect data. A pilot study was conducted with 20 teachers' in three public primary schools in Mandera West Sub County to help in the improvement of the data collection instruments. Content validity was ascertained by engaging the research supervisor to check and assess the frequency of errors and the accuracy of data to be collected. Cronbach alpha was used to test reliability. Data was analyzed through multiple linear regressions, where descriptive statistics such as frequencies and percentages were employed in presentation of the information. Findings showed that; there is a significant relationship between teaching staff availability and pupils' academic achievement ($p=0.030$), a significant relationship between availability of pedagogy materials and pupils' academic achievement ($p=0.000$), a significant relationship between teachers' pedagogical skills and pupils' academic achievement ($p=0.005$), and a significant relationship between conducive learning environment and pupils' academic achievement ($p=0.048$). The recommendations are; Teacher service commission should improve on the speed of replacing teachers who either retire or transfer to other schools, the MoE should consider introducing incentivized in-service training courses for teachers in primary schools, the government should also make efforts to ensure that the books disbursed to public primary schools, and the school management should collaborate with stakeholders to raise funds in an effort to improve the schools' physical facilities.

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| <i>N</i> | <i>S</i> | <i>N</i> | <i>S</i> | <i>N</i> | <i>S</i> |
|----------|----------|----------|----------|----------|----------|
| 10 | 10 | 220 | 140 | 1200 | 291 |
| 15 | 14 | 230 | 144 | 1300 | 297 |
| 20 | 19 | 240 | 148 | 1400 | 302 |
| 25 | 24 | 250 | 152 | 1500 | 306 |
| 30 | 28 | 260 | 155 | 1600 | 310 |
| 35 | 32 | 270 | 159 | 1700 | 313 |
| 40 | 36 | 280 | 162 | 1800 | 317 |
| 45 | 40 | 290 | 165 | 1900 | 320 |
| 50 | 44 | 300 | 169 | 2000 | 322 |
| 55 | 48 | 320 | 175 | 2200 | 327 |
| 60 | 52 | 340 | 181 | 2400 | 331 |
| 65 | 56 | 360 | 186 | 2600 | 335 |
| 70 | 59 | 380 | 191 | 2800 | 338 |
| 75 | 63 | 400 | 196 | 3000 | 341 |
| 80 | 66 | 420 | 201 | 3500 | 346 |
| 85 | 70 | 440 | 205 | 4000 | 351 |
| 90 | 73 | 460 | 210 | 4500 | 354 |
| 95 | 76 | 480 | 214 | 5000 | 357 |
| 100 | 80 | 500 | 217 | 6000 | 361 |
| 110 | 86 | 550 | 226 | 7000 | 364 |
| 120 | 92 | 600 | 234 | 8000 | 367 |
| 130 | 97 | 650 | 242 | 9000 | 368 |
| 140 | 103 | 700 | 248 | 10000 | 370 |
| 150 | 108 | 750 | 254 | 15000 | 375 |
| 160 | 113 | 800 | 260 | 20000 | 377 |
| 170 | 118 | 850 | 265 | 30000 | 379 |
| 180 | 123 | 900 | 269 | 40000 | 380 |
| 190 | 127 | 950 | 274 | 50000 | 381 |
| 200 | 132 | 1000 | 278 | 75000 | 382 |
| 210 | 136 | 1100 | 285 | 1000000 | 384 |

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

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LIST OF ABBREVIATIONS

| | |
|----------------|--|
| KCSE | Kenya Certificate of Secondary Education |
| KCPE | Kenya Certificate of Primary Education |
| NACOSTI | National Council of Science and Technology |
| NIER | National Institute for Education Research |
| MOEST | Ministry of Education Science and Technology |
| PTR | Pupil-Teacher Ratio |
| SPSS | Statistical Package for Social Sciences |
| TSC | Teachers Service Commission |

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter focuses on the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions and significance of the study. The chapter also covers scope of the study, limitation and delimitation of the study, basic assumptions of the study and definition of key terms.

1.1 Background of the Study

In this era of globalization and technological revolution, education plays a vital role in the development of human capital and is linked with an individual well-being and opportunities for better living. It ensures the acquisition of knowledge and skills that enable individuals to increase their productivity and improve their quality of life (Marzano, 2015). This increase in productivity also leads towards new sources of earning which enhances the economic growth of a country (Moola, 2015). The quality of pupils' performance remains a top concern for educators. It is meant for making a difference locally, regionally, nationally and globally.

National Institute for Education Research (NIER, 2015) while focusing on education performance among Asian countries found that education performance was still low in Indonesia and Philippines. This was attributed to poor allocation of resources and poor management. The research revealed that though Government had done a lot to provide physical facilities, there was shortage of teaching and learning resources and qualified teachers. USA addresses academic performance as an integral aspect with regard to education. A poor performing school is seen as a learning institution that is not able to meet the expected standards over repeated assessment cycles. In this light, low performing schools are seen as poor schools. As such, these schools are often associated with a wide range of problems that would seem to defy applicable solutions. There are many problems that are associated with poor academic performance in public schools these include: low academic expectation, high dropout rate, high indiscipline problems, low student, and teacher morale and poorly managed facilities (Agunloye, 2011). Pedagogy resources are important because the school uses them to advance the learning opportunities offered to the students and also help them improve academic performance

The head teachers have the responsibilities to seeing to it that the teachers have adequately prepared their professional records before they engage learners in instruction process. Teacher preparation is critical to the planning of class work and it has a net effect on the pupils' academic performance. For teachers to improve on the performance in instruction process the preparation of professional documents and keeping of updated records is paramount. The preparation of professional document has been found to influence the quality of education standards. In schools where teachers prepared their documents well without being coerced by the authority or head teachers, they posted good performance (Noor, 2012).

In Nigeria, factors such as inadequate text books, inadequate number of teachers, inadequate libraries, ineffective teaching method, and teachers' attitude towards teaching, class size, and inadequate time for teaching and inexperienced teachers to handle the subject affected academic performance of students (Obidile, Chinyere, Uzoekwe & Akuezuilo, 2017). If physical facilities are available, adequate and effectively utilized they can lead to high pupils' academic performance and if not, they can lead to low pupils' academic performance (Akomolafe & Adesua, 2016). A study in Uganda on factors influencing learning achievement in grade six in Uganda, found out that pupils' age, time spent on a subject, class size, text book and pupil desk ratio are significant factors influencing learning achievement. The study also revealed that teachers' qualifications, experience and in-service training affect pupils' performance (Nannyonjo, 2017). Usaini and Bakar (2015) revealed that schools with adequate facilities, adequate teachers and favourable environment influenced learners' academic performance.

Education system in Kenya has been stressing on performance as integral part of quality education emphasized in the Sessional Paper No.1 of 2005. The provision of quality education and subsequent high performance in school is inevitable for the realization of millennium development goals and the vision 2030. In Kenya, the major yardstick for measuring educational output is performance in the K.C.P.E and K.C.S.E, with educators and policy makers focusing on testing accountability, curriculum and teacher quality. The importance placed on examinations has made stakeholders come up with strategies aimed at improving students' performance in examinations (Juma, 2011).

According to Abe (2014), competent teachers are key determinants of learners’ academic performance. If teachers lack essential resources required to teach effectively, the learners might suffer and consequently record dismal performance. In order to effectively teach, teachers require continuous training to develop their skills. The training helps the teacher to improve their competency. This could be through seminars, conferences, workshops or taking in-service courses in higher learning institutions. The pupil-teacher ratio reflects the teacher's workload and how available they are to offer services and care to their pupils. Many pupils and teachers find that the lower the number, the better the educational process and learning will be. Teacher adequacy can compromise the quality of education. Pupils’ academic performance is influenced by the transfer of teachers from schools without replacements leading to lack of enough teachers’ thus influencing teacher-student ratio (Wanyama, 2013). Wambui (2015) found that checking of teachers’ record of work, classroom visitation/observation, ensuring syllabus coverage, and provision of learning materials for pupils by the head teachers significantly influences pupils’ performance. Public primary schools in Mandera East Sub-County have been recording poor performance consistently as shown in Table 1 which has raised concerns in the government and other educational stakeholders. It is against this background that the present study investigated the relationship between international factors and academic performance of pupils in public primary schools in Mandera East Sub-County.

Table 1: Pupils’ Academic Performance 2016-2020

| Year | Mean |
|----------------|---------------|
| 2016 | 181.0 |
| 2017 | 215.0 |
| 2018 | 169.12 |
| 2019 | 178.51 |
| 2020 | 206.92 |
| Average | 190.11 |

Source: Mandera East Sub County Director of Education (2021)

1.2 Statement of the Problem

Introduction of free day secondary Education fund by the National Rainbow coalition (NARC) government in 2007 was a move to increase literacy levels by ensuring that every child gets quality basic education (MOE, 2010). The government funding in primary schools was also intended to improve infrastructure, teaching and learning and subsequently performance in national examinations. However, despite interventions by the government, international organizations and community, pupils' performance at Kenya certificate of primary education (KCPE) in Mandera East sub-county still low at average of 190.11 for the past five years as shown in Table 1. Due to this situation, experts came up with various interventions to arrest the situation in Mandera Sub-County. These interventions included teachers' workshops, seminars, funding to improve school facilities and teaching and learning resources for better results. Despite all those efforts things have not changed that way for any better, thus a lot of concern from teachers, parents, community, educationists and politicians has led to the critical question on what are the main internal environmental factors affecting pupils' academic performance in public primary schools in Mandera East Sub-county, and this was the purpose of this study.

1.3 Research Objectives

1.3.1 General Objective

The general objective was to determine the effect of internal environmental factors and academic performance of pupils in public primary schools in Mandera East Sub-County.

1.3.2 Specific Objectives

- i. To determine the effect of teaching staff availability and academic performance of pupils in public primary schools in Mandera East Sub-County.
- ii. To examine the effect of availability of pedagogy materials and academic performance of pupils in public primary schools in Mandera East Sub-County.
- iii. To establish the effect of teachers' pedagogical skills and academic performance of pupils in public primary schools in Mandera East Sub-County
- iv. To assess the effect of conducive learning environment and academic performance of pupils in public primary schools in Mandera East Sub-County.

1.4 Research Questions

- i. To what extent does availability of teaching staff related to academic performance of pupils in public primary schools in Mandera East Sub-County?
- ii. How does availability of pedagogy materials related to academic performance of pupils in public primary schools in Mandera East Sub-County?
- iii. What is the relationship between teachers' pedagogical skills and academic performance of pupils in public primary schools in Mandera East Sub-County?
- iv. How is the relationship between conducive learning environment and academic performance of pupils in public primary schools in Mandera East Sub-County?

1.5 Significance of the Study

The findings of the study might be useful to policy makers in Education sector in charge of allocation and disbursement of funds to public primary schools in the sub-county to ensure that the facilities are adequate and in good condition as well as provision of adequate facilities.

The Ministry of Education Science and Technology (MOEST) may use the study findings to determine the status of pedagogy resources and physical facilities in the primary schools.

Since they are in charge of monitoring, building the capacity of teachers and administrators, and assessing academic performance of students, Quality Assurance Officers and Inspectors may learn the importance of visiting the school at regular intervals to see how daily activities are carried out; frequent visits to the school may cause every staff member to take their work seriously. The findings of the study might be helpful to the Teachers Service Commission (TSC) who could ensure that all the primary schools have adequate trained and professionally qualified teachers for effective curriculum implementation.

The findings study may assist the head teachers in forming a team with the school's teachers, parents, and pupils in order to assist them to better understand the needs pupils and how to address them effectively. The teachers may also be able to re-examine their teaching methodologies in order to improve the pupils' academic performance.

The study might be beneficial to parents and the community at large who might see the need to provide conducive environment at home and ensure their children attend school regularly so as to acquire the desired learning outcomes.

The study improved the researchers' knowledge in factors related to pupils' academic performance as he was involved in the study and therefore gained first-hand information. The study would be a point of reference to academicians with an aim of exploring the area of pupils' academic performance.

1.6 Scope of the Study

The study was confined to public primary schools in Mandera East sub-county. The conceptual scope of this study was limited to four independent variables namely; availability of teaching staff, checking of pedagogy materials, conducive learning environment with adequate physical facilities and teachers' pedagogy skills. The dependent variable was pupils' academic performance. This study was conducted during the academic year 2020/2021.

1.7 Limitations of the Study

The head teachers might at first were reluctant to give permission for data collection fearing that their weakness in administration might be exposed. The class teachers were afraid to reveal some information concerning the study due to fear of intimidation from their superiors. Accessing schools was difficult due to bad roads.

1.8 Delimitations of the Study

To overcome the limitations, the researcher assured the head teachers' that the data collected would be specifically for academic purposes and not for policies. In case of class teachers, the researcher closely monitored the data collection process to ensure that the teachers were not manipulated by any third party and that they only responded according to their own opinion. He also ensured them that their identity would be anonymous. To curb the challenge of accessibility, the researcher sought reliable means to access the schools.

1.9 Assumptions of the Study

The researcher was guided by the following assumptions:

That Kenya Certificate of Primary Education exams results is a valid and reliable measure of academic performance. Academic performance in public primary schools in Mandera East Sub-

County has been consistently low. There are various internal factors contributing to the low academic performance in public primary schools in Mandera East Sub-.

1.10 Definition of Terms

Academic performance- pupil's achievement in exams

Facilities desks/chairs, classrooms and libraries available in a primary school

Staff Availability: number of teaching staff in a primary school

Teacher pedagogy skills: how a teacher can best assess pupils, prepare professional documents and knowledgeable on subject content matter to facilitate and support pupils towards academic achievement

Pedagogy resources: the resources teachers use in classroom to support specific learning objectives as set out in the lesson plan

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter provides an overview of literature from previous studies on internal environmental factors influencing performance. The chapter covers the study theories, theoretical framework, and empirical review, summary of literature review, conceptualization, and conceptual framework.

2.1 Theoretical Literature

The study was majorly anchored on three theories, namely; institutional theory, path goal theory and systems theory as discussed below:

2.1.1 Institutional Theory

The institutional theory was developed by Scott in 1987. Institutional theory is focused on the systematic study of people's collective behaviour in institutions (Suchman, 1995). One way to understand the social systems in which schools are elements is to understand the organizational climate, because it is these forces that guide or restrict the search for legitimacy. While the concept of institution has been conceptualized in various ways, in general it refers to relatively durable systems of social beliefs and socially organized practices associated with varying functional areas of societal systems such as religion, work, politics, laws, and regulations.

Scott (2001) explained that there are three levels of analysis that institutional theory utilizes. There are societal (and international) institutions at the greatest level, where models and menus are offered both officially and informally. These provide the context of the institution: what is considered possible, acceptable and legitimate. Such organizations form, restrict and promote lower-level structures and behavior. The governance structures are at the second stage, composed first of organizational areas and then of organization themselves. An organizational field is described as those organizations that operate in the same domain, e.g. a school with other organizations that have a critical impact on their performance (e.g., funders, contractors, and associates). The organizational level of assessment is also crucial as organizations vary in function, size, structure, culture and change ability and all impact and are affected by their organizational areas and institutional settings. Finally, performers can be people or organizations in institutional environments (Hartley, Butler & Pennington, 2002). Each level affects and is

affected by the diffusion and imposition forces of institutional norms, while at the same time inventing fresh methods of functioning and negotiating institutional norms.

According to Hanson (2001), schools also have their own distinct cultural practices that are based on a particular set of ideals, convictions, and attitudes. Such school cultures place a strong emphasis on what matters most to them as they work to hone their learning content in a particular way, such as sending students from inner-city urban schools to college or producing exceptional soccer clubs, high standardized test scores, orderly classes, and skilled auto mechanics. The type of commemorations hosted to honor learners, how the school's budget is dispersed with regard to the relative emphasis given to different academic and extracurricular schemes, the quantity and quality of efforts being made to collaborate with various groups within the community, the photos and rewards on exhibit in the front office that welcome each visitor all of these things, even though the school's heritage of a school is not easily identifiable reflect specific cultural priority areas.

In addition, Hanson (2001) explains that the expectations, rules, information flows, myths, beliefs, laws, and other factors that have an influence on schools both official and informal tend to generate structuration, which is a type of connection. Especially, patterns emerge in the interactions between organizations as a result of factors including information exchange, contractual connections, formal and informal contracts, and shared knowledge about governance practices (Scott et al., 2000, p. 26). Therefore, learning institutions are aware of the participants on board and their responsibilities and they are knowledgeable enough to avoid attempting to break them. The activities becomes very intriguing when all of the participants sit down with their own set of rules and anticipate that the school will operate in accordance with those rules.

Therefore, a crucial assumption within institutional theory is that all social actors are seeking legitimacy and reinventing legitimacy norms, within the institutional environment (North, 1990). These limitations and forces all converge within institutional settings to generate isomorphism or similarity of structure, thought and action. This theory was important to study since a school is an institution itself whose performance is influenced by various internal environment factors.

2.1.2 Path Goal Theory

The path goal theory was developed by Robert House (1996). The theory states that a leader's behavior is contingent to the satisfaction, motivation and performance of her or his subordinates. House (1996) argues that the leader engages in behaviors that complement subordinate's abilities

and compensate for deficiencies. According to the path goal theory, the manager's job is viewed as guiding workers to choose the best paths to reach their goals, as well as the organizational goals. The theory argues that leaders will have to engage in different types of leadership behavior depending on the nature and the demands of a particular situation. It is the leaders' job to assist followers in attaining goals and to provide the direction and support needed to ensure that their goals are compatible with the organizations' goals (Crook, Todd, Combs, Woehr, & Kitchen, 2011).

When working with youngsters, it takes patience and discipline to keep them from drifting off topic. The absence of motivation is a crucial element that must be taken into consideration when attempting to convince younger learners to accomplish learning tasks. As a result, the path-goal strategy would be ideal if used properly and at the appropriate times. In other words, the Path-Goal concept focuses on how leaders motivate followers to accomplish predetermined goals (Northouse, 2016). The path-goal theory emphasizes the relationship between the leader's style, the followers' characteristics, and the organizational environment in contrast to the situational approach, which suggests that the leader must adapt to the followers' growth (Northouse, 2016). Therefore, one may become an effective educator in a learning environment if they are aware of the challenges facing their learners and know when to step in for direction and inspiration.

According to Dixon and Hart (2010), the path-goal theory proposes such adaptable behaviors as "clarification, direction, structure, and incentives" (p. 55). The adoption of path-goal leadership styles, according to the concept, enables leaders to clarify and offer directives for subordinates, help eliminate barriers, and offer support and incentives for goal completion" (Dixon & Hart, 2010, p. 55). As a result, learning leaders should serve as enablers and adopt various behaviors to encourage subordinates toward learning by removing the barriers and assuming a learning mindset. Also, Nahavandi (2014) argued that "a leader's responsibility is to clear the routes subordinates take to attain goals," which is consistent with this viewpoint (p. 80).

If learning leaders inspire their teams to work toward a learning vision and use learning resources, their institutions will become more learning-oriented. This might be achieved through promoting information sharing and communication across all levels of leaders and followers. Additionally, in order to effectively use participation as a strategy, subordinates must comprehend the goal, advantages, and impact of sharing their knowledge on their institution. Independent of their rank or title, or any interpersonal conflicts, learning leaders may promote

feedback and suggestions from their subordinates by implementing this approach. Xue, Bradley, and Liang (2011) evaluated the impact of empowerment on information sharing in an empirical study and discovered that enhancing participatory approaches can improve members' attitudes toward knowledge transfer in institutions.

In essence, the deployment of this technology offers a space for knowledge sharing, transferring ideas and information, and allowing for learning from one's own experience and from others, which in turn would allow for the existence of a learning organization. According to Ford (2006), involvement in an environment of open communication may promote power sharing, which "enables people to overcome obstacles to learning by questioning the status quo" (p. 497).

The Path-Goal Theory is applicable to the current study because the internal environment which is under control of the schools' leader (head teacher) influences teaching and learning process by providing support, coaching, and guidance. The head teachers are concerned in making the learning and teaching environment conducive and therefore must explain the plan clearly to the teachers and pupils what is expected of them, what to do and how to perform a task. The theory shows that head teacher must provide the opportunities for the teachers and pupils to accomplish their goals; by creating an environment that nurtures and supports teachers' growth and pupils' academic performance.

2.1.3 Systems Theory

Systems theory was developed by Ludwig von Bertalanffy (1968). A system is an assembly of parts (or subsystems) combined to complete a general objective. A school is an example of an open system. An open system is a group of interrelating components that gains inputs from the outside, changes them, and yields out-puts for the environment. Employees, resources, communication flow, and finances are the main components of a firm. In the transformational process, these components are modified into valuable things known as outputs, which are then exported back into the environment. Ideally, pupils are changed by the school system into learned graduates, who later give back the community.

The systems theory and the production function of education are comparable. John (2010) claims that the production of human resources places a high premium on education and that the production function is a connection between the input and auxiliary components needed to generate a specific output while taking into account its quality. A functional relationship between the inputs of the school and the pupils and the accompanying measure of school outputs is

represented by an education production function. Education legislators and administrators must choose the inputs and techniques that will be transformed through the productive process into a credentialed product, as well as define clear and specific goals. They must also retain definite key competencies in the form of abilities, skill sets, and knowledge that can be transmitted to the resourceful economic sector with productivity and efficacy (John, 2010). Cory and Betts (2007) conducted a study on the importance of teacher quality in the education system's production function. They found out that variation in teacher quality is a significant factor in determining student accomplishment.

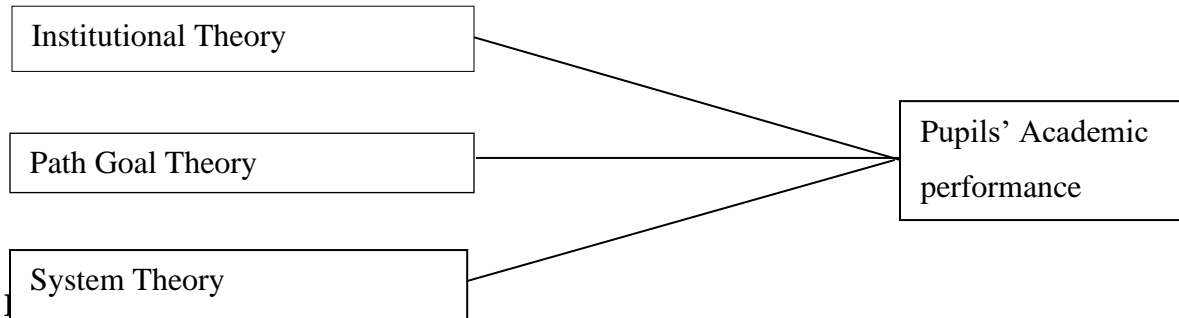
The Systems Theory has been effectively and creatively utilized in a variety of real-world contexts, but it is barely conceived or connected to the primary goal of the educational system, which is to provide students with high-quality instruction. According to Khuzwayo (2020), the key characteristics of the Systems Theory that enable it to thrive in the educational system include interdependence, relationships, and interactions between its constituent parts as well as feedback, adaptability, and flexibility to environmental contexts. Adaptation enables human structures like schools to survive unexpected atrocities. The key takeaway is that every component has an impact on how well the entire system works. For instance, it takes time for students to adjust to the teaching style of the substitute teacher if one grade teacher is on leave (Khuzwayo, 2020).

Additionally, Khuzwayo (2020) found that, despite the Systems Theory in his research appearing to be used effectively due to its numerous enabling interrelated aspects, it is not devoid of certain systems' barriers. The limitations of certain systems had the power to transform some risks to teaching and learning into possibilities due to the principle of adaptability. In the conclusion, Khuzwayo (2020) demonstrated that for Systems Theory to become a reality, the school's sub-systems and the environment where the school is located must work together as dual collectives to create a center of excellence for the institution.

The input systems theory is suitable to this study since the inputs are the internal environment factors while output is the academic performance. In the school environment, both of these variables interact as a social system to enhance pupils' performance. A school that is a social system also promotes the exchange of thoughts with learners and educators from other well-performing schools through benchmarking. The head teachers must also work with the teachers

and other stakeholders to ensure that the syllabus is addressed in a timely manner so that the pupils are not disadvantaged.

2.1.4 Theoretical Framework



2.2 Conceptual Literature

2.2.1 Teaching Staff Availability

For many years, teachers have been seen as the key drivers of academic and institutional advancement. They are the major resource and the driving force behind students' academic progress since they are sources of information and change-agents (Wallace & Priestley, 2011). Legislators, educators, and parents have all shown concerns in teacher effectiveness. The efficiency is evaluated based on how well pupils perform academically in both internal and external tests. There is a perception that students who perform poorly on exams are taught by incompetent teachers, whereas children who perform well are instructed by highly effective teachers. According to research so far, a teacher's efficacy affects the pupils' academic success (Afe, 2001). A teacher's availability while carrying out their teaching duties and tending to individual students is one of the primary indicators of their effectiveness.

Teaching staff availability is measured as the teacher-pupil ratio which is the total number of pupils handled by a teacher in a classroom. A teachers 'pupil ratio of 1:10 shows that there is 1 teacher for ten pupils (Schmitt & Lose, 2012). However, the argument over what the ideal class size can be traced back to Ancient Greece. The eminent educator Socrates never set a maximum enrollment, but he did restrict his classes to well-to-do young men to keep them exclusive and controllable. Herodotus, a Spartan who lived during his time, believed that the ideal number was around 30, and that opinion persisted up until the 20th century (Krueger, 2002). The proportion of pupils who were enrolled in school increased dramatically after World War II. Class size management was one of the most straightforward and efficient strategies used to control the supply and lower the operating cost of instructors and classes. Less instructors and facilities were required for larger groups, which reduced the cost per student (Tomlinson, 1998). Equally back then and now, educators and proponents of educational reform reacted negatively towards this approach. They argued that larger classrooms would put more effort on the teachers and have a negative impact on learning (Tomlinson, 1998).

Ehrenberg et al. (2001) arrived at the conclusion that despite the fact that more research had been conducted on class size than on any other aspect of education, there was divergence of opinion among the results. Tomlinson (1998) questioned if there were differences in what students and instructors did in a small class and whether teaching grew more challenging and learning became less possible as class size increased.

Researchers have utilized a variety of methods to examine the impact of class size on educational quality (Hoxby, 2000; Achilles, 2003). They have looked at the connection between class size and student performance and have carried out several research on class size and its potential effects on educational practices.

In their study, Welch (1966) found that learners spend more time participating in aggressive academic responses and academic engaged time in small classrooms (low teacher pupil ratio). Teachers reviewed students' work more frequently and gave more relevant tasks, comments, and adaptive training. Under high ratios, more time was spent on management replies, improper responses, whole group discussions, and teacher-initiated assignments. Investments in the provision of a quality education are the goals of educational programs. The issue raised by a rise in enrollment is that, in the 1980s, the majority of legislators involved in education in developing nations focused primarily on enrollment rates, according to Ehrenberg, et al. (2001). Although enrollment growth has been spectacular in many regions of the world, including sub-Saharan Africa, Tanzania's education system continues to face significant issues due to the high teacher-to-student ratio. Although the average pupil-teacher ratio (PTR) in primary schools in Sub-Saharan Africa is 45, Babyegeya (2002) and Mosha (2006) note that class sizes vary from one school to another based on the location of the institution and the number of classrooms available. Schools where teaching staff are available, particularly in metropolitan regions, have low PTR and hence a small class size.

In some schools, several streams sharing the same grade are united into one huge stream for efficient teaching and learning since there are not enough classrooms for everyone. As the class size increases, the instructor struggles to properly manage and instruct the learners. The performance of the pupils will improve as the class size decreases. Additionally, a larger class makes a teacher puts pressure on a teacher's availability since they are unable to deliver each student enough activities or challenges to avoid having to mark their work.

Therefore, smaller classes benefit all pupils because of individual attention from teachers, but low-attaining pupils benefit more at the primary school level. Pupils in large classes drift off task because of too much instruction from the teacher to the whole class instead of individual attention, and low-attaining students are most affected. Pupils benefit from being in small classes during early grades. Longer periods in small classes results in more increases in achievement in later grades for all learners (Bayo, 2015). According to the Uwezo Assessment Report (2011)

teachers' shortage in public primary schools in Kenya is acute and is greatly affecting learning. On average every public school in Kenya has a shortage of four teachers. Nationally a teacher is in charge of fifty two children except in Western province where a teacher is in charge of 64 children. Counties with worst pupil teacher ratio are also having the worst learning levels.

For educators, it is crucial to comprehend the scope and pattern of teacher attrition since this information is crucial for planning the availability of teachers (Mulkeen & Crowe-Taft, 2010). The issue of public school teachers leaving their jobs too soon is one that is impacted by a variety of factors, including economic, social, cultural, and individual teacher preferences. Teachers are leaving the field, particularly new ones, for a variety of reasons (US Department of Education, 2007). The author claims that a career in teaching does not always provide promotional offers, raises on merit are not available, bonuses are rare, salary increases are earned annually solely for the level of education attained and years of experience. Also the US Department of Education (2007) states that the salary is frequently below that of other occupations where staff members have the same educational degree, classroom conditions vary across the US, and financial support for learning resources is scarce.

Also, according to Ingersoll and Perda (2010), early attrition from the field of teaching is a significant but sometimes disregarded cause of the shortages of math and science instructors. Given the delays in replacing teachers who leave the service, certain schools, particularly those in unsuitable regions, endure shortage of teachers or at the very least, learners go longer without an instructor.

2.2.2 Availability of Pedagogy Materials

Pedagogic material includes any product created solely for educational or vocational purposes such as models, equipment, devices, and machinery. Such educational resources play a significant role in order to provide equal opportunities to learners. Several factors including instructional resources, if scarce, constrain educational system from responding more fully to meeting crises in educational demands. To meet crises in education, education systems will need adequate trained teachers and physical facilities to improve its quality (Guthrie, 2013). Teaching and learning materials are usually visual and they include wall pictures, chalkboard, maps, atlases and charts. They aid in teaching and learning because the pupils are able to see and often feel what the teacher teaches. They stimulate ideas; demand an active response from the learners

and provide enjoyment. The lesson becomes more lively and grasping and understanding the major concepts becomes easier (Lowe, 2009).

According to Whitebread (2010), educators fail to utilize pre-researchers in play activities since they lack play amenities, leisure facilities, physical infrastructures, and play resources. Additionally, they point out that proper preparation of materials, tools, and experiences should take into account a diversity of resources for development to strengthen psychomotor skills. The choices for play activities are further expanded by common features like rope constructions, even tree trunks, and brief plans for real obstacles. Sand, water, ropes, crayons, wheels, construction blocks, and even outdoor play equipment like swings and hooks should all be included in the physical environment in order to promote creative play. Onyango (2014) advises instructors to build up learning areas with plenty of resources. The pupils will be inspired to experiment and explore more as a result. Also, according to study done by Mutindi et al. (2016), some preschools employ insufficient facilities and educational resources, and instructors do not fully utilize them. A significant contributor to teacher satisfaction and motivation as well as educational achievements is the availability of sufficient, high-quality educational resources and materials for both instructors and students, including text books (UNESCO, 2014). When choosing and developing the teaching and learning resources they will employ, teachers should be involved in the decision-making process. A teacher policy may encourage innovative methods to increase instructional effectiveness in addition to emphasizing the accessibility of high-quality teaching and learning materials. In environments with limited resources, teacher education, both initial and ongoing, can concentrate on assisting teachers in delivering effective instruction using the local resources as well as educating teachers to create teaching and learning aids utilizing local resources. Where instructors are required to provide their own teaching materials, this should be represented in the amount of time they put in.

An adequate pedagogy material refers to resources, physical infrastructure, and human resources that are of sufficient or acceptable quality and quantity (Rashidi & Safari, 2011). The most cost-effective factor influencing student achievement is the suitability of instructional materials, such as textbooks, which serve as the primary teaching resource. According to Okongo (2015), an acceptable quantity is typically considered to be at least one textbook for every three pupils, as well as enough reading materials for the elementary grades so that every learner may read a

minimum of one new book each and every week. The effectiveness of an educational system is dependent on the sufficiency of teaching and learning resources (Okongo, 2015).

Textbooks and other reference resources are essential for efficient teaching and learning; their lack or insufficiency causes teachers to treat subjects abstractly, giving the impression that they are uninteresting and dry. In order to support educational efforts, it is crucial to have the right staff and physical infrastructure in place (Okongo, 2015). According to Coombs (1970), lack of textbooks, libraries, and infrastructural environment will prevent the teaching process from adequately meeting new needs. Better learning materials, physical facilities, and human resources are required to improve education's quality, effectiveness, and productivity. Also, educators have been quite concerned about the inadequate nature of teaching and learning resources.

Lyons (2012) explains that learning is a complex process that necessitates the interaction of the curriculum requirements, instructional resources, physical facilities, and learner motivation. Therefore, having pedagogy materials on hand makes school systems more successful because they are the fundamental tools for helping students achieve academic success. Okongo (2015) proves that materials resources, people resources, and other resources are required for teaching and learning.

According to Tuimur and Chemwei (2015), the utilization of instructional resources is a crucial aspect of teacher education that is receiving a lot of attention. A teacher uses instructional resources to make their lessons easier to understand. They can either be made of concrete or not, and they can use either graphical or audio-visual assistance. These educational resources motivate students to learn, bringing learning to reality. The instructor may be able to better clarify new ideas with the use of instructional materials, which would improve the understanding of the topics being taught by the students. However, they serve as a means to an end rather than being their own ends (Kadzera, 2006).

According to Tuimur and Chemwei (2015), effective teaching tools can never completely take the position of a teacher; rather, they are used by the latter to accomplish their own teaching and learning goals. The blackboard, models, graphs, charts, maps, drawings, diagrams, cartoons, slides, filmstrips, radio, and television are some examples of the instructional resources required for efficient teaching and learning of social studies (Kocher, 1991).

2.2.3 Teachers' Pedagogical Skills

Teachers require to effectively managing the teaching and learning process to help students to learn better and apply the knowledge in the day to day activities. According to Badu et al. (2009), every educational process needs qualified teachers as one of the essential elements in the organization of high-quality educational solutions for students. The Millennium Development Goals (MDGs) and Education for All (EFA) objectives cannot be met without an adequate number of teachers who are well-educated, qualified, and experienced (Sinyolo, 2017).

Also, the UIS Record (2006) estimated that more than 18 million instructors will be needed globally to meet the Universal Key Education (UPE) goal by 2015. Specifically, Gregory & Boglárka (2019) argues that Sub-Saharan Africa alone would need to educate and recruit close to 4 million teachers in primary schools to replace those who leave and provide high-quality education and learning to the regions' school-aged children. However, Sub-Saharan Africa has a persistent problem with the under-recruitment of competent teachers and the extensive employment of untrained, voluntary, contractual, or para-teachers. It is advised that teachers get in-service training to keep their knowledge, abilities, and performance up to date and to increase their effectiveness in providing high-quality teaching (Gregory & Boglárka, 2019).

Teachers should therefore, develop their skills in consistent with changes in the curriculum and professional activities effectively (Surasak, 2013). There is a greater need for enhanced teacher competency during the process of imparting knowledge and skills. This is necessary because the valid measure of the success of a curriculum is the knowledge acquisition by learners. Learners' active participation in the learning process is dependent on teachers' skills and wisdom in the management of learning activities (Copriady, 2014).

Teachers use various assessment activities and strategies in the classroom to gain comprehensive understanding into how much students learn as part of formative assessment. They not only contribute in learning and teaching activities, but also use assessment information to set performance targets (Büyükkarcı, 2014).Urevbu (2010) indicated that every committed teacher must take up some measures before teaching which include; reading approved syllabus description of subjects, selecting content areas that need to be covered and prior time planning in order to cover syllabus on time. The preparation of professional document influences the quality of education standards. Jadam (2014) indicated that an ignorant or a teacher who lacks adequate subject matter knowledge can deliver inaccurate content to learners and eventually confusing

them rather than helping them to learn. He also asserts that a teacher would find it very hard to answer different questions from students if he is less knowledgeable about the subject. It is very important for a teacher to understand a subject before teaching it. This helps a teacher to plan a lesson and also to assess assignments given to students.

There need to be approaches that instructors might take to increase the educational process and, in turn, the success of the students' learning experiences. According to Amusan (2016), every class in many primary schools has a teacher who remains with them for the majority of the week and teaches them the whole curriculum; instructors are required to be knowledgeable in a variety of subject areas. Darling-Hammond (2000) asserts that a particular teaching attribute, like academic major, is related to greater increases in student accomplishment. In addition, Goldhaber and Brewer (2000) discovered that pupils who had math instructors had stronger academic outcomes than those who had teachers without math degrees, but they found no such outcomes for science subject.

Effective class management is a skill that top-notch teachers must possess. Proper planning can help maximize the use of time in the classroom. The amount of time learners spend actively participating in learning activities and their academic accomplishment are related (Amusan, 2016). The achievement of the students may consequently be impacted by the instructors' capacity to plan, oversee, and devote quality time to teaching. According to Amusan (2016), most instructors plan and allot enough time for learning, but few really make sure that their students are engaged and actively busy with activities meant to help them learn the subject within the time that is allotted.

A positive learning environment is a result of effective instructors' vast range of skills and talents. A strong foundation in efficient teaching methods must be combined with topic knowledge in order to achieve balance. To make sure that students are meeting a wide range of cognitive objectives, teachers should employ a wide array of instructional techniques, experiences, exercises, and resources (Okpala & Ellis, 2005). Researchers generally concur that teachers' pedagogical skills are significant determining factors that influence learners' outcomes (Amusan, 2016). However, there is little agreement among researchers regarding the connection between particular instructor character traits and their impactful pedagogical skills.

2.2.4 Conducive Learning Environment

The learning environment including school facilities has an impact on learning outcomes.

Dangara and Geraldine (2019) explains the school as a specialized social space in which learning, training, and personality development of young people who are the future assets of a society are built and managed. Such activities can be achieved through correct training techniques, a suitable psychological environment, and adequate physical space. Learners who are socializing require a healthy atmosphere and role models in order to improve their performance. As a result, hygienic, calm, and comfortable settings are essential components of a conducive learning environment (Gilavand, 2016). Furthermore, any responsible teacher should make the physical learning structure an optimal learning environment a goal since being comfortable should be a mix of numerous aspects such as temperature, lighting, and noise management, among others (Murugan & Rajoo, 2013).

According to ILO (2013), the UNICEF guidebook on child friendly school environments is an important reference in developing conducive school environments. This document and the procedure detailed in it have been tested in numerous parts of the world with variable degrees of success.

According to Al Rukban (2010), the learning environment includes everything that occurs in the classroom, department, faculty, or institution. The numerous physical places, settings, and cultures in which students learn are referred to as the learning environment. Higgins et al. (2005) explained further learning environment to include the culture of a school or class, along with its prevailing ethos and features, such as how learners engage with and regard each other, as well as how instructors may structure an educational setting to aid learning. School rules, governance systems, and other aspects may also be included in a learning environment since the characteristics and qualities of a learning environment are affected by a variety of factors.

Various critical aspects that may influence the learning process include the intellectual component, which refers to the individual's mental capacity. Learning variables are elements that might alter the learning process due to improper work or study practices or a restricted experimental background. Health, physical development, nutrition, visual and bodily deformities, and glandular irregularity are all examples of physical variables. Mental variables are attitudes such as interest, cheerfulness, and open-mindedness, among others that play a vital role in the formation of personality. Personal variables like instincts and emotions, as well as societal factors like collaboration and rivalry, are inextricably linked to a complex psychology of motivation.

Motanya (2011) noted that poor learning environment in third world countries has been singled out as one of the major factors that lead to poor performance. This is due to increased enrolment without further expansion of the facilities. This leads to over-utilization of resources which in turn affects the effectiveness of the teaching and learning process resulting in poor performance of student. School physical facilities provide the basic teaching and learning environment.

Kenya, among the developing countries, has taken attempts to improve access for all youth by implementing free and compulsory basic education programs (ILO, 2013). This conforms to the Children's Act (2001), International Labor Organization (ILO) Convention, and the constitution (2010). However, it is essential to enhance the quality of education delivered as well as the conduciveness of the learning environment for these youngsters. Access to high-quality, relevant education is critical for the rehabilitation and social reintegration of child laborers, as well as for preventing those who are at risk.

Education systems tailored to the needs and ambitions of impacted children will have a big impact, but they must be supplemented by other programs focusing on, for example, school food supply, poverty reduction, sensitization, legislative change, supervision and discipline, revenue creation, adult employment promotion, and social protections for populations at high risk of resorting to child labor

2.3 Empirical Literature

This section focuses on the independent variables under study. It emphasizes on empirical evidence available, reviewed according to the current study. The main objective is to ascertain the existing gap in literature for the relevance of the study. Empirical studies reviewed focus on external environment factors that influence academic performance. The studies reviewed are from different countries globally and regionally as well as in other counties in Kenya.

2.3.1 Teaching Staff Availability and Academic Performance

Handal, Watson and Maher (2015) conducted a study on teachers' perceptions on class size in Australia. Findings revealed that majority of the teachers believed that smaller class size was beneficial to student achievement. They believed that smaller class sizes led to a decrease in classroom management issues which would be particularly beneficial to lower achieving students. Krassel and Heinesen (2014) examined the effects of class size in secondary schools in Denmark. Findings showed that reducing class size showed a statistically significant effect on student achievement.

Chen and Yeung (2015) carried out a study on the effectiveness of instructors in relation to class size in a Chinese second language learning scenario. The study used a qualitative method. Students engage in groups more while learning a second language; however teachers attending large classes were shown to be less efficient at conducting teaching and learning activities, talking to each student one-on-one, and including each student. Smaller class sizes gave teachers ample time to monitor students' progress and give timely comments and encouragement, which resulted in more productive learning.

Filade (2019) examined effect of student-teacher ratio on the academic performance of the primary school students in Ogun State, Nigeria. Findings showed that there is a significant effect of student-teacher ratio and the academic performance. Pupils in large classes drift off task because of too much instruction from the teacher to the whole class instead of individual attention, and low attaining students are most affected. Ajani and Akinyele (2014) investigated the effects of student-teacher ratio on academic achievement of selected secondary school students in Port Harcourt metropolis, Nigeria. Findings showed that there is a significant relationship between students' perception of students-teacher ratio and academic achievement in Mathematics. Classes with too many students are often disrupting to education and too many students in a class results in a diverse field of students, with varying degrees of learning ability.

Ndayisaba (2017) sought to establish effect of Pupil-Teacher Ratio (PTR) on pupils' academic performance in public primary schools in Rwanda. Findings showed that in schools where the PTR was high above the set standards, teachers found it difficult to give personalized attention to all pupils and take full control of their classes. Statistical analysis showed PTR significantly affects the academic performance of pupils in schools. Kambuga (2013) studied impact of teacher- pupil ratio on the teaching- learning process in public secondary schools in Dares Salaam, Tanzania. Findings showed that all teachers and pupils opined that they would prefer small classes. The teachers agreed that quality teaching-learning process was affected negatively by the class size and overcrowding of pupils in a single class.

Wanyama (2013) investigated school based factors influencing students' performance in public secondary school in Narok North District. Findings revealed that transferring teachers without replacement contribute to shortage of teachers affected teaching and learning and ultimately affecting performance. Teachers gave assignments often but were not able to mark the assignments due to much work load and many classes to teach. Orangi (2016) studied influence of teacher-pupil ratio on reading achievement levels of standard three pupils in Kenya in Sub-County, Kisii County, Kenya. Findings revealed a significant relationship between pupils' reading achievement levels and pupil-teacher ratio, textbook-pupil ratio, story books pupil ratio and charts-pupil ratio. Results also revealed that reading achievement is a function of teacher-pupil ratio since as the number of pupils for every one teacher increases in class, the percentage of pupils struggling to read tend to increase.

Nyiwa, Maithya and Gathumbi (2017) investigated the influence pupil-teacher ratio on KCPE performance in Kitise Division, Makueni County. They elude that majority of the head teachers and teachers were of the opinion that the number of teachers was not enough in their schools. It was also reported that academic performance has been affected by the high number of pupil-teacher ratio in the schools. Mutindi (2018) sought to establish school based factors influencing students' performance in KCSE in public secondary schools in Kathiani Sub County. The study found out that teacher inadequacy was rampant because there were no immediate replacements made once teachers had been transferred from schools. Teacher adequacy had positive and significant relationship with students' performance at KCSE. This current study aimed at finding out whether there is a relationship between teaching staff availability and academic performance in public primary schools in Mandera East Sub-County.

2.3.2 Availability of Pedagogy Materials and Academic Performance

Zingier (2014) set out to investigate the critical role that pedagogy plays in smaller courses in raising student success. The analysis synthesized 112 studies from 1979 to 2014, and the findings were verified by an experimental investigation of 63 schools in New South Wales, where teachers were recruited to lower class size. According to the study, smaller classrooms are beneficial for learners in their early years of education, those from culturally, linguistically, and economically disadvantaged families, as well as those who require special learning help. The study suggested combining teacher professional development initiatives with smaller class sizes.

Lockheed and Verspoor (2011) carried out a study on factors affecting improvement of Primary Education in New York. Findings established that: teaching and learning materials are critical ingredients in learning, and the intended programme cannot be easily implemented without them; No meaningful teaching and learning takes place without adequate resource materials and adequate teaching and learning resources have an impact on academic performance. Farrant (2010) carried out a study on principles and practice of education in Hong Kong. Findings revealed that schools where authorities provide the adequate teaching and learning resources, students' performance improved.

Onyeachu (2010) performed a research on factors that affect secondary school students' academic performance in Ghana. Findings established that unavailability of teaching/learning resources in teaching and learning processes may cause meager attention span and poor learning which impede the success of planned aims of a lesson. Most schools which performed poorly spend less money on the purchase of teaching/learning resources. The study recommended that the government should ensure equal distribution of learning and teaching materials in all public secondary schools to improve students' performance.

Kamal (2014) conducted a study on factors influencing pupils academic achievement in mathematics in Pakistan. Findings revealed that there is a significant relationship between availability of instructional resources, supervision and mathematics achievement. Obidile, Chinyere, Uzoekwe and Akuezuilo (2017) sought to find out factors affecting students' academic performance in public secondary schools in Anambra State. Findings showed that school based factors such as inadequate text books, inadequate number of teachers, inadequate libraries, ineffective teaching method, teachers' attitude towards teaching, syllabus coverage, class size and time for teaching for teaching accounting affected academic performance of students.

Abdi (2017) carried a study to establish the relationship between an institutional supervision and student performance in public secondary schools in Hargeisa city, Somalia. This study established that instructional materials which are available to the students and teachers, when they are sufficient in terms of students' ratio have a significant relationship on students'

performance in their studies. The study showed that in every school, how instructional resources are available, their sufficiency and utility have progressive marks on the way students' perform.

Kanguo (2011) investigated factors that influence the academic performance of students in the community and government secondary schools in Mbeya municipality, Tanzania. The research finding showed that there were insufficient teaching and learning materials, methods of teaching and learning were poor, and the equipment available in the schools did not match the number of pupils. This affected students' performance negatively. The study recommended that the government should increase the number of teachers, provide teaching and learning materials such as textbooks, laboratories and classrooms, provide lunch to students who live far from schools to ensure retention.

Nghambi (2014) examined factors contributing to poor academic performance in Community Secondary Schools in Tanzania. Findings revealed that poor performance in form four examinations was associated with poor working environment for teachers and poor supply of teaching and learning materials. Luketero and Kangangi (2019) sought to find out factors influencing students' academic performance in Kirinyaga Central Sub-county of Kirinyaga County, Kenya. Findings showed that school resources (textbooks and revision materials) influence academic performance by 73.3%.

Okango et al. (2015) sought to investigate whether the availability of teaching and learning resources had any bearing on implementing inclusive education in pre-school centers in the Nyamira North sub-county. The study design used a descriptive survey. The target population consisted of 938 pre-school parents, 402 pre-school instructors, and 134 head teachers in 134 pre-school facilities, and 12 education officials in the county. 40 pre-schools and 40 head teachers made up the sample, which was chosen at random to represent 30 percent of the facilities. In addition, a stratified random sample of 134 early childhood educators, 270 early childhood parents, and 12 education officers was taken. Checklists for observation and questionnaires were used to gather data. According to the findings, the Nyamira North sub-preschool county's centers lacked basic teaching and learning resources. According to 78% of respondents, implementing inclusive education was hampered by a lack of resources.

Mitei and Mwoma (2021) investigated the accessibility of instructional and learning resources for children attending public pre-primary schools in Bureti Sub-County, Kenya. The research used a descriptive survey methodology based on Sarah Smolinsky's theory, which emphasizes the child-centered approach to teaching creativity. 135 public pre-primary schools were the target demographic. 10 percent of the target population, which represented 14 public pre-primary schools, was used to conduct the pilot test. The study's sample size involved 236 participants, including 144 preschool instructors and 92 head teachers from 121 pre-primary schools in Bureti Sub-County. Data collection tools included observation logs and questionnaires. Tables of percentages were used to present the findings. The findings showed a lack of learning and teaching resources, stating that the most readily available resources include pencils, rubber, paintings, clay, and maize grains. According to the research, the County Government should make learning and teaching materials accessible to students so they may participate in creative play activities. Additionally, appropriate playtime must be set aside in order to support creative play activities in schools.

Mburu (2017) studied the influence of head teachers' Instructional supervision practices on pupils' performance in the Kenyan Certificate of Primary Education in Muranga South Sub County, Kenya. The study also revealed that head teachers. Class observation, provision of adequate teaching/learning materials to teachers and pupils and guiding and motivating pupils, and discussing pupils' performance with parents and teachers affected pupils' performance in the national exam. The presence of teaching/learning materials promotes and encourages effective teaching/learning and the lack of these materials causes poor learning which contributes to poor performance in the national exam.

Migui (2018) conducted a survey to examine conflict-related variables that affect student access to Laikipia North Sub-County government pre-schools. From the study it was established that; teaching and learning resources significantly influences access to pre-school. This study recommends that: education planners should evaluate, assess and avail teaching and learning resources for improved access to pre-school education. Wakarindi (2013) investigated the administrative strategies employed by secondary school principals and how the strategies

influenced students' performance in Muranga County, Kenya. Findings revealed that principal strategy on provision of teaching learning resources influenced students' performance in KCSE. Findings also established that the teaching aids were enough and at least all class eight students had access to text books. The researcher recommended that the school administration should source for funds or donors to provide teaching and learning resources to enhance students' performance.

Kiragu (2015) conducted a study on influence of head teachers' roles on pupils' academic achievement in public primary schools in Nyeri County Kenya. Findings established that Head teachers do not provide adequate teaching/learning materials to the schools, thus impacting negatively on the academic achievement of pupils. Findings also established that the pupil book ratio was very low whereby one book was shared amongst three students. The researcher recommended that head teachers should liaise with all education stakeholders to source for the teaching and learning resources.

Tuimur and Chemwei (2015) attempted to determine if the instructional materials required for teaching Conflict and Conflict Resolution as a topic in the Social Studies course in primary schools in Kenya's Nandi North District were accessible and being used. The research was conducted using a descriptive survey. Social Studies instructors in Kosirai Division of Nandi North District were among the population. Purposive selection was used to choose a sample of 45 Social Studies instructors teaching in grades 7 and 8. Data was gathered via a questionnaire, document analysis, and a checklist for classroom observations. The research revealed that many of the social studies instructors in primary schools had not taken any continuing education courses to prepare them to teach newly developing topics like conflict and conflict resolution in the existing primary curriculum. Additionally, the teachers lacked the necessary teaching resources to effectively teach the subject. The study sought to find out whether there is a relationship between availability of pedagogy materials and academic performance in public primary schools in Mandera East Sub-County.

2.3.3 Teachers' Pedagogical Skills and Academic Performance

Prasertcharoensuk, Somprachand and Ngang (2015) investigated the influence of teacher competency on students' academic achievement in Malaysia. Findings established that teacher

competency has significant effect on students' learning achievement. Students learning achievement was high in schools where teachers had attained higher levels of curriculum and knowledge management. Kishwar (2016) conducted a study on effects of teachers' professional competence on students' academic achievements at secondary school level in Muzaffarabad District, Munich. It was concluded that teachers were competent in almost every skill of instructional planning. Teachers planned lessons by using students' previous results information, their strengths and weaknesses. They planned extra classes for slow learners and students centered activities. They shared ideas with colleagues, keep in mind students' interest and resources availability during lesson planning.

Prasetio, Aziz, Fadhilahand and Fauziah (2017) examined the impact of lecturers' professional competency on students' academic performance in higher education in Indonesia. The findings show that the professional competency does not have a significant relation with students' academic performance. Keller, Neumann and Fischer (2017) examined the extent to which pedagogical content knowledge predicts students' achievement in Germany and Switzerland. Findings revealed that teacher pedagogical content knowledge positively predicted students' achievement. Teachers' motivation predicted students' interest which was mediated by enthusiastic teaching as perceived by students.

Tengku et al. (2012) investigated the challenges that instructors experience when expected to teach topic areas such as science and mathematics in English in West Malaysia. The researchers focused on teachers' pedagogical skills and content knowledge, which includes pedagogical approach, subject matter content, lesson planning, use of resources, examination, preparation of teaching resources, managing learners, teachers' compensatory communication styles, use of first language, and teachers' perspectives on teaching English content subjects. The data was collected from a self-report questionnaire given to 495 secondary school teachers in West Malaysia. The study's findings offer implications for school administrators in making judgments about assigning skilled teachers to various levels of classrooms.

Saleman, Warrak, Bing and Yusuf (2019) investigated the relationship between teacher quality and students' academic performance. The study revealed that quality of teachers' competence

was positively related to students' academic performance. Aina and Olanipekun (2015) studied influence of teachers' credentials on students' academic achievement in Nigeria. Findings established that subject matter knowledge, academic qualification, professional development and teaching experience are crucial and significantly related with students' academic achievement.

Also, Amusan (2016) investigated factors needed to develop effective pedagogical abilities for teaching basic science and technology (BST) in Ogun State Primary Schools in Nigeria. The survey research design was used. A total of 148 instructors from around the country were interviewed. The study discovered a link between instructors' topic understanding and pedagogical skills. Teachers' BST subject knowledge influences their use of excellent pedagogical skills while teaching.

Switbert (2013) examined effects of teachers' professional development on students' performance in Secondary schools in Dar es Salaam, Tanzania. Findings established that implementation of teachers' training and development programs affect students' performance in Tanzania. Findings also established that the teachers training and development policies were not implemented or not available at all in majority of the schools studied. Wamala and Seruwagi (2012) investigated the influence of teacher competence on the academic achievement of sixth grade students in primary schools in Uganda. The results showed students high academic achievement in reading and numeracy was significantly associated with high teacher competency in the same disciplines.

Alphonso (2017) study aimed at assessing the role of teachers' motivation on students' academic performance in Ilemela District, Tanzania. Findings established that teachers' professional development improves students' academic performance. The study recommended that teachers must be given profession training and development to increase their knowledge and skills to deliver highly to students.

Nyakundi, Raburu, Okwara (2019) investigated the influence of teacher motivation to the academic performance of pupils in primary schools in Nyamira South Sub-County. The study concluded that the teacher professional development had a significant influence on academic

performance of standard eight pupils in K.C.P.E. The study recommended that teachers should be given better motivation in terms of recommendations for further studies and promotions.

Linnet (2015) investigated how the teacher's motivation influences the students' performance in public secondary schools in Manga sub-county Nyamira County, Kenya. The 28 public secondary schools in Manga sub-county and 340 teachers together with the 28 principals of the secondary schools formed the target population. The researcher employed simple random sampling technique. The researcher used the descriptive survey design. Questionnaires were used as data collection instruments. The researcher found that in the highly performing schools, all the teachers including those hired by the Board of Management were trained while the schools with low performance had hired teachers some without training.

Kiamba (2018) examined the influence of teacher preparedness on students' academic achievement in Kiswahili language in public secondary schools in the Kathonzwi Sub County, Makueni County, Kenya. Findings established that subject matter knowledge helps the teacher to adopt suitable teaching methods, gives teachers the capability to clear up misconceptions and hard concepts to students enabling them to improve their performance, helps the teacher in planning of lessons and assessment of the students' performance and teachers' knowledge on subject matter assists students to understand concepts better. The researcher investigated whether teachers' pedagogical skills influenced academic performance of pupils in public primary schools in Mandera East Sub-County.

2.3.4 Conducive Learning Environment and Academic Performance

Praveen and Mohammad (2012) conducted a study to investigate the role of physical facilities in teaching and learning process and to highlight the role and importance of physical facilities in improving teaching learning process in Pakhtunkhwa, Province of Pakistan. The findings of the study were that there was a strong need for creating an excellent and suitable learning environment where all sorts of physical facilities were available both to teachers and learners. Effective teaching learning was not possible without adequate physical facilities to the students and teachers.

Usaini and Bakar, (2015) conducted a research project to investigate how the school environment affects learners' academic performance in selected secondary schools in Kuala Terengganu, Malaysia. Data from 377 respondents were obtained using a self-administered questionnaire from four chosen secondary schools using a descriptive survey research methodology. The respondents were sampled using a stratified random sampling approach. According to the study's findings, learners from schools with appropriate facilities, excellent instructors, and a friendly atmosphere outperform those from schools with less resources, inadequate teachers, and a less supportive environment.

Hussain *et al* (2011) carried out a study on school factors contributing to pupils' performance in India. Findings established that lack of physical facilities was one of the major reasons of students' poor performance in India with respondents stating that inadequate provision of physical facilities in schools and poor standards of health and nutrition as one of the main causes of poor performance.

Uko (2015) conducted a study to investigate how management of school facilities in Nigeria affect pupils' performance. The findings showed that educational facilities were grossly inadequate. Parents were therefore forced to borrow money or collect loans to send their children to private schools, even though they do not present the best of facilities, but relatively they were better than those of public schools under study.

Moonson (2013) conducted a study of academic performance amongst teenagers in Ghana. The findings established that enrolling many students and lack of a system that supports pupils contributes to poor performance. A school environment with many students, less classrooms and few teachers contributes to little or lack of attention from the teachers since they are not able to attend to all pupils individually which also leads to pupils detachment with studies since teachers are unable to help all pupils.

Alyaha and Mbogo (2017) conducted a study establish how working conditions affect job satisfaction of teachers and performance in private primary schools in Yei town, South Sudan. Findings established that inadequacy of school facilities led to teachers' dissatisfaction with their job. Working atmosphere also affected teachers' level of satisfaction. The study concluded that

the inadequacy of school facilities led to teachers' dissatisfaction with their job. The study recommendations were that National and local governments should provide adequate instructional materials for teachers' use in order to enhance teacher job satisfaction, as well as students' learning.

Shonje (2016) sought to assess the influence of teachers working conditions on job satisfaction of public secondary school teachers' in Kisarawe district, Tanzania. The findings reveal that teachers work in poor conditions typified with lack in-service training, promotion and necessary facilities like chairs, housing. Most of them live a long distance from schools where they teach hence affecting them to fulfill their day to day responsibilities which leads to lowering their morale of work. This results into teacher absenteeism and lateness which leads to lower students' academic performance. The study recommends among others for the government to address teachers' problem through providing them adequate teaching facilities, in-service training, promotion, accommodation.

Gitonga (2012) conducted a study to investigate the influence of teachers' motivation on performance of students in KCSE in public secondary schools in Imenti South District, Kenya. Findings revealed that conducive working conditions had been provided by the schools which motivated teachers to perform better hence good students' performance in the examinations. Ouma and Munyua (2018) carried out a study to investigate the relationship between teachers' working conditions and students' academic performance in public day secondary schools in Nyando Sub-County. Findings revealed that those poor working conditions and inadequate teaching and learning materials were the major de-motivators of teachers towards good students' academic performance. The study recommended that the government should distribute teaching and learning materials equitably to schools to support good performance in all schools in Kenya.

Mwamwenda and Mwamwenda (2012) carried out a study to establish how the availability of physical facilities affects the pupils' performance in Botswana. The study revealed that physical facilities had a direct link to the education quality measured in terms of students' pupils' performance. Thiruaru (2016) conducted a study on the causes of pupils' poor performance in public primary schools of Imenti North Sub-County. Findings established that inadequate

physical facilities such as classrooms, negative attitude of teachers, school punishment, inadequate teaching and learning resources, poor sanitation, contributed to the pupils' poor performance. In this study, the researcher investigates whether drug and substance abuse level influence dropout rates among pupils in public primary schools in Mandera East Sub-County.

2.4 Knowledge Gap

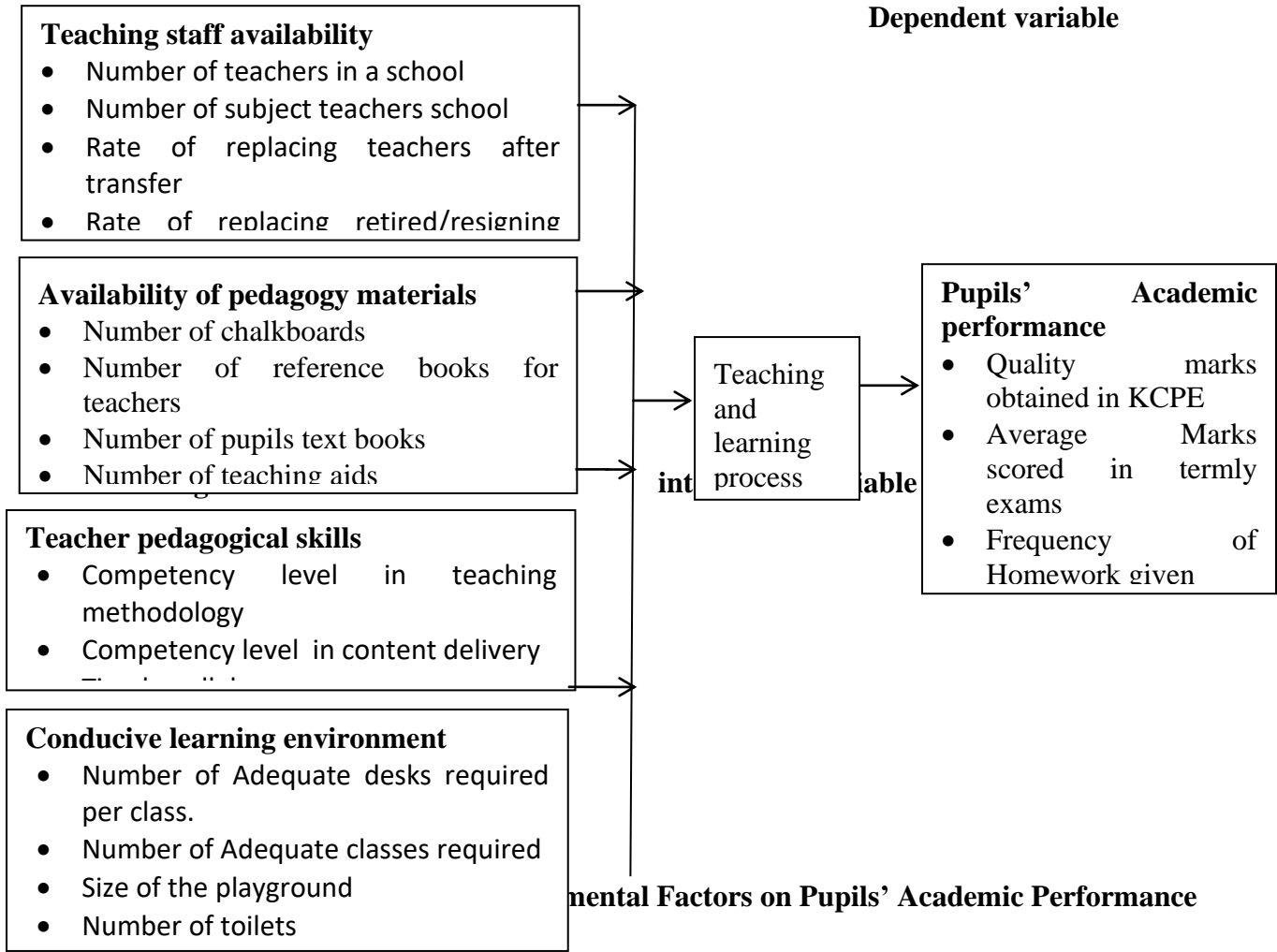
Studies have shown that; pupils in large classes drift off task because of too much instruction from the teacher to the whole class instead of individual attention, and low attaining students are most affected (Filade, 2019); in schools where the PTR was high above the set standards, teachers found it difficult to give personalized attention to all pupils and take full control of their classes (Ndayisaba, 2017); transferring teachers without replacement contribute to shortage of teachers affected teaching and learning and ultimately affecting performance (Wanyama, 2013); poor performance is associated with poor working environment for teachers and poor supply of teaching and learning materials (Nghambi, 2014); textbooks and revision materials greatly influence academic performance (Luketero & Kangangi, 2019); teacher pedagogical content knowledge positively predicted students' achievement (Prasetio, Azis, Fadhila & Fauziah, 2017); subject matter knowledge, academic qualification, professional development and teaching experience are crucial and significantly related with students' academic achievement (Olanipekun, 2015); subject matter knowledge helps the teacher to adopt suitable teaching methods, gives teachers the capability to clear up misconceptions and hard concepts to students enabling them to improve their performance (Kiamba, 2018) and a school environment with many students, less classrooms and few teachers contributes to little or lack of attention from the teachers since they are not able to attend to all pupils individually (Moonson, 2013). The researcher therefore established geographical, scope and methodological gaps. This current study aimed at filling by examining internal environment factors influencing performance in public Primary School in Mandera East Sub-County.

2.5 Conceptualization

The study conceptualizes that independent variables, teaching staff availability, availability of pedagogy materials, teachers' pedagogy skills and conducive learning environment, have a strong relationship with the independent variable, pupils' academic performance. However, this relationship is regulated or moderated by the intervening variable, teaching and learning process.

2.6 Conceptual Framework

Independent variable



2.7 Operationalization of the Variables

Table 2: Operationalization of the Variables

| Variables | Indicators | Data collection instrument | Analytical Tool | |
|------------------------------------|--|----------------------------|-------------------------|--------|
| Independent variables | <ul style="list-style-type: none"> • Number of teachers in a school • Number of subject teachers' school staff | Questionnaire | Multivariate regression | Linear |
| Teaching staff availability | <ul style="list-style-type: none"> • Rate of replacing teachers after transfer • Rate of replacing retired/resigning teachers | | | |
| Availability of pedagogy materials | <ul style="list-style-type: none"> • Number of chalkboards • Number of reference books for teachers • Number of pupils text books • Number of teaching aids • Number of pencils/biros | Questionnaire | Multivariate regression | Linear |
| Teachers' pedagogical skills | <ul style="list-style-type: none"> • Competency level in teaching methodology • Competency level in content delivery • Competency level in syllabus coverage • Competency level in marking of pupils' work | Questionnaire | Multivariate regression | Linear |
| Conducive learning environment | <ul style="list-style-type: none"> • Number of Adequate desks required per class. • Number of Adequate classes required • Size of the playground • Number of toilets | Questionnaire | Multivariate regression | Linear |
| Dependent variable | <ul style="list-style-type: none"> • Number of pupils who get quality marks in KCPE | Questionnaire | Multivariate regression | Linear |
| Pupils' Academic performance | <ul style="list-style-type: none"> • Average Marks scored in termly exams • Frequency of homework given | | | |

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents a detailed description of research methodology that was used in the study. This chapter covers the study design, study area, target population, sampling design and procedures, research instruments, validity and reliability of research instruments, data analysis and presentation and ethical considerations.

3.1 Study Design

The researcher used cross-sectional survey research design. Babbie (2013) point out that cross-sectional survey is suitable in collecting data on current status of events on certain phenomena and especially when a large population is involved. This design was therefore suitable in describing and exploring relationship between internal environmental factors and academic performance of pupils in public primary schools in Mandera East Sub-County.

3.2 Study Area

The study was conducted in Mandera East Sub County. Mandera County borders Ethiopia to the North and Somalia to the East and Wajir County to the South west as shown in Appendix VI. It covers an area of 25,939.8 KM² with a population of 1,572,435 located approximately 1027km south-west Nairobi (Mandera County development planning office, 2020). The area is faced with acute teacher shortage due to security reasons that drives teachers away from their residents and deteriorated infrastructure especially in public primary schools whereby some pupils actually study under trees. Depletion of pasture and theft of livestock by bandits affect the local economy. Many people in the area live below the poverty line and therefore depend on school administration to provide teaching and learning resources.

3.3 Target Population

The target population of the study was 30 public primary schools in Mandera East Sub- County. According to the sub-county director of direction, these schools have a total of 200 class teachers. Class teachers have been selected since they are directly involved in the teaching and learning process and are therefore knowledgeable on internal environment factors influencing pupils' academic achievement.

3.4 Sampling Design and Procedures

The 30 public primary schools were used to determine the sample size. The total target population was 200 class teachers' pupils. Krejcie and Morgan (1970) sampling table was used to determine the sample of 132 class teachers as shown in Appendix IV. Simple random sampling was used to sample the class teachers. The researcher therefore obtained a list of all class teachers from head teachers of the targeted schools. The names of the teachers were listed down numbered 1-200. The researcher randomly picked 132 class teachers who participated in the study.

3.5 Research Instruments

This study used questionnaires to collect data from teachers. Questionnaires gave enough time to the respondents to think about the questions and to give well thought answers. The questionnaire was divided into five sections. Section A covered background information, section B covered relationship between availability of teaching staff and academic performance, section C covered relationship between checking of pedagogy materials and academic performance, section D covered relationship between conducive learning environment with adequate physical facilities and academic performance, section E covered relationship between teacher-pupil ratio and pupils' academic performance and section F covered pupils' performance .

3.6 Validity and Reliability of the Research Instruments

3.6.1 Validity

The research used content validity (Sekaran, 2010). Content validity was ascertained by engaging the research supervisor to check and assess the errors and the accuracy of data expected. The process of validation will enable the researcher to test the suitability of the questions, the adequacy of the instructions provided, the appropriateness of the format and sequence of questions. Some corrections were made to the questionnaires and the final version was printed out.

3.6.2 Reliability

Questionnaire reliability was tested using Cronbach's' Alpha. The Cronbach alpha coefficient method indicates the internal consistency of the items in the scale. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. A reliability coefficient of 0.7 and above was considered appropriate for the study and that below 0.7 was inappropriate for the study. A score

of 1 means perfect reliability. The reliability coefficient was 0.714 which meets the reliability threshold hence the questionnaire was reliable.

3.7 Piloting

A pilot was conducted with 10% of the target population (20 teachers' questionnaires) in three public primary schools in Mandera North Sub County. This area has been selected for piloting since it has similar characteristics with Mandera East Sub County.

3.8 Data Analysis

The data was coded following the likert scale values consistent with the number of options in the research queries. The coded data was analyzed by use of descriptive statistics such as frequencies and percentages. Multivariate Linear regression was used to ascertain the relationship between the independent and dependent variable.

The regression equation is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y is the dependent variable (pupils' academic performance)

β_0 is the regression constant

β_1 , β_2 , β_3 and β_4 are the coefficients of independent variables

X1 is teacher staff availability

X2 is availability of pedagogy materials

X3 is teacher pedagogy skills

X4 is conducive learning environment

ε is the error term

3.9 Ethical Considerations

The research sought all the mandatory legal authorizations before proceeding to collect data. The researcher obtained an introduction letter from the dean of school of education, Lukenya University. He also applied for a research permit from National Council of Science and Technology (NACOSTI) for permission to conduct a study in public primary schools in Mandera East sub-county. This letter was also used to inform the sub county director of education before

going to schools. The researcher visited each sampled school and administered the questionnaires to the class teachers. The researcher observed all the ethical guidelines stipulated in conducting research that involves human subjects, namely; objectivity, informed consent maintenance of confidentiality, and anonymity, voluntary participation and the ensuring that the entire process would free of coercion or intimidation. Accordingly, the sampled respondents were not compelled to answer the questionnaires.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, AND INTERPRETATION OF FINDINGS

4.1 Introduction

This chapter covers data analysis, presentation, and interpretation. The general objective was to determine the effect of internal environmental factors and academic performance of pupils in public primary schools in Mandera East Sub-County. The specific objectives were to determine effect of teaching staff availability, availability of pedagogy materials, teachers' pedagogical skills, and conducive learning environment on academic performance of pupils in public primary schools in Mandera East Sub-County. The sample size was 132 class teachers and 113 answered the questionnaire. The study response rate was therefore 87% which was adequate for analysis. The response rate is in agreement with Mugenda and Mugenda (2008) who stipulated that a response rate of 50% is adequate, 60% good, and 70% as excellent. The high response rate as a result of the researchers' efforts to closely monitor the data collection process and gave the teachers and students enough time to complete the questionnaires. The researcher also created a rapport with the respondents and assured them of confidentiality of the data collected.

4.2 Background Information

The background of the teachers focused on gender, educational level, and teaching experience. Gender balance in the teaching fraternity ensures that learners have learning experiences of both gender though some may prefer one gender to the other. Teacher training equips teachers with classroom management practices that enable them to deliver curriculum effectively. Experience also enhances content mastery since as opposed to novice teachers who may frequently refer to their lessons plan, experienced teachers are well knowledgeable on the concepts of their teaching subjects. Findings on teachers' gender are presented in Table 3

Table 3: Teachers' Background Information

| Gender | Frequency (F) | Percentage (%) |
|---------------|----------------------|-----------------------|
| Male | 75 | 66.4 |
| Female | 38 | 33.6 |
| Total | 113 | 100.0 |

| Highest Education qualification | | |
|--|------------|--------------|
| Masters' degree | 4 | 3.5 |
| Bachelors' degree | 29 | 25.7 |
| Diploma | 46 | 40.7 |
| P1Certificate | 34 | 30.0 |
| Total | 113 | 100.0 |

| Period of teaching | | |
|---------------------------|------------|--------------|
| 1-5 years | 52 | 46.0 |
| 6-10 years | 20 | 17.7 |
| 11-15 years | 10 | 8.8 |
| 16-20 years | 13 | 11.5 |
| Over 20 years | 18 | 15.9 |
| Total | 113 | 100.0 |

Findings show that majority of the class teachers, 66.4% were male. This shows that there were fewer female teachers than male. This is an indication that the role of class teachers is mostly delegated to male teachers. The fact that majority of the class teachers are male show that the teaching fraternity in the study area is dominated by male and there is no teacher gender balance which is paramount in the teaching-learning process. Pupils of a certain gender may believe that teachers of that gender understand their grievances and concerns. Such students may hence discuss life and academic issues with them resulting in a good relationship with the teachers and eventually improved performance. According to Maqsood, Munazza, and Ishtiaq (2018), teachers' gender affects their classroom management practices and their relationship with learners.

Findings also show that of the teachers had either attained a diploma (40.7%) or certificate (30%) while the others had attained undergraduate and masters' degrees. This is an indication that all the class teachers were qualified as primary school teachers since they had attained the minimum threshold which is a P1 certificate. The teachers were hence qualified to teach in a primary school in Kenya. Quality of teacher academic qualification determines the quality of content

delivered and pupils' grades in a subject taught by a qualified teacher. Akinsolu (2010) noted that pupil's performance is determined by availability of qualified teachers.

With regards to teaching experience, findings show that majority of the class teachers (63.7%) have been in the teaching profession for between 1-10 years. This is an indication that the teachers have spent a considerable number of years in a school are therefore knowledgeable on the internal factors that may be contributing to pupils academic performance. Fatma and Tugay (2015) indicated that teachers with a great experience of teaching are more effective in teaching and good in classroom management skills.

4.3 School Academic Performance

The study sought to find out the trend of pupils' performance in National and internal exams as well as home works. The class teachers were there asked to indicate the extent to which they agreed with statements related to school academic performance. Findings are presented Table 4.

Table 4: School Academic Performance

| Statements | Strongly disagree | | Disagree | | Not Sure | | Agree | | Strongly Agree | | mean |
|--|-------------------|------|----------|------|----------|-----|-------|------|----------------|------|------|
| | F | % | F | % | F | % | F | % | F | % | |
| There is a high number of pupils who get quality marks in KCPE | 4 | 3.5 | 77 | 68.1 | 7 | 6.2 | 25 | 22.1 | 0 | 0 | 2.47 |
| Pupils perform well in end of term exams | 51 | 45.1 | 49 | 43.4 | 7 | 6.2 | 3 | 2.7 | 3 | 2.7 | 2.02 |
| Pupils always accomplish homework | 0 | 0 | 4 | 3.5 | 9 | 8.0 | 52 | 46.0 | 48 | 42.5 | 3.21 |

N=113

Findings show that majority of the class teachers 68.1% disagreed that here is a high number of pupils who get quality marks in KCPE, majority of the class teachers (mean=2.02) disagreed that the pupils perform well in end of term exams, and majority of the class teachers (mean=3.21)

agreed that pupils always accomplish homework. This implies that although majority of the pupils accomplish their homework, they still perform poorly in national and end term exams. This study therefore sought to find out whether pupils' academic performance could be due to internal (school-based) factors.

4.4 Teaching Staff Availability and Academic Performance

The first objective sought to determine the effect of teaching staff availability and academic performance of pupils in public primary schools in Mandera East Sub-County. The class teachers were asked to indicate the extent to which they agreed with statements on teacher adequacy. Findings are presented in Table 5.

Table 5: Teaching Staff Availability

| Statements on teacher adequacy | Strongly disagree | | Disagree | | Not Sure | | Agree | | Strongly Agree | | mean |
|--|-------------------|------|----------|------|----------|------|-------|-----|----------------|------|------|
| | F | % | F | % | F | % | F | % | F | % | |
| Number of teachers in the school is enough | 70 | 61.9 | 27 | 23.9 | 0 | 0 | 6 | 5.3 | 10 | 8.8 | 2.10 |
| Number of subject teachers in the school is enough | 77 | 68.1 | 13 | 11.5 | 2 | 18 | 4 | 3.5 | 17 | 15.0 | 2.31 |
| Rate of replacing teachers after transfer is done swiftly | 63 | 55.8 | 13 | 11.5 | 23 | 20.4 | 5 | 4.4 | 9 | 8.0 | 2.38 |
| Rate of replacing retired/resigning teachers is high and effective | 60 | 53.1 | 14 | 12.4 | 19 | 16.8 | 8 | 7.1 | 12 | 10.6 | 2.47 |

N=113

Findings show that more than half of the class teachers (61.9%) strongly disagreed that the number of teachers in the school is enough, 68.1% strongly disagreed that the number of subject teachers in the school is enough, 55.8% strongly disagreed that the rate of replacing teachers after transfer is done swiftly, 53.1% strongly disagreed that the rate of replacing retired/resigning teachers is high and effective. This implies that the schools have few teachers and the teacher pupil ratio may be higher than the recommended ratio. Therefore, one teacher attend to many pupils and may not have adequate time to address the academic needs of every pupil individually. The teachers in such a situation may concentrate only on best performing pupils who learn first and the slow learners may be disadvantage. When teaching many pupils, classroom management may also be a challenge and cases of indiscipline may increase hence interrupting learning and teaching?

Less number of subject teachers means that some lessons are not attended to which may cause delay in syllabus coverage. The pupils may sit for an exam while they are blank on some topics and may therefore perform poorly. The teacher service commission is also slow on replacing teachers who either retire or transferred to other schools which cause workload for the few teachers in a school and they may not be able to deliver content effectively as a result of burn out. Findings concur the Uwezo Assessment Report (2011) that teachers' shortage in public primary schools in Kenya is acute and is greatly affecting learning. Nyiwa, Maithya and Gathumbi (2017) also found that the teaching staff in public schools in Kenya is limited and that academic performance has been affected by the high number of pupil-teacher ratio.

4.5 Influence of Availability of Pedagogy Materials and academic performance

The second objective examines the effect of availability of pedagogy materials and academic performance of pupils in public primary schools in Mandera East Sub-County. Class teachers were asked to tick on the extent to which they agree with statements regarding availability of pedagogy materials. Findings are presented in Table 6.

Table 6: Availability of Pedagogy Materials

| Statements | Strongly disagree | | Disagree | | Not Sure | | Agree | | Strongly Agree | | Mean |
|---|-------------------|------|----------|------|----------|------|-------|------|----------------|------|------|
| | F | % | F | % | F | % | F | % | F | % | |
| Number of Chalkboards in school is adequate | 20 | 17.7 | 3 | 2.7 | 1 | 0.9 | 82 | 72.6 | 7 | 6.2 | 3.62 |
| Number of Reference books for teachers adequate | 7 | 6.2 | 8 | 7.1 | 6 | 5.3 | 84 | 74.3 | 8 | 7.1 | 3.69 |
| Number of Pupil's text books is adequate. | 4 | 3.5 | 79 | 69.9 | 8 | 7.1 | 8 | 7.1 | 14 | 12.4 | 2.50 |
| Number of Teaching aids is adequate | 4 | 3.5 | 68 | 60.2 | 17 | 15.0 | 16 | 14.2 | 8 | 7.1 | 2.60 |
| Number of Pens/pencils is adequate. | 10 | 8.8 | 18 | 15.9 | 5 | 4.4 | 69 | 61.1 | 11 | 9.7 | 3.47 |

N=113

Findings showed that majority of the class teachers (72.6%) agreed that the number of chalkboards in school is adequate, 74.3% agreed that number of reference books for teachers is adequate, 69.9% disagreed that number of pupils' text books is adequate, 60.2% disagreed that number of teaching aids is adequate, and 61.1% agreed that the number of pens/pencils is adequate. This shows that while some pedagogy materials (chalkboards, reference books for teachers, and pens/pencils) are adequate, others are inadequate (pupils' text books and teaching aids).

Shortage of revision books and teaching aids could contribute to poor academic performance. Revision books enables pupils to revise and follow up with teachers while teaching. Teaching aids on the other hand helps the teachers to do demonstrations in class rooms for easier understanding of concept. The reason for low provision could be due to inadequate allocation of resources from the government and the inability of parents to fill the gap through buying text books for their children. Provision of adequate teaching/learning materials helps pupils to learn better as it reduces sharing thus pupils understand better which help improve their performance. Findings concur with Luketero and Kangangi (2019) that school resources (textbooks and revision materials) influence academic performance. In addition, Nghambi (2014) found that poor performance in examinations was associated with poor supply of teaching and learning materials.

4.6 Influence of Teachers' Pedagogical Skills and Academic Performance

The third objective therefore sought to establish the effect of teachers' pedagogical skills and academic performance of pupils in public primary schools in Mandera East Sub-County. Class teachers were requested to rate their competency as far as pedagogy skills is concerned. Findings are presented in Table 7.

Table 7: Teachers' Pedagogical Skills

| Pedagogy skills | | Very incompetent | | Incompetent | | Fairly competent | | Competent | | Very competent | | Mean |
|------------------------------------|--|------------------|-----|-------------|-----|------------------|------|-----------|------|----------------|-----|------|
| | | F | % | F | % | F | % | F | % | F | % | |
| Competency in teaching methodology | | 7 | 6.2 | 7 | 6.2 | 45 | 39.8 | 50 | 44.2 | 4 | 3.5 | 3.33 |
| Competency in content delivery | | 2 | 1.8 | 6 | 5.3 | 23 | 20.4 | 76 | 67.3 | 6 | 5.3 | 3.69 |
| Competency in syllabus coverage | | 0 | 0 | 9 | 8.0 | 59 | 52.2 | 39 | 34.5 | 6 | 5.3 | 3.37 |
| Competency in marking pupils' work | | 1 | 0.9 | 10 | 8.8 | 60 | 53.1 | 33 | 29.2 | 9 | 8.0 | 3.35 |

N=113

Findings show that majority of the class teachers (84%) opine that they are either fairly competent/competent in teaching methodology, 67.3% opine that they competent in content delivery, 86.7% are either fairly competent/competent in syllabus coverage or 82.3% are fairly competent/competent on marking pupils work. This implies that the class teachers are competent in their work. They make efforts to adopt suitable teaching methodology in content delivery to enhance understanding of the concepts they teach. The teachers have a great command of the subjects they teach and are therefore able to deliver content effectively. They are also try to cover syllabus in time to give the pupils adequate time for revision in readiness for exams. Competency in marking exams enables pupils to understand their strengths and weakness. They may therefore work on their weakness in conjunction with the teachers which may help them improve academically. Competency helps the teacher to adopt suitable teaching methods, gives teachers the capability to clear up misconceptions and hard concepts to students enabling them to improve their performance. Findings are in agreement with Aina and Olanipekun (2015) that subject matter knowledge, academic qualification, professional development and teaching experience are crucial in academic achievement.

4.7 Influence of Conducive Learning Environment and Academic Performance

The fourth objective assesses the effect of conducive learning environment and academic performance of pupils in public primary schools in Mandera East Sub-County. Class teachers were asked to rate the adequacy of physical facilities in the school. Findings are presented in Table 8.

Table 8: Adequacy of Physical Facilities

| School facilities | Very inadequate | | Inadequate | | Fairly adequate | | Adequate | | Very adequate | | Mean |
|---|-----------------|------|------------|------|-----------------|------|----------|------|---------------|-----|------|
| | F | % | F | % | F | % | F | % | F | % | |
| Number of Classrooms in the school | 12 | 10.6 | 24 | 21.2 | 12 | 10.6 | 63 | 55.8 | 2 | 1.8 | 3.17 |
| Number of Desks in each class | 53 | 46.9 | 35 | 31.0 | 18 | 15.9 | 5 | 4.4 | 2 | 1.8 | 2.11 |
| Number of Toilets against the pupils population | 19 | 16.8 | 48 | 42.5 | 21 | 18.6 | 25 | 22.1 | 0 | 0 | 2.46 |
| The size of the Playground in the school | 2 | 1.8 | 14 | 12.4 | 18 | 15.9 | 69 | 61.1 | 10 | 8.8 | 3.63 |

N=113

Findings show that majority of the class teachers opine that the number of classrooms in the school is adequate (mean=3.17), number of desks in each class is inadequate (mean=2.11), number of toilets against the pupils population is inadequate (mean=2.46), and the size of the playground in the school is adequate (mean=3.63). This implies that majority of the schools have adequate classrooms, and playground while the majority lack enough desks and number of toilets. Lack of enough desks means that the pupils may be fixed in a one desk which may make girls feels uncomfortable and lose concentration in class. Few numbers of toilets means sharing

for both genders and girls particularly those at puberty may prefer to miss school during a certain period of the month rather than face the embarrassment at school. This may affect their performance negatively. Findings are in agreement with Moonson (2013) who found that poor school environment leads to pupils’ detachment with studies. Thiruaru (2016) also established those inadequate physical facilities contributed to the pupils’ poor performance.

4.8 Relationship between Head Teachers’ Administrative Practices and Academic Performance

To establish the relationship between internal environmental factors and academic performance of pupils in public primary schools in Mandera East Sub-County, regression analysis was used. The regression analysis shows how a change in every study independent variable predicts change on the dependent variable. Table 9-11 presents the regression output.

Table 9: Model Summary

| Model | R | R Square | Adjusted R² | Std. Error of the Estimate |
|--------------|----------|-----------------|-------------------------------|-----------------------------------|
| 1 | 0.484 | 0.235 | 0.206 | 0.937 |

a Predicators: (constant) **teaching staff availability, availability of pedagogy materials, teachers’ pedagogical skills, conducive learning environment**

The results show that the value of R² is 0.235. This shows that internal environmental factors accounts for 23.5% changes in pupils academic performance. Therefore, other factors excluded from this study account for 76.5% changes in academic performance of pupils in public primary schools in Mandera East Sub-County.

An analysis was performed on the relationship between internal environmental factors and pupils academic performance. The F-ratio in the ANOVA tests whether the overall regression model was a good fit for the data.

Table 10: Analysis of Variance

| ANOVA ^b | | | | | | |
|--------------------|------------|----------------|-----|-------------|-------|-------------------|
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | Regression | 29.091 | 4 | 7.273 | 8.279 | .000 ^b |
| | Residual | 94.873 | 108 | .878 | | |
| | Total | 123.965 | 112 | | | |

a Predicators: (constant) **teaching staff availability, availability of pedagogy materials, teachers' pedagogical skills, conducive learning environment**

b Dependent variable: **academic performance**

Findings showed that the regression model was significant (p-value = 0.000) at 0.05 hence there was a linear relationship between internal environmental factors and pupils academic performance. The F is 8.279 which shows that the model is suitable in testing the relationship between independent and dependent variable.

Table 11: Regression Coefficients

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|----------------------|-----------------------------|------------|---------------------------|-------|------|
| | B | Std. Error | Beta | | |
| | Constant/Y Intercept | 1.775 | .555 | | |
| Staff availability | .255 | .121 | .230 | 2.110 | .037 |
| Pedagogy materials | .505 | .169 | .368 | 3.863 | .000 |
| Pedagogical skills | .362 | .094 | .341 | 2.992 | .003 |
| Learning environment | .224 | .138 | .216 | 1.606 | .107 |

Based on the results in Table 4.11, the equation

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Changes to;

Pupils academic performance = 1.775 + 0.255 (teaching staff availability) + 0.505 (availability of pedagogy materials) + 0.362 (teachers' pedagogical skills) + 0.224 (conducive learning environment).

Therefore, holding all variables at a constant zero, pupils' academic performance in public primary schools in Mandera East Sub-County would be at 1.775. A unit increase in teaching staff availability would cause a 0.255 significant increase in pupils academic performance, a unit increase in availability of pedagogy materials would cause a 0.505 significant increase in pupils academic performance, a unit increase in teachers' pedagogical skills would cause a 0.362 significant increase in pupils academic performance, and a unit increase in conducive learning environment would cause a 0.224 significant increase in pupils academic performance. According to the T statistics, availability of pedagogy materials has the most significant effect on pupils' academic performance (3.863), followed by teachers' pedagogy skills (2.992), teacher adequacy (2.110) and conducive learning environment (1.606). The findings shows that the three independent variables; teaching staff availability (0.037), availability of pedagogy materials (0.000), and teachers' pedagogical skills (0.003) are significantly related to pupils' academic since the p value is less than 0.05. Learning environment is not significantly related to pupils academic performance since the p value is 0.107 which is greater than 0.05. Findings therefore concur with; Filade (2019) that there is a significant effect of student-teacher ratio and the academic performance, Kamal (2014) that there is a significant relationship between availability of instructional resources, supervision and mathematics achievement, and Wamala and Seruwagi (2012) that high academic achievement is significantly associated with high teacher competency,

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of key findings and conclusions. It also presents the recommendations and suggestions for further research.

5.2 Summary of Findings

Findings are summarized according to the study objectives;

First objective; there is a significant relationship between teaching staff availability and pupils' academic achievement. The number of teachers in the primary schools is not enough. Subject teachers are inadequate leading to missed lessons hence the syllabus is not covered on time. The teacher who retires or referred to other schools are not replaced immediately. The school therefore has to deal with few teachers and the teacher pupil ratio is high. The teachers are unable to attend to every pupil effectively leading to low academic achievement.

Second objective; there is a significant relationship between availability of pedagogy materials and pupils' academic achievement. The schools have adequate chalk boards, reference books for teachers, and pens/pencils. The pupils' text books and teaching aids are inadequate. Therefore, pupils are forced to share the available text books and may lack enough closure with the text sine every pupil has his/her preferences. Lack of teaching aids demotivates teachers since they have to struggle when explaining concepts and pupils may not understand the lesson as the teacher would wish for. This may cause poor performance.

Third objective; there is a significant relationship between teachers' pedagogical skills and pupils' academic achievement. The teachers are competent in teaching methodology, content delivery, and syllabus coverage and on marking pupils' work. Teachers' competence enhances pupils' performance since competent teachers are well knowledgeable on the subjects they teach and have better classroom management practices. This may eventually help to improve pupils' academic performance.

Fourth objective; there is a significant relationship between conducive learning environment and pupils' academic achievement. The number of classrooms in the school is inadequate,

number of desks in each class is adequate, number of toilets against the pupils' population is inadequate, and the size of the playground in the school is adequate. The pupils may feel uncomfortable in a squeezed desk and toilets that are unhygienic. They may feel uncomfortable and lose concentration in class leading to poor performance.

5.3 Conclusion

There is acute shortage of teachers in public primary schools in Mandera East Sub County. The teachers are not enough to handle every subject (specialization). This means that the teachers may take up lessons that they not be conversant with while in other situations lessons may be left unattended to. This affects timely syllabus coverage. The blame on teacher shortage is solely on the teacher service commission which takes time to replace the retired teachers or teachers who are transferred. Due to insecurity in Northern Kenya, some teachers who are not natives run for their security and in most cases, they do not return to the schools. Rather, they prefer to ask for transfer or search for jobs in the private sector. The study established that qualified teachers help improve the performance. When teachers are well trained, they are able to develop interest and ability for teaching. Qualified teachers are said to be very competent in the curriculum activities which might influence pupils' performance.

It is also concluded that pedagogy materials promote and encourage effective teaching and learning. There is shortage in pedagogy materials which may lead to poor attention. Sharing of text books may also demotivate pupils who may have to share the books. Primary school learners need wall charts and maps to help them learn easily. Teaching/learning materials are needed in order to raise the quality of education of primary school pupils. From the findings, it is evident that majority of the schools are uncondusive for learning. This depicted by the inadequacy of desks and toilets. The pupils are hence forced the few desks that are available and they may feel uncomfortable and lose concentration while in class. Lack of enough may also lead to lack of interest in education particularly for girls. Teachers may on the other hand may de demotivated as a result of the poor teaching environment and fail to performing their duties effectively.

5.4 Recommendations

Teacher service commission should improve on the speed of replacing teachers who either retire or are transferred to other schools. The commission should replace the teachers within the shortest time possible. This will enable attainment of recommended PTR in schools which currently is far above the required standards. It will also help to offset the problem of teacher shortage as a result of over-enrolments caused by introduction of Free Primary Education. The government through the MOE and TSC should ensure balance in deployment of teachers throughout the country even in areas considered as marginalized like Mandera County.

The MoE should consider introducing incentivized in-service training courses for teachers in primary schools which could be attended by teachers in practice during school holidays. This will equip teachers with skills to prepare professional records, assess pupils and also improve their subject matter knowledge. The MoE should device a mechanism of rewarding, recognizing and or promoting teachers with exemplary subjects' performance as a motivational method to woo others to step up their abilities and creativity in teaching.

To improve the pedagogy materials, parents should be sensitized on the importance of education. This will encourage them to buy text books for their children to substitute the shortage at school. The government should also make efforts to ensure that the books disbursed to public primary schools are enough for the pupils to enable them improve on their academics through constancy revision. The schools may also come up with income generating activities that may enable them have some extra funds to procure teaching aids and text books.

The school management should address the school environment related factors that lead to poor performance. The school management should collaborate with stakeholders such as the parents, the school community, non-government organizations, and other well-wishers to raise funds in an effort to improve the schools' physical facilities. The government should also review the development funds allocated to schools in marginalized areas to enable them improve the schools' physical facilities.

5.5. Suggestions for Further Study

A study to find out the influence of teachers in-service training on students' subject performance

A similar study be done in another sub county in Mandera to establish whether the situation in Mandera East is similar or differs with other sub-counties in the same County.

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APPENDICES

Appendix I: Introduction Letter

Hussein IsaakAbdi

P.O.Box,

Mandera.

The Head Teacher,

..... Primary School,

Dear sir/madam,

RE: PERMISSION TO COLLECT DATA FROM YOUR SCHOOL.

I am a student at the Lukenya University pursuing master degree in education specialising in planning and administration and I am in the process of conducting a research on “**relationship between internal environmental factors and academic performance of pupils in public primary schools in Mandera East Sub-County**”. Your school has been selected to participate in this study. Kindly allow me to administer the questionnaires to the class teachers. I assure you that the information provided will only be used for academic purposes and respondents’ identity will be treated with strict confidentiality.

Yours faithfully,

Hussein IsaakAbdi

Appendix II: Questionnaire for the Teachers

Please complete this questionnaire as truthfully as possible. The information given will purely be used for the purpose of this study and will be treated with the strictest confidence.

Section A: Background Information

1. What is your gender:

Male () Female ()

2. Which is your highest education qualification?

Masters in Education () Bachelors degree in Education ()

Diploma in Education () Others (specify)_____

3. How long have you been teaching?

1 -5 years () 6 -10 years () 11 -15 years ()

16 -20 years () 21 years and above ()

Section B: Teaching staff availability and academic performance

4. Using the scale given below show the extent to which you agree or disagree with the teaching staff availability in the school on academic performance. Please tick (√) appropriately.

1=Strongly Disagree

2=Disagree

3=Not Sure

4=Agree

5=Strongly Disagree.

| Teacher adequacy | 1 | 2 | 3 | 4 | 5 |
|--|----------|----------|----------|----------|----------|
| Number of teachers in the school is enough | | | | | |
| Number of subject teachers in the school is enough | | | | | |
| Rate of replacing teachers after transfer is done swiftly. | | | | | |
| Rate of replacing retired/resigning teachers is high and effective | | | | | |

Section C: Availability of Pedagogy Materials and academic performance

5. Please tick the adequacy of the listed instructional materials in the school. Use the scale given to answer the following questions accordingly.

Please tick (√) appropriately.

1=Strongly Disagree

2=Disagree

3=Not Sure

4=Agree

5=Strongly Disagree.

| Material | 1 | 2 | 3 | 4 | 5 |
|---|----------|----------|----------|----------|----------|
| Number of Chalkboards in school is adequate. | | | | | |
| Number of Reference books for teachers adequate | | | | | |
| Number of Pupil's text books is adequate. | | | | | |
| Number of Teaching aids is adequate | | | | | |
| Number of Pens/pencils is adequate. | | | | | |

Section D: Teachers' pedagogy skills and academic performance

6. Using the scale given below, how do you rate your competency in as far as pedagogy skills is concerned?

1=Very incompetent

2=Incompetent

3=Fairly competent

4=Competent

5=Very competent

| | 1 | 2 | 3 | 4 | 5 |
|------------------------------------|----------|----------|----------|----------|----------|
| Competency in teaching methodology | | | | | |
| Competency in content delivery | | | | | |
| Competency in syllabus coverage | | | | | |
| Competency in marking pupils' work | | | | | |

Section E: Conducive learning environment and academic performance

7. How can you rate the adequacy of the listed physical facilities in the school? Use the scale given to answer the following questions accordingly.

Please tick (√) appropriately.

1=Very inadequate

2=Inadequate

3=Fairly adequate

4=Adequate

5=Very adequate

| Material | 1 | 2 | 3 | 4 | 5 |
|---|----------|----------|----------|----------|----------|
| Number of Classrooms in the school | | | | | |
| Number of Desks in each class | | | | | |
| Number of Toilets against the pupils population | | | | | |
| The size of the Playground in the school. | | | | | |

Section F: Academic Performance

8. Using the scale given below show the extent to which you agree or disagree with the statements on school academic performance. Please tick (✓) appropriately.

1=Strongly Disagree

2=Disagree

3=Not Sure

4=Agree

5=Strongly agree

| Performance indicators | 1 | 2 | 3 | 4 | 5 |
|--|----------|----------|----------|----------|----------|
| There is a high number of pupils who get quality marks in KCPE | | | | | |
| Pupils perform well in end of term exams | | | | | |
| Pupils always accomplish homework | | | | | |

Thank you for your cooperation

Appendix III: Krejcie and Morgan Sample Size Table

| <i>N</i> | <i>S</i> | <i>N</i> | <i>S</i> | <i>N</i> | <i>S</i> |
|----------|----------|----------|----------|----------|----------|
| 10 | 10 | 220 | 140 | 1200 | 291 |
| 15 | 14 | 230 | 144 | 1300 | 297 |
| 20 | 19 | 240 | 148 | 1400 | 302 |
| 25 | 24 | 250 | 152 | 1500 | 306 |
| 30 | 28 | 260 | 155 | 1600 | 310 |
| 35 | 32 | 270 | 159 | 1700 | 313 |
| 40 | 36 | 280 | 162 | 1800 | 317 |
| 45 | 40 | 290 | 165 | 1900 | 320 |
| 50 | 44 | 300 | 169 | 2000 | 322 |
| 55 | 48 | 320 | 175 | 2200 | 327 |
| 60 | 52 | 340 | 181 | 2400 | 331 |
| 65 | 56 | 360 | 186 | 2600 | 335 |
| 70 | 59 | 380 | 191 | 2800 | 338 |
| 75 | 63 | 400 | 196 | 3000 | 341 |
| 80 | 66 | 420 | 201 | 3500 | 346 |
| 85 | 70 | 440 | 205 | 4000 | 351 |
| 90 | 73 | 460 | 210 | 4500 | 354 |
| 95 | 76 | 480 | 214 | 5000 | 357 |
| 100 | 80 | 500 | 217 | 6000 | 361 |
| 110 | 86 | 550 | 226 | 7000 | 364 |
| 120 | 92 | 600 | 234 | 8000 | 367 |
| 130 | 97 | 650 | 242 | 9000 | 368 |
| 140 | 103 | 700 | 248 | 10000 | 370 |
| 150 | 108 | 750 | 254 | 15000 | 375 |
| 160 | 113 | 800 | 260 | 20000 | 377 |
| 170 | 118 | 850 | 265 | 30000 | 379 |
| 180 | 123 | 900 | 269 | 40000 | 380 |
| 190 | 127 | 950 | 274 | 50000 | 381 |
| 200 | 132 | 1000 | 278 | 75000 | 382 |
| 210 | 136 | 1100 | 285 | 1000000 | 384 |

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

Appendix IV: Budget

| Item | No. of items | Unit cost(ksh) | Total cost(ksh) |
|---|---------------------|-----------------------|------------------------|
| Proposal development | | | |
| Internet | | | 8000 |
| Copier papers | 5 reams | 500 | 2500 |
| Printer cartridge | 1 | 2500 | 2500 |
| Binding | 6 | 100 | 600 |
| Pre-test | | | |
| Printer cartridge | 1 | 2500 | 2500 |
| Questionnaires' Photocopying | 75 | 12 | 900 |
| Transport | 10 days | 300 | 3000 |
| Data collection | | | |
| Photocopying questionnaires | 1224 | 3 | 3700 |
| Training research assistants | 5 days | 500 | 2500 |
| Transport | 10 days | 1,000 | 10000 |
| Food and refreshments | 10 days | 500 | 5000 |
| Data analysis and report writing | | | |
| Installing SPSS | 1 | 500 | 500 |
| Internet | | | 7,000 |
| Statistician | | | 30,000 |
| Copier papers | 4 | 500 | 2,000 |
| Printer cartridge | 1 | 2500 | 2,500 |
| Binding final defense copies | 7 | 500 | 3,500 |
| Final thesis binding | 2 | 1,000 | 2,000 |
| Sub-Total | | | 88,700 |
| Contingency | | 15% of the total | 13,305 |
| Grand total | | | 102,005 |

Appendix V: Time Plan

| | Period | | | | | | | | |
|--|-------------|----------------------|-------------|----------------|-------------|-------------|--------------|-------------|-------------|
| Activity | May 2021 | May- July 2021 | Aug 2021 | April. 2022 | May 2022 | May 2022 | June 2022 | Jun 2022 | Jul 2022 |
| Identification Of research Title | | | | | | | | | |
| Proposal writing | | | | | | | | | |
| Submission of the proposal | | | | | | | | | |
| Proposal defense | | | | | | | | | |
| Pilot study | | | | | | | | | |
| Data collection | | | | | | | | | |
| Data analysis | | | | | | | | | |
| Project writing | | | | | | | | | |
| Submission of the project | | | | | | | | | |

Appendix VI: Map of Mandera County

