ASSESSMENT OF SCHOOL FEEDING PROGRAM ON PRE- SCHOOL LEARNERS' ACHIEVEMENT IN MVITA SUB-COUNTY, MOMBASA

DEBORAH M. OKINDO

A RESEARCH PROECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTERS DEGREE IN EDUCATION ADMINSTRATION, MANAGEMENT AND LEADERSHIP OF MOUNT KENYA UNIVERSITY

JULY 2025

DECLARATION AND APPROVAL

Declaration by student:

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

SIGNATURE _____ DATE 3/7/25

DEBORAH M. OKINDO

MED/2021/40383

Declaration by supervisors

This proposal has been submitted for review with our approval as university supervisor.

Signature _____ Date 3/7/25

NAME: Dr Emily Kirwok

Mount Kenya University:

Mount Kenya University

DEDICATION

I happily wish to dedicate this study paper to the Almighty God, the supreme being. I equally dedicate this study paper to the following: Phyllis Nyanchama (mother), Charles Nyauma Makinya (husband), Sudyne Makinya (daughter), Junior and Senior Makinya (sons).

ACKNOWLEDGEMENT

First of all, I would like to thank God for everything. I am also indebted to thank my advisor, Dr. Emily Kirwok, for her unreserved and constructive comments during the preparation of this proposal. Without her advice and guidance the accomplishment of this proposal would have been impossible.

I would like to thank all my family members, especially my daughter who stood with me during this journey proposal writing.

ABSTRACT

The school feeding program (SFP) plays a vital role in learner's achievement of pre-primary school. Young children in their development stage need a lot of quality nutrition to attend school, transition to the next educational level, and perform well in academics. This study therefore explored the extent to which school feeding program impacts on the academic achievement of pre-school learners in Mvita Sub-County, Mombasa County, Kenya. Failure to supply adequate nutrition to preschoolers may affect school attendance with a high possibility of poor retention and transition by preschoolers. The following research objectives were formulated to guide the study; To establish teaching and learning after the initiation of school feeding Program of preschoolers' academic achievement in Mvita Sub County; to find out the provision of quality food influence academic achievement; to establish whether the amount of food and frequency of feeding influence academic achievement of learners. The study used a descriptive survey design. The research equipment demonstrated strong reliability, with a Cronbach's alpha coefficient of 0.75, and their validity was confirmed through expert assessment. The theoretical foundation of the study was the Hierarchy of Needs by Maslow. The target population included 921 participants, including 13 head teachers, 49 preschool teachers, 49 parent representatives and 810 preschool learners. Using the Yamane Formula, a sample size of 367 respondents was determined, including 13 prominent teachers, 43 teachers, 43 parent representatives, and 268 preschoolers. To collect the data, the questionnaire was distributed to preschool teachers, while interviews were conducted with school heads and parent representatives. For preschool learners, data was collected through an observation checklist. A pilot study involving 92 participants from the selected public preschool in Mvita was conducted to assess the reliability and validity of the equipment. The study adopted a mixed-method approach, incorporating both qualitative and quantitative data. Qualitative data was analyzed using Kitwood's Technique of analysis and was presented narratively. Quantitative data was analyzed through descriptive and inferential data, especially Pearson's Product-Moment Correlation, using the SPSS version 23, and the results were displayed in a tabular form. The findings indicated that the school feeding program positively affected the pupil appearance, enrollment and academic performance. Therefore, lack of SFP and poverty were thought to be the key contributors to the poor academic achievement of preschoolers. The study recommends that the government through the ministry of education and the county governments should encourage the parents to subsidize SFP by contributing food and money to support the learners.

ABBREVIATIONS AND ACRONYMS

ASAL	Arid and Semi-Arid Lands
DQI	Diet Quality Index
ECE	Early Childhood Education
ECD	Early Childhood Development
FCUBE	Free Compulsory Universal Basic Education
FFE	Food for Education
FAO	Food and Agricultural Organization
HGSFP	Home Grown School Feeding Program
KCSE	Kenya Certificate of Secondary Education
KCPE	Kenya Certificate of Primary Education
MoE	Ministry of Education
RoK	Republic of Kenya
SFP	School Feeding Program
SPSS	Statistical Package for Social Sciences
UNCRC	United Nations Convention for Rights of Children
UNESCO	United Nations Education Scientific and Cultural Organization

TABLE OF CONTENTS

CHAPTER ONE
INTRODUCTION

1.0 Introduction

This chapter outlines the background of the study, problem statement, purpose and objectives of the research, research questions, significance of study, its limitations and delimitations, major assumptions, and definition of important terms.

1.1 Background of the Study

As stated at the United Nations Convention on The Rights of the Child (UNCRC), education is widely accepted as a fundamental human right. In this international agreement, every child's right is emphasized to get high quality education, as it is necessary for their overall development. The implementation of this right is still interrupted by many obstacles, especially for children living in food-insecure areas. Every child has the right to safe, adequate and nutritious food; Without this, according to UNICEF (2020), meaningful education is impossible, which emphasizes that hunger remains a major obstacle to learning. For example, according to Finan (2020), food offering schools report an average enrollment rate that according to WFP data, is 28% more than those who do not. When a WFP-supported oil incentive scheme was implemented in Pakistan, female enrollment increased by 76%, while it increased only 14%in non-participation areas.

According to a global assessment of preschool feeding programs by Smith (2018), these programs greatly enhance children's educational achievement, cognitive function and nutritional health. To quickly establish healthy behavior, the study also suggested that the childhood curriculum to include nutrition instructions. According to Jones (2019), the homes participating in subsidized lunch programs helped reduce food insecurity, as well as increase in nutritional intake of children. But the report also states that there are hinderance to meet the obstacles that may obstruct the performance of the program, such as the lack of awareness

and the means of transport among other challenges experienced in the field.

Garcia (2020), whose longitudinal studies have shown that children who had healthy food in preschool, have more development, low risks of chronic diseases and improving educational success in later years, further supports long -term health and educational benefits of further nutrition. Choi (2021) also examined the opinion of teachers on preschool feeding programs and emphasized the importance of involving stakeholders, especially parents and community to guarantee the stability of the program. Similar achievements were seen in Bangladesh, where 698,000 recipients saw an increase in enrollment and attendance as a result of food distribution programs in more than 4,700 elementary schools.

Manary (2023) evaluated therapeutic feeding initiatives applied at community level for children who experience severe malnutrition in Africa and found that these interventions greatly increased both nutritional status and survival results. Even though his research focuses on severe acute malnutrition, it made it clear how it is important to address the malnutrition of childhood using locally targeted strategies. During the 2000 World Education Forum held in Dakar, the global community endorsed the Dakar Framework for Action, which set forth six major objectives under the Education for All (EFA) initiative. These goals aimed to enhance early childhood development, guarantee access to primary education for all children, encourage lifelong learning opportunities, raise adult literacy rates, promote gender equality in education, and elevate overall education quality. To deal with this issue, school feeding programs (SFPs) have been placed worldwide as calculated measures to increase educational access, enrollment and the attendance and improve the educational achievement of students. According to the World Food Program, the feeding of the school has been important among the especially weak people to promote school enrollment. Mary (2015) investigated the micronutrient intake and food quality of school-age children in

Uganda, East Africa. Her findings, while not preschool-specific, highlighted the vital role that diets high in micronutrients play in promoting both cognitive and physical development. In a similar vein, Celia (2017) showed that there is a strong correlation between food security and nutritional assessments and that successful prevention of childhood malnutrition requires multisectoral strategies that include social protection, health, and education. Research in Kenya has shown how normal poor nutrition occurs between children in the preschool age group and may have negative effects. Muthoni (2019) discovered stunting, wasting and high proliferation of low weight, while examined the nutrition status of preschool in both urban and rural areas. Lack of poor feeding methods and nutrition diversity was blamed by their search for these changes. Otieno (2020) evaluated how the school nutrition initiative affected the students of Mombasa County Primary School. According to the study, the state of students was greatly improved in terms of nutritional value, which had a beneficial impact on their performance and attendance in the school. However, there's still an important empirical research deficit on preschool-specific feeding programs on the educational achievement in Mvita sub-county, despite the fact that this study offered practical information on primary education. The impact of early childhood nutritional programs is understudied because most of the current research focuses on primary or upper-level school education.

1.2 Statement of the Problem

Very little is known about the exact effects of school feeding programs (SFP) on the educational achievement of a preschool students in Mvita sub-County, Mombasa, despite the increased efforts to adopt these programs as a way to increase access to early childhood education. Although comparable programs have demonstrated efficacy in increasing educational and nutritional results at the primary school level, it is rarely known about how these activities affect the preschool. In addition, there are still concerns about the frequency,

quality and quantity of food and how can they affect their overall academic achievement along with the attendance, attention and participation. Policymakers and education stakeholders find it challenging to maximize the planning and implementation at the pre-primary level the feeding programs due to this evidenced gap.

1.3 Purpose of the Study

This study set out to evaluate how the school feeding program affects academic achievement of preschoolers in Mombasa County, Kenya's Mvita Sub-County.

1.4 Objectives of the Study

This investigation was shaped by the following specific objectives:

1. To determine the effect of the school feeding program on preschool learners' class attendance on academic achievement in Mvita Sub-County.
2. To assess how the quality of food served influences the concentration and Academic Achievement of preschool learners in Mvita Sub-County.
3. To examine the relationship between the quantity of food provided on academic achievement academic achievement in Mvita Sub-County.
4. To evaluate how the frequency of meals served under the school feeding program affects the consistency of preschool learners' and academic achievement in Mvita Sub-County.

1.5 Research Questions

1. What is the effect of the school feeding program on preschool learners' attendance and academic achievement in Mvita Sub-County?
2. How does the quality of food serve influence the concentration and on academic achievement of preschool learners?

3. What is the relationship between the quantity of food provided and preschool learners' academic achievement in Mvita Sub-County?
4. In what ways does the frequency of meals impact the consistency of preschool learners' academic achievement in Mvita Sub-County.?

1.6 Significance of the Study.

Different types of stakeholders in childhood education and nutrition are anticipated to benefit from this study. First, by offering evidence-based insight to guide the plan, execution and expansion of school feeding programs in Kenya, the conclusions will be helpful to the Ministry of Education and Government officials. The project will provide important information about how feeding programs affect the results of preschooler learning, which will help with choices about allocating resources and making policies for childhood education. The study will help teachers and preschool administrators in Mvita Sub-Country and beyond. This will improve their understanding of the relationship between dietary habits and educational achievements, including participation, appearance and focus. With this knowledge, teachers can modify the school schedule to customize the educational benefits of feeding programs. The project will increase the understanding of the importance of healthy food for cognitive and physical development of young children by community members' and parents. This could encourage more community participation and support for feeding programs, which is important for the long -term viability of the program. Studies will help development partners and non-governmental organizations (NGOs) to work in nutrition, child health and education. Information can be useful in determining the needy places and evaluating how well their assistance is working. Additionally, by addressing a vacuum in research about the effects of school food programs, which clearly target the preschool, the study will add to the body of knowledge. Results can serve as a base for further research by scholars and students, especially when there's limited resources in urban

areas such as Mvita sub-county Mombasa County.

Finally, the results can be used by civil society organizations and advocacy groups to advocate more funds for integrated school nutrition programs as a means of improving early learning and development assessment that focus on children's rights and educational fairness.

1.7 Limitations of the Study.

Notwithstanding the measures used to guarantee the study's validity and reliability, a number of issues arose that may have affected the scope and applicability of the conclusions. First, the study was carried out with limited financial and logistical resources and in a short amount of time. Because of this, it was not feasible to perform a thorough analysis of all pertinent literature or carry out extended fieldwork that would have enhanced the study's conclusions. Second, just a few preschools in Mombasa County's Mvita Sub-County were included in the research. The results might not accurately represent the range of experiences seen in all public and private preschool settings in the area, despite efforts to choose a representative sample of schools, head teachers, instructors, parents, and students. Additionally, the researcher had to walk and ride motorcycles to get to certain schools due to transit issues in some places, which could have limited the extent and consistency of data collection. Third, there were very few local studies that particularly examined how school food programs affected preschoolers. This made it more difficult to develop a solid contextual foundation and comparative analysis, particularly when considering Kenya. It was necessary to extract a large portion of the material from primary or general school populations in other nations. Furthermore, the study used a descriptive survey approach, which limited the depth of analysis and prevented the development of causal correlations between feeding programs and learning results, although being helpful for offering broad insights. Additionally, the research made extensive use of pre-existing school records and self-reported data, which might have

resulted in response bias or mistakes. Finally, because of variations in finance, cultural dietary preferences, and community engagement, school feeding programs range greatly by location. As a result, the results of this study could not apply entirely to other Kenyan or international counties or locations. Notwithstanding these drawbacks, the researcher purposefully tried to increase the validity of the study's conclusions by triangulating data using observations, document analysis, and numerous responder groups.

1.8 Delimitation of the Study

Only Pre-schools were involved in the study. Data was collected only from headteachers, parents, learners, and teachers of Mvita Sub- County.

Although many factors influence teaching and learning of pre-school learners, only the influence of feeding programs was examined in the study.

Due to many preschools in Mvita Sub- County, the study was confined to sampled schools only. Since the study was conducted in the sampled-out schools of Mvita Sub-County, the results were not generalized to all schools in Kenya.

1.9 Assumption of the Study.

The assumptions were guided in the following study:

1. All the respondents were to provide accurate and honest responses to the items of the questionnaire.
2. All the sampled schools that follow the Kenya institute of curriculum development education curriculum for CBC in Kenya were considered.
3. The information obtained from the respondents was adequate to meet the objectives of the study.

1.10 Scope of the Study.

Mvita sub-County, located within Mombasa County, includes Old Town, Majengo, Mwembe Tayari, Shimanzi, Tononoka and Railways wards. Geographically, it is located almost at latitude -4.05 (4 ° 2 ' 59.9994 "s) and longitude at 39.6667 (39 ° 40 '6.0" e). The sub-county has a relatively small population and experiences a tropical savanna climate (Aw classification), which features different wet and dried seasons. Rainfall is highly seasonal, with the heaviest rainfall typically occurs in April and May, while the driest periods occur between January and February. The region records an average annual temperature of around 25.1 ° C (77.2° F), with daily lows of about 21.4° C (70.5° F) and higher reaching up to 28.8° C (83.8° F). At the coldest nights, the temperature can fall to about 18.5° C (65.5° F). Generally, Mombasa eliminates warm and humid conditions throughout the year, with warm, dryer, and breezy winters, which have an extended period of overcast and sweltering summers. Overall, the annual temperature limit usually comes between 71° F and 89° F, with rare ups and downs above 69° F or 91° F.

DEFINITION OF TERMS

Retention: The ability of a school to maintain the number of pupils in a class all year round.

Pre-Primary: An educational level of children

n between the age of three to six years.

Poverty: The extreme shortage of food and money.

Short term hunger: Temporary condition of pupils who have not had an adequate meal for a number of hours before coming to school or while at school.

School Feeding Program: Meals provided to children while at school.

Transition: Graduating from a lower education level to a higher one.

Academic performance: Results realized from attainment of knowledge taught at school.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction.

The primary objective of this study was to examine the impact of school feeding programs on the educational performance of preschool learners in Mvita sub-county. This chapter presents a comprehensive review of aligned relevant literature with the study's focus. It highlights insight and conclusions from previous scholars, provides a relevant basis and identifies knowledge intervals addressed by current research. The review was arranged in subjects and sub-topics as follows; contribution of school feeding program on quality of food, sources and amount of food and frequency of food on academic achievement of preschoolers in Mvita sub-county.

2.1 School Feeding Program on Academic Achievement.

Academic achievement refers to learners' degree of accomplishment after undertaking an examination and attaining a graded position. Smilansky and Shefatya (2013) agree that Academic Achievement typically was characterized by a combination of expertise, aptitudes, capabilities, attitudes, and comprehension attained by a student due to their active participation in a specific set of educational experiences.

According to Ahmed (2018), schools in Bangladesh that implemented a food distribution program experienced a 20% increase in attendance, while those without such a program reported a 2% decline in attendance. In Jamaica, it was shown that students aged 7 to 11 who came from families experiencing food insecurity performed worse on math tests than those who received school lunches. The School Feeding Program was found to have a notable positive impact on learners' academic performance. Adelman et al. (2015) observed that students who received meals at school demonstrated higher literacy scores compared to their peers who were provided food at home, indicating the academic advantage associated with

in-school feeding initiatives. These findings however, did not provide in depth analysis of the influence of feeding Program and Academic Achievement of preschoolers, a gap that was addressed by this study.

In order to investigate academic achievement, Yendaw (2015) conducted a research in Ghana that compared students' test scores before and after the SFP was implemented. The study found that students' test performance (73.8%) was greater prior to the SFP's introduction than it was during the post-implementation period, when test performance rates were just 26.2%. A chi-square test was conducted to examine the hypothesis that the implementation of the Ghana School Feeding Program had a significant impact on students' academic performance. The results ($X^2 = 29.767$, df = 4, p = 0.000) indicated a strong statistical association, suggesting that the program substantially improved students' academic achievement compared to the period prior to its introduction. The grade of the students being studied was not specified in this study; this was a gap that was filled by examining toddlers. According to research by Ahmed (2004), school feeding programs have been effective in raising student achievement. According to research conducted in Ghana, the National School Feeding Program, which was introduced in Ghanaian basic schools, had a favorable impact on student enrollment and academic achievement (Abotsi, 2013).

According to Chepkwony et al. (2016), public schools in Kenya that participate in school food programs have demonstrated improved academic achievement when compared to those who do not. Additionally, the study conducted at Nigerian private schools found that feeding students during class improved their focus and academic achievement. The food that was provided in schools resulted in a decrease in school dropout rates and an increase in attendance. A 2008 research in Mwala division, Machakos County, found that school feeding programs help students' Academic Achievement (Wambua, 2008). However, a study in Yala division, Busia County, found that school meals have no effect on students' performance. If

the government was to attain the desired educational results, policies that would enhance school achievement and lower the percentage of youngsters dropping out were essential.

Strategies aimed at enhancing preschool retention and development have gotten very little attention, despite their significance. According to the World Bank (2019), high school dropout rates are a result of many developing nations' current educational systems failing to reach their aims. Because it impacts households' capacity to pay school fees, provide food for their children, and cover other educational expenses, poverty has an impact on the demand for education. According to the Poverty and Eradication Commission (2009), it was also linked to a high opportunity cost of education for kids.

Matengo (2016) observed that the School Feeding Program (SFP) played a pivotal role in enhancing children's participation in educational activities within Kisumu East Sub-County. Numerous studies have established a positive correlation between school feeding initiatives and improved health outcomes, including enhanced memory, focus, and engagement in both academic and co-curricular activities. High levels of competency were particularly evident in Early Childhood Development Education (ECDE) centers that regularly provided meals to learners. Moreover, a report by the World Food Programme (WFP, 2017) indicated that students attending schools offering daily meals tended to perform better academically. Despite these findings, there remains a notable research gap regarding the academic outcomes of preschool learners, as the majority of existing studies have concentrated on primary education. Furthermore, no previous research has examined the specific context addressed in the current study in relation to academic performance.

Evaristo (2015) emphasized that well-nourished children are more likely to maintain attention and actively participate in various school activities. Earlier research similarly noted that hunger impairs concentration, induces fatigue, and negatively impacts a child's mental, physical, and emotional development. In support of this, Wambua (2018) found that the

implementation of SFPs in Mwala Division, Machakos County, led to improved academic outcomes. Conversely, a 2019 study conducted in Yala Division, Busia County, reported no significant relationship between school feeding and learner performance, suggesting that outcomes may vary depending on context.

Additionally, Chepkwony (2013) reported that learners in private schools often outperformed those in public schools in terms of competency development. The Competency-Based Curriculum (CBC) currently in use underscores the importance of fostering practical skills and active learner engagement, both within and outside the classroom. However, hunger continues to hinder learners' ability to concentrate, potentially limiting their acquisition of essential competencies. This study, therefore, aimed to address the existing knowledge gap by examining the influence of the School Feeding Program on preschoolers' academic achievement in classroom settings within Mvita Sub-County.

Food is an essential component of human life, and survival is inherently dependent on access to adequate nutrition. However, obtaining sufficient food remains a significant challenge, particularly for children living in developing nations. According to the (FAO 2020), government and development actors were increasingly recognizing the importance and value the school meals constituted globally. The benefits of Home-grown School Feeding program (HGSFP) go beyond education and nutrition to tackle livelihoods of smallholder farmers and local communities.

The goals of school feeding programs often differ based on the local context. Broadly, these programs aim to address the immediate nutritional needs of children, reduce short-term hunger, and enhance their cognitive and learning abilities. They are also intended to improve access to education by increasing enrolment, regular attendance, retention, and completion rates. Moreover, school feeding initiatives seek to promote equity by minimizing gender and social disparities, support better health and nutrition outcomes, and create greater

opportunities for child development. Generally, the School Feeding Program (SFP) involves providing meals to pupils in primary day schools, serving as a targeted strategy to assist learners from communities affected by poverty and food insecurity.

Children in preschools therefore deserve constant supply of food because they to, were persons and the majority live in poverty-stricken countries where the needed to improve learning capacity was so high. It was school feeding program that was hopped to be in a realistic position that provided sufficient quality food to the school children. School feeding programs are often directed at populations experiencing food insecurity, particularly in regions with high concentrations of low-income households or in schools where student attendance and retention are persistently low—a common scenario in many developing countries. These initiatives aim to sustain the well-being of children and facilitate consistent school attendance, especially among preschool learners.

According to Jomaa (2020), one of the primary reasons for introducing school feeding programs is to enhance the physical health, cognitive growth, and psychosocial well-being of children and adolescents, particularly in low- and middle-income nations. These programs frequently prioritize vulnerable groups, including girls, who are provided with incentives to encourage regular school attendance. The initiative was also motivated by the understanding that early childhood plays a crucial role in shaping a child's future. This is supported by the Education for All Report (2000), which emphasized that a child's foundation for future success is established during the early years. As a result, investing in preschool education has a direct and positive effect on enrollment, attendance, retention, and completion rates. It was also called for the governments to avoid assuming the preschool in their budgets as shown by Waithaka (2024), who said that the government was spending a lot of money in primary, secondary and university forgetting preschool. This observation is also found in other African countries, and how countries support their children through effective school feeding program

as cited by Penn (2022), that preschool had a low priority in South African government's policies.

Preschool needed and deserved massive government support so as to realize positive results. Increased consistence in school attendance by children attracted back other children who might have seen no need for schooling, dropped from school or had taken schooling as a punishment in life. This was to increase the chance of increasing the enrolments if feeding programs were to be taken seriously. Additionally, food has been recognized as life and a force that may energize people's lives and support a variety of child development areas, all of which depend on the proper quantity and quality of food.

Food has long been recognized as an important tool in promoting education. Mungai (2020) highlighted its effectiveness in improving school attendance and encouraging enrolment through his study on the impact of school feeding programs on educational outcomes. Similarly, a recent evaluation of Burkina Faso's ongoing school feeding initiative revealed that school canteens contributed to increased enrolment, improved attendance, reduced repetition rates, lower dropout levels in disadvantaged regions, and enhanced performance in national examinations—benefits that were particularly significant for girls. According to the study, school canteens were virtually nonexistent, which is why school feeding programs were chosen as the most effective way to replace them.

WFP (2024), assert that the school meals program had been found to be positive effect on students' cognitive functions, increase enrolment and retention, improve attendance, lower repeaters and dropout rates as well as improve performance. These advantages of the school feeding program must be recognized in the study region since they resulted in the establishment of more prestigious institutions, such as universities and teacher training colleges, which the researcher also supported. WFP provided governments with full support

to guarantee that all school-age children were healthy, ready to study, and had access to school meals.

According to Finan (2022), schools that provided meals experienced an average enrollment rate that was 28% higher than schools without such programs. Jomaa et al. (2022) conducted a review examining the effects of school feeding programs on health and educational outcomes in primary schools. Their findings revealed consistently positive impacts, including improved energy intake, better micronutrient levels, and higher rates of enrollment and attendance among children benefiting from the program compared to those who did not participate.

Ngome (2020) reported that in Kajiado County, school feeding programs were more effective in boosting enrollment and student participation than any other intervention, particularly in arid and semi-arid regions. For preschool education to effectively benefit children's future learning, it is essential that all stakeholders optimize the utilization of food provided. This is particularly important in Arid and Semi-Arid Lands (ASAL) counties, where discontinuation of school feeding programs has led to a withdrawal of children from preschool centers. Therefore, consistent provision of food for education in these regions is critical to sustaining enrollment and engagement.

School feeding programs also serve as an incentive for parents from low-income backgrounds to enroll their children in school rather than keeping them at home. Knowing that their children will receive a nutritious meal helps alleviate concerns about hunger, enabling the children to focus better during lessons. In her literature review, Levinger (2021) concluded that school feeding programs likely have a positive impact on enrollment and attendance, particularly when these factors are taken into account within the specific contexts where the

programs operate. She further recommended that such programs be implemented in impoverished and unstable rural areas where enrollment and attendance rates tend to be low.

Mvita being one of those division where young children are immensely into drugs, unstable families in Kenya with relatively low learner enrolments which according to Levinger need school feeding programs to boast their retention capacities as advocated for by the researcher. This left Mvita division residents and all other preschool stakeholders with a duty to consistently provide FFE to ensure a promising future for their innocent children who solely depend upon them.

Children who experience hunger struggle to concentrate during lessons. Therefore, nutrition should be acknowledged as a fundamental element of a high-quality early childhood education program that supports strong academic performance. Participation of parents and other stakeholders in learner's education was very important in the quality of learning and for the future of the learners. Influence on SFP on learners deserved great support from all sectors as the results were immense and better. It was therefore, the task of those working with preschoolers to provide quality nutrition with awareness of the value of food in the child's life. Effective methods, like SEPs used to provide preschools SFP to boast the Academic Achievements of the learners.

WFP (2018), asserts that the school meals program had been found to have a positive effect on learner's cognitive functions, increase enrolment and retention, improve attendance, lower repeater and dropout rates and improve performance. A study by the International Food Policy Research Institute (IFPRI, 2003) highlighted the beneficial effects of school feeding programs in improving students' academic performance. This was coined by Florence and Michelle (2008), who stated that learners perform better on standard tests when given adequate amount of food the day of the test. This was a good indication that there was power in food. Power to make learners do better academically and develop holistically.

2.1.1 The influence of providing quality food Academic Achievement

Various organizations and education stakeholders launched a school feeding program to guarantee that school-age children received food rations to prevent hunger and to keep them in school. According to experts, eating a balanced diet is crucial for promoting the best possible brain development and productivity. Atkins (2015). Energy levels, attention, and learning might be influenced by food intake. In one study, children and parents of major cities were questioned regarding eating patterns, and the Academic Achievement of the children were appraised Murphy, Kleinman & Jellinek (2015). This study found that pupils did not keep school attendance time, high rates of absenteeism, and low hyperactivity in children who were thought as having severe hunger. While the link between diet and academic performance is frequently acknowledged, there is limited research that directly explores how diet quality influences educational results. The majority of studies in this field have concentrated mainly on issues related to hunger, malnutrition, and deficiencies in micronutrients. Evidence shows that undernourished children tend to exhibit lower attendance rates, diminished concentration, poorer academic performance, and increased health problems compared to their well-nourished peers.

Murphy, Kane, Sperling, Nachman, Pagano, and Kleinman (2012). More recently, research has looked at how breakfast affects school-age children's behavior, Academic Achievement, and cognitive abilities. According to this study, eating breakfast may improve performance on some cognitive activities. There are, however, gaps in the research that look at how age, sex, and nutritional status affected the effects of ten o'clock tea on cognition. Regular meal intake and academic achievement were positively correlated in the one study that did not focus just on breakfast. Research on diet has primarily concentrated on the effects of specific nutrients or food items (St-Onge et al., 2014).

However, people eat combinations of meals rather than specific nutrients. Given the complexity of diet, studies examining the link between nutrition and health have utilized summary indicators of food and nutrient consumption to assess the effects of overall diet quality. This approach was employed in the current study to explore the connection between academic achievement and diet quality. It enabled the identification of specific components of diet quality that have the greatest influence on academic success, beyond merely assessing overall diet quality. The Diet Quality Index-International (DQI-I) was chosen for its ability to provide scores across key dimensions of diet quality, including sufficiency, diversity, balance, and moderation.

The research investigated the relationship between academic performance and the individual elements of the Diet Quality Index-International. The dietary adequacy component measures the consumption of vital foods and nutrients necessary for a balanced diet, such as fruits, vegetables, grains, fiber, protein, iron, calcium, and vitamin C (Given, 2014). The moderation score of the DQI-I assesses the consumption of less nutritious items, such as foods high in saturated fat, sodium, and those categorized as ―empty calorie‖ foods. The balance score captures the overall nutritional balance of the diet, based on the proportion of energy derived from protein, fats, and carbohydrates. Meanwhile, the variety score measures the diversity of food choices within the diet.

Within the broader framework of improving children's nutrition, emphasis was placed on the importance of a high-quality diet—specifically one that includes low fat intake and higher consumption of fruits and vegetables. To better understand their specific associations with academic performance, the percentage of caloric intake from fat and the number of fruit and vegetable servings were analyzed individually. Overall, the diet quality indicators demonstrated favorable outcomes, with the exception of the DQI-I balance component, which showed a skewed distribution (Lissau, 2019).

Evaluated several aspects on of the diet quality. Good nutrition increases the well-being and learning potential of a child which leads to improved educational success. Data indicates affirmative relationships among children who were fed well and enhanced knowledge, engagement, actions, and relationships between children and teachers (The Food Commission, 2011). Good nourishment also promotes responsiveness, societal, and general well-being, leading to improved self-confidence and a healthy body figure. However, despite the facts, because of globalization and ethnic cuisine markets' growth, knowledge of nutritional benefits had been largely lost.

A healthy feeding Program at school would provide learners with the ability to learn comfortably. Schools had to demonstrate to children's healthy ways of life and the way to incorporate healthy food (Snyder, 2014). Through the meals and snacks offered at school, pupils learn how to select a balanced diet and acquire various consumer-based expertise, comprising food processing, handling and food preparation. It was necessary to guarantee that messages about food and diet were clear and not contradictory. Besides, teachers had to be allowed to develop their awareness and skills in food education to benefit pupils (St-Onge, 2014).

Effective dietary interventions should be introduced early in childhood and adolescence to prevent or counteract the negative health consequences associated with poor and unhealthy eating habits. Good diet throughout childhood and puberty were regarded as a cornerstone for a healthy maturity in many Sub-Sahara African countries. Therefore, the many advantages of nutritious food and diet in children highlight the requirement for a high-priority school policy to resolve these issues. Due to the vast difference between African schooling systems, a collective food and diet strategy could be articulated (Ravinder, 2014 &Whaley, 2016).

It was therefore the responsibility of each county, school, or institution to assess and identify which recommendations outlined in the guide were most relevant and suitable to their specific context and needs. A study by Scriven and Stoddard (2014) conducted in Ghana found that schools and educational institutions played a vital role in shaping positive dietary and lifestyle habits, serving as key environments for promoting healthy living. However, addressing nutrition-related challenges in childhood requires targeted interventions within the school setting. Such efforts may be constrained by hierarchical systems that limit empowerment and hinder effective implementation.

Creating a healthy school environment is best achieved through the development of comprehensive food and nutrition strategies. These strategies should be guided by a written policy grounded in context-specific analysis and developed collaboratively with input from all relevant stakeholders.

Kenya’s agricultural sector experienced a significant decline in annual growth rates, dropping from 6 percent in the 1960s to just 1.3 percent by the 1990s. During the 1980s and 1990s, the country's economic growth either stagnated or declined, failing to keep pace with the rapid population increase. However, there was a notable economic recovery in the mid-2000s, with growth reaching 5.8% in 2005 and 6% in 2006. This economic improvement contributed to a reduction in extreme poverty levels, which decreased from 56% in 2009/10 to 46% by 2011 (Economic Survey Report, 2013). Despite these gains, nutritional challenges remained prevalent. According to the Kenya Demographic and Health Survey (MoE, 2018), 35% of children under the age of five were stunted, 16% were underweight, and 7% suffered from wasting.

According to statistics by Ministry of education approximately 2.1 million children underwent stunt growth in Kenya. Those kids would never achieve their total physical and mental capacity, which was a severe national growth matter. Significant regional disparities existed in Kenya's nutrition indices, with the former Northeastern province's counties having the greatest percentage of children—8%—being severely malnourished. On the other hand, the largest percentage of stunted children—up to 44%—occurs in counties like Nakuru. Like in many other regions of the globe, children in Kenya who lived in rural areas and those from families with lower incomes were more likely to suffer from malnutrition (MoE, 2018).

The consistency of the diets given to pupils had a significant in weights and poor food quality are receiving more public health attention.

These studies provided evidence for the idea that certain nutrients, components, diets, meals, eating patterns, and overall nutritional status may have positive or negative consequences. There was, however, no correlation from these studies suggested that nutrition affects the Academic Achievement of preschool learners. This study explored these discrepancies by identifying the consequences of school feeding schemes on pupils' educational performance in preschoolers.

School Feeding Programs provide children with access to nutritious and varied meals, including breakfast, snacks, and temporary feeding arrangements (Meyers, 2015). A more targeted effort may be necessary to fully integrate these programs into education systems, given their potential benefits.

Improved dietary habits have been associated with enhanced academic performance in several Sub-Saharan African countries such as Nigeria, South Africa, and Kenya (Ravinder, 2014; Whaley, 2016). Conversely, the consumption of less nutritious foods has been linked to poorer outcomes, particularly in core subjects like language and mathematics. Students who do not consume balanced meals may lack essential nutrients required for optimal cognitive functioning

The constancy of children's diets is arguably the most urgent issue our research has revealed. There should be a successful correction effort in Mvita Sub-County in light of research on the nutritional needs of the human brain and recent evidence demonstrating mental malnutrition and generally poor nutrition quality. Serious repercussions result from depriving schoolchildren of a healthy diet; a dependent association between Academic Achievement and total diet quality, specifically food diversity and sufficiency, has been demonstrated.

However, research hasn't fully demonstrated how preschool instructors' roles in the classroom may be replaced by just providing high-quality meals. Furthermore, the research did not specify which meal types are deemed high-quality or how they improve the development of abilities required for academic success. The current study aimed to fill up these information gaps that persist in the researcher's curiosity.

2.1.2 Effect of Amount of Food on Academic Achievement of Preschoolers.

A survey conducted across multiple countries revealed that numerous underlying challenges continue to hinder the effective implementation of school feeding programs intended to address issues such as hunger and poor academic performance. Among these obstacles are regional disparities in the allocation of funds for school feeding programs, rising student enrolment without corresponding increases in food supplies, teaching and non-teaching staff, and classroom infrastructure.

In Kenya, similar challenges persist, with different regions experiencing varying degrees of difficulty. For instance, frequent seasonal migration by nomadic communities often disrupts children's school attendance. Additionally, cultural and traditional practices such as early marriages, particularly among girls—contribute to high dropout rates. Limited funding for essential school programs also hampers the sustainability of school feeding efforts (Ministry of Education, 2010).

Many school feeding programs remain heavily dependent on donor funding, and implementation varies significantly across schools. Other persistent challenges include slow execution due to weak institutional frameworks, unpredictable seasonal droughts and floods that disrupt food supply chains and market access, inadequate infrastructure, inter-community conflicts, and political instability all of which undermine the consistent delivery of school meals (Ministry of Education, 2010).

The homes in Arid and Semi-Arid Lands (ASAL) have endured severe social consequences due to increasingly frequent droughts and food shortages. Espejo (2009) described school feeding programs as a "magnet effect," attracting large numbers of children to schools, thereby improving attendance rates and reducing early dropouts compared to schools without such programs. Concerns about low enrollment have been addressed through various

development plans, including the Ministry of Education's most recent strategy covering 2002–2008 (Ministry of Education, 2010).

Langinger (2011) emphasized that the primary goal of introducing school feeding programs in Kenya was to serve as an incentive for enrollment and retention of children, especially in rural areas. Buttenheim (2011) further noted that school meal programs aim to enhance educational attainment among school-going children, with the ultimate goal of boosting their future productivity and earning potential. Between 2002 and 2007, Kenya saw net preschool enrollment rise from 77% to 92%, with enrollment in ASAL regions increasing from 17% to 29% (Finan, 2010). Despite these improvements, ASAL regions continue to lag behind urban areas in terms of educational access and expansion.

Children's learning and academic performance are closely linked to their health and nutritional status (Joy and Rosso, 2021). Those lacking vital nutrients such as iodine, iron, and sufficient protein often experience reduced cognitive abilities compared to their well-nourished peers. School feeding programs act as a crucial incentive for underprivileged families to send their children to school and help vulnerable households maintain enrollment. According to the World Food Programme (WFP, 2023), school feeding initiatives represent the world's largest social safety net, providing meals to nearly half of all children currently attending school. However, researchers such as Ainely (2013), Rodriguez (2016), and KNNAP (2012) have not clearly identified which specific food groups most effectively support cognitive development and enhance children's creative capacities. Additionally, existing empirical studies have not specified which particular processed foods may contribute positively to young children's academic achievement.

2.1.3 Effect of Feeding Frequency on Academic Achievement of Preschoolers.

The number of times a child was given food by caregivers, was a strong determinant of the child's ability to attend and remain in school with a high possibility of performing academically well. According to Teres (2005), regular school feeding programs enhance Academic Achievement, lower absenteeism and fatigue, lessen hunger, raise children's capacity for academic success, enhance conduct and emotional functioning, and result in higher grades. Given that children's appetites continue to fluctuate, parents and educators should stay involved.

William, (2000), stated, children eat hungrily at one meal and completely refuse the next. Royal parents and teachers therefore, needed to fight against poor appetite so that it did not become hindering menace to the learner's acquisition of their daily three times meals.

The World Food Program (2016) had shown that persistent malnutrition affects children's mental growth and educational success and avoiding meals could unpleasantly affect the performance of children in problem resolving activities. Similar opinions were supported by a study done in Paris by Pollitt, Jacoby, and Cueto (2014), who claimed that children's ability to solve problems could be negatively impacted by skipping breakfast, lunch, or dinner and that a low energy intake at breakfast could negatively impact physical stamina, creativity, and wellbeing.

The study also found that the academic, behavioral, and emotional functioning of learners was increased by having a good breakfast. Given the significant contribution of school-based food to children's daily dets, such diets' impact on juveniles' nutrition was of great concern to scholars. Schools also deliver a more general and different forms of food choices than in previous decades, like other non-home food sources. The majority of Sub-Saharan African nations have implemented school meal programs to guarantee that young children receive nutritious lunches and breakfasts every day during the regular school day (Schweinhart &

Weikart, 2015). According to Schweinhart and Weikart (2015), breakfast makes up 22% of daily calories, whereas lunch makes up 31%. School lunches would make up over half of the daily calorie intake of children who ate school breakfast, which was almost universal. Providing nutritious meals and snacks was crucial for young children's healthy growth and development in Kenya.

According to the Kenya National Nutrition Action Plan (2012), children can participate fully in the day's learning opportunities because of the energy and nutrition results provided by wholesome diets. Preschoolers discover a variety of foods, learn how to make good food choices during meals and snacks, and establish wholesome eating habits. Similar cases were observed in Mvita Sub-County, where students who eat healthily show remarkable learning results. The evaluated research did not, however, show a clear correlation between the frequency of feedings that various children adopted and the development of cognitive abilities, increased creativity, and problem-solving abilities—all of which are components of scholastic success. Schweinhart and Weikart (2015) and the Kenya National Nutrition Action Plan (2012) could not find any evidence linking a particular meal frequency to academic achievement. This study demonstrates unequivocally the kinds of feeding programs that affect preschoolers' academic achievement.

2.2 Research Gaps.

The related literature reviewed showed that eating was crucial and millions of people worked hard to ensure food was available at school and home. It also showed that investing in education through SFP by the government was very important in the teaching and learning of preschoolers. SFP has shown great potential to address socioeconomic factors that hinder teaching and learning at the preschool level, especially in ASAL areas in Kenya, where parent's concerns had been to having one meal to substitute for three meals a day. A study on source and food security for the HGSEP in Mombasa has indicated that Orodho (2012), did

not say anything on the effects of SFP on Academic Achievement, retention, and transition. The related literature also emphasized on provision of school meals in the right proportion and frequency as opposed to the rest of the studies that are silent on the preschool feeding frequency on teaching and learning.

There are major repercussions when schoolchildren are not given a healthy diet; there is a direct link between academic achievement and food quality overall, especially in terms of variety and adequacy. Studies haven't fully demonstrated how providing high-quality meals alone would take the role of preschool instructors in the classroom, though. Furthermore, the research did not specify what meals were deemed to be of high quality or how they improved the development of abilities required for academic success. The current study aimed to fill up these information gaps that persisted in the researcher's curiosity.

However, Alienly (2013) did not specify which specific food kinds have an impact on children's cognitive development and enhance their capacity for creativity. The empirical research that was analyzed did not specify which particular processed foods might improve young children's Academic Achievement.

Similar cases were observed in Mvita Sub-County, where students who eat regularly show remarkable learning results. The examined research, however, has not shown how the eating schedules that various kids followed were connected to the development of problem-solving abilities, increased creativity, and cognitive growth—all of which are components of academic success. Schweinhart and Weikart (2015) and the Kenya National Nutrition Action Plan (2012) could not find any evidence linking a particular meal frequency to academic achievement. This study demonstrates unequivocally the kinds of feeding programs that affect preschoolers' academic achievement.

2.3 Theoretical Framework.

According to Abraham's Maslow hierarchy of needs theory, would perfectly match and guide the study. It had a relationship related to the work study that results into suitability. Kabiru and Njenga (2009), point out that according to Maslow, human beings were motivated by primary needs or drives such as hunger, thirst and avoidance of pain before thinking of attaining higher needs like education which are cognitive needs. Maslow believed that needs make us behave in a certain way in order to fulfill them. Abraham Maslow puts food as a primary need. The government, parents and teachers must therefore ensure that pupils have adequate food that is balanced since a hungry child would lack motivation and energy to attend school and learn. Maslow claims that needs differ from one culture to another and from an environment to another. The study would help to show and indicate that human basic needs did not differ especially for preschoolers. Abrahams Maslow's theory stands out distinctly in support of the use of school feeding programs in education since it aims at providing the physiological needs as he stressed in his theory to enable children to function well. Therefore, gave the researcher the green light to conduct a study on school feeding program to investigate its influence on teaching and learning of preschoolers.

2.4 Conceptual Framework

For the purpose of this study, a conceptual had been designed to show the relationship between the independent and the dependent variables. Issues on attendance, enrollment, retention and preschool performance as the challenges or factors that the study aims to address, school feeding program on quality of food, amount of food and feeding frequency represents the independent variable or the intervention being studied, intervening variables on the role of stakeholders and availability of qualified teachers are factors that might influence the relationship between SFP and the assessments and school participation on pupils,

attendance. increased enrollment and attendance, preschoolers' performance and high retention were dependent variables that would measure the assessments.

The Conceptual Framework is Represented

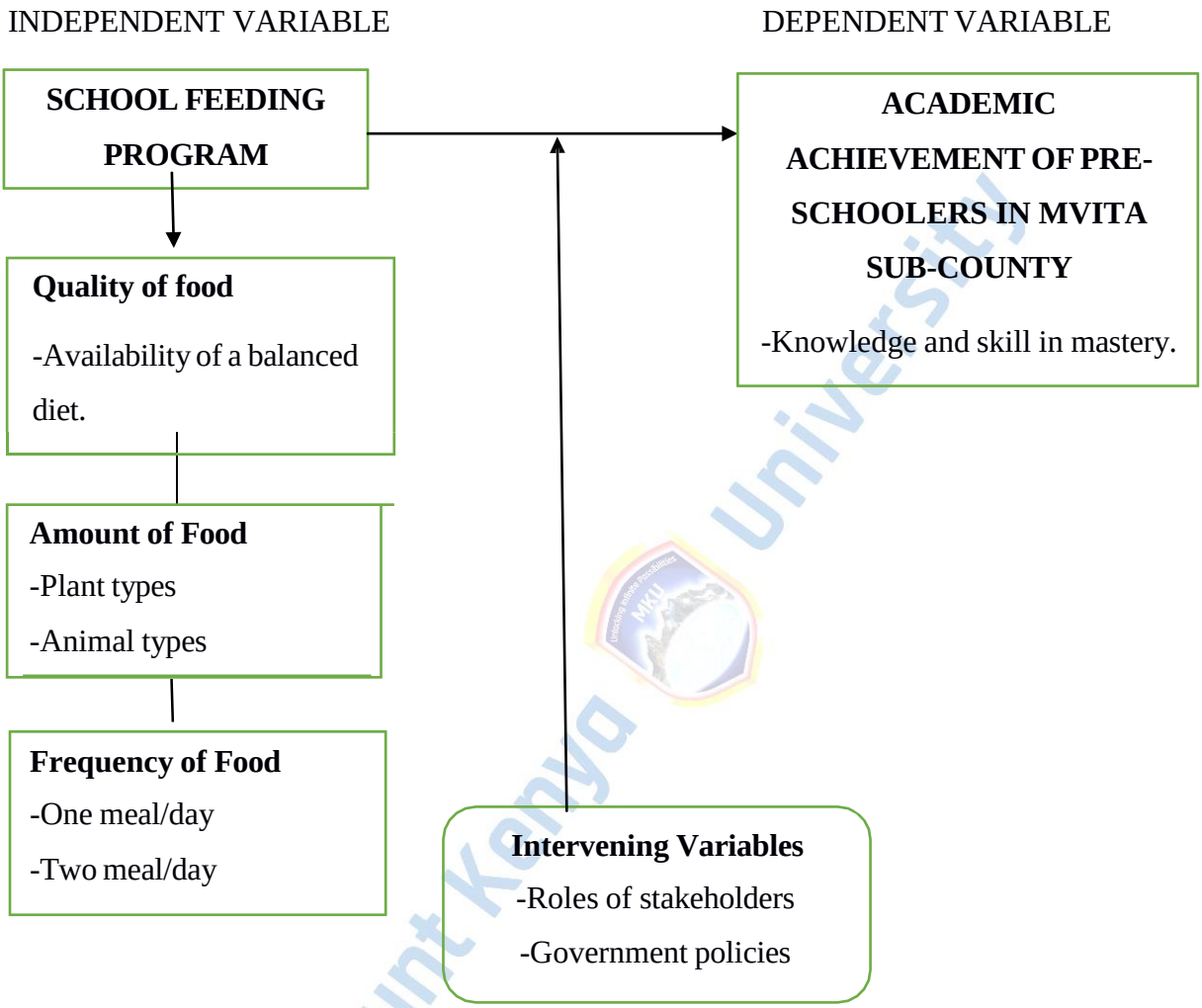


Figure 2.1 Researcher (2025)

The conceptual framework in figure 2.6 had been developed to help and guide in the organization of the variables used in the study. This framework involved focusing on how school feeding SFP. In addition, parents and all other stakeholders had to play the role of providing food to the preschoolers. The inspectors of schools were to ensure that school meals were safely provided to the learners. On the other hand, anything that might hinder the supply to food not reaching the preschool centers on time. The independent variable to be

examined in this study, was school feeding program while dependent variable was as teaching and learning of preschool learners. The use of school feeding program could greatly determine the teaching and learning of both preschool learners if it would be well administered.

CHAPTER THREE:
RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction.

This chapter details the research methodology utilized in the study. It describes the study area, the target population, sample size, and sampling methods. Additionally, it provides information on the research tools used, including a summary of the questionnaire, pilot testing, and the assessment of instrument validity and reliability. The chapter also explains the procedures for data collection and analysis, along with logistical and ethical aspects. An overview of the overall research design is included as well.

3.1 Research Methodology.

To achieve this study's objectives, both qualitative and quantitative data were used to collect data. As a result of this, a mixed methodology data collection method would be used.

3.2 Research Design.

The research intended to use a descriptive study (Kellogg, 2022). It asserts that a descriptive method was used to assess the distribution of specific behavior in a population and enables the collection of detailed data to justify current conditions and practices. In this case, the contribution of the school program to the teaching and learning of the preschool would be assessed. According to Creswell (2014), in order for the researcher to comprehend the study challenge, this design often entailed the simultaneous but distinct collecting and processing of quantitative and qualitative data. Triangulation was used by the researcher to combine the two data sets. This design makes it possible to collect information about occurrences, which is subsequently arranged, tabulated, shown, and explained. A limited selection of examples were then described in detail and narratively.

3.3 Location of the Study.

The study was carried out in Mvita Sub-County, located within Mombasa County. This sub-county is divided into six academic zones: Majengo, King'orani, Old Town, Mwembe Tayari, Shimanzi, Tononoka, and Railway. The predominant local communities in the area include the Mijikenda, Swahili, and Kenyan Arab groups. The Mijikenda constitute the largest ethnic community in Mombasa County, representing approximately 35% of the total population. The immigrant Kamba community ranks as the second-largest group, accounting for nearly 30% of the county's population.

3.4 Target Population.

Mugenda (2003) defines the target population as ―a group of individuals to whom the researcher intends to generalize the study findings.‖ For this study, the population consisted of 921 participants, including 13 head teachers, 49 teachers, 49 parent representatives, and 810 pupils.

Population Group	Number
Head Teachers	13
Teachers	49
Parent Representatives	49
Pupils	810

3.5 Sampling Procedure and Sample Size.

According to Orodho's (2023) noteworthy modified sampling definition, a sample is a subset of the target population. All of the traits of the whole research population were present in the carefully chosen sample. This would allow the results to be applied to the whole target population. In this investigation, the sampling approach was used. The number of respondents to represent each group of teachers, parents, students, and school zone inspectors

was determined using stratified sampling. Simple random sampling was used to choose the respondents from each segment of the population. The survey used a total of 367 respondents.

Yamane's formula:

n = N /1 + N (e2)

Where n implies = desired sample size at 95% confidence interval

N= Target Populace

e = Confidence level at 5% (decimal equal to 0.05)

Therefore, the preferred sample was:

n= $49/(1+49(e)^2$ =43

n= $810/(1+810(e)^2$ = 268

n= $49/(1+49(e)^2$ =43

n= $13/(1+13(e)^2$ =13

Table 3.1 Sample Size

Group	Population	Sample Size
Teachers	49	43
Learners	810	268
Parents	49	43
Head Teachers	13	13
Total	**921**	**367**

3.6 Data Collection Instruments.

The study used both primary and secondary data in the data collection process. To achieve the objectives of the following research instruments questionnaires, interview schedule, and observation checklist. Research instruments were developed according to the research objectives. Questionnaires formed the major tool of data collection because of their efficiency

and easy analysis. Orodho (2023), argues that personal ideas from the respondents. Questionnaires administered to zonal inspectors of schools would assess their role in the provision and bettering of the preschool feeding programs. Questionnaires administered to preschool teachers would collect information on their role in the school feeding programs, Academic Achievement, and enrolment variations during times with and without school food.

Secondary data sources like food records, report cards, and class registers were used to collect information on the availability of SFP, Academic Achievement, transition, and retention rates, and as a result of absence or presence of FFE at various school times. An observation checklist was used to cross-check the validity of the information given by the respondents. Observation would for instance be made during meal times to ascertain the provision of food in the school.

3.6.1 Questionnaires

To gather quantitative data from preschool educators, the investigator used a questionnaire with close-ended test items. As Morse (2010), asserts, a questionnaire entails a research instrument or tool comprising of interrogations collected respondent information and was intended for the arithmetic analysis of the answer. The questionnaire form was organized into two separate segments. The study of feeding practices and structure questionnaire (FPSQ, 2020). It gave details on the development and validation of learners that was structured during the mealtime environment. The foremost segment included data on the demographic data of the respondents. In contrast, the second portion contained questions focusing on the research objectives by the 5-point Likert Scale.

3.6.2 Interview Schedule.

The World Food Program (WFP, 2020), stated that school feeding worldwide gave comprehensive insights into the evaluation and impact of SFP globally based on a detailed observation checklist. The researcher employed an organized interview guide with open-

ended quizzes to obtain qualitative data from school heads and those who represented the parents This was also supported by (Cupertino, O., and Botelho, R.B.A, 2022). A structured interview would be necessary to permit the investigator to ask analytical and supplementary queries.

3.6.3 Observation Checklist for Preschoolers.

An observation checklist, according to the researchers, is a tool used methodically to document and evaluate several facets of the study being conducted (Veronica, G., & Raquel B., 2022). Preschoolers' levels of expression of fundamental language, numeracy, and creative skills were evaluated in this study using an observation checklist (Smith, J., & Brown, L. 2023). commented on the program for healthy kids.

3.7 Pilot Study.

According to the study done by Morgan and Sonnino (2013), they analyzed the impact of school feeding programs on dietary behaviors and educational assessments that were valid. It sought to pre-test instruments and verify the result, familiarize with the use of the instruments, and mainly to enhance the validity and reliability of the research instrument. Among 92 respondents from a sample found from public primary schools in Mvita, research instruments underwent piloting since Kothari (2005) suggests that a pilot sample should entail 10 percent of the study sample, that is, 10 percent of 921. The pilot study aimed at checking the appropriateness and clearness of the queries relating to the tools. It also sought the validity of the evidence collected, and the suitability of the terminologies utilized. Reliability assessment and verification of results from the pilot study were also used to pre- test the testing instruments. It also anticipated respondents' concerns or difficulties, such as analysis when administering the forms and time management for information gathering. Again, trial runs were provided to the interview schedules to guarantee that queries were well expressed and drawn reasonable answers that helped the investigator define parts for revision.

For the duration of the real data gathering, the respondents to the pilot study did not offer their contributions because theirs had been done during the pilot study. This was done and achieved under the guidance of the supervisor. Piloting was conducted in Mvita sub-county, Mombasa County.

3.8 Validity and Reliability of Research Instruments.

3.8.1 Validity of Research Instruments.

According to Mugenda (2009), validity is the accuracy, meaningfulness, and degree to which results obtained from the analysis of data represent the phenomena of the study. Kothari (2019), argues that validity is the degree to which the test items measure a particular quality for which the test was designed. To establish content validity the researcher would work closely with experts like the supervisor. Appropriate corrections including ambiguity of research questions will all be done to ensure the tools test what was intended by the study.

3.8.2 Reliability of Research Instruments.

According to Fraenkel and Wallen (2015), reliability is the consistency of an instrument to yield the same results at different times. To establish the reliability of the instruments, the researcher administered the instruments by himself. The researcher also conducted a retest after two weeks with the pilot sample group using the same tools. Together with the guidance of experts the researcher was to make a comparison using the Spearman test and calculate the correlation coefficient. This was because it had been documented that the higher the correlation coefficient, the higher the reliability, and vice versa.

3.9 Data Analysis Procedure.

Both qualitative and quantitative data were gathered. Mugenda (2013) asserts that field data should be comprehensive, useful for understanding social and physical events, and simple to analyze in its unprocessed state. Such information has to be coded, cleaned, entered into a computer, and then examined. Data analysis involved the use of descriptive statistics. Content

analysis, a systematic qualitative approach for describing the characteristics of the study's subjects or materials, was employed to analyze qualitative data. After coding the data, statistical measures such as percentages, means, and standard deviations were calculated using the Statistical Package for the Social Sciences (SPSS). The results were then presented through graphs and frequency tables.

3.10 : Ethical Considerations

Helsinki (2006) states that ethical issues in research include describing the study's purpose and participant requirements, as well as how informed permission was acquired and confidentiality was maintained. Any information provided by the respondents that impacted on their private life would be kept private, the researcher promised. The responders would get guarantees that no written or other correspondence will divulge any personally identifiable information. The answer promised that the information would only be used for the specified purpose in terms of confidentiality.

Respondents were reassured by the researcher that no information about their identity will be disclosed. Besides, no written or other contact would provide any identifying information about the person or the organization. The researcher will inform participants about the purpose and nature of the study to ensure transparency. To promote voluntary participation, the researcher will outline the procedures involved in the data collection process. Participants will be requested to sign informed consent forms to confirm their agreement to take part. All raw data collected will be systematically organized and stored for easy retrieval. After analysis, printed copies of the processed data will be filed, while digital copies will be securely saved on storage devices such as CDs and flash drives. The findings will be presented using graphs and frequency tables to facilitate clear understanding.

.

CHAPTER FOUR

PRESENTATION OF FINDINGS, INTERPRETATIONS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results of the study, which was guided by the following research objectives:

i. To evaluate how the quality of food provided influences the academic performance of preschool learners in Mvita Sub-County.
ii. To assess the impact of school feeding schedules on the academic achievement of preschoolers in Mvita Sub-County.
iii. To determine how the variety of available food options affects the academic performance of preschool children in Mvita Sub-County.

4.2 Respondents Response Rate

This study had 367 questionnaires delivered to respondents who comprised of 13 head teachers, 43 pre-school teachers, 43 parents' representatives and 268 preschoolers where 315 questionnaires were effectively filled and given back. According to their response rate, two students, parents' representatives, head teachers, and grade two teachers all had an 85.8% response rate. The study's head teachers concurred that the majority of the sub county's schools, particularly the public ones, rely on SFP, which is occasionally unavailable. They pointed out that the government has not consistently supported the SFP, claiming budgetary constraints, because WFP's financing responsibilities were handed to the government.

The study found that many schools did not get the government's school meal program fund to maintain the program, based on the surveys and interviews. As a result, despite being recognized as SFP recipients, these schools were unable to operate the program because of a lack of funding. Because poor nutrition impairs focus, attendance, and general academic

ability, this had a detrimental effect on students' involvement in school. Nonetheless, this study gave stakeholders in education and lawmakers insightful information that would help them advocate for better financing and long-term solutions for the SFP.

4.3 Demographic Information

The study tools implored the respondents' demographic information as follows;

4.3.1 Gender and Level of Education of Headteachers, Teachers and Parents

The gender of the respondents was recorded in table 4.2 below.

Table 4.1: Gender Distribution

Gender	SH		GTTs		PR		GTPs	
	f	%	f	%	f	%	f	%
Male	5	62.5	14	21.9	2	28.6	154	65.3
Female	3	37.5	50	78.1	5	71.4	82	34.7
Total	8	100.0	64	100.0	7	100.0	236	100.0

Key: SH-School Headteachers; PTs- Preschool Teachers; PR-Parents' Representatives; PSs-Preschool Pupils; f-Frequency

The table above reveals that (62.5%) of school heads were men, with 37.5% being women head teachers. The majority (78.1%) of teachers in preschool were female, with 21.9% being male.

On the other hand, the Level of Education of Head teachers, Teachers and Parents showed that a half (50.0%) of school heads had diploma qualifications, (25.0%) had bachelor's degrees, 12.5% with certificate-level credentials just like those with postgraduate qualifications. Nonetheless, many educators (64.1 %) had certificate credentials, 28.1% had diplomas, 4.7% had bachelor's degrees, and 3.1% had postgraduate qualifications.

4.4 Levels of Academic Achievement of Preschool Pupils

Determining the academic achievement levels of preschoolers was the study's primary goal. The researcher used observation and easy assessments of students' performance in language, creativity, and basic numeracy abilities to accomplish this goal. Both the checklist and the notebook included notes on the many teaching resources that were accessible in the classes. Teachers were asked to provide descriptive information on each student, and the results are displayed in Table 4.4.

Table 4.2 : Academic Achievements Levels of Preschool Pupils

Indicators of Academic Achievements	GOOD	FAIR	BELOW
Elementary mathematical ability skills such as recognizing numbers, ordering them and basic math operations	31.2	15.6	53.2
Linguistic skills such as reading, lettering and communication	40.3	9.1	50.6
Imagination skills such as sketching, coloring, painting and shape formation	26.0	18.2	5.8

Source: Field Data (2024)

Table 4.2 shows that 31.2 percent of teachers observed that their pupils demonstrated strong foundational numeracy skills, including number recognition, sequencing, and basic arithmetic. Meanwhile, 15.6 percent of pupils were assessed as having fair skills following the introduction of school feeding programs. In contrast, 53.2 percent of the pupils were rated as below average. Table 4.2 also indicates that 40.3 percent of teachers specified that their learners had strong language skills such as reading, writing, and speaking, 9.1 percent showed fair performance after introduction of school feeding Programs. In contrast, 50.6% of learners had less than average language skills acquisition.

Furthermore, Table 4.2 shows that 26.0% of teachers indicated that their pupils showed strong artistic abilities such as drawing, coloring, etching, painting and pattern forming, 18.2% showed adequate performance after introduction of school feeding Programs. In comparison 55.8% scored below average marks.

According to Uwezo (2011), 20% of third-graders in Uganda may not be able to accurately complete written sums from grade two. Over 11% of all seventh-grade students were unable to complete grade two numerical sums properly. Uwezo (2011) listed a number of factors that contributed to low math scores, including the kind of school—private or public—the degree of education, and the presence of the school food program. Despite the fact that the study concentrated on lower primary school students' proficiency in mathematics, there were no observations of how the classrooms looked to show that there were teaching resources there. Additionally, the survey did not provide insight into the kind of teaching tools utilized in mathematics classes. Furthermore, there was no discussion of arithmetic performance among students in the study. This fueled the researcher's motivation to do this study.

In response to further questions, head teacher H1 observed: "In my pre-primary school, many students do not perform basic numeracy skills like number recognition, ordering, and fundamental operations." Additionally, students lack significant artistic talents including coloring, etching, painting, pattern-making, and sketching, as well as listening, reading, and speaking abilities. This was echoed by Fungo, R. (2023). He went on to say that the implementation on the school feeding and Nutrition programme in Uganda, and the contribution of school meals to recommended dietary allowances (RDAI) of children.

According on enrollment trends, The National Institute of Early Education Research (NIEER), reported that during the year 2022-2023 school year, approximately 1.63 million children attended state-funded preschool programs. This gave an increase in enrollment

compared to the previous years, with 35% of four-year-old and 7% of three-years-old participating in these programs. Despite the increase in enrollment, studies indicate that American pupils are still struggling academically post academic. These are some of the factors that are contributing to such trends include, chronic absenteeism, foundational knowledge gaps, and socio-emotional challenges that need to be looked into as matter of fact.

According to Smith Galgleish and Herzmark (2011), these results support the idea that in order to make learning more meaningful for students, they must comprehend the curriculum in order to provide guidance for a more successful and driven life. The academic achievement approach allows the educational community to grasp the researcher's point by specifically building educational interactions focused on what preschool pupils should be able to do with their expertise. Another done be Kim (2013), evaluated the various frequency of dietary habits and their association with school performance, and found out that there's certain dietary patterns were linked to better academic assessments.

4.5 Effect of Provision of Quality of food on Academic Achievement on Preschoolers

The second goal was to determine how providing high-quality meals affected students' Academic Achievement. The researcher examined instructor comments about the impact of providing high-quality meals on students' Academic Achievement in order to accomplish this goal. Table 4.5 lists the descriptive data and results gathered from instructors.

Table 4.3: Opinions of Preschool Teachers on the Effect of Provision of Quality of food on Academic Achievement of Preschoolers

SUMMARY	1	2	3	4	5
In this school, preschool learners rarely receive nutritionally balanced meals that support their mental development and academic growth.	71.8	11.5	1.3	10.1	5.3
The school has struggled to ensure consistent access to clean and safe drinking water for Grade Two pupils, which is essential for their cognitive development and learning progress.	66.9	13.2	2.4	12.7	4.8
Supplying nutritious and well-prepared meals to Grade Two children has significantly contributed to their cognitive advancement and improved classroom performance.	80.5	12.4	1.6	3.3	2.2
Grade Two learners in preschools that offer consistent access to quality diets tend to achieve better results in academic assessments.	67.4	19.7	3.5	5.3	4.1

The findings in Table 4:3 above showed how instructors felt about the impact of serving high-quality meals on students' test and classwork performance. According to the findings, students are given tea around ten o'clock in order to encourage them to attend class and do well on tests. According to the findings, public preschools have successfully improved students' health and Academic Achievement by offering them safe and clean drinking water. These findings corroborated Bunde (2016) that among the six schools he sampled, 4 - (66.6%) had school diet Program whereas the others 2 (33.3%) did not provide any food at school. These results also confirm Ahmed's (2014) finding that implementing and investing in effective school-based nutrition Program could increase students' access to healthy food choices, a quality diet, improved Academic Achievement and a healthy life over the long

term. It also indicated that a higher-quality diet at one year of age was associated with significantly higher scores in mathematics, reading, writing, and spelling in later years.

According to Shaw (2013), eating can provide a youngster the power and confidence they need to handle everyday school issues. A youngster who doesn't consume the right foods becomes agitated, anxious, and unable to focus. Teachers also report that their attention span and Academic Achievement are significantly impacted, and they are more susceptible to infections and other illnesses. Children who consume a healthy, balanced diet on a daily basis are better equipped to learn, focus for extended periods of time, and participate in all of the day's health-promoting activities. These are the outward signs of a youngster who is receiving proper nutrition.

4.5.1 Inferential Statistics on the Effect of Diet Quality on Academic Achievement of Preschool Pupils in Public Schools

Data on how frequently public preschools guarantee that students have access to high-quality food and clean water, as well as the average academic results for three terms of preschool students in joint examinations, were gathered in order to determine the relationship between having high-quality food and students' Academic Achievement (Very Often = 5, Often = 4, Sometimes = 3, Rarely = 2, and never = 1).

The teachers noted that when pupils are well- fed, they are more attentive and engaged in learning. Schools with a consistent feeding programme reported better performance in assessment compared to those without. In another responses from teachers, stresses that well-nourished pupils are also active in class discussion, group work and demonstrate improved problem-solving skills. Regular meals also contribute to better memory retention, which directly influences test scores and academic progress.

Table 4.4: Frequency of Provision of Quality of Food on Academic Achievement of Pre-school Learners

Frequency of Provision of Quality of food (per day)	Average Academic Achievement of Pupils in Joint Examinations (%)
Lunch only	22
1 Breakfast only	31
Ten o'clock tea and lunch	37
Ten o'clock tea and lunch	43
Ten o'clock tea and lunch	43
Ten o'clock tea, lunch and four o'clock porridge	43
Ten o'clock tea, lunch and four o'clock porridge	54
Ten o'clock tea, lunch, four o'clock porridge and snacks	61

Table 4.4 shows that students typically receive excellent scores on joint examinations in public preschools if they are regularly fed a well-balanced, wholesome, and nourishing food. Pearson's Correlation Test Analysis was used to test these results, as shown in Table 4.5 below:

Table 4.5: Pearson's Product Moment Correlation Test

		Provision of Quality Diet	Academic Achievement of Pupils
Provision of Quality Diet	Pearson Correlation	1	.928**
	Sig. (2-tailed)		.001
	N	8	8
Academic Achievement of Pupils	Pearson Correlation	.928**	1
	Sig. (2-tailed)	.001	
	N	8	8

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

The Pearson Product-Moment Correlation Test shows the corresponding significant level (p-value) of 0.001 generating coefficients of correlation of r = 0.928 lower than the pre-determined meaning level of 0.05, i.e. p-value = 0.001 <0.05. Thus, the insignificant hypothesis, H01, there is no major impact on pupils' Academic Achievement in public primary schools of having quality diets. Besides, the association between quality of food and

second-year school pupils' Academic Achievement in public preschools is important. These findings were in line with Ravinder (2014), who points out that in an increasing number of low- and middle-income nations, children's inadequate diets are a serious health concern. Children that do well in school keep track of the quality of their food intake. Additionally, eating poor-quality food hinders physical development, which leads to stunting and waste. Several studies show that while high-quality dietary therapies can reverse stunting and wasting, malnutrition-induced brain impairment cannot be reversed.

4.6 Feeding Frequencies and Academic Achievement of Preschool Pupils

The third objective of this research was to examine how the frequency of meals provided in schools affects the Academic Achievement of preschool pupils. Proper nutrition plays a key role in a child's ability to concentrate, participate in class activities, and retain information, which ultimately influences their overall performance.

The researcher examined the kinds and quantity of meals given to students as well as the degree to which these meals affect their Academic Achievement in order to accomplish this goal. Tutors provided descriptive information, and the results are shown in the table below;

Table 4.6: Types of Meals Consumed by preschool Pupils

TYPES OF MEALS	NUMBER OF TEACHERS	
	F	%
No of meal provision	11	17.2
Breakfast only	38	59.4
Breakfast and lunch	15	23.4

According to Table 4.6, 17.2% of instructors said that their schools do not serve meals to students, slightly more than half (59.4%) said that preschools only serve breakfast to students, and 23.4% said that students receive breakfast and lunch. Preschool instructors, however,

disagreed with school administrators and parent representatives that students are not provided with meals. They pointed out that it is mandatory to provide meals to students, therefore they eat in school. The majority agreed with teachers that schools can only afford to serve meals, despite disagreements from certain head teachers and parent groups.

These results corroborate Ravinder's (2014) claims that students should eat at least all three meal categories—breakfast, lunch, and dinner—whether some are consumed at school and others at home in order for learning to take place effectively. This research indicates that regular feedings improve children's nutritional status and performance.

According to Ravinder (2014), providing children with high-quality meals on a regular basis boosts their active participation in class, which improves learning results. It's interesting to note that more physical activity has been shown to directly boost learners' cognitive abilities in recent research. According to these research, math results significantly improve in schools that even go so far as to shorten class assignments and increase physical education time.

The study also examines the relationship between the frequency of strength exercises and Academic Achievement which found out that children who engage more frequently in strength exercises had significantly high GPAs according to (pnbmed.ncbi.nlm.nin.gov). It is also evident that providing regular meals in schools positively influence learning and performance among preschool pupils. Schools with such structured feeding programs are likely to experience better academic results, improved attendance, and increased pupil engagement in learning activities.

Table 4.7: Views of Preschool Teachers on the Effect of Feeding Frequency on Academic Achievement of Preschool Pupils.

SUMMARY	1	2	3	4	5
Despite policy directives aimed at enhancing academic	55.9	15.1	2.8	16.8	9.4

achievement, meal provision for preschoolers has not yet been implemented in my school.					
At my preschool, learners are provided with mid-morning tea at 10 o'clock to encourage attendance and improve their academic performance.	59.1	23.5	2.7	5.9	8.8
The introduction of breakfast for preschoolers has contributed to enhanced cognitive development and better academic outcomes.	58.9	17.2	2.0	19.3	2.6
Since the implementation of a lunch program, a significant number of preschool learners in my school have shown improved academic performance.	78.4	11.1	2.1	3.9	4.5

The opinions on the impact of feeding frequency on students' performance in public preschools are shown in Table 4.7. According to the findings, several public preschools have started feeding their students in accordance with regulatory standards in an effort to raise their academic achievement. According to the findings, breakfast is given to students at a lot of public preschools as a means to encourage them to attend class, which eventually helps them do well on tests.

These results go counter to Shaw's (2013) claims that eating habits including skipping breakfast, eating often, and eating meals out of the house might have an influence on students' Academic Achievement and overall health. This suggests that, even while school feeding programs cannot be implemented in public preschools, it is acknowledged that school meals are important for drawing kids to school and enhancing their cognitive development, both of which have an impact on their academic achievement.

The results of a longitudinal study in Paris conducted by Pollit, Jacoby, and Cueto (2014) showed that missing breakfast, lunch, or dinner could negatively influence the problem-

solving capacity of children, and a low intake of energy-food at breakfast can have detrimental effects on physical stamina, creativity, and general good health. In short, these results point to the enhancement of the academic, behavioral, and emotional functioning of pupils who have breakfast. Given the significant contribution of food obtained at school to children's daily diets, it is of interest to researchers to influence children's diets. Schools now provide a wider variety of food alternatives than they did in previous decades, much like other non-home cuisines. These findings corroborate Shaw's (2013) claims that schoolchildren's nutritional status, which in turn affects their health and Academic Achievement, can be impacted by eating behaviors such the frequency of meals consumed outside the house, missing breakfast, and consuming foods often. In contrast, a record-breaking majority of preschool instructors (78.4%) strongly agreed that since the implementation of school food programs, many primary school students have received exceptional grades in several public preschools. This study provided insights into the effects of nutrition and early education programs on Academic Achievement on pupils.

Head teachers and parent representatives who participated in the interviews concurred that a child's fundamental numeracy abilities are influenced by the amount of meals they consume in a single day. These findings corroborate Schweinhart and Weikart's (2015) assertion that a child who is denied food has little energy to play or explore the world, and that their inability to interact with their physical and human surroundings reduces their ability to pick up new knowledge, ideas, and skills that will foster brain development.

Nearly all children who eat school breakfast also frequently consume school lunches; for these kids, school meals make up roughly half of their daily calorie intake. These findings provide validity to the findings of a research conducted in Rome to ascertain the impact of dietary habits on Academic Achievement. According to the World Food Program (2016), a person's early eating habits may influence their diet in the future. Children's and teens' growth

and health depend on eating breakfast. In long-term humanitarian responses, the research described the dedication to helping governments reduce malnutrition and achieve sustainable development of resilience-building and stunting prevention.

The study also demonstrates that breakfast is an essential dietary component that adds to the daily intake of nutrients and energy. These results coincide with WFP (2016), who revealed that moderate undernutrition impacts children's intellectual growth and class performance, and skipping meals may alter juveniles' performance in completing both basic and difficult tasks. The results also corroborate the claims stated in the 2012 Kenya National Nutrition Action Plan that eating a balanced diet prepares kids to engage fully in the day's educational activities.

The headmaster, H4, stated, "Learners in my school who take all the meals on a daily basis record remarkable grades in basic mathematical ability, linguistic and inventiveness skills." These findings support Ainely's (2013) assertion that a child's nutrition can help them face daily challenges at school with confidence and strength. A child who is malnourished becomes irritable, tense, and unable to concentrate. Teachers report that these children's responsiveness span and Academic Achievement are severely reduced, and they are also easily impacted by a variety of germs and contaminants.

4.7.1 Inferential statistics on the Effect of Feeding frequency

To determine whether a relationship exists between meal frequency and academic performance among preschool learners, data were collected on the number of meals provided and the average academic scores across three terms in joint examinations, as presented in the table below.

Table 4.8: Number of meals provided and Academic Achievement of Pre-schoolers

Number of Meals Provided	Average Academic Achievement of Pupils in Joint Examinations (%)
0	22
0	31
0	37
1	43
2	43
2	43
2	54
2	61

According to Table 4.8, students who eat more meals at school do better academically than those who eat no meals or only one meal per day in fundamental counting, language, and imaginative abilities. The results of a Pearson's Product Moment Correlation Test Analysis test are shown in Table 4.9.

Table 4.9: Pearson's Correlation Analysis of Relationship between Feeding frequencies and Academic Achievement of Preschool Pupils

			Feeding Frequency	Academic Achievement of Pupils
Feeding Frequency	Pearson Sig. N	Correlation (2-tailed)	1 7	.941** .001 7
Academic Achievement of Pupils	Pearson Sig. N	Correlation (2-tailed)	.941** .001 7	1 7

**. Significance level.01 (2-tailed).

Table 4.9 shows the Pearson product-moment correlation test which generated the corresponding significant level (p-value) of r =.001 with correlation coefficients less than the predetermined level of 05, i.e. P-value =.001<0.05. Therefore, the null theory, H02: no substantial effect on preschool pupil's Academic Achievement is rejected in public pre-schools by feeding frequency s. These findings show significant links between feeding

frequency s and the Academic Achievement of pupils in public preschools. Therefore, preschools that provide breakfast and lunch record outstanding academic credentials in language, creativity, and elementary numeracy. Because a healthy child can learn during the day, get higher grades, and have energy for most nighttime activities including stress management, infection resistance, an active and alert mind, etc., these results are constant. These are high-performing substances, hair is a reflection of one's diet, and beauty and plenty go hand in hand with important components of healthy nutrition.

4.9.1 Availability of Food and Academic Achievement of Preschool Pupils

The fourth aim entailed finding the relationship on availability of Food and Academic Achievement of preschool learners. The study sought to determine how different food varieties provided in schools impact children's learning and cognitive development. To achieve this objective, descriptive statistics were gathered from teachers as represented in the table 4.10.

Table 4.10: Opinions of Teachers on the Effect of Availability of Food on Academic Achievement of Pupils

SUMMARY	1	2	3	4	5
In this preschool, learners are occasionally provided with animal-based food options, which has helped motivate them to attend school regularly and perform better academically.	58.8	21.6	4.1	10.4	5.1
Pupils are often served plant-based meals that support their	61.6	17.7	3.9	10.5	6.3

cognitive development and contribute positively to their academic performance.					
The lack of access to a variety of nutritious foods among learners has hindered improvements in their academic achievement.	59.9	19.8	2.5	12.3	5.6
The introduction of school feeding programs has enabled learners to access diverse food options, which has played a role in enhancing their learning outcomes.	65.9	13.4	3.7	10.3	6.7

The finding indicated that:. 58.8% of teachers strongly agreed that preschoolers are sometimes provided with animal food varieties which have not necessarily motivated them to attend or perform well. 61.6% of teachers strongly agreed that preschool pupils are often given plant-based food varieties in schools as a way to improve their cognitive development and, consequently, their performance . 59.9 of teachers strongly agreed that learners who have been provided with only one type of food variety have not experienced significant improvements in their Academic Achievement.

. 65.9 of teachers strongly agreed that the introduction of school feeding programs has ensured that pupils receive a variety of meals, enhancing their learning assessments.

The findings of teachers' opinions about the impact of food availability on students' Academic Achievement in public preschools are shown in Table 4.10. According to the findings, students in many public preschools are occasionally given animal-based meal options, which encourages them to attend class and do well. According to the findings, preschoolers frequently get plant-based meal options at school in an effort to enhance their cognitive development and, therefore, their Academic Achievement. The results also show that students have only been given one kind of food, which hasn't improved their academic achievement.The study underscores the need for schools and policymakers to enhance

feeding programs including diverse food types. This will not only improve the health and well-being of preschool pupils but also create a conducive environment for learning.

4.10.1 Inferential Statistics on the Effect of Availability of Food on Academic Achievement of Preschool Pupils

Information on food types offered to students in public preschools and the average academic achievement of preschool students in three terms on joint tests were collected in order to verify the possibility of a discrepancy between the availability of food and students' linguistic proficiency. The following table shows the results.

Table 4.11: Number of Meals Provided and Academic Achievement of Pupils in Public Preschools

Number of Meals Provided	Average Academic Achievement of Pupils in Joint Examinations (%)
0	22
0	31
0	37
1	43
2	43
2	43
2	54
2	61

Table 4.11 illustrates that public preschools offering a greater variety of food options to their learners were associated with average academic performance among the pupils. To further assess this relationship, a Pearson's Product Moment Correlation Test was conducted, with the results presented in Table 4.12.

Table 4.12: Pearson's Correlation Analysis on the Relationship Between the Availability of Food Varieties and Academic Performance of Preschool Learners in Public Schools

			Availability of Food Varieties	Academic Achievement of Pupils
Availability of Food Varieties	Pearson	Correlation	1	.814**
	Sig.	(2-tailed)		.014
	N		7	7
Academic	Pearson	Correlation	.814**	1

Achievement of Pupils	Sig. (2-tailed)	.014			
	N	7		7	

Significance level (2-tailed).

A Pearson product-moment correlation test, as presented in Table 4.12, produced an association coefficient of = 0.931 of 0.001, which is less than the significance level of 0.05, or p-value =.001<.05. Therefore, the null hypothesis, H03: The availability of food variety has no discernible impact on students' Academic Achievement in public primary schools, is rejected. This suggests a significant association between the availability of various food types and pupils' academic success in public preschool schools. Thus, children with access to an adequate food supply report strong academic qualifications in basic numeracy, language, and imagination. These results corresponded to Lloyd – Still's (2014) finding that lack of food impairs mental growth, decreases brain cellularity, decreases motivation for children, and lowers energy levels. This can therefore lead to reduction of learning. Children with these characteristics are particularly vulnerable during pre-school years to the enduring effects of undernourishment and contamination. Recent research has investigated the connection between diet and students' academic performance. For example, studies have shown that children's access to nutritious foods at home, including fruits, vegetables, and healthy snacks, as well as their dietary intake in early childhood education settings, is linked to better heart-healthy diet scores among preschool-aged children. However, the findings also revealed that dietary consumption both at home and in early care environments falls short of recommended heart-healthy standards, highlighting the urgent need for targeted interventions to promote healthy eating habits among young children.

CHAPTER FIVE:

SUMMARY, CONCLUSIONS AND ROMMENDATIONS

5.1 Introduction

This chapter presents a detailed discussion of the research findings, drawing conclusions based of the study's objectives and providing relevant recommendations. It highlights key assessments of the investigation, offering insights into the impact of school feeding programs on preschool pupil's Academic Achievement. Additionally, suggestions for future research are discussed to enhance further understanding of the topic.

5.2 Summary of Research Assessments

The study revealed that while some preschool pupils demonstrated well-developed language skills, with many having difficulties with reading, writing, and speaking. The findings suggest that many learners have difficulties in basic literacy and numeracy, which may hinder their overall academic progress. Insufficient access to nutritious meals was found to contribute to poor concentration and lower cognitive development among some pupils.

Teachers also reported that children who received regular, balanced meals tended to perform better and exhibit greater engagement in learning activities.

5.2.1 Levels of Academic Achievement of preschoolers

This study's primary goal was to determine the students' academic achievement levels. In order to accomplish this goal, the researcher watched students and evaluated their performance using fundamental language, numeracy, and creative exams.

The results indicated that 31.2% of teachers reported that their learners had strong basic numeracy skills such as number recognition, ordering, and basic mathematical operations whereas 15.6% were fair after introduction of school feeding Programs, particularly those receiving a variety of meals, demonstrated better concentration, participation, and overall Academic Achievement compared to those with irregular or no meal provisions. These findings emphasize the importance of ensuring that preschoolers have access to adequate and nutritious food, as it directly influences their cognitive abilities and learning potential. The study further suggests the need for continued efforts to enhance school feeding programs to improve educational assessments for the learners.

5.2.2 Effect of Providing Quality of food on Academic Achievement of Pupils

The second goal was to determine how providing high-quality meals affected students' Academic Achievement. The findings showed how teachers felt about the impact of serving high-quality meals on students' performance on tests and in class. According to the findings, students are given tea around ten o'clock in order to encourage them to attend class and do well on tests. The findings demonstrate that public preschools have successfully improved preschoolers' health and Academic Achievement by offering them safe and clean drinking water.

The Pearson Product-Moment Correlation Test yields coefficients of correlation of $r = 0.928$ below the pre-established meaning level of 0.05, or p-value = 0.001 <0.05, with a

corresponding significant level (p-value) of 0.001. According to the unimportant hypothesis, H01, eating a healthy diet has no discernible effect on students' academic achievement in public primary schools.

5.2.3 Feeding Frequency on Academic Achievement of Preschoolers

Determining the impact of feeding frequency on students' Academic Achievement was the third goal of the study. According to the findings, 23.4% of respondents said that students receive lunch and tea at 10 o'clock, while 59.4% believed that preschools only serve tea at that time. However, school administrators pointed out that it is mandatory to provide meals to students, therefore they eat in school.

5.3 Conclusions

According to the study's findings, school feeding programs had an impact on preschoolers' academic achievement in Mvita Sub-County, Mombasa County, Kenya. The teaching and learning of preschoolers in number-work and basic language acquisition are impacted by the absence of school feeding programs. School feeding programs have benefited students by enhancing their cognitive development, which raises their scholastic achievement in language, creativity, and basic numeracy. This suggests that in order for students to achieve their maximum academic potential, mental development, and long-term health and well-being, they must eat healthily.

Additional findings indicate that the school-feeding program is an essential intervention with significant educational advantages. At first, there were no feeding programs in any of the schools, but with the help of the government and non-governmental organizations, these programs were created. Due to the fact that their children received healthy meals at school, the majority of parents expressed satisfaction with the programs. When the school feeding program was implemented, children's performance in numerical work increased overall, with those who were fed twice a day outperforming those who were fed just once.

Furthermore, the parents verified that the school food program enhanced the pupils' performance in numerical work and had a solid degree of understanding about it. Based on the results, the researcher came to the conclusion that children may grow and develop normally and reach their full potential when food is balanced, delivered in the right amounts, and at the necessary intervals or frequencies.

5.4 Recommendations of the study

Recommendations based on research findings are presented in this portion of the study. The recommendations are divided into three categories: areas for more study, practical implementations, and policy-policy proposals.

5.4.1 Policy Recommendations

The school management committees should examine and determine alternative funding and cost-cutting measures. This might be achieved by launching revenue-generating ventures to generate money to augment government-provided financial assistance. Additionally, campaigns and advocacy should be started to persuade political figures, NGOs, religious organizations, and well-wishers in the community to donate money to assist the SFP.

5.4.2 Recommendations related to practice

In order to increase enrollment and retention in schools, the study suggests that school food programs provide preference to impoverished students. This is because families and societies with limited resources, as well as those who wish to be motivated, should enroll their children in school. Parents who are unable to contribute financially to the feeding program can still play a significant role and eventually take on some of the responsibilities, such as providing services for water, firewood/gas, and cooking, as well as ensuring a sterile and clean environment in the school by maintaining a clean environment. The money earned will be returned to the parents' SFP payment for their children.

Community people must be persuaded and inspired that their involvement in the school-feeding program is beneficial in order for them to take part. It is important to promote the removal of obstacles to community involvement and the use of suitable communication channels, whether official or informal. The success of school food programs will be preserved thanks to our combined efforts.

5.4.3 Recommendations for further research

To enhance student engagement in public preschools, this study could be replicated in various global regions, especially within urban low-income communities. This recommendation stems from the understanding that the sample size used in this study might not fully represent areas with different social, economic, and environmental conditions elsewhere in the world. Research on possible funding sources for school feeding services should be conducted in order to assist schools in augmenting government funding and avoid feeding programs being interrupted when funds are not provided or are delayed.

Additionally, further studies should investigate sustainable funding sources for school feeding programs. Understanding potential financial support mechanisms can help prevent disruptions in feeding programs due to delays or shortages in government funding. This would ensure continuous access to nutritious meals, ultimately improving school attendance and Academic Achievement among preschoolers.

REFERENCE

Abotsi, A. K. (2013). Influence of Ghana's School Feeding Initiative on Basic School Enrollment and Academic Success. *Journal of Education and Practice*, 4(10), 1–8.

Adelman, S. (2015). Evaluating the Effectiveness of School-Based Food Programs in Developing Nations. *International Food Policy Research Institute (IFPRI)*.

Ahmed, A., & De Ninno, C. (2015). Assessment of the Food for Education Scheme in Bangladesh. *International Food Policy Research Institute (IFPRI)*.

Ainley, M., & Ainley, J. (2011). Student Interest in School: A Cultural Analysis. *Educational Psychology Perspectives*.

Alderman, H. (2015). Evaluating Alternative School Feeding Approaches in Northern Uganda: Educational Outcomes and Attendance. *University of British Columbia Working Paper*.

Alderman, H. (2019). Exploring Nutritional Interventions and Academic Participation. *The Journal of Nutrition*, 149(4), 659–666.

Alsubaie, M. A. (2016). Teachers' Role in Curriculum Planning and Implementation. *Journal of Curriculum Studies*.

Ann, W. (2017–2021). *Child Growth and Development*. New York: Longman Publishing.

Asante, G., et al. (2024). Insights into Ghana's Pre-tertiary Curriculum Framework. *Open Access Curriculum Reports*.

Ayah, K., & P. M. (2021). Overview of the Pradhan Mantri Poshan Shakti Nirman Scheme. *(Wikipedia entry)*.

Balachander, J. (2002). Preschool Education and Development: A Comparative Case Study from Kenya and India. *World Bank Early Childhood Report*.

Birch, L. L. (2014). Nutritional Learning from Infancy to Toddlerhood. *American Journal of Clinical Nutrition*.

Braidy, N., & Colby, M. (2018). Neurotransmitters Derived from Diet: A Comprehensive Review. *Journal of Nutritional Neuroscience*.

Bunde. (2016). Article Title. *Journal Name*, Volume(Issue), Pages.

Bundy, D. (2015). The Link Between Child Health and Early Development. *Elsevier Press, Amsterdam*.

Burke, W. M. (2023). Research, Teaching, and Learning in Early Childhood: Conflicts and Contributions. *Creative Education Journal*.

Chepkwony, P. C., Anditi, Z. O., & Mwebi, B. (2016). School Feeding Programs and Their Role in Primary School Attendance in Kenya. *Journal of Education and Practice*, 7(15), 1–10.

Chopra, M. (2014). Addressing Food Security and Health Disparities in Southern Africa. *Equity in Health Network Report, Harare*.

Clara, M. D. Feeding Autonomy in Children: Encouraging Choice and Independence. *Child Development Insights*.

Creswell, J. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. Thousand Oaks, CA.

Cueto, S. (2014). Nutritional Status and Educational Achievement in Rural Peru. *Current Biology*, 23(9), R401–R408.

Del Rosso, J. (2009). *School-Aged Children's Nutrition and Health: A Global Perspective.* World Bank Human Development Department.

EFA (2007). *Education for All: Global Monitoring Report.*

Espejo, F., Burbano, C., & Galliano, E. (2009). Developing Sustainable School Feeding Models. *Home-Grown School Feeding Framework, WFP*.

Evaristo, M. (2015). Nutrition's Role in Children's Learning and Mental Growth. *Early Childhood Research Quarterly*, 30, 238–247.

FAO. (2008). *Nutrition and Food Security Overview*. Food and Agriculture Organization of the United Nations.

Finan, T. (2010). Evaluating School Meal Programs in Kenya Using Mixed Methods. *World Food Programme Report, Rome*.

Florence, M. (2018). Diet Quality and School Performance: Evidence from School Health Surveys. *Journal of School Health*, 78(4).

Fungo, R. (2023). Addressing Food Systems Challenges in Africa. *African Journal of Food Science*, 17(5), 85–92.

Given, B. (2014). Nutrition and Cognitive Readiness in Schools. *Educational Leadership*, pp. 68–71.

Gomez-Pinilla, F. (2008). Nutritional Effects on Brain Function and Development. *Nature Reviews Neuroscience*.

HET. (2022). Review of the Feingold Diet: Approved Foods, Effectiveness, and Risks. *(Healthline.com).*

Hoyland, A. (2015). The Effect of Breakfast on Children's Mental Performance: A Meta-Analysis. *Nutrition Research Reviews*. https://doi.org/[DOI].

IFPRI. (2003). The Role of School Meals in Academic and Nutritional Evaluation. *International Food Policy Research Institute Report.*

Jacoby, H. (2013). School Meal Interventions and Learning Outcomes. *The Economic Journal*, 2(3), 12–34.

Jomaa, L. H., McDonnell, E., & Probart, C. (2020). School Feeding in Developing Nations: Impacts on Children's Education and Health. *Nutrition Reviews*, 78(8), 660–676. https://doi.org/10.1093/nutrit/nuz104

Jomaa, L. H., Naja, F., Cheaib, R., & Hwalla, N. (2022). School Meals and Child Development in Low- and Middle-Income Regions: A Review. *Public Health Nutrition*, 25(4), 1–15. https://doi.org/10.1017/S1368980021003854

Kanarek, R. B. (2011). Artificial Color Additives and ADHD in Children. *Journal of Child Psychology*.

Kenya Ministry of Health. (2011–2017). *National Nutrition Action Plan*. Government Printer: Nairobi.

Kim, H. Y. (2013). Impact of Dietary Behavior on Student Performance in Korea. *Nutrients*, 10(5), 591.

Kothari, C. (2005). *Research Methodology: Methods and Techniques*. New Delhi: New Age International Publishers.

Levinger, B. (2021). Reviewing the Potential of School Meal Programs in the Global South. *USAID Policy Brief*.

Lissau, I. (2015). Understanding Youth Obesity Trends. *Cambridge University Press*, pp. 243–269.

Lloyd-Still, J. (2014). Malnutrition's Cognitive Impact on Childhood Development. *Journal of Child Psychology*, 55(3), 321–335.

Maslow, A. (2008). Hierarchical Needs and Motivation Theory in Education. *Journal of Humanistic Psychology*, 7(2), 93–126.

Matengo, J. A. (2016). School Meals and Student Engagement: A Study in Kisumu East, Kenya. *Journal of Education and Human Development*, 5(2), 123–134.

Mungai, N. (2020). Strengthening Preschool Enrollment Through Meal Programs in Kenya. *Early Childhood Education Journal*, 48(3), 345–357.

Meyers, R. (2015). *The Twelve Who Survive: Enhancing Early Childhood Development Programs in Developing Countries* (2nd ed.). Hi/Scope Press, Ypsilanti, Michigan.

Ministry of Education (2018). *Kenya Demographic and Health Survey*. Nairobi: Longhorn Publishers.

Ministry of Education (2018). *Net Enrollment in Public Pre-primary and Primary Schools in Kenya*.

Moorck, P. & Leslie, J. (2013). Nutritional Challenges and Educational Outcomes among Children in Nepal's Terai Region. *Journal of Development Economics*, 5(1), 11–22.

Morse, J. (2010). Integrating Qualitative and Quantitative Methods: A Triangulation Approach. *Nursing Research*.

Murphy, J., Pagano, M., Nachmani, J., Sperling, P., Kane, S., & Kleinman, R. (2012). School Breakfast Programs and Their Impact on Students' Academic and Social Well-being. *Archives of Pediatrics & Adolescent Medicine*, 152, 899–907.

Murphy, J., Wehler, C., Pagano, M., Little, M., Kleinman, R., & Jellinek, M. (2015). Exploring the Link Between Hunger and Social-Emotional Health in Economically Disadvantaged U.S. Children. *Nutrition Reviews*, 69(7), 385–391; *Journal of Psychiatry*, 50(2), 77–82.

National Institute of Early Education Research (NIEER). (2023). *State-funded Preschool Programs in the U.S.: Enrollment trends and assessments*. *NIEER Report.*

Ngome, C. (2020). *Impact of school feeding programs on enrollment in ASAL regions: A case of Kajiado County, Kenya*. *African Journal of Education and Science, 6*(1), 12–24.

Olusanya, M. O. et al. (2023). *Food Insecurity and Academic Achievement among university*

Own Diets.

Pastor-Viced, J. C., (2021). A systematic review. *Punts Education Biscay, Deportees, 146,*(11-

Philippines. France: World Bank Mission.

Penn, H. (2022). *Early childhood education in Africa: Policy and practice gaps. International Journal of Early Years Education, 30(1), 12–25.*

Pollit, E., Jacoby, H., & Cueto, S. (2015). *The Impact of Malnutrition and Disease on Learning Environments*. Paris: UNESCO.

Rao, T. S. (2008). The Interrelation Between Nutrition, Depression, and Mental Health Disorders. *Indian Journal of Psychiatry*.

Ravinder, & Keating, X. D. A. S. F. (2013). Resistance Training Research and Its Implications for Health. *Journal of Strength and Conditioning Research*, 27(7); see also *Reviews in Neuroscience*, 9(7), 568–578.

Rodriguez, J. (2016). Influence of Nutritional Supplementation on Recovery from Mild and Moderate Wasting in School-Aged Children. *American Journal of Clinical Nutrition*, 7(3), 23–45.

Rolls, B. J. (2017). Evaluating the Role of Portion Size in Weight Regulation. *International Journal of Obesity*.

Schweinhart, L., & Weikart, K. (2015). *Long-Term Outcomes of the High/Scope Perry Preschool Program*. Ypsilanti, MI: High/Scope Press.

Scriven, A., & Stiddard, L. (2014). Implementing Health Promotion in School Settings: Practical Applications. *Health Promotion*, 103(2), 110–118.

Seshehardi, D. (2016). The Link Between Stunting and Risk of Obesity in Childhood. *American Journal of Clinical Nutrition*, 4(1), 11–23. São Paulo, Brazil.

Shaw, M. E. (2013). Breakfast Skipping Among Adolescents: A Study in Austria. *Adolescence*, 33(132).

Smilansky, S., & Shefatya, L. (2013). *Encouraging Play to Foster Cognitive and Emotional Growth in Early Learners*. Silver Springs, MD: Psychosocial and Educational Publications.

Smith, P., Dalgleish, M., & Herzmark, G. (2011). Comparing Fantasy Play Instruction and Skill-Based Tutoring in Early Childhood Education. *International Journal of Behavioral Development*, 2(11), 23–37.

Stevns, L. J., et al. (2023). Effectiveness Ratings of 13 Nutritional Therapies for Autism Spectrum Disorders. *Journal of Personalized Medicine*, 13(10), 1448.

St-Onge, M., Keller, K., & Heymsfield, S. (2014). Changing Childhood Food Patterns and Rising Obesity Risks. *American Journal of Clinical Nutrition*, 78(6), 1068–1073.

Strauss, S. (2006). Nutritional Guidelines for Children. *Canadian Medical Association Journal*, 175(10), 1199–1202.

Strupp, B. (2016). Rethinking the Lasting Effects of Childhood Malnutrition on Cognitive Function. *Journal of Nutrition*, 4(2), 11–34. See also *BMC Public Health*, 23(1), 1124.

Uwezo. (2011). *Learning Outcomes in East Africa: A Literacy and Numeracy Assessment*. Uwezo Report.

Ventura, A. K., & Worobey, J. (2013). Early Life Factors Shaping Children's Food Preferences. *Appetite and Nutrition Research Journal*.

Waithaka, P. (2024). Government Spending on Early Childhood Education in Kenya: Identifying Policy Gaps. *African Journal of Public Policy*, 8(2), 89–102.

Wambua, M. (2008). School Feeding and its Effects on Academic Performance: The Case of Mwala Division. *Kenya Journal of Educational Planning*, 2(1), 45–58.

Wambua, M. (2018). The Role of School Feeding in Enhancing Learners' Academic Outcomes in Mwala Division. *Kenya Journal of Educational Research*, 3(1), 55–68.

World Food Programme (WFP). (2016). *Nutrition at School and Cognitive Growth*. United Nations.

World Food Programme (WFP). (2017). *Global Overview of School Feeding Initiatives*. United Nations.

World Food Programme (WFP). (2018). *Cognitive Benefits and Academic Impact of School Meals*. United Nations.

World Food Programme (WFP). (2024). *Evaluating the Outcomes of School Feeding Schemes*. United Nations.

Whaley, S. (2016). Nutritional Interventions and Their Effect on Kenyan Students' Cognitive Development. *Journal of Nutrition*.

Wilson, N., & Parnell, W. (2014). School-Based Feeding: The Impact of Breakfast and Lunch Consumption on Dietary Quality. *Nutrition & Dietetics Journal*.

Yendaw, E. (2015). Ghana's School Feeding Programme: Influence on Enrollment and Academic Success. *Journal of Education Research*, 10(2), 34–45.

Young, M. (2015). *Investing in Early Childhood Development: A Pathway to the Future.* Directions in Development, World Bank, Washington, D.C.

APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

Dear Sir/Madam,

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

I am currently pursuing a Master's degree in Administration, Management, and Leadership at Mount Kenya University. My research focuses on assessment of school feeding Programs in the sub-county of Mvita in Mombasa County, Kenya, specifically regarding pre-school teaching and learning.

You have been selected to participate in this study, and I kindly seek your support and consent to include you as a respondent. Please be assured that all information collected will be used strictly for academic purposes, and your identity will remain confidential. The findings of this research will be shared with you upon request.

Your cooperation and assistance in this study are highly valued and appreciated.

Yours sincerely,

Deborah M. Okindo

APPENDIX II: QUESTIONNAIRE FOR TEACHERS

Section A: Background Information

1. Gender:
   i. Male [ ]
   ii. Female [ ]
2. Highest Level of Education:
   i. Doctorate Degree [ ]
   ii. Bachelor's [ ]
   iii. Diploma [ ]
   iv. Certificate [ ]

Section B: Teaching and Learning Levels of Preschool Pupils in Primary Schools

1. How would you assess the quality of teaching and learning among pupils in your preschool?

Indicators of Academic Achievement	GOOD	FAIR	BELOW AVERAGE
Basic mathematical ability skills like number recognition, organisation and basic procedures			
Language skills including reading, writing, and oral communication			
Creative skills such as drawing, coloring, sketching, painting, and forming shapes			

Section C: Effect of Quality of Food Served on Concentration and Academic Achievement in Preschool

1. Does your school provide quality and balanced diet meal to pupils

   i. Yes [ ]

   ii. No [ ]

2. Please indicate the extent to which you agree with the following statements regarding the impact of food quality on preschoolers.

Key: 1= Strongly Agree; 2=Agee; 3=Undecided; 4= Disagree; 5= Strongly Disagree

Statements	**1**	**2**	**3**	**4**	**5**
In this school, preschool learners rarely receive nutritionally balanced meals that support their mental development and academic growth.					
The school has struggled to ensure consistent access to clean and safe drinking water for Grade Two pupils, which is essential for their cognitive development and learning progress.					
Supplying nutritious and well-prepared meals to Grade Two children has significantly contributed to their cognitive advancement and improved classroom performance.					
Grade Two learners in preschools that offer consistent access to quality diets tend to achieve better results in academic assessments.					

Section D: Feeding frequency on Preschoolers

(Please tick the appropriate option)

1. How many meals are provided to preschool children in your school?

i. No meals are provided [ ]

ii. Morning tea only (10 o'clock tea) [ ]

iii. Morning tea and lunch [ ]

2. Please indicate the extent to which you agree with the following statements regarding the impact of feeding frequency on the academic achievement of preschoolers in your school.

Key: 1= Strongly Agree; 2=Agee; 3=Undecided; 4= Disagree; 5= Strongly Disagree

Statements	**1**	**2**	**3**	**4**	**5**
Despite policy directives aimed at enhancing academic achievement, meal provision for preschoolers has not yet been implemented in my school.					
At my preschool, learners are provided with mid-morning tea at 10 o'clock to encourage attendance and improve their academic performance.					
The introduction of breakfast for preschoolers has contributed to enhanced cognitive development and better academic outcomes.					
Since the implementation of a lunch program, a significant number of preschool learners in my school have shown improved academic performance.					

Section E: Access to Different Types of Food for Preschool Learners

1. Kindly tick the categories of food provided to pupils in your preschool:

i. Balanced meals [ ]

ii. Animal-based foods [ ]

iii. Plant-based foods [ ]

2. Kindly rate the extent to which you agree with the following statements concerning how the availability of diverse food options affects academic performance in your preschool.

Key: 1= Strongly Agree; 2=Agee; 3=Undecided; 4= Disagree; 5= Strongly Disagree

Statements	**1**	**2**	**3**	**4**	**5**
In this preschool, learners are occasionally provided with animal-based food options, which has helped motivate them to attend school regularly and perform better academically.					
Pupils are often served plant-based meals that support their cognitive development and contribute positively to their academic performance.					
The lack of access to a variety of nutritious foods among learners has hindered improvements in their academic achievement.					
The introduction of school feeding programs has enabled learners to access diverse food options, which has played a role in enhancing their learning outcomes.					

Your contribution is highly appreciated

Deborah M. Okindo

APPENDIX III: HEAD TEACHER INTERVIEW GUIDE

Dear Respondent,

I am a student pursuing a Master's degree in Administration, Management, and Leadership at Mount Kenya University. I am conducting research on the influence of school feeding

programs on pre-school teaching and learning within Mvita Sub-County, Mombasa County, Kenya. All information you provide will be treated with strict confidentiality and used solely for the purpose of this study.

Section A: Background Information

1. Gender: _____

2. What is your highest level of education?

   i. Certificate [ ]

   ii. Diploma [ ]

   iii. Bachelor's [ ]

   iv. Postgraduate [ ]

Section B: Teaching and Learning Levels of Preschoolers

1. How would you assess the quality of teaching and learning among preschoolers in your institution?

Section C: Quality of Food Provided to Preschoolers

1. How frequently does your preschool ensure that grade two pupils receive quality food and access to clean water?

2. To what extent has the provision of both plant-based and animal-based foods impacted the academic achievement of grade two pupils in your preschool?

Section D: Feeding Frequency of Preschoolers

1. How many meals does your preschool provide to learners daily?

2. What is the influence of feeding frequency on teaching and learning of preschoolers in your preschool?

Section E: Availability of Food Varieties for Preschool Learners

1. What types of food varieties are offered to learners in your preschool?
2. In what ways has the availability of diverse food varieties impacted the teaching and learning experiences of pupils in your preschool?

Your cooperation is greatly appreciated.

Deborah M. Okindo

APPENDIX IV: PRESCHOOLERS' OBSERVATION CHECKLIST

A. Basic Numeracy Skills

Attributes of Basic Numeracy Skills	Able to Attempt	Unable to Attempt
Provision of balanced diet has enhanced number recognition such as 6 and 9		
Provision of balanced diet has enhanced pupils' ability in ordering and sequencing of numbers		
The provision of a balanced diet has been shown to improve foundational numeracy skills such as rote counting e.g. 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10		
The provision of a balanced has contributed to enhanced proficiency in basic arithmetic operations, including addition (e.g.,23 + 14, 56-13 etc)		

B. Language Skills

Attributes of Language Skills	Able to Attempt	Unable to Attempt
Reading skills include phonemic awareness, phonetics, language comprehension, and the ability to recognize pictures.		
Writing skills involve word formation, combining syllables to create words, and constructing sentences.		

Oral skills encompass activities such as storytelling and memory recall.		

C. Creativity Skills

Attributes of Creative Expertise include:	**Able to Attempt**	**Unable to Attempt**
Use of color		
Formation of patterns		
Sketching or drawing		
Etching with crayons and pencils		

APPENDIX V: INFORMED CONSENT FORM FOR RESPONDENTS
Dear Respondent,

The investigator is a student completing a Masters of Administration Management and Leadership course at Mount Kenya University, researching the impact of school feeding Programs in the sub-county of Mvita in Mombasa County, Kenya on pre-school teaching and learning. I kindly request some of your time to participate in this research, during which you will be asked to complete a few quizzes. Please be assured that your responses will be kept strictly confidential and private. Your name will not appear on any of the materials, and the information you provide will only be accessible to the research team. The study is not going to help you directly. Your contribution is voluntary, and before and during the research, you can change your mindset and withdraw at any time. We are not going to pay for this participation or offer any facilities. Please sign the form below to participate in this research if you want to participate.

Participant:

_ _

Name of Participant Signature Date

Researcher:

Deborah M. Okindo

_ _

Name of Researcher Signature Date

APPENDIX VI: CONSENT FORM FOR PARENTS/GUARDIANS

Dear Parent/Guardian,

I am a student completing a degree course in a Masters of Administration Management and course at Mount Kenya University, carrying out research on the Impact of School feeding Programs in the sub-county of Mvita in Mombasa County, Kenya on pre-school teaching and learning. I would like to inform you that I intend to include your child in this research study. The purpose of the study is to observe the interactions between children and their teachers during learning activities. This observation is solely for educational purposes, and the information gathered will not be used for any other reason.

Before proceeding, I will seek permission from both the head teacher and the classroom teacher. I kindly ask for your consent to allow me to interact with your child during the study. Please be assured that all information concerning the school and the children will be kept strictly confidential and private. Participation in this study is entirely voluntary. You have the right to withdraw your child from the study at any time, either before or during the research, without any penalty. There will be no payment or provision of any materials for participating, and no risks are expected from involvement in this study.

If you agree to allow your child to participate, please sign the consent form below.

Thank you for your consideration.

Parent:

_ _

Name of Parent Signature Date

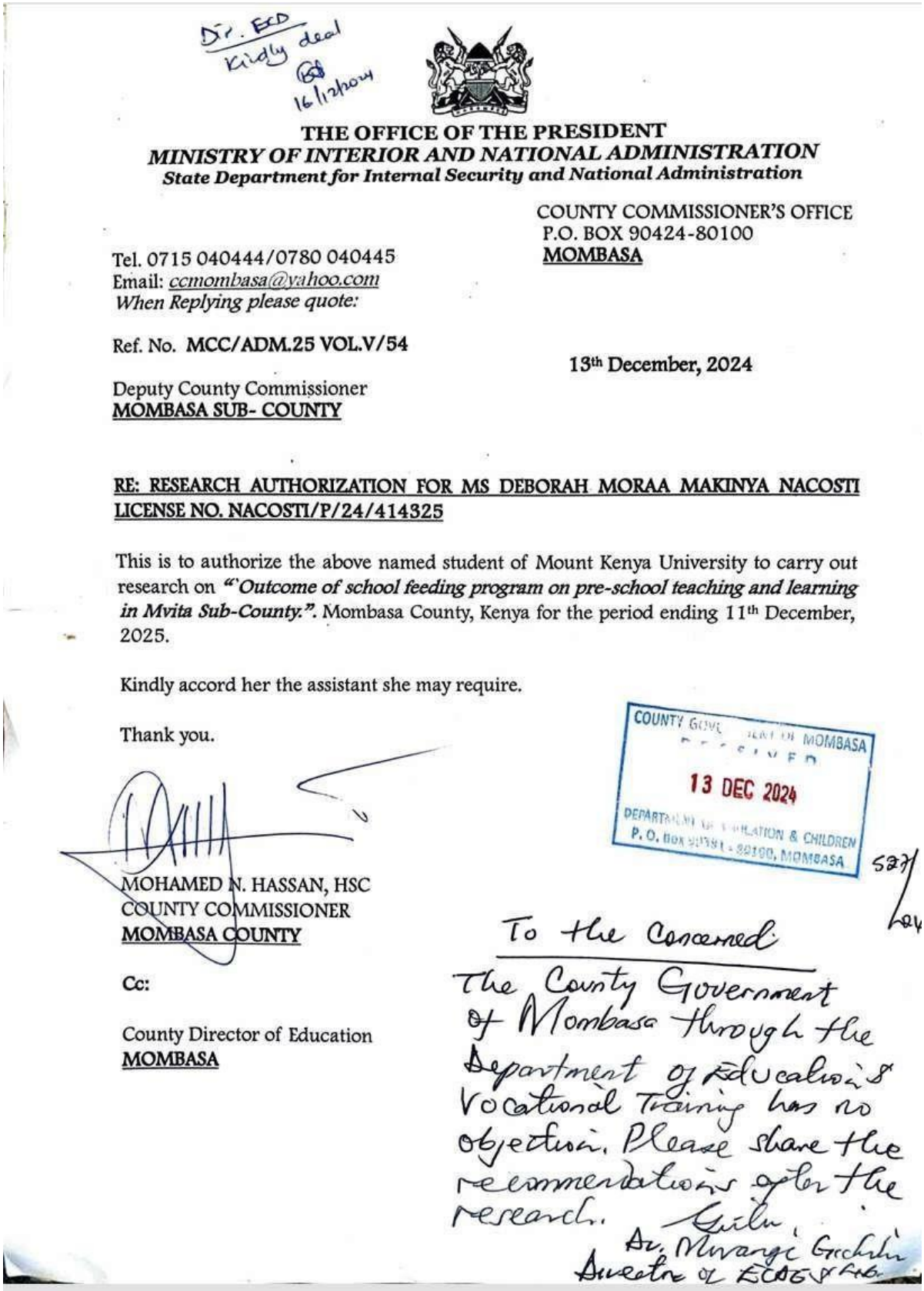
Researcher:

Deborah M. Okindo

_ _

Name of Researcher Signature Date

APPENDIX VII: RESEARCH AUTHORIZATION LETTER



Dr. ECD
Kindly deal
16/12/2024

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

COUNTY COMMISSIONER'S OFFICE
P.O. BOX 90424-80100
MOMBASA

Tel. 0715 040444/0780 040445
Email: ccmombasa@yahoo.com
When Replying please quote:

Ref. No. **MCC/ADM.25 VOL.V/54**

13th December, 2024

Deputy County Commissioner
MOMBASA SUB- COUNTY

RE: RESEARCH AUTHORIZATION FOR MS DEBORAH MORAA MAKINYA NACOSTI LICENSE NO. NACOSTI/P/24/414325

This is to authorize the above named student of Mount Kenya University to carry out research on ***"'Outcome of school feeding program on pre-school teaching and learning in Mvita Sub-County."***. Mombasa County, Kenya for the period ending 11th December, 2025.

Kindly accord her the assistant she may require.

Thank you.

COUNTY GOVERNMENT OF MOMBASA
RECEIVED
13 DEC 2024
DEPARTMENT OF POPULATION & CHILDREN
P. O. BOX 90424 - 80100, MOMBASA

MOHAMED N. HASSAN, HSC
COUNTY COMMISSIONER
MOMBASA COUNTY

Cc:

County Director of Education
MOMBASA

527
16/12/24

To the Concerned
The County Government of Mombasa through the Department of Education & Vocational Training has no objection. Please share the recommendations after the research.
Dr. Mwangi Gichuhi
Director of ECDE & FAL

APPENDIX VIII: ETHICAL CLEARANCE FROM MKU

Mount Kenya University

REF: **MKU/ISERC/4601** Date: 20 November 2024
TO: **DEBORAH M. OKINDO**
REG: **MED/2021/40383**

Dear Sir/Madam,

RE: OUTCOME OF SCHOOL FEEDING PROGRAM ON PRESCHOOL TEACHING AND LEARNING IN MVITA SUBCOUNTY, MOMBASA COUNTY, KENYA

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **3323.** The approval period is **20/11/2024 - 19/11/2025.**

This approval is subject to compliance with the following requirements:

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

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

Yours sincerely,

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

MOUNT KENYA UNIVERSITY
ETHICS REVIEW COMMITTEE
P. O. Box 342 - 01000,
THIKA

Main Campus, General Kago Road, P.O. Box 342-01000 Thika.
Tel: 020-2878 000, Cell: +254 709 153 000
Email: info@mku.ac.ke Web: www.mku.ac.ke

APPENDIX IX: INTRODUCTION LETTER FROM THE SCHOOL OF POSTGRADUATE STUDIES OF MKU

Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MED/2021/40383

20th November, 2024

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

Dear Sir/Madam,

RE: DEBORAH M. OKINDO- REGISTRATION NO. MED/2021/40383

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

The title of the research is **"Outcome of School Feeding Program on Preschool Teaching and Learning in Mvita Sub County, Mombasa County, Kenya."** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **November, 2024 and January, 2025.**

Any assistance accorded to the student will be highly appreciated.

Thank you

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

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

Main Campus, General Kago Road, P.O. Box 342-01000 Thika.

APPENDIX X: AUTHORISATION LETTER FROM THE NATIONAL COMMISSION OF SCIENCE TECHNOLOGY AND INNOVATION (NACOSTI)

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **247364**

Date of Issue: **11/December/2024**

RESEARCH LICENSE

This is to Certify that Ms.. Deborah Moraa Makinya of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Mombasa on the topic: OUTCOME OF SCHOOL FEEDING PROGRAM ON PRE-SCHOOL TEACHING AND LEARNING IN MVITA SUB-COUNTY, MOMBASA COUNTY, KENYA for the period ending : 11/December/2025.

License No: **NACOSTI/P/24/414325**

247364

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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

See overleaf for conditions

APPENDIX XI: MAP OF MVITA SUB–COUNTY, MOMBASA COUNTY