

# African Journal of Education and Practice (AJEP)

## **INFLUENCE OF FOOD ADEQUACY ON ENROLMENT IN ECE CENTRES IN TURKANA CENTRAL SUB COUNTY, TURKANA COUNTY, KENYA**

Locha Erukudi and Dr. Paul Edabu

## INFLUENCE OF FOOD ADEQUACY ON ENROLMENT IN ECE CENTRES IN TURKANA CENTRAL SUB COUNTY, TURKANA COUNTY, KENYA

<sup>1\*</sup>Locha Erukudi

Masters Student: School of Education, Mount Kenya University

\*Email: [lochaerukudi@gmail.com](mailto:lochaerukudi@gmail.com)

<sup>2</sup>Dr. Paul Edabu

Lecturer, School of Education, Mount Kenya University

### Abstract

**Purpose:** This study sought to establish the influence of SFP on children enrolment in early childhood education centers in Turkana Central Sub-County, Kenya. Specific objective was to establish the influence of food adequacy on enrolment in ECE centres in Turkana Central Sub County, Turkana County, Kenya.

**Methodology:** The study was based on Maslow hierarchy of needs, the program theory and liberal egalitarian theory. The study used a mixed research method. The study adopted the cross-sectional research design. The target population was 250 schools, 78 teachers and head teachers and 5,000 parents in pre-schools in Turkana Central Sub County. The study used purposive sampling to select respondents. The sample size of the study was 150 schools, 60 teachers and head teachers and 357 parents. Primary data was gathered by use of questionnaires and interviews guides. Secondary data consisted of report forms of pre-schoolers. Quantitative information was analyzed using descriptive statistics which was computed using SPSS version 21. Qualitative data was analyzed using content analysis. Multiple regressions were done to analyze the influence of SFPs on children enrolment in ECDE centres in Turkana Central Sub County.

**Findings:** The study found that food adequacy significantly and positively relate with children enrolment in ECE centres in Turkana Central Sub County, Turkana County, Kenya. Food adequacy had statistically significant effect of school enrolment in ECD ( $\beta = 0.415$ ,  $P = 0.005$ ). It implies that food adequacy significantly and positively relate with children enrolment in ECE centres in Turkana Central Sub County, Turkana County, Kenya. This implies that increasing food adequacy will lead to increase in children enrolment in ECE centres in Turkana Central Sub County, Turkana County, Kenya.

**Unique contribution to theory, practice and policy:** The study therefore recommends the government to increase food supply to ensure adequacy. There is need to continue supply of balanced diet to children because it improves their growth and learning. Some of the children are from very poor families and during school holidays they suffer because of lack of food; the study therefore recommends orphans, poor and disabled to be fed even during holidays.

**Key Words:** Adequacy, feeding programme, School enrolment, Beneficiary

## 1.0 INTRODUCTION

Food and Agricultural Organization (FAO, 2012) statistics showed that nine hundred and twenty three million persons globally are hungry; this is a rise of seventy five million persons from estimates done in 2009 to 2010. A great number of the individuals were children and people in developing nations. This is an implication that Millennium Development Goals (MDGs) linked to alleviation of hunger as well as malnutrition was not achieved in 2015. School feeding programmes (SFP) was introduced in many developing nations as a way to mitigate hunger and it is also one of the MDGs. School feeding programme (SFP) is a form of an intervention aimed at improving human capital of school-aged children (FAO, 2012).

Task Force Report of the MDGs indicated that after attainment of educational millennium goals they would focus on School Feeding Programmes as an essential method to draw children to schools. SFPs are important in the provision of balanced meals to Early Childhood school children; this assists to improve children attention in the classroom hence improve their performance. School feeding programmes are also essential for children growth. It helps in preventing malnutrition for children of the age between zero to eight years which can be distressing (Birdsall, Levin & Ibrahim, 2015).

In Kenya the school feeding program initiative did not start with the collaboration of WFP and the Kenya government in 1980. It existed even before as early as 1969 and it was managed in the National School Feeding Council (NSFC). In his speech while outlining KANU election manifesto blueprint in 1969, the late president Mzee Jomo Kenyatta noted that school feeding programme which was then operating in some areas would be expanded to cover other parts of the country for KANU was convinced that those children who are healthy could make use of the opportunities presented by schools to grow their intellectual potential fully (KANU Manifesto, 2009).

The Kenyan education has evolved fast since independence. The enrollment in schools has rose from “892, 000 in 1963” to “9.95 million in 2013” (KNBS, 2014), the primary school enrollment rose from “801,000 in 1989 to 1,281,284 in 2000” at early childhood education level (Mwoma & Ruto 2013). Moreover, increase in poverty mostly in arid and semi-arid regions has resulted to low school enrolment. According to Murungi (2012) roughly “65%” of Kenyan children do not attend pre-schools. This may have been caused by hunger which highly affects school attendance and learning. Hungry children are unable to learn because they do not have energy to involve themselves in the school activities. The level of concentration of such children is low and also affects the child’s interaction with his or her fellow children in school. Therefore it is important to introduce SFP to pre-school children to improve their nutritious status (Murungi, 2011).

The introduction of SFP has impacted the rise in children enrollment in several schools in Kenya due to its consistency, however, some school have reported decline in enrollment despite the provision of SFPs. Therefore, SFP should not be misjudged (Wamaru, 2012). SFPs motivate school attendance by children (Ouko, 2012). Ouko (2012) further revealed that with the provision of SFP, attendance and enrollments in school might rise gradually or decrease because of varied factors. According to Onyimbo (2007) School Feeding Programme in Kenya faces numerous problems which have highly affected the process of implementation. The challenges include; inadequate funds, unavailability of SFP courses on management to train people and failure to involve parents in the SFPs. Many schools in

Kenya have not implemented the SFP. Additionally, involvement of parents in meal preparation is low so, the pupils with their teachers are responsible for themselves.

Inadequate financing as well as lack of support from stakeholders affects the smooth running of the school feeding programme (Ndung'u, 2010). Food scarcity in semi-arid and arid regions might limit the number of servings per day and hinder availability of various foods which are important for balanced meals. More so, factors related to needs assessment, regulatory frameworks, community participation, financial management and policy also deter the running of school feeding programmes. A study carried out in Emuhaya sub county, Kenya revealed that provision of SFP is deterred by failure to reflect on all challenges, opportunities and any arising issues as well as stakeholder's involvement. It was concluded that lack of capacity to plan, manage budget needs, lack of implementing units and arrangements, lack of staff training on knowledge of SFP, lack of monitoring and evaluation and failure to consult the community when designing a SFP led to the collapse of the programme (Olubayo, Amisialuvi & Namusonge, 2013).

According to Central Bureau of Statistics (CBS) (2011) in Kenya many preschool pupils are highly or a little bit malnourished. CBS also found that a third of Kenyans children below 5 years have severe or mild malnutrition. Under nutrition is seen as a risk which has an effect on children education in future and therefore the government and other non – governmental organizations should work together to help improve the nutrition of children (Pollit, 2014). The school feeding initiative in Kenya started with WFP collaborating with the government in 1980. FPE was introduced to all government primary schools by Kenyan government in 2003, with an objective of improving children enrollment and attendance in schools. Despite the two initiatives, school enrollment and attendance is still low (less than 50%) (CBS, 2011). This study sought to establish impact of SFP on children enrolment in ECDE centres in Turkana Central Sub County in Kenya.

### **Statement of the Problem**

School Feeding Programme is a program created for the purpose of eradicating hunger, supporting education, health and development (WFP, 2007). The programme provides meals and snacks which are consumed at school while some are taken home. Proponents of SFP claim that provision of meals in schools would attract children to schools. Further, according to the United Nations WFP food acts as motivation to the needy families to invest in educating their kids and send them to school (WFP, 2008).

In times of crisis such as war and drought East Africa has used school feeding as a key strategy in combating scarcity of food. In times that crisis are acute, for instance when schools are not running the SFPs become less priority and serves as supplements to food aid given to households (Bennett, 2003). When a country is faced with crises it is common to see children withdrawn from school to help their families in generating income, and in such a case, SFP can assist as they can act as encouragements to motivate children to get enrolled back to school. Additionally, when schools are in operation, they can operate as both direct (meals to take home) and indirect (meals at school).

Although SFP is offered in Kenya approximately 55% of children in Kenya don't go to school. According to CBS (2016) roughly 50% of ECDE children do not attend school in Turkana Central Constituency. Lack of tuition, lack of uniform, sickness, family affairs, movement of families from one place to another as well as lack of food are major



contributors to low attendance and enrollment in schools (Allen, 2011). Therefore the introduction of SFP in schools might improve enrollment in schools. Bundy (2009) argued that feeding programs can be introduced in schools to increase the rate of attendance and enrollment especially if the program is incorporated in comprehensive school health and nutrition programs. Similarly Jomaa (2011) revealed a positive relationship between SFP and school enrolment and attendance.

Though SFPs are available in some pre-schools in Kenya, school enrollment and attendance is still low as a result of minimal government support of the programme. Inadequate and underfunding in some regions in Kenya also affects the sustainability of SFPs. Turkana Central Sub County is not singled out since it has low pre-school enrollment and attendance. Turkana Central Sub County is also faced with hunger due to the drought experienced in the region for long a period, this affects children enrollment in ECDE. The purpose of the study was to investigate the influence of SFPs on children enrolment in ECE centres in Turkana Central Sub County, Turkana County, Kenya.

### **Purpose of the Study**

The purpose of the study was to investigate the influence of SFPs on children enrolment in ECE centres in Turkana Central Sub County, Turkana County, Kenya

### **Study Hypothesis**

**H<sub>01</sub>** Food adequacy has a positive influence on enrolment in ECE centres in Turkana Central Sub County, Turkana County, Kenya.

## **2.0 LITERATURE REVIEW**

### **2.1 Theoretical Review**

#### **Maslow Hierarchy of Needs**

The motivation theory guided by Maslow (1970) is based on hierarchical needs. Maslow defined needs as deficiency in psychology that makes a person feel the obligation to satisfy. Such needs affect the attitude and behavior of people at work. The Maslow theory proposes that individuals are inspired by numerous needs. Maslow argues that motivation of people is usually their needs that are yet to be satisfied. As the needs are significantly fulfilled, it pushes and forces the emergence of next need. The 5 needs were grouped by Maslow into two groups; higher needs and lower-order needs. In the needs of lower order, there are the safety and physiological needs. The needs of lower order are usually satisfied externally. In the needs of higher order, there is self-actualization, esteem and social and they are satisfied internally which implies it is by an individual.

The assumption of this theory was that the behavior of a person is based on what they need. The behavior of an individual is influenced by satisfaction of those needs which are usually in hierarchical order, and starts with the basic needs to high needs and a need that has already been satisfied cannot motivate a person; only the next need in the hierarchy can motivate them to move higher only after satisfying the lower ones.

The critics on Maslow's pyramid as ethnocentric technique of stemming from the facts in the hierarchy of needs by Maslow fails to show and expand on the distinction between social as well as intellectual needs which are raised in a society of individualism and those rising a

society of collectivism. The foundation that was used by Maslow in creating his hierarchy was the perspective of individualism, especially by the fact that his origin is US which is a nation that is very individualistic. Those people in societies that are very individualistic tend to be very self-centered in their needs and drives compared to individuals from collectivist societies who focus on improving self with the apex of self-actualization being self-improvement. The pyramid of Maslow has a number of problems and one being that once the needs have been met they don't disappear but rather some cues in the environment make them reappear.

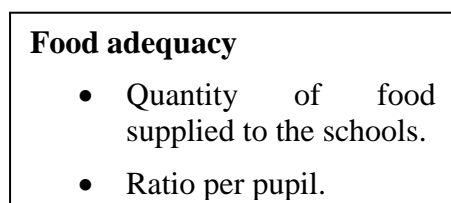
Maslow indicated that once needs are met, the children become happy and contented. Learning will proceed smoothly since the atmosphere at the school is good. And the vice versa is true if their needs are not met (Adelman et al, 2008). The highlight of the model is that it's crucial to provide food as well as security. In a wider perspective of development it implies countries that are struggling to provide basic needs to its population. For a county such as Kenya that is still developing, it means that there is need for poverty to be prevented by providing the citizens with food, clothing and shelter.

The main aim in targeting children through provision of food in schools is to increase their achievements in education with the aim of improving their future productivity and earnings. Improving education through provision of food in SEPS is assumed to take place in three distinct ways. Firstly, it increases the percentage of attendance through reducing cost incurred in school attendance and providing other incentives. The result is that the children tend to spend more of their time in school and in studying and secondly its by elevating short time hunger which leads to improvement in cognition of the child and the span of time in which they remain attentive, thirdly it improves the nutrition of the child through the provision of calories and additional nutrients which supplements their usual diet. The result is improved health, low rates of infections that could have prevented regular attendance to school (Heim et al, 2011) the result is improved nutrition which betters achievements in education indirectly through the increase in attendance of children to school.

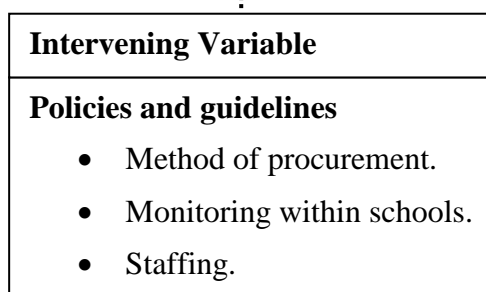
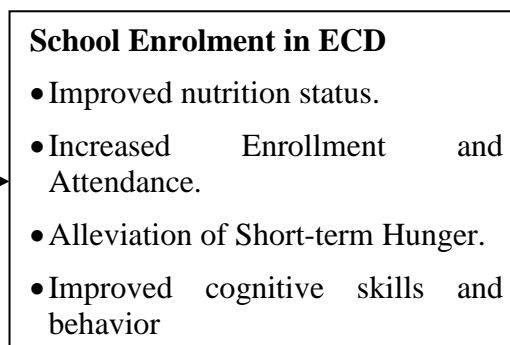
The theory has contributed to schools teaching and management. Other than decreasing environment response to behaviour, Maslow uses a universal learning approach. The theory outlines the entire intellectual, physical, emotional, social qualities of a person and their effects on education. The application of the theory in classroom include; before meeting the cognitive needs of a student the physiological need should be met first. For instance a student who is hungry and tired cannot concentrate in class.

## 2.2 Conceptual Framework

### Independent Variable



### Dependent Variable



**Figure 1: Conceptual Framework**

## 2.3 Empirical Literature

### The Influence of Food Adequacy on Enrolment in Early Childhood Education Centres

In SFP, it is very important to have the perfect ration. When meals are provided early it helps in reducing hunger levels among kids and assist them to be more attentive, concentrate and achieve more. Children going to school need to be given a heavy meal during the day this is because the children may not get any other meals from their families during the day from their families (Lawson, 2012). It is important that the ration be assessed for its quality and quantity and the time it is given. The meal or snack that is given at school gives 1/3 of the energy and protein that is required daily. For adolescents their requirements are greater this is because of the increasing nutrition required at this stage of their life. It is approximated that children of the age 4-8 need 1692 calories every single day while those aged 9-13 need 2195 calories every single day (Leathers & Foster, 2009).

The national SFP in Brazil (PNAE) forms part of their policies on food security and the main intention is lowering the percentage of children who are malnourished and increase the arte of enrollment (FAO, 2013a; WFP, 2007). Among the old feeding programs in Brazil, PNAE is one of them and is also among the largest SFP worldwide in terms of the children benefiting from it and the resources that are allocated towards it. This is an example of an integrated program supporting food security and also nutrition. From the time PNAE was created it has gone through a lot of changes in its structure and the result is that it has improved. The greatest importance of all is that it has supported the development of the locals which includes acquisition of different foods that are produces within the locality and respect for habits that are healthy in terms of eating. Through this, PNAE has played a great role towards

contributing to progress in the realization of the proper foods, making sure that the results are sustainable by having an approach that has been planned accordingly that targets the segments that are vulnerable in the society of Brazil.

In El Salvador programs of food provision and health(PASE) in El Salvador (FAO, 2013d) is part of the flagship programmes in the plan of social education 2009–2014, “*Vamos a la Escuela*” (“Let’s go to school”), whose implementation was by the ministry of education. The proposition was to have an education that is centered on the student in regard to their cultural, social, and environmental requirements among others and also of those in their community and also their family members. PASE is among series of programs of food as well as nutrition strategies in El Salvador with the aim of improving social equity. The main focus of the program is to provide the immediate need of the children which is food and the result is that it increases enrollment lowers rate of absenteeism and betters the health habit of the children.

In South Africa, through the Child Care Act of 1983, there is a condition that is provided which makes sure that the ECD institutions provide meals to children. Through the regulation it is clearly stated that the facility of care will operate for at least 8 hours every day and the children should be served with meals and refreshments. Regulations as well as the Children’s Act of 2005 makes it possible and also regulates provision of ECD services to the young children and through the DSD there are guides provided for GECDs to give directions on the way to support the needs of the young kids nutritionally through the ECD programs (Neelon & Briley, 2011).

For the case of Namibia, a child that participates in SFP has the right to get 125g of dry maize flour for porridge and biscuits that have been prepared using *mahungu* (WFP&PCD, 2011). The children get one cooked meal each day whose ration is sufficient (Burbano, 2011). If the ration provided is not satisfying then the pupils will not be contented (Stevenson, 2008). WFP (2008) indicated that the quality of the food that was provided was not yet good and the variety was the same in majority of the countries that practiced SFPs. The result is that it affects the rate of enrollment and thus the rate of retention in the affected schools. Chikuni (2010) did argue that the pupils who were benefiting from SFP in Malawi did attend school on a regular basis and they also maintained punctuality and the result was that their performance improved and the rate of illnesses among the children decreased tremendously.

There were some guidelines that were provided by WFP to make sure that the food provided was of good quality. Their suggestion was plumpy-nuts for regions where under nutrition among children was severe and in regions where there was need of surplus proteins, peanuts and soya beans were recommended (WFP, 2004). In Tanzania and Cambodia, adding MNP did act as an effective way to boost the vitamin as well as mineral content in meals that were being provided. The result was that the behavior of the children changed in that the instances of illnesses decreases, capacity of learning improved, attendance improved and they became more attentive (Leather and Foster, 2008).

World Hunger Education Service (2012) indicated that the cause of disease globally is as a result of under nutrition which accounts for 35% mortality especially in developing nations. The poor households do not have choices of food to make and the result is that they take food that is not adequate in nutrients and they lack vital nutrients (Ash, 2009). Therefore, there is need to have a universal approach to better the health of the children from this poor



households through the maximization of potentials of development and lifelong health (Van de Poel, 2008). A study that was conducted by IFPRI (2008), established that the cognitive power of children in Kenya became better after they were provided with meals that were rich in proteins. Abdullahi (2012) did a study in Wajir North and gave a suggestion that food that is of quality will have a tremendous improvement in the health of the children. Jamison, (2006) did argue that food for education has the ability of lowering short term hunger and deficiency of micronutrient which will improve functioning of the mind and prevents infections.

### **3.0 RESEARCH METHODOLOGY**

#### **Research Methodology**

The study used mixed research method. This method is important because it enables the collection of quantitative and qualitative data. Mixed method of research is gathering and analysis of quantitative data for instance surveys, experiments and qualitative data for instance interviews, focus groups research. This method is preferred because it promotes more understanding of the problem under research when used together (Johnson, Onwuegbuzie & Turner, 2013).

#### **Research Design**

The cross-sectional research is a research approach in which the researcher investigates the state of affairs in a population at a certain point in time (Bethlehem, 2009). Cross sectional design was applied in this study.

#### **Location of the Study**

The study location was Turkana County, Kenya, specifically the sub-county of Turkana Central. Turkana Central Sub County covers an area of 4906.50 square kilometers with a population of approximately 134,647 people (2009 Census report). The main economic activities in the area are; livestock keeping, fishing, and burning of charcoal and crop farming for those along the Lake Turkana regions. A good number of people are employed in various government and private sector institutions for example the MOE, the MH and the defence ministry. However, 86.4% of the population is still illiterate due to culture and nature of climate which is very dry thus encouraging people to practice nomadic Pastoralism (Turkana County Government strategic plan, 2015).

#### **Target Population**

According to Mugenda and Mugenda (2013) a population is a complete tally of all items in a researcher study area. Therefore, the target population for this study was 250 schools, 78 teachers and head teachers and 5,000 parents in pre-schools in Turkana Central Sub County. At least 30% and above of the study population is enough for a research on social science (Orodho, 2013). The study used purposive sampling to select the respondents. The representative sample was selected through the researcher expert judgment. Picking cases that were involved in the study using an individual's judgment is known as purposive sampling.

#### **Research Instruments**

Both secondary and primary data was used. Primary data was gathered by use of questionnaires and interviews guides. Secondary data consisted of report forms of

preschoolers. According to Bryman (2015) a researcher is required to come up with tools that he/she applied in gathering data. Both open and closed ended questions were used and they were distributed to head teachers and ECD teachers. Interview Schedules are designed in a standard form. This implies that similar questions are asked to every interviewee in a similar order.

Validity was ascertained by the researcher where he discussed the instruments with the supervisor and an expert on the subject under study. The researcher then corrected questions which might be ambiguous. Questionnaires were printed for purposes of gathering data. Gathering of data was done by the researcher with the help of a personal assistant. Reliability was tested using the split-half technique where the research instrument is split into two sections. Correlation is done between the two in order to test the coefficient. If it lies between 0.7 and 0.9 then the instrument is said to be reliable.

Quantitative information was analyzed using descriptive statistics which was computed using SPSS version 21. Presentation of the findings was done using frequencies, percentages, means and standard deviation and displayed on pie-charts, bar charts and graphs. This is done through responses tally, percentages computations, descriptions and interpretation of data. Qualitative data was analyzed using content analysis. If the value of correlation is 0 suggests there is no relationship between the variables. A value of  $\pm 1.0$  implies that there exists a perfect relationship which could either be positive or negative (Hair *et al.*, 2013). Interpretation of the values was as follows; '0 - no relationship', and '1.0 perfect relationship'. When ' $r = \pm 0.1$  to  $\pm 0.29$ ' the relationship is small, when ' $r = \pm 0.3$  to  $\pm 0.49$ ' the relationship medium and the relationship is strong when  $r = \pm 0.5$ .

Multiple regressions was done to analyze the influence of SFPs on children enrolment in ECDE centres in Turkana Central Sub County. Multiple regressions measured quantitative data. The equation was modeled as:

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Where:

Y= enrolment in early childhood education

$\beta_0$  = Constant term

$X_1$  = Food Adequacy

$\varepsilon$  = error term

$\beta_1$ , coefficients of determination

## 4.0 RESEARCH FINDINGS AND DISCUSSION

### 4.1 Influence of Food Adequacy on Enrolment in ECE Centres

#### 4.1.1 Teachers

Teachers were asked to indicate the level to which they agree with statements relating to food adequacy on enrolment in early childhood education centres. The results were as presented in Table 1. Means and Standard deviations were applied in analyzing the information. A mean value of 1-1.4 was strongly disagree, 1.5-2.4 disagree, 2.5-3.4 neutral, 3.5-4.4 agree and 4.5-5 strongly agree.

**Table 1: Influence of Food Adequacy on Enrolment in ECE Centres**

	N	Min.	Max.	Mean(M)	Std. Deviation(SD)
Food is supplied in relation to the number of pupils in a school	53	1.00	5.00	3.8571	1.56191
Schools will large student population get large amount of food	53	1.00	5.00	3.7143	1.58980
In the beginning of every school term food is supplied in schools	53	1.00	5.00	2.0000	1.30089
During break time hours pupils are provided with small portions of food such as porridge and snacks	53	1.00	4.00	1.5714	1.01635
At lunch break pupils are served large portions of food to sustain them till the closure of school day	53	1.00	5.00	3.5714	1.45255
Pupils are served similar proportion of meals so that no one feels discriminated	53	2.00	5.00	4.6429	.92878

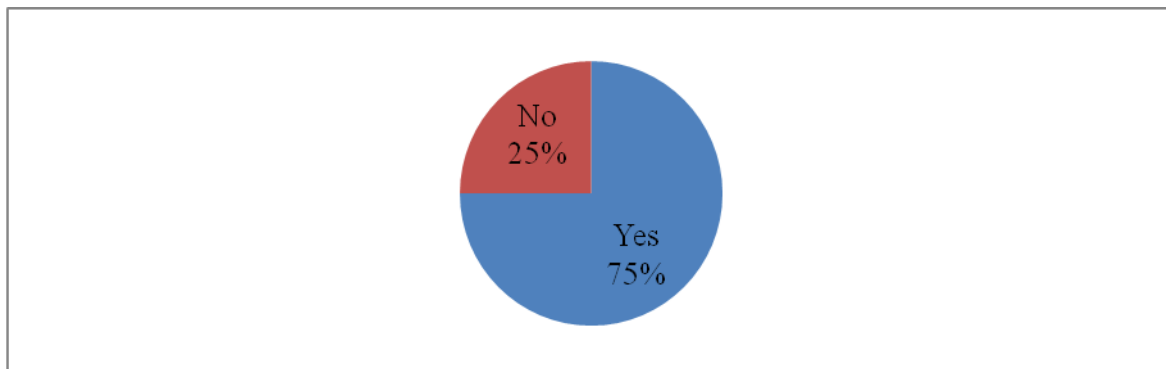
From the findings, teachers strongly agreed that pupils are served similar proportion of meals so that no one feels discriminated ( $M=4.6429$ ). Furthermore, they agreed that food is supplied in relation to the number of pupils in a school ( $M=3.8571$ ), schools with large student population get large amount of food ( $M=3.7143$ ) and that at lunch break pupils are served large portions of food to sustain them till the closure of school day ( $M=3.5714$ ). In addition teachers disagreed that in the beginning of every school term food is supplied in schools ( $M=2.0000$ ) and that during break time hours pupils are provided with small portions of food such as porridge and snacks ( $M=1.5714$ ). These findings suggest that pre-schools in Turkana Central Sub County receive food in relation to the number of students in the school with schools having a larger population receiving more food. The food supplied is served in equal ratios to all children to allow for indiscrimination, and mostly the food is served during lunch hour to sustain them until end of school day. Despite food being supplied to these schools, it is not necessarily supplied at the beginning of the term. Also pupils are fed at lunch time but during break time hours they are not provided with any snack or porridge.

According to Lawson (2012), it is very important to have the perfect ration. When meals are provided early it helps in reducing hunger levels among kids and assist them to be more attentive, concentrate and achieve more. Children going to school need to be given a heavy meal during the day this is because the children may not get any other meals from their families during the day from their families. Providing perfect ration of food for pre-schools in Turkana Central Sub County is important it's also important to assess its quality and quantity and the time it is given.

#### 4.1.2 Parents

##### Food Provision and its Adequacy

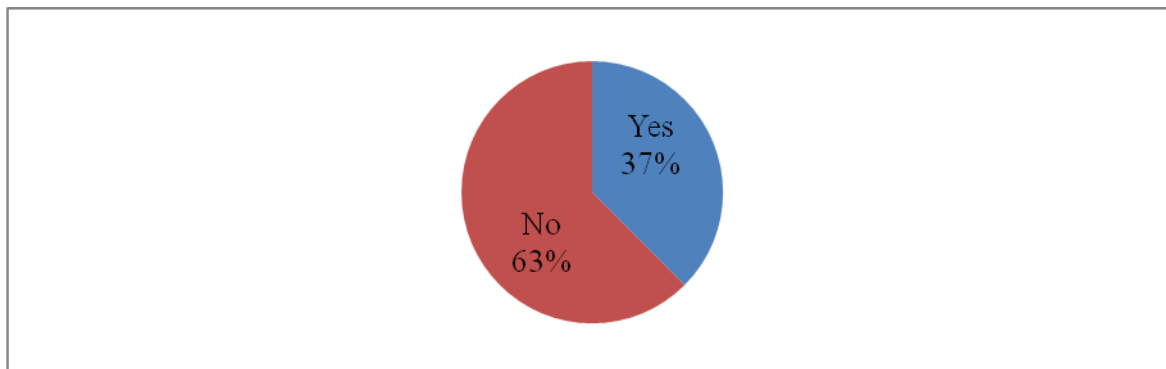
Parents were asked to indicate whether the school provides daily meals. The results were as presented in Figure below.



**Figure 1: Parents Opinion Regarding Food provision**

From the findings 75% of parents agreed that the school provides their children with daily meals while 25% disagreed. This therefore suggests that pre-school going children in Turkana Central Sub County, Turkana County, Kenya are provided with meals daily. Parents added that the meals their children are provided with is adequate and is served daily during school days (Monday to Friday). All students get a meal until the end to the term since it's a requirement by the ministry of education. In addition for students in boarding school they receive all their meals at school.

Parents were also asked to indicate whether the school gets enough food for every term and provide a reason for their response. Figure 2 presents the findings.



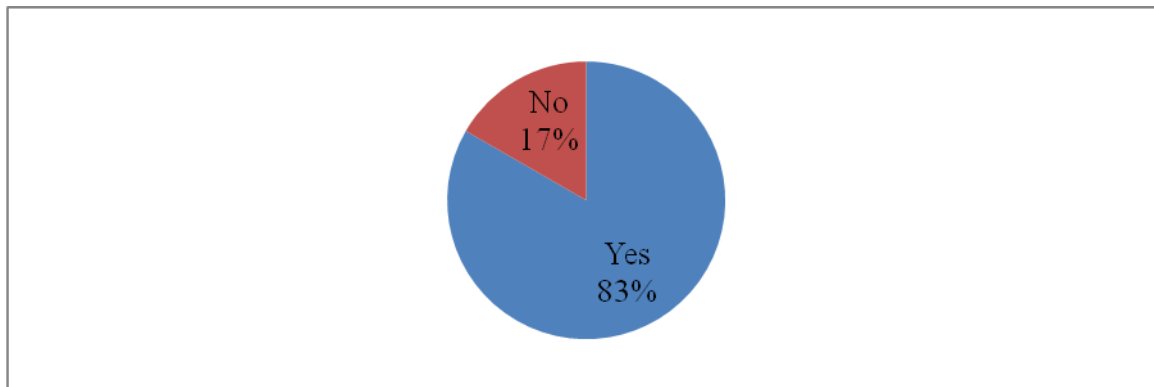
**Figure 2: Parents Opinion on Adequacy of Food Supply**

From the findings, 63% of parents indicated that the school does not get enough food for every term while 37% indicated that the food received was enough. Majority of parents considered the food to be inadequate because sometimes the amount of food provided fluctuates and therefore there are a times when the food is not adequate for the entire term. Another challenge is constant change in enrollment levels. Those parents who considered the food to be adequate indicated that it covered the entire learning period. Also it was adequate because the government both national government and country government collaborated with other sponsors like mission of hope to provide adequate food. This concurs with FAO (2013) explaining that the national SFP in Brazil (PNAE) forms policies on food security and the main intention is lowering the percentage of children who are malnourished and increase the arte of enrollment



### **Adequacy of Onsite Meals**

Parents were asked whether the school provide adequate onsite meals and explain the reason for their response. Figure 3 presents the findings



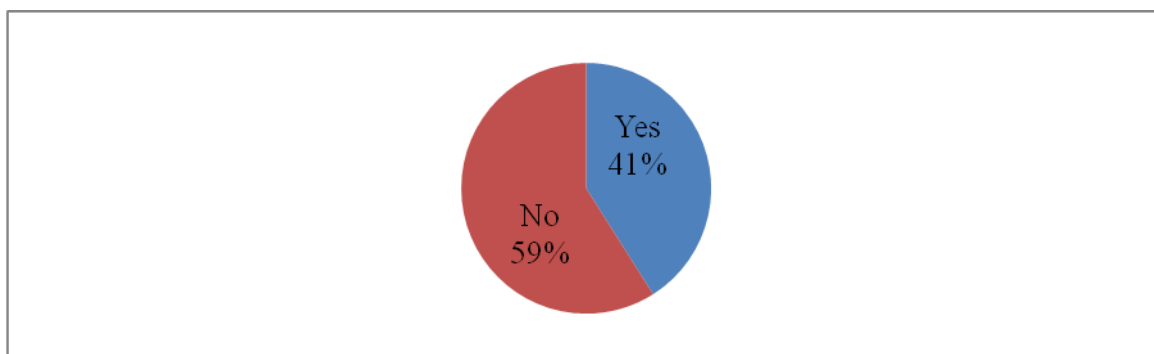
**Figure 3: Parents Opinion on Adequate of Onsite Meals**

From the findings, 83% of parents agreed that the school does provide adequate onsite meals while only 17% disagreed. This therefore suggests that schools in Turkana Central Sub County provide adequate onsite meals as supported by majority (83%) of parents. Parent considered the means provided to be adequate because their children were able to get meals from mission of hope (sponsor), government and county government. Food availability in the school is also provided by education department and other sponsors like Mary meals.

Parents indicated the reaction of their children on the amount of food they are served. Parents indicated that the children are served with adequate ration of food and therefore they are satisfied. Because the food the child is provided with is nutritious and comprise of nutrients needed by the child, they react positively and their health is improved.

### **Adequacy of Take Home Ratios**

Parents were asked to indicate whether the school provide adequate take home ratios and explain their response. Figure 4 presents the findings.



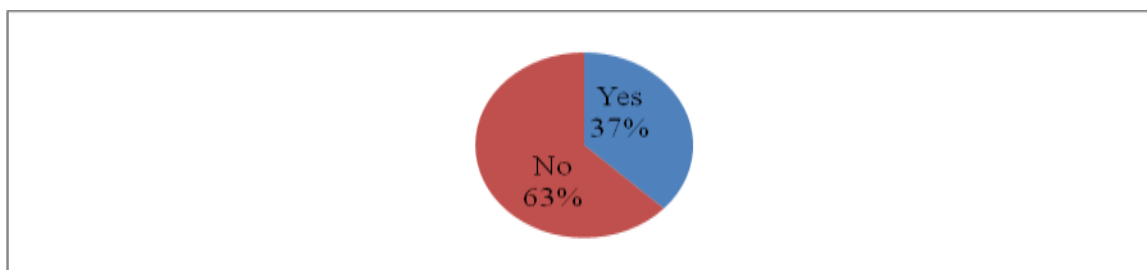
**Figure 4: Parents Opinion on Adequacy of Take Home Ratios**

From the findings, 59% of the parents were in did not agree that school provide adequate take home ratios while 41% agreed that the school provided school provide adequate take home ratios. These findings therefore suggest that some of the schools provide adequate take home

ratios but majority (59%) do not. The food is not enough for children to take home because it meant for children in school and is prepared for them daily and they eat it while in school.

### Adequacy Benefits to Schools

Parents were asked to indicate whether food adequacy has benefited all schools in their community while explaining their reasons. The results were as presented in Figure 5.



**Figure 5: Parents Opinion of Adequacy Benefits to Schools**

From the findings, 63% of the parents indicated that food adequacy has not benefited all schools in their community while 37% indicated that it has. Majority of the parents indicated that it hasn't benefited all schools because there are no neighboring schools around them due to long distances between schools and therefore they are not aware. Parents also disagreed on its benefits because food supply was not consistent. Those parents who found the program to benefit schools surrounding them indicated that it was because same supplier supplies food to all the schools within the region.

This agrees with Abdullahi (2012) that food that is of quality will have a tremendous improvement in the health of the children. Jamison, (2006) did argue that food for education has the ability of lowering short term hunger and deficiency of micronutrient which will improve functioning of the mind and prevents infections. Therefore, adequate supply of food not only helps in improving nutrition of students but also their education performance.

### 4.2 Correlation Analysis

Karl Pearson product-moment correlation coefficient was used in conducting correlation analysis. Correlation Coefficient was applied in testing if there is a case of interdependence among the variables and whether predictor variables are associated with the response variable. The findings were as resented in Table 2.

**Table 2: Correlations**

		School Enrolment In ECD
<b>School Enrolment In ECD</b>	Pearson Correlation	1
	Sig. (2-Tailed)	
	N	53
<b>Food Adequacy</b>	Pearson Correlation	.673**
	Sig. (2-Tailed)	.008
	N	53

\*\* . Correlation Is Significant At The 0.01 Level (2-Tailed).

From the findings, food adequacy has a strong, positive and significant relationship with school enrollment with ECD ( $r=0.673$ ,  $p\text{-value}=0.008$ ). This findings therefore suggest that food adequacy influence school enrolment in ECD.

### 4.3 Multiple Regression Analysis

**Table 3: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.775 <sup>a</sup>	.601	.423	.55878

a. Predictors: (Constant), Food preparation , Balanced diet , Consistency of food delivery , Food adequacy

From the findings, the value of adjusted  $R^2$  was 0.423, suggesting that 42.3% variation in school enrolment in ECD can be explained by changes in food adequacy, balanced diet, consistency of food delivery and food preparation was analyzed. The remaining 57.7% suggest that there are other factors that can be attributed to changes in school enrolment in ECD that were not included in this model. The findings also suggest that the variables included in this model are strongly and positively related as indicated by correlation coefficient value (R) of 0.775.

**Table 4: Analysis of Variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	161.907	4	40.477	9.387	.009 <sup>b</sup>
	Residual	206.976	48	4.312		
	<b>Total</b>	<b>368.883</b>	<b>52</b>			

a. Dependent Variable: School Enrolment in ECD

b. Predictors: (Constant), Food preparation , Balanced diet , Consistency of food delivery , Food adequacy

The p-value obtained was 0.009 which is less than 0.05 ( $0.009 < 0.05$ ) therefore the model was considered significant. In addition, the value of F-calculated was 9.387 while the F-critical value obtained from the f-distribution tables was 2.565. Since the f critical value was less than the f-calculated value ( $9.387 > 2.565$ ) it suggests that there is a significant linear relationship existing between food preparation, balanced diet, consistency of food delivery, and food adequacy with school enrolment in ECD. This agrees with the findings of Chikuni (2010) that the pupils who were benefiting from SFP in Malawi did attend school on a regular basis and they also maintained punctuality and the result was that their performance improved and the rate of illnesses among the children decreased tremendously.

**Table 5: Beta Coefficients of the Study Variables**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.765	0.101		7.574	0.001
	Food adequacy	0.415	0.049	0.343	8.469	0.005

a. Dependent Variable: School Enrolment in ECD

The modelled regression equation was;

$$Y = 0.765 + 0.415X_1 + \varepsilon$$

Food adequacy has statistically significant effect of school enrolment in ECD ( $\beta = 0.415$ ,  $P = 0.005$ ). It implies that food adequacy significantly and positively relate with children enrolment in ECE centres in Turkana Central Sub County, Turkana County, Kenya. This implies that increasing food adequacy will lead to increase in children enrolment in ECE centres in Turkana Central Sub County, Turkana County, Kenya.

## 5.0 CONCLUSION AND RECOMMENDATIONS

### Conclusions

The study found that food adequacy has statistically significant effect of school enrolment in ECD. The study further revealed that food adequacy significantly and positively relate with children enrolment in ECE centres in Turkana Central Sub County, Turkana County, Kenya. Based on these findings, the study concludes that increasing food adequacy will lead to increase in children enrolment in ECE centres in Turkana Central Sub County, Turkana County, Kenya.

### Recommendations

Food adequacy has been found to increase children enrolment in ECE centres in Turkana Central Sub County. The study recommends the government to increase food supply to ensure adequacy. This can be accomplished by encouraging other bodies like churches, CDF and NGO's to come in and help in provision of foods to these schools ensuring adequacy. Children should be provided with more nutritious food by diversifying their menus to serve them with highly nutritious foods and this can also include a fruit each day.

### Suggestion for Further Studies

The study was conducted among schools in Turkana Central Sub County; the study recommends replication of the research study in other sub counties in Turkana County to facilitate generalization of the research findings. The study recommends replication of the study in other counties that experience food scarcity such as Wajir and Mandera Counties. The study focused on effects of SFPs on enrollment another study should focus on effects of SFPs on school drop-outs.



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