**Greener Journal of Educational Research**

**Vol. 13(1), pp. 16-22, 2023**

**ISSN: 2276-7789**



**DOI: https://doi.org/10.5281/zenodo.7753339**

**https://gjournals.org/GJER**

# Efficacy of the school meal program on pupils' academic performance in consideration of school-related environmental factors.

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**ARTICLE INFO**

***Article No.:*** *021623016*
***Type*****:** *Research*
***Full Text:*** *PDF, HTML, PHP, EPUB*
***DOI:*** *10.5281/zenodo.7753339*

***Accepted:*** *18/02/2023*
***Published:*** *20/03/2023*

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***Keywords:*** *efficacy, school meal program, pupil, academic performance, school-related environmental factors*

**ABSTRACT**

**The goal of the study was to assess how the school meal program affected pupils' academic progress while taking into account school-related environmental variables. The study was led by two research questions and two hypotheses. Twelve thousand four hundred (12,400) pupils and five hundred seventy-eight (578) teachers from primary one to three made up the population in public elementary schools. Using a systematic random sampling approach, a sample size of 1,240 pupils (1240) and 58 teachers (58) was selected. Respondent information was gathered using a structured questionnaire. The study topic was resolved using the mean and standard deviation. The t-test was used to test hypotheses. The study found that a significant element harming the meal program is the difficulties in delivering money to schools and poor money management. Additionally, the results demonstrated that the school meal program improved pupils' academic performance. Based on the study's findings, it was advised that the government should oversee the transfer of money intended for the school food program to avoid issues related to the transfer procedure.**

## INTRODUCTION

Since the advent of modern education, there has been anxiety over pupils' academic performance in school. Many nations now understand that pupils are the center of the educational process and that without strong academic performance, all innovations in education are destined to failure. Academic performance is defined as the quality and quantity of knowledge, skills, techniques, and a learner's

achievement or acquisition of a positive attitude, behavior, and philosophy (Isidor, 2022). The results of a test or examination given to pupils at the conclusion of a subject, academic year, or educational cycle are used to assess their level of ability. Each pupil's grades and scores reflect their level of achievement. The standard of the grade establishes the level of academic performance in a particular class at a specific examination period, whether internal or external (Aguh, et al. 2023). Academic performance really means three things: the capacity to learn and retain information; the capacity to learn effectively and see how information fits together to form larger knowledge patterns; the capacity to think in relation to information; and thirdly, the capacity to convey information either verbally or nonverbally. Therefore, it could be said that the school meal program is a commendable program that promotes education for everyone in all respects. The school meal program is an approach to supplying basic education with high-quality needs in a way that will improve academic success.

The school meal program is an effort by governments and a broad variety of partners to promote activities that may quickly restore, enhance, and expand food and educational systems, help pandemic recovery, and promote Sustainable Development Goals (Aurino, et al. 2023). In many developed and developing nations across the world, school meal programs are essential interventions that have been implemented to combat poverty, increase enrollment in schools, and improve pupil performance. The Sustainable Development Goals initiative and several conferences held later by African leaders to address issues like peace, security, good economic, political, and corporate governance as well as to make the continent an appealing location for foreign investment are credited with the introduction of school feeding (Chakrabarti, et al. 2021). African leaders have made a commitment to end poverty, put their nations on the road of sustainable growth and development, and actively engage in global politics and the economy, among other things. This commitment is founded on a shared vision.

One of the many intervention programs that can address some of the nutritional and health issues affecting children of school age is the school meal program. Parents may be encouraged to enroll their children in school and ensure that they attend on a regular basis by a school meal program. The greatest risk factor for children's futures in school is now malnutrition (Destaw, et al. 2021). Because young children's ages play a crucial role in their growth and development, it has major developmental ramifications for them. As a result, nutrition instruction is a crucial component of early childhood education programs. Although the number of school-age children who are hungry is unclear, it is likely to be a serious issue in many situations. Children's hunger is caused by a variety of circumstances, including the distance children must travel to school, cultural norms that forbid or only offer tiny breakfasts, and a lack of family time or money to provide nutritious meals for pupils before and/or throughout the school day (Chaves, et al. 2023). Simply addressing this need among schoolchildren improves their academic performance.

The impact of nutrition on the child's physical, emotional, and academic development has proven crucial. State boards of education have looked for solutions on how to raise test scores and develop school systems where all children and pupils receive the finest education possible in a world of failing schools and indifferent pupils. In Nigeria, the majority of public schools accept pupils from less fortunate homes. Due to their low socioeconomic status, these pupils cannot be guaranteed regular meals. A healthy diet is essential since it helps the body grow, protect itself, and get repaired. Food must be available in sufficient quantities for humans to operate sustainably. A successful educational system must also focus on keeping pupils healthy and capable of learning. This is especially important when trying to get everyone in the poorest areas to go to school. On the premise of the foregoing, the present study assessed the efficacy of the school meal program on pupils' academic performance in consideration of school-related environmental factors.

**Research Questions**

This study answered the following research questions:-

1. What are the schools environmental factors affecting school meal programme in the study area?
2. What influence has school meal programme on academic performance of the pupils in the study area?

**Research hypotheses**

The research hypotheses for this study were tested at the 0.05 level of significance. They are as follows:-

$HO_1$ There is no significant difference between environmental factors affecting school meal programme of male and female pupils in the study area.

$HO_2$ There is no significant difference between the influence of school meal programme on academic performance of male and female pupils in the study area.

**Theoretical Framework**

The theory of human needs (Maslow, 1945) served as the basis for this study. This theory holds that a decent standard of living must meet a number of minimum requirements. The term "physiological needs" refers to these. They consist of clothes, shelter, and food. Prior to pursuing additional wants like protection and shelter, a sense of connection and affection, love,

esteem, and eventually self-actualization, these core needs must be met. According to Maslow, a hierarchy of human needs begins with those that are purely physical, such as those for food, clothes, and shelter. These are essential requirements that must be met before any other requirements. This notion is used in the study since it has been found that providing pupils with meals at school—a basic need—encourages their attendance and persistence. Short-term hunger is reduced while learning and academic performance is improved. As a result, it can be said that the School Meal program has met the fundamental demand for food, which has improved pupil enrollment, attendance, and academic performance. It may serve as a stepping stone for them to achieve educational degrees that will motivate them to rise to the level of self-actualization at the top of the pyramid.

The school food program in this location might be viewed as a stepping stone for pupils to use in order to attain what is often anticipated in favorable learning contexts and conditions. Therefore, according to this idea, each pupil must start from the very bottom of the ladder in order to go up to the other demands at the top of the hierarchy, regardless of how long it is. Since food plays a significant part in children's life, it is important to provide them a healthy diet and enough sleep. Making sure that everyone has access to necessities like food, clothing, and shelter can help a growing nation like Nigeria avoid poverty. Since food is essential for human survival, the government should work to eliminate food insecurity, especially among weaker populations like children. When dietary assistance are made accessible, such as through a school meal program, hunger is lessened if it is correctly controlled, and excellent health, high motivation, engagement, and concentration in class are all promoted (Munyiri,2010). In an effort to understand the impact of the school meal program on academic performance, the research is based on this notion. The topic is explained from the viewpoint of the writer in the model in figure 1. This demonstrates the link between the variables (independent and dependent) utilized in the study for a better comprehension of the impact of pupils' academic performance on the school nutrition program.

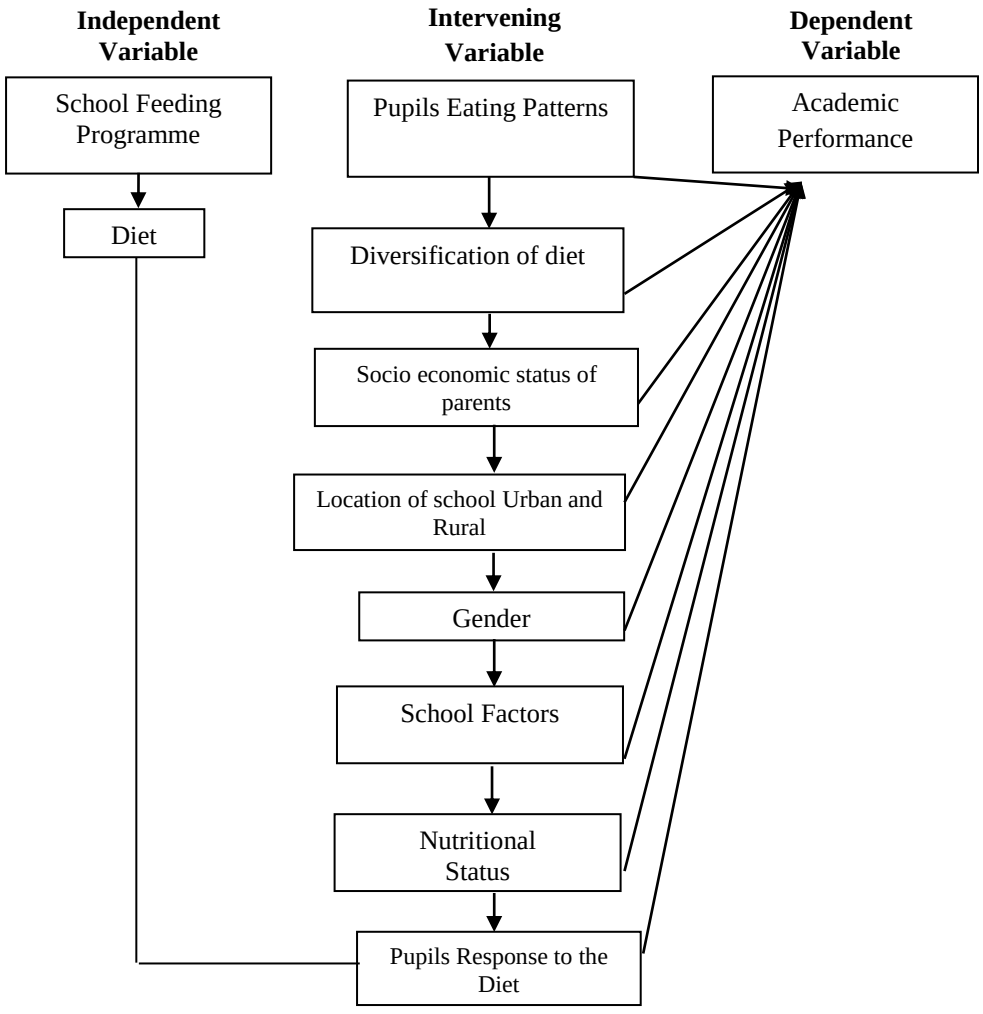


**Figure 1: Self-made model for assessing the impact of the school meal program on academic performance.**

Figure 1 consists of three parts -:

**Independent variable**: This describes the factors that affect the outcomes that pupils exposed to school meals might attain. The school meal program is the independent variable. For a child's general wellbeing, this is crucial. Having a good diet helps children become physically and intellectually strong, making them capable of handling any job that is thrown at them.

**Dependent variable**: This clarifies how the variable's result came about. Pupils' academic performance is influenced by their general health. A healthy youngster will focus more on their schoolwork and be happier overall.

**Intervening variable**: These are the elements that might have an impact on how the independent and dependent variables interact. The study's modifying variables included pupils' eating habits, the variety of diets served in schools, social economic status, whether the school was in an urban or rural setting, whether the pupils were male or female, environmental factors at the school, nutritional status, and how they reacted to the diet. Investigated was how these intervening factors affected the dependent variables.

## DESIGN OF THE STUDY

Ex-post facto research, which is descriptive in nature, was the methodology used in the study. This type of study strategy is applied after the independent variable's impact on the dependent variable has already materialized. Using this methodology, the researcher was able to analyze and describe how pupils' and teachers' perceptions of the impact of the school food program on pupils' academic performance. All of the pupils and teachers from primary one to three at a public primary school made up the population for this research. This included thirty Local Government areas with twelve thousand four hundred (12,400) pupils and five hundred seventy-eight (578) teachers.

Primary 1, 2, and 3 pupils made up a total sample of 1240 pupils and 58 teachers, or 10% of all pupils and teachers enrolled in the research area's school food program. For the investigation, a method of systematic random sampling was employed. Five schools from the metropolitan areas and five from the rural areas were chosen at random. Local government offices were considered to be in urban areas, while other locations were considered to be in rural areas. Four experts, three from the department of vocational education and one lecturer in test and measurement assessment, all in the faculty of education at Delta State University Abraka, verified the items on the instruments, and the instrument was adjusted as a result of their feedback. A pilot study was conducted to assess the instrument's dependability. In doing so, 60 copies of the tests were given to pupils and teachers.

Sixty respondents took the pilot exam, including thirty (30) teachers and pupils from metropolitan areas and thirty (30) from rural areas. To determine the internal reliability, the pilot test was split into two equal halves, and the results from the two halves were correlated. Cronbach's alpha statistics were used to evaluate the instrument's internal consistency. The pilot study's findings indicated that the r value coefficient was 0.74. The high coefficient demonstrated that the tool is thought to be suitable for the investigation. A structured questionnaire named "Questionnaire assessing the impact of school meal program on the academic performance of pupils (QEISFPOAPP)" and a day dietary recall list served as the study's instruments.

In order to distribute the questionnaire, a total of 1298 copies were manually distributed with the aid of research assistants and classroom teachers in each of the chosen schools. To respond to the study questions, frequency counts, percentages, means, and standard deviation were employed. The cutoff point was 2.50 based on the scale that was employed. So, mean scores of 2.50 and higher were regarded as agreed upon, whereas scores below 2.50 were regarded as disagreed upon. T-tests were used to assess hypotheses at a significance level of 0.05.

## RESULTS

### Research Question 1

What are the factors affecting school meal programme in the schools?

**Table 1: Mean responses of teachers on the factors affecting school meal programme in the schools(N=58)**

| S/N | Statement item | Mean | SD | Remark |
|---|---|---|---|---|
| 1 | Foods are prepared by qualified caterers | 2.12 | 0.67 | Disagreed |
| 2 | The facilities for food preparation are readily available | 3.42 | 0.78 | Agreed |
| 3 | Funds are provided regularly for the programme | 2.25 | 0.77 | Agreed |
| 4 | Time of service does not encroach on the lesson periods | 3.04 | 0.69 | Agreed |
| 5 | The meals are served daily during school days | 4.67 | 0.88 | Agreed |
| 6 | The guidelines for effective implementation of school meal programme are followed | 3.45 | 0.57 | Agreed |
| 7 | School administrators mismanage the fund set up for the meal programme | 3.42 | 0.86 | Agreed |
| 8 | The funds passes a difficult process before getting to the school | 4.01 | 0.67 | Agreed |
| 9 | There is poor supervision of the school meal programme by the government | 3.41 | 0.95 | Agreed |

According to Table 1, the mean range for all the components was between 2.12 and 4.67. With the exception of Item 1, whose mean value was less than the threshold of 2.50. This showed that the majority of the components were recognized by the teachers as influencing the school meal program. The items' standard deviations varied from 0.57 to 0.95. This demonstrated that respondents' comments were corroborated by one another.

**Research Questions 2**

What influence has school meal programme on academic performance of the pupils in the study area?

**Table 2: Mean responses of teachers on the influence of school meal programme on academic performance of the pupils (N=58)**

| S/N | Statement item | Mean | SD | Remark |
|---|---|---|---|---|
| 10 | School meal programme has helped to increase scores in examination. | 3.19 | 0.76 | Agreed |
| 11 | School meal programme has improved verbal fluency among pupils. | 2.78 | 1.01 | Agreed |
| 12 | Enrolments have increased as a result of meal programme in the schools | 3.00 | 0.57 | Agreed |
| 13 | All home works are readily done, thus increasing academic performance | 3.09 | 0.68 | Agreed |
| 14 | The school meal programme has help to caution the effect of poor nutrition found in pupils' homes | 2.54 | 0.88 | Agreed |
| 15 | Absenteeism and truancy of pupils have reduced due to the effectiveness of the school meal programme | 3.45 | 0.57 | Agreed |
| 16 | School meal programme has helped to improve pupils developmental (physical and intellectual growth) process | 3.42 | 0.71 | Agreed |
| 17 | School meal programme has increased my ability to concentrate | 2.81 | 0.55 | Agreed |
| 18 | School meal programme helps to fight malnutrition found among pupils | 3.41 | 0.95 | Agreed |

According to Table 2, the mean range for all the products was 2.54 to 3.45. The items' average values were higher than the 2.50 cutoff. This showed that the academic performance of the pupils had improved as a result of the school food program, according to the teachers. The items' standard deviations varied from 0.55 to 1.01. This demonstrated that respondents' comments were corroborated by one another..

**Hypothesis 1**

$HO_{1:}$ There is no significant difference between rural and urban teachers on factors affecting school meal programme in the study area.

**Table 3: t-test analysis of the mean responses of rural and urban teachers on factors affecting school meal programme in the study area**

| Location | N | Mean | SD | t-value | t-tab | Decision |
|---|---|---|---|---|---|---|
| Rural | 24 | 2.91 | 0.89 | | | |
| | | | | 1.02 | 1.98 | Accepted |
| Urban | 34 | 2.74 | 0.73 | | | |
| **Total** | **58** | | | | | |

The results of the t-test analysis of the average responses of rural and urban teachers to the factors impacting the school food program were displayed in Table 3. At the 0.05 level of significance, the t-value (1.02) is lower than the t-tab (1.98) The given null hypothesis is accepted as a result. This shows that the average assessments of teachers in rural and urban areas on the aspects impacting the school food program are not significantly different from one another.

**Hypothesis 2**

$HO_{2:}$ There is no significant difference between teachers from rural and urban schools on the influence of school meal programme on academic performance of pupils in the study area

**Table 4: t-test analysis of the mean responses of rural and urban teachers on the influence of school meal programme on academic performance of pupils in the study area**

| Location | N | Mean | SD | t-value | t-tab | Decision |
|---|---|---|---|---|---|---|
| Rural | 24 | 3.90 | 0.72 | | | |
| | | | | 2.03 | 1.98 | Rejected |
| Urban | 34 | 3.78 | 0.56 | | | |
| **Total** | **58** | | | | | |

The study of the mean responses from teachers in rural and urban areas about the impact of the school meal program on pupils' academic performance is shown in Table 4. At the 0.05 threshold of significance, the t-value (2.03), rather than the t-tab (1.98), was higher. The stated null hypothesis is disproved by this finding. This shows that there is a large disparity in the mean assessments of teachers in rural and urban areas about the impact of the school food program on pupils' academic performance in the research region.

## DISCUSSION

According to the findings of research question 1, teachers recognized poor financial management by school administrators, a challenging distribution method for monies to reach schools, and inadequate government oversight of the school meal program as problems influencing the program. Similar result was obtained by Langinger (2011) who captured factors such as water scarcity and inadequate infrastructure as constraints to full implementation of school meal program. In some cases, certain financially strapped schools require families to contribute money to sustain the program. These elements that have an impact on the school meal program hinder the program's execution because they do not support the positive learning settings that pupils need to improve their academic performance (Anderson, Gallagher & Ritchie, 2018). In some cases, part of the money required for the school meal program may be diverted along the route from each level of government before it was finally used for program implementation (Shrestha, et al. 2020). The goal of the program might be destroyed when only a portion of the funding allocated for the school food program had been distributed. Additionally, Aulo's (2010) research found that on-site meals cost around three times as much as fortified biscuits. However, money is misappropriated by senior officials, resulting in significant delays in getting the program's essential components and impeding the regularity of workers' paycheck payments.

In line with findings by Billah, et al. (2017) which claimed that feeding school children improved their short-term nutritional status and supported their concentration and cognitive abilities, the research question 2 result showed that the teachers agreed that the school meal program improved academic performance of the pupils. Similarly, Kitaoka (2018) noted that school meal programs are crucial for satisfying children's nutritional needs and for imparting nutritional knowledge in order to support healthy child development. This is because poor nutrition can make pupils more prone to sickness, cause headaches and stomachaches, and increase absences from class (Baleanu, et al. 2018). It has been demonstrated that pupils' cognition, focus, and energy levels are enhanced when they have access to a healthy diet that includes protein, carbs, and glucose. In agreement with this

results, Bellisle (2004) argued that diet has an impact on pupils' cognitive abilities, conduct, and health, which has an impact on pupils' academic performance.

## CONCLUSION

The mean opinions of teachers in rural and urban areas about the academic performance of their pupils participating in the school meal program varied significantly. In a summary, the study found that the school food program had a beneficial impact on the pupils' athletic and academic performance. Before beginning the day's academic activities, pupils should have breakfast (in a healthy way). This will help them stay focused in class all day. The following suggestions were given in light of the findings of this study: In order to promote adequate academic performance among school pupils, school administrators should establish a healthy, well-balanced meal that may provide good nourishment. Before serving food to pupils, school officials should conduct a thorough inspection of the food's quality, and health education teachers should make sure that pupils are given nutritious meals.

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**Cite this Article:** Okadigwe, JC (2023). Efficacy of the school meal program on pupils' academic performance in consideration of school-related environmental factors. *Greener Journal of Educational Research*, 13(1): 16-22. https://doi.org/10.5281/zenodo.7753339