



Review Article

The Impact of School Feeding Programs on Pupil Attendance and Academic Achievement in Sierra Leone

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Abstract

This study explores the influence of school feeding programs on pupil attendance and academic performance in Sierra Leone. With on-going challenges such as food insecurity, malnutrition, and widespread poverty, many school-age children across the country face difficulties in accessing consistent education. These socio-economic barriers often lead to irregular attendance, low classroom participation, and poor academic outcomes. The research investigates how structured school feeding initiatives contribute to improving these educational indicators, particularly in underserved rural communities. A desk-based research design was employed, relying on secondary data gathered from government publications, international development agency reports, and peer-reviewed academic studies. This method allowed for an in-depth review of existing evidence and analysis related to the implementation and outcomes of school feeding programs within the Sierra Leonean context. Findings from the study reveal that school feeding programs significantly enhance school attendance and academic achievement, especially in primary schools. The assurance of receiving at least one nutritious meal per day motivates children to attend regularly, while also improving their attention span, classroom engagement, and overall cognitive development. Girls and children from low-income households appear to benefit most, as the meals reduce the economic burden on families and incentivize continued education. Furthermore, school feeding has contributed to a reduction in dropout rates and better performance in core subjects such as English and Mathematics. The study is anchored in Maslow's Hierarchy of Needs and the Expectancy-Value Theory, highlighting the critical role that basic physiological needs play in shaping students' academic behaviour and performance. The findings call for the integration of nutrition into national education planning and emphasize the importance of continuous monitoring and evaluation mechanisms. Strengthening Sierra Leone's Home-Grown School Feeding Program and aligning it with broader educational and agricultural development policies could enhance the sustainability and reach of these interventions.

Keywords

Educational Outcomes, Lower Dropout Rates, School Feeding Programs, Student Attendance, Academic Performance

1. Background

The global educational landscape reflects significant disparities in student attendance and academic performance, particularly when comparing high-income countries with those in the developing world. While nations like the United

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States, the United Kingdom, and Japan boast consistent school attendance rates and strong academic results, largely due to stable infrastructure, robust policies, and socio-economic affluence [1], countries in Sub-Saharan Africa, including Sierra Leone, face unique and pressing challenges in ensuring regular school attendance and achieving optimal student performance.

In Sierra Leone, the education sector has undergone numerous reforms since the end of the civil war in 2002. Despite commendable progress, the nation continues to grapple with low attendance rates, high dropout rates, and poor academic performance, especially in rural and underserved regions [2]. These issues are often exacerbated by factors such as poverty, food insecurity, child labour, poor infrastructure, and gender disparities. A 2022 UNICEF report indicates that only 64% of children complete primary education in Sierra Leone, and among them, a substantial number performs below national literacy and numeracy benchmarks. Hunger remains a fundamental barrier to educational access and quality. According to the World Food Programme, more than two million people, including many school-age children, face moderate to severe food insecurity [23]. In households where providing even a single daily meal is a challenge, children are often required to assist in income-generating activities or caregiving duties rather than attend school. As a result, absenteeism is common, and hunger-related fatigue and distraction impair cognitive performance and classroom engagement [8, 16, 21, 33].

In response to these challenges, school feeding programs (SFPs) have emerged as a strategic intervention aimed at addressing food insecurity and promoting education. The Government of Sierra Leone, in partnership with international organizations such as the WFP, has implemented various school feeding schemes to boost enrolment, reduce dropout rates, and enhance academic performance in primary schools. A key initiative, the Home-Grown School Feeding Program (HGSFP), introduced in 2016 and expanded in 2020, promotes the procurement of food from local farmers to support both school nutrition and the agricultural economy [23, 6, 24]. The effectiveness of these programs, however, is still under review, and there is limited empirical evidence regarding their actual impact on education outcomes in Sierra Leone [7, 13, 15, 19].

Despite notable progress, systemic issues persist. Many schools lack appropriate facilities such as kitchens, storage areas, and clean water, which undermine the potential benefits of feeding programs. Moreover, inconsistencies in food supply due to logistical bottlenecks and funding constraints have been reported, especially in hard-to-reach communities [20, 23, 26]. The absence of a robust monitoring and evaluation framework also hampers the ability to fully assess the scope and effectiveness of these programs. While feeding initiatives are assumed to encourage attendance and learning, there is a lack of concrete data to substantiate these claims within the Sierra Leonean context [9, 30, 32]. This study

seeks to address this critical research gap by assessing the extent to which school feeding programs influence student attendance and academic performance in selected primary schools across the country.

The overall aim of this research is to evaluate the impact of school feeding programs on student attendance and academic achievement in English Language and Mathematics, two core subjects in the primary school curriculum. Specifically, the study will investigate the relationship between the provision of school meals and attendance rates, analyze the influence of feeding on performance outcomes, identify implementation challenges, and propose strategies to strengthen the delivery and sustainability of school feeding initiatives. In doing so, the study will explore several key questions: How do school feeding programs influence student attendance in primary schools? What is the relationship between school feeding and students' academic performance in core subjects? What challenges are encountered during the implementation of these programs? And what strategies can be adopted to enhance their effectiveness?

This research is significant in multiple dimensions. It provides locally generated evidence that can guide policy decisions and enhance programmatic responses to educational challenges. Findings from this study will be valuable to government agencies such as the Ministry of Basic and Senior Secondary Education (MBSSE) and the Ministry of Agriculture and Forestry (MAFFS), as well as development partners like WFP, UNICEF, and FAO. The outcomes of this research are also expected to contribute to broader national development goals by highlighting the role of school feeding in promoting human capital development, gender equality, poverty reduction, and community resilience [3, 5, 18, 28, 35]. In addition, the study aligns with Sierra Leone's Education Sector Plan (2022–2026), which prioritizes inclusive and equitable access to quality education [14].

The scope of this study is limited to selected public primary schools in Sierra Leone, covering both rural and urban areas. The research focuses on the influence of school feeding on attendance and academic performance over a single academic year. Private and secondary schools fall outside the purview of this investigation. While the study considers related variables such as gender, infrastructure, and teacher support, it does not delve into the nutritional content or long-term health effects of the meals provided. These delimitations allow for a more focused analysis of the educational outcomes linked directly to the presence or absence of school feeding interventions.

In light of these challenges and opportunities, this research is timely and necessary. By shedding light on the dynamics between nutrition and education in Sierra Leone's primary schools, the study aims to inform strategies that can improve both attendance and learning outcomes for children, particularly in underserved communities.

2. Literature Review

2.1. Theoretical Framework

The implementation and effectiveness of school feeding programs in Sierra Leone can be best understood through established educational and psychological theories that explain human motivation and learning outcomes. One such theory is Maslow's Hierarchy of Needs, which highlights that individuals are motivated to satisfy their most basic physiological needs before progressing to higher-level psychological and self-fulfilment goals. In the context of Sierra Leone, where food insecurity remains a pressing issue, many school-aged children arrive at school hungry, which impairs their concentration and learning abilities. By meeting this fundamental physiological need through the provision of school meals, children are better positioned to engage meaningfully in academic activities, thereby improving both attendance and academic performance [1, 21, 23].

In addition, Social Cognitive Theory, proposed by Albert Bandura, offers a relevant lens through which school feeding outcomes can be assessed. Bandura emphasized the role of environmental factors, observational learning, and self-efficacy in behaviour development. School feeding programs in Sierra Leone create positive school environments that foster peer influence and collective behaviours around regular attendance. As students observe peers attending school regularly due to the assurance of meals, their own motivation and confidence (self-efficacy) to remain in school and succeed academically are reinforced [6, 17, 19].

The Expectancy-Value Theory is also applicable, as it postulates that motivation is driven by the perceived value of an outcome and the likelihood of achieving it. In Sierra Leone, where the daily struggle for food often supersedes the value placed on education, school feeding programs alter the cost-benefit equation. Children and their parents begin to see education not only as a pathway to a better future but also as a source of immediate benefits such as meals. This increases the perceived utility of school attendance, particularly in marginalized communities [13, 22, 27].

2.2. Empirical Review

Recent studies conducted within Sierra Leone provide substantial evidence of the positive impacts of school feeding programs on student outcomes. A study by Kamara and Koroma assessed school attendance trends across six districts implementing the Home-Grown School Feeding Program. The findings revealed a consistent rise in daily student attendance, with a notable impact among girls in upper primary classes. Parents interviewed in the study indicated that the assurance of meals was a strong motivator for sending their children to school regularly, especially during planting or harvesting seasons when food is scarce at home [11, 29].

Another study evaluated academic performance indicators

before and after the introduction of school meals in selected rural schools. Their quantitative analysis showed significant improvements in literacy and numeracy scores, particularly in lower primary grades. Teachers also reported enhanced student engagement and attentiveness in class, which they attributed to reduced hunger-related fatigue and distractions [10, 12, 22].

In a qualitative study, researchers explored community perceptions of school feeding programs in Bombali and Pujehun districts. Through focus group discussions with teachers, pupils, and parents, they discovered that beyond improving attendance, feeding programs enhanced community-school relationships. Local women's groups, often involved in meal preparation, expressed a sense of ownership and pride, while parents noted a reduction in household food burden. The study concluded that the program's community involvement component contributed to its sustainability and acceptance [26, 34].

The role of nutrition in cognitive development has also been explored in Sierra Leonean research. A pilot study involving cognitive assessments of children receiving fortified school meals versus those who did not revealed that children benefiting from meals enriched with essential vitamins and iron demonstrated superior short-term memory and problem-solving skills. The researchers recommended further nutritional optimization of school meals to amplify these effects [4, 8].

Longitudinal evidence of the broader educational impact of school feeding has been provided by a joint evaluation from national education stakeholders. Tracking a cohort of pupils from primary to junior secondary school, the study found that students who consistently received school meals had higher transition rates to secondary education and lower dropout rates. It emphasized that feeding programs are not just temporary incentives but catalysts for long-term educational progression [31, 32].

Additionally, local economic benefits from school feeding initiatives have been highlighted in a case study by the Sierra Leone Agricultural Research Institute. The integration of locally sourced produce in the Home-Grown School Feeding Program stimulated demand for community-grown food crops, supporting smallholder farmers and creating employment opportunities. This symbiotic relationship between education and agriculture suggests that school feeding programs can simultaneously address food security, economic development, and educational attainment [14, 28].

3. Methodology

This study utilized a desk-based research methodology, commonly known as secondary data collection. This approach allows for gathering data from existing resources, which offers significant advantages, such as lower costs compared to primary field research. The focus of this study was on exploring previously published reports, academic

studies, and government publications related to school feeding programs in Sierra Leone. These sources were accessed through online databases, libraries, and government websites, providing a comprehensive understanding of the impact of school feeding programs on student attendance and performance within the Sierra Leone context.

4. Findings

The findings were categorized into various research gaps, including conceptual, contextual, and geographical areas:

4.1. Conceptual Gap

Although the existing research highlights the positive effects of school feeding programs on student attendance and academic performance in Sierra Leone, there is a lack of studies that explore the long-term impact of these programs beyond the primary education level. While some research suggests positive outcomes for students who receive school meals, additional research is needed to assess the sustained influence on educational attainment and socio-economic outcomes into adulthood. Moreover, there is a gap in investigating the psychological and social benefits of school feeding programs, such as how these programs influence self-esteem, social cohesion, and community empowerment in Sierra Leonean schools. A broader exploration of these aspects could reveal the full scope of benefits offered by these interventions.

4.2. Contextual Gap

Several studies, including those focused on rural settings in Sierra Leone, emphasize the benefits of school feeding programs in areas with limited resources. However, less attention has been given to urban contexts or more affluent regions of Sierra Leone. Further research is needed to examine how school feeding programs are implemented in urban schools compared to rural ones, and how socio-economic factors influence the effectiveness of these programs. Additionally, there is a lack of research exploring how cultural preferences and local dietary habits influence the acceptance and success of school meals. Understanding these factors is crucial for designing culturally relevant and inclusive school feeding programs that can cater to all students, regardless of their socio-economic background.

4.3. Geographical Gap

While various studies have been conducted on school feeding programs in different countries, there is a gap in comparative research specifically focusing on Sierra Leone and other regions with similar educational and nutritional challenges. Comparative studies could offer valuable insights into how contextual factors, such as local governance, com-

munity involvement, and economic status, impact the success of school feeding programs in diverse settings. Furthermore, Sierra Leone, being a country with a history of civil conflict and ongoing development challenges, could greatly benefit from research on the role of school feeding programs in conflict-affected areas or regions prone to natural disasters, where such programs can help address food insecurity and support educational continuity.

5. Conclusion and Recommendations

5.1. Conclusions

School feeding programs in Sierra Leone have proven to be an effective strategy for enhancing both student attendance and academic performance. These programs provide critical nutritional support, which improves students' health and concentration levels, directly influencing their ability to engage and excel in their studies. Several studies have shown that regular access to school meals increases attendance rates, as the provision of food serves as a strong incentive for students to attend school regularly, especially in low-income areas. Moreover, the enhanced nutrition provided through these meals has been linked to improved cognitive function, enabling students to participate more actively in classroom activities and perform better academically.

Beyond immediate educational outcomes, school feeding programs contribute to broader social benefits, including a reduction in dropout rates and the potential for increased future economic opportunities for students. These programs help alleviate hunger, a significant barrier to learning, and can improve social outcomes by fostering a sense of community among students, teachers, and families. The expansion and sustained success of school feeding initiatives in Sierra Leone can play a vital role in achieving educational equity and promoting overall development. For these benefits to be maximized, school feeding programs must be well-funded and managed, ensuring that meals are consistently available and nutritionally balanced to meet the developmental needs of students.

5.2. Recommendations

5.2.1. Theory

Future research should delve deeper into the motivational theories that explain how school feeding programs influence student behaviour and academic performance in Sierra Leone. Incorporating elements from educational, psychological, and economic theories could provide a more nuanced understanding of how these programs affect learning and school attendance. Studies should also explore how school feeding programs can support educational equity theories, providing a level playing field for students from disadvantaged backgrounds. This could lead to a better understanding of how

supplemental programs, like school feeding, contribute to the achievement of educational equity.

5.2.2. Practice

To improve program design and implementation, schools in Sierra Leone should adopt best practices, such as diversifying menus to cater to local dietary preferences and nutritional needs. This would enhance student participation rates and ensure that meals are culturally appropriate. Engaging parents and local communities in the planning and execution of these programs will increase their relevance and effectiveness. Additionally, robust monitoring and evaluation frameworks should be implemented to regularly assess the effectiveness of feeding programs, including tracking key metrics like student attendance, academic performance, and health improvements. This data can inform timely adjustments to optimize the program's impact.

5.2.3. Policy

It is essential to integrate school feeding programs into national educational policies, ensuring sustained funding and government support. This would make school meals a standard component of the educational system in Sierra Leone. Collaborations between government agencies and the private sector should be encouraged to secure additional funding and resources for school feeding programs, possibly through corporate social responsibility initiatives. Policies should also promote community-based management of these programs, ensuring that they are locally sourced, culturally sensitive, and economically sustainable. Additionally, cross-sectoral collaboration between the education, health, and agricultural sectors is vital for creating a holistic approach to school feeding programs. By aligning educational objectives with nutritional and agricultural policies, the outcomes for students can be significantly improved.

Abbreviations

HGSFP	Home-Grown School Feeding Program
SFPs	School Feeding Programs
MBSSE	Ministry of Basic and Senior Secondary Education
MAFFS	Ministry of Agriculture and Forestry

Author Contributions

Angella Magdalene George: Conceptualization, Funding acquisition, Investigation, Methodology, Visualization

Daniel Rince George: Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Resources, Supervision, Writing – original draft, Writing – review & editing

We both collectively read and approved the final manuscript.

Conflicts of Interest

The authors declare no conflicts of interest.

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