

Impact of School Feeding Programme on Students' academic Performance in Primary Schools in Rwanda, G.S Kiyanzi Tss (2021 - 2025)

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Abstract: The condition of food insecurity and malnutrition for school-aged children and adolescents remains one of the most influential determinants of learning outcomes. The major purpose of this study was to assess the impact of school feeding programmes on students' academic performance in Rwanda, with special emphasis on Groupe Scolaire (G.S) Kiyanzi Technical Secondary school. Specifically, the study identified the school feeding programme implemented in Kirehe District, explore the food security level at G.S Kiyanzi TSS and analyse the relationship between school feeding programs and students' academic performance. The study was directed by a mixed research design combining both qualitative and quantitative approaches using a sample of 360 respondents. Both primary data and secondary data were gathered using the interviews, questionnaires, and documentary reviews. The numeric data were descriptively evaluated using SPSS vector, while the qualitative data were investigated using theme analysis. The survey revealed that delivering a typical meal of fortified maize, beans, locally available veggies were the most common School Feeding Programmes (SFP) used at G.S Kiyanzi, TSS. However, the study found out that the students at G.S Kiyanzi TSS consume low-quality meals with low dietary diversity. Furthermore, the study revealed a positive association between SFP and children' academic achievement in G.S Kiyanzi, TSS as indicated by a Pearson correlation coefficient of 0.809 (or 80.9%). Finally, the study recommends that the Ministry of Education and District Board of Education should provide training seminars for school management boards, teachers, parents, and other stakeholders to maximize the benefits of the school food program.

Keywords: School Feeding Programme, Education, Enrollment, Attendance and Academic Performance and Kiyanzi.

1. INTRODUCTION

Education is widely recognized as a fundamental pillar of human capital development and socioeconomic transformation. It contributes significantly to poverty reduction, improved health outcomes, increased productivity, and sustainable national development. However, the achievement of quality education remains a challenge in many developing countries due to factors such as poverty, malnutrition, and food insecurity. School food insecurity is a global concern that affects millions of children and undermines their ability to fully participate in the learning process. According to the World Bank (2019), approximately 466 million children worldwide benefit from school meal programmes, yet many more remain

vulnerable to hunger, particularly in low-income countries where rising food prices continue to limit access to nutritious diets. Hunger negatively affects children's concentration, memory, cognitive development, and overall academic achievement, making it difficult for them to reach their full educational potential.

Research has consistently shown that food insecurity poses a significant barrier to learning. Children who attend school while hungry are more likely to experience fatigue, reduced attention spans, poor classroom participation, and lower academic performance than their well-nourished peers (Prabhakar, 2015). Similarly, Triandis and Weick (2020) observed that increasing food prices have reduced access to healthy diets for children across the world, thereby worsening educational inequalities. School Feeding Programmes (SFPs) have therefore emerged as an important policy intervention designed to address short-term hunger among learners while simultaneously promoting educational participation and achievement. Beyond providing meals, these programmes serve as social protection mechanisms that improve attendance, retention, health, and learning outcomes.

Globally, School Feeding Programmes have gained widespread recognition as effective tools for enhancing educational outcomes and supporting child welfare. Studies conducted in countries such as Bangladesh, India, Colombia, and Pakistan have demonstrated positive effects of school meals on learners' concentration, attendance, enrolment, and academic performance (Ahmed, 2021; Afridi, 2020). In India, for example, the Supreme Court directed state governments to provide cooked meals in public schools as a strategy for improving access to education and reducing child hunger. Similarly, countries such as Colombia, El Salvador, and Paraguay have institutionalized school feeding programmes as part of their national education and social protection policies. These experiences highlight the growing recognition that school meals are not merely welfare interventions but essential investments in human capital development and educational success.

In Africa, School Feeding Programmes have been implemented to combat classroom hunger, improve school participation, and enhance educational outcomes among vulnerable children. Evidence from several African countries indicates that learners who benefit from school meals are more likely to attend school regularly, remain enrolled, and perform better academically than those who do not receive such support (Yunusa et al., 2022). South Africa, for instance, introduced school feeding initiatives as early as the 1940s through the provision of milk, fortified biscuits, and nutrient supplements to schoolchildren (Tomlinson, 2017). In Zimbabwe, school feeding programmes target vulnerable and orphaned children through the provision of porridge and other meals during school hours (WFP, 2020). Likewise, studies from Malawi have reported improvements in school enrolment and attendance following the introduction of school feeding interventions, while Tanzania's Food for Education Programme has benefited thousands of learners and supported school-based agricultural initiatives that supplement school meals.

In Rwanda, the School Feeding Programme is one of the key interventions implemented to improve access to quality education and support the well-being of learners. The programme complements other government initiatives such as free basic education, prevention of school dropout, community sensitization, and increased involvement of local leaders in promoting school attendance. Furthermore, the programme aligns with the country's commitment to achieving the Sustainable Development Goals, particularly Goal 4, which seeks to ensure inclusive, equitable, and quality education for all. Through the Home-Grown School Feeding approach, Rwanda also aims to strengthen local agricultural production while improving the nutritional status of school-going children.

Despite these efforts, food insecurity and poverty continue to affect many households, particularly in rural areas. Kirehe District, located in the Eastern Province of Rwanda, faces socioeconomic challenges that may influence learners' access to adequate nutrition. The district is characterized by relatively high levels of poverty and a strong dependence on agriculture as the primary source of livelihood. Consequently, many pupils remain vulnerable to short-term hunger, which may negatively affect their concentration, attendance, and academic performance. Although the School Feeding Programme has been implemented to address these challenges, limited empirical evidence exists regarding its effectiveness in improving educational outcomes in the district. It is against this background that the present study sought to assess the impact of the School Feeding Programme on pupils' academic performance in primary schools in Kirehe District, with specific reference to G.S. Kiyanzi TSS.

2. PROBLEM STATEMENT

Education is widely recognized as a fundamental driver of human capital development and socioeconomic growth. To improve access to quality education, many countries have implemented School Feeding Programmes (SFPs) as a strategy to enhance learners' enrolment, attendance, retention, and academic performance. In Rwanda, school feeding has been adopted alongside other educational interventions such as free basic education, community sensitization, and local authority engagement to improve educational outcomes and reduce school dropout rates (WFP, 2023).

Despite these efforts, challenges related to food insecurity continue to affect learners' concentration, cognitive development, and overall academic achievement. Although School Feeding Programmes have been credited with improving participation in education, some schools in Rwanda, including those in Kirehe District, continue to record unsatisfactory academic performance. This raises concerns regarding the extent to which school feeding contributes to improved learning outcomes in these contexts.

Previous studies conducted in Bangladesh, Ethiopia, Kenya, Tanzania, and Uganda have reported positive relationships between school feeding programmes and indicators such as enrolment, attendance, retention, and academic achievement (Ahmed, 2021; Abiy Yohannes, 2017; Mkanyika, 2014; Khatete et al., 2013; Ssenonga, 2019). However, empirical evidence from Rwanda remains limited, particularly in the Eastern Province. Consequently, there is insufficient context-specific evidence on the influence of school feeding programmes on pupils' academic performance in the region. This study therefore sought to fill this knowledge gap by assessing the impact of the School Feeding Programme on pupils' academic performance at G.S. Kiyanzi TSS in Kirehe District, Rwanda.

3. STUDY OBJECTIVES

The general objective of this research is to assess the impact of school feeding programme on pupils' performance in primary schools in Rwanda, especially at G.S. Kiyanzi TSS (2021 - 2025). Specifically, the study sought to identify the school feeding programme implemented at G.S. Kiyanzi TSS, to explore the food security and pupils' academic performance level at G.S Kiyanzi TSS and to analyse the relationship between school feeding programs and students' academic performance.

4. LITERATURE REVIEW

This section presents the key theory used to explain the study variables, it presents the empirical review in accordance to the study objectives.

4.1. Theoretical framework

This study was mainly guided by the Equity Theory, developed by Adams (1965), posits that individuals strive for fairness and equality in social exchanges. According to this theory, individuals compare their inputs (e.g., efforts, contributions) and outcomes (e.g., rewards, benefits) to those of others to assess whether they are being treated fairly. When there is a perceived imbalance or inequity in the exchange, individuals may experience feelings of dissatisfaction, which can impact their motivation and behavior (Reschly & Patton, 2022). In the context of the subject study, the equity theory can provide valuable insights into the perception of fairness in assessing the impact of school feeding programme on school attendance and enrollment in primary schools in Rwanda. Students, parents, and other stakeholders may evaluate whether the distribution of nutritional support, access to education initiatives, and quality of nutrition is equitable across schools and regions.

They may assess whether all students, regardless of their socio-economic background or geographical location, have equal opportunities to benefit from the program (Mudaheranwa, 2024). Furthermore, the theory can shed light on the relationship between equity in school feeding programs and the quality of education to boost school attendance and enrollment in primary schools in Rwanda. When students perceive the provision of meals and educational resources as fair and equitable, they are more likely to experience a positive school climate, higher engagement in classroom activities, and improved academic performance. On the other hand, if students perceive inequities in the program, such as unequal access to nutritious meals or educational initiatives, it may negatively impact their motivation, attendance rates, and overall well-being. The equity theory emphasizes the need for equal distribution of resources and opportunities to enhance the quality of education. By considering the principles of equity in designing and implementing the program,

policymakers and stakeholders can strive to create an environment that fosters students' sense of fairness, engagement, and academic success in terms of scores in all assigned tasks.

4.2. Empirical Review

The findings indicated that micronutrient supplementation have shown that iron appears to improve cognitive performance in which the programme of providing food with micronutrient, helps to increase pupils' concentration span and learning capacity by reducing short term hunger in the classroom. School meals act as a good way to channel vital nourishment to poor children. Therefore providing pupils' food helps them to increase attention and concentration in their learning (Madeley, 2020). Also School Feeding Programme effectively reduces absenteeism and increases the duration (King and Burgess, 2023). Hasbi (2022) explored the school-based Shokuiku program in Japan and its potential lessons for Indonesia's school feeding program. The study examined the holistic approach of the Shokuiku program, which emphasizes nutrition education, healthy eating habits, and the promotion of local and sustainable food sources. The findings suggest that incorporating similar elements into Indonesia's school feeding program can have positive effects on students' nutritional knowledge, dietary behaviors, and overall health. Such improvements contribute to creating an enabling environment for quality education. Awojobi (2019) conducted a systematic review to examine the impact of Ghana's School Feeding Programme on educational and nutritional outcomes. The study synthesizes existing research findings and provides an overview of the effects of the program. By analyzing multiple studies, the review highlights the positive influence of the School Feeding Programme on enhancing educational outcomes, such as school attendance, enrollment, and academic performance, as well as nutritional outcomes among schoolchildren in Ghana. Barnabas et al. (2023) conducted a study to investigate the impact of the Homegrown School Feeding Program on smallholder farmers' household food security in Northeastern Nigeria.

Mwendwa and Gori (2019) investigate the relationship between school feeding programs and pupils' school attendance in public primary schools in Kitui County, Kenya. The study examines whether school feeding programs influence children's regular attendance at school. The research design was longitudinal, with a sample of 70 students and 10 teachers as the sample size. Data was collected through surveys and cooperative production reports 2011 to 2015. SPSS was used in data presentation while qualitative and quantitative analysis were used for data analysis. The findings reveal a positive association between school feeding programs and improved school attendance among pupils, suggesting that these programs play a significant role in promoting regular school attendance in Kitui County, Kenya. Ndugu & Karungu (2019) studied the relationship between Community Participation and Performance of Donor Funded Youth Projects in Korogocho, Nairobi City Country in Kenya. The general objective of the study was to examine the influence of community participation on the performance of donor funded youth projects in Korogocho, Nairobi country.

The specific objectives of the study were to examine the role of community participation in the entire program cycle and performance of donor funded youth projects in Korogocho i.e., community participation in program planning, community participation in program implementation and community participation in monitoring and evaluation on the performance of donor funded youth projects. The primary data was collected by using questionnaire. Qualitative data was analyzed using SPSS 23 and Microsoft excel and presented in line with the study themes. The findings of the study are anticipated to enhance program implementation and impact. The study was able to obtain a 75% response rate. The study of the correlation analysis indicated there was strong positive effect of community participation in the identification and planning on the program performance while the regression results indicated there is a statistically significant positive of community participation on the program performance. The study used only qualitative data; this implies that, there is gap in methodology regarding to quantitative data. Hence, there is also the gap in contextual because the study dealt with both quantitative and qualitative data, and also the gap in context because the study did not mention how each variable of community participation contributes to the performance of projects, (Ndugu, 2019).

4.3. Conceptual Framework

Below is an illustrative presentation of the relationship between the independent and dependent variables of this study (Mugenda and Mugenda, 2004). Independent variable is school feeding programmes while students' attendance and enrollment is 'dependent variable. This is further explained diagrammatically in the figure below:

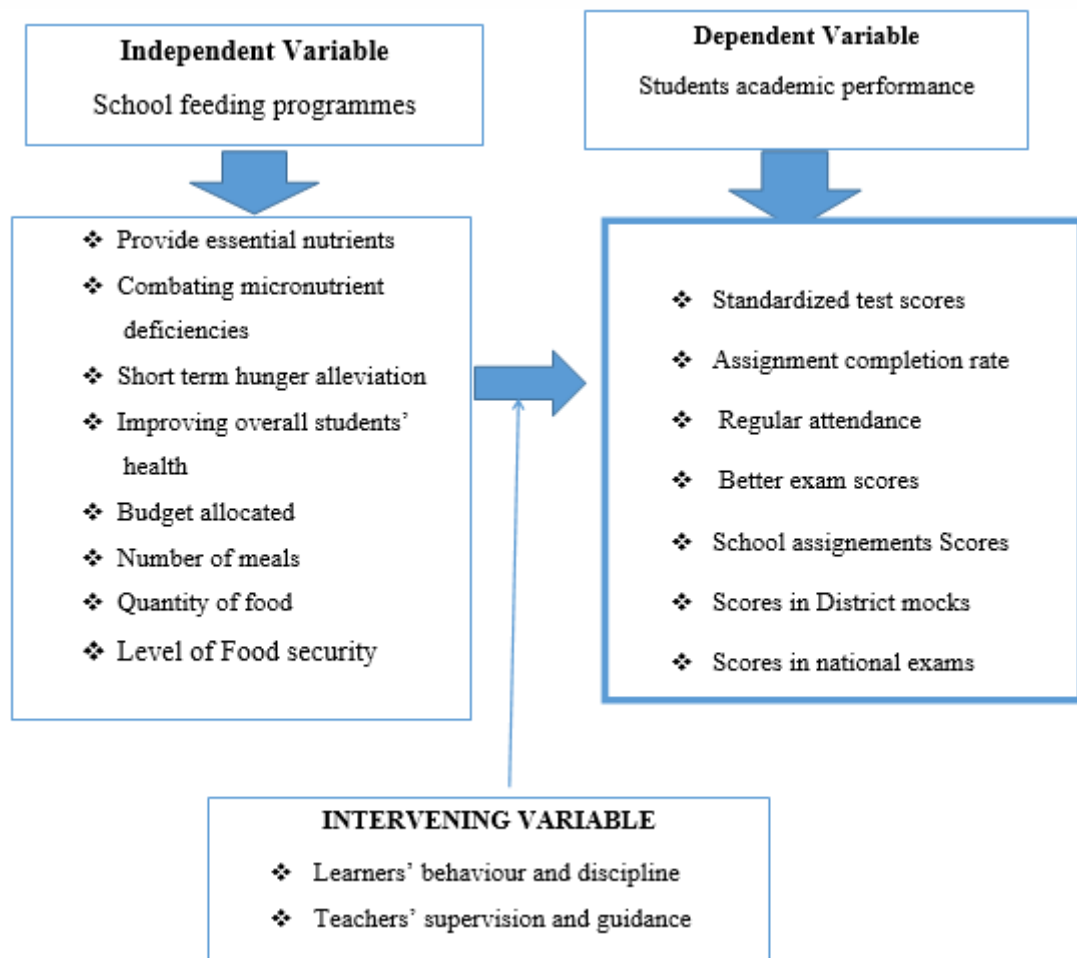


Figure 1.: Conceptual framework

Source: Researcher own compilation (2026)

The impact of SFPs is to increase educational achievement. Through this programme of school feeding can increase the students' academic performance by lowering the opportunity costs of attending school and also by providing additional incentive to engage in formal education. This may lead to more spending towards learning in schools. Also SFPs may alleviate short-term hunger which improves children's cognitive functioning and attention span. Furthermore, through SFPs it helps to improve nutritional status of children by providing them calories and nutrients in addition to their regular diet. This leads to better health and better resistance to infectious diseases and illness that would keep children from attending school (Buttenheim et al, 2021). Therefore; Figure 1 shows the relationship between SFP and potential students' academic performance performance with the review of related literature, the researchers managed to portray the independent variable: school feeding programmes including provision of essential nutrients, combating micronutrient deficiencies, short term hunger alleviation, improving overall students' health, budget allocated and number of meals as well as quantity of food and jointly reflecting on students' academic performance interms of Standardized test scores, Assignment completion rate, Regular attendance is a strong, Better exam scores and engagement, Scores in school assignments , Scores in District mocks and Scores in national exams.

5. METHODOLOGY

This study employed a mixed methods research design, which combines quantitative and qualitative approaches, to comprehensively assess the impact of school feeding programme on the students' academic performance in terms school attendance and enrollment in primary schools in Rwanda , especially in Kirehe district. A mixed methods design allows for a more holistic understanding of the research topic by integrating both numerical data and qualitative insights (Johnson & Onwuegbuzie, 2014). The mixed methods approach is particularly suitable for studying complex social

phenomena and policy interventions, as it allows for triangulation and convergence of data from multiple sources, thereby strengthening the overall validity and reliability of the findings (Creswell & Plano Clark, 2018). The target population, as defined by Babbie (2016), refers to the specific group or individuals that the researcher intends to study and draw conclusions about. In this study, the target population comprises all 1488 (one head teacher, One director of studies, 47 teachers and 1439) parents. The sampled size summed to 313 respondents computed using Yamane' simplified formula to calculate sample size as follows

$$n = \frac{N}{1 + (a^2)N}$$

Three hundred and thirteen (313) respondents were randomly sampled while Purposive sampling was employed to select 47 teachers and 2 school leaders. This article used both primary data and secondary data. Primary data was collected using questionnaire administered to 47 teachers and 313 parents. Correspondingly, qualitative primary data was collected using interview guide conducted with 2 school leaders. However, secondary data was collected using documentary review/checklist. The study ensured acceptable validity of the instruments through testing them in piloting study conducted in Ngororero District. The questionnaire was subjected to statistical test to establish an acceptable reliability, which was 0.7 Cronbach's Alpha. The Collected data related to the to the study subject were edited, coded, summarised, and analysed using Statistical Package for Social Science (SPSS) vector and presented in tables. The respondents' data was analysed and results were tabulated. Frequencies and percentages were calculated for analyses. Qualitative data collected using interview guide were categorised and analysed according to themes; transcripts were thoroughly reviewed to note the main themes.

6. RESULTS AND DISCUSSION

6.1.Descriptive statistics

This section presents the results of the study and it is guided by research questions as follows:

6.1.1 School feeding programme implemented at G.S. Kiyanzi TSS

The first objective of this study was to find out to identify the school feeding programme implemented at G.S. Kiyanzi TSS Table 4.1 give the summary of the findings from respondents.

Table 1: School feeding programme implemented at G.S. Kiyanzi TSS

School feeding program at G.S. Kiyanzi TSS (47 teachers and 313 parents)	Agreement (SA & A)		Disagreement (D & SD)	
	F	%	F	%
Pupils' nutrition capacity building	300	83.3	60	16.7
Supervision & hygiene Protocols	283	78.6	77	21.4
Daily meal provision	360	100.0	0	0.0
Home-grown school feeding	320	88.8	40	11.2
Infrastructure development	301	83.6	59	16.4
School gardening	312	86.6	48	13.3
Menu diversification & nutrition education	259	71.9	91	25.3

Source : Field results (March, 2026)

Key: F: Frequency, %: Percentage SA: Strongly agree A: Agree D: Disagree and SD: Strongly Disagree

The respondents unanimously cited the school feeding programme implemented at G.S. Kiyanzi TSS. 83.3% respondents were in agreement that Pupils' nutrition capacity building is SFP. However, 78.6% respondents were in agreement (strongly agreed and agreed) that school leaders and teachers always supervised and ensured hygenical protocol when pupils taking school meals. Furthermore, all respondents were in agreement that G.S. Kiyanzi TSS provided a daily meal to the pupils. Additionally, a big percentage of respondents (i.e. 88.8% , 86.6% and 83.6% respondents agreed that home-

grown school feeding, school gardening and infrastructure development are school feeding programmes implemented at G.S. Kiyanzi. TSS Moreover, 71.9% respondents were in agreement that menu diversification & nutrition education is the school feeding programme implemented at G.S Kiyanzi TSS.

The interview results revealed almost the same results : According to key informants, parental contributions and management, in which parents contribute 10% of food costs and frequently provide in-kind commodities such as firewood or vegetables, is one of the SFP at G.S Kiyanzi TSS. Other key informants noted that one of the SFPs at G.S Kiyanzi TSS is to establish equipped kitchens, cooking stoves, and storage facilities in schools as part of the school's and its parent's infrastructure development tasks. According to the interview results, G.S Kiyanzi TSS implements SF programs such as establishing school-based agribusiness centers and gardens to teach agricultural skills and supplement meals with fresh produce, introducing diverse food types (e.g., fortified foods) to ensure balanced nutrition, and teaching nutrition and food safety. The above findings are consistent with the interview, which stated that teachers and school committees supervise feeding times to ensure cleanliness and proper portion management, and that training school staff, cooks, and committee members on nutrition, food hygiene, and safe food storage helped to solve the problem of food insecurity in schools in Rwanda (Musoni, 2024) in the same vein , Mbonigaba (2025) added that school feeding activities in secondary schools, in line with Rwanda's National School Feeding Program (NSFP), focus on providing a daily, hot, nutritious lunch (fortified maize meal, beans, vegetables, and oil) to students and the activities include parental contribution management, local sourcing from farmers, and on-site kitchen operations. Basing on both primary data and secondary data , it is clear noticeable that serving a standard menu of fortified maize, beans, oil, and locally sourced vegetables to increase student energy, nutrition, and attendance, procurement of agricultural produce from local farmers and cooperatives to support the local economy and introducing variety to the diet to meet specific nutritional standards and improving meal diversity and initiatives at G.S Kiyanzi TSS that are supported by the Ministry of Education (MINEDUC) to ensure the nutritional well-being of students and increase retention to highly ensure food security in schools in Rwanda.

6.1.2 The food security level and pupils' academic performance at G.S Kiyanzi TSS

The second objective of this study was to explore the food security level at G.S Kiyanzi. TSS With this objective, the researcher formulated the research questions : What is the food security level at G.S Kiyanzi. TSS The researcher also started showing the magnitude of indicators of food security level at G.S Kiyanzi TSS and findings are presented using mean and standard deviation and the key empirical references. Details of these analyses are shown in table 4.2 as below:

Table 2. The food security level at G.S Kiyanzi TSS

	N	Minimum	Maximum	Mean	Std. Deviation
Food consumption score	360	1	2	2.27	.834
Quantity of food consumed by the students	360	1	3	3.02	.447
Quality of food consumed by the students	360	1	2	1.98	.501
Variety of food consumed	360	3	4	3.78	.147
Diversity of food consumed	360	3	4	3.93	.250
Dietary Diversity	360	1	2	1.98	3.11
Valid N (listwise) (Teachers and parents)	360				

Source: Field survey, data (2026)

Table 2 presents means and standard deviations of the food security level at G.S Kiyanzi, TSS food consumption score is below the average 3 to mean that the Food consumption score at G.S Kiyanzi TSS was low. However, the analysis indicates that quantity of food consumed by the students was moderate as 3.02 approaches the maximum 3 (Moderate) with a standard deviation .447 showing respondents' responses variation. In the above table, quality of food consumed by pupils at school was low as indicated by the mean value (1.98) approaching maximum 2 (Low) while variety of food consumed was high as indicated by mean value 3.88 approaching maximum 4 (High) , Diversity of food consumed at G.S Kiyanzi TSS was also high as indicated by the mean value 3.93 and weak standard deviation of 0.250 which shows weak deviated respondents' responses that at G.S Kiyanzi TSS the pupils consumed diversity of food. The findings in

table 4.6 indicates that Dietary Diversity was low at G.S Kiyanzi TSS this was indicated by a mean 2 tends towards Maximum 2 (Low).The results of interview revealed that Pupils and students at Rwandan government-aided boarding schools, such as G.S Kiyanzi TSS typically consume meals provided under the National School Feeding Programme, which emphasizes high-iron beans, rice, and maize-based products.

One key informants noted that the meals are designed to be balanced and are tailored to meet a percentage of the students' daily nutrient requirements, with beans being a staple component and high-iron beans (served daily in most schools), rice, maize (often as porridge or solid food), and sometimes cassava. Onother key informnts added that : Dodo (amaranth leaves), cabbages, and other green leafy vegetables Beans, eggs, and occasionally milk have been provided to the students to energize them and perform well academic duties and assignmnmnts. The literature revealed alomost the same findings that a standard "base meal" often consists of beans, fortified maize meal, vegetables, oil, and iodized salt with low Quantity of food consumed by the pupils and low Dietary Diversity but by applying best agronomic practices, climate-smart agriculture, and providing access to climate information services for school garden caretakers, both the yield and quality of produce will improve. This, in turn, will help reduce the costs of school meals, allowing savings to be reallocated to address other pressing needs within the schools (Kalisa, 2025).

Table 3. Indicators of pupils' academic performance

Indicators	High (VH & H)		Moderate (M)		Low (L&VL)	
	F	%	F	%	F	%
Standardized test scores	320	88.8	0	0	40	11.1
Assignment completion rate	303	71.9	4	1.1	53	14.7
Regular attendance is a strong	320	88.8	10	2.8	30	8.3
Better exam scores and engagement.	320	88.8	20	5.5	20	5.5
Scores in school assignments	330	91.6	6	1.6	14	3.8
Scores in District mocks	91	25.3	259	71.9	0	0.0
Scores in national exams	360	100.0	0	0.0	0	0.0

Source: Field results (March, 2026)

Key: F: Frequency, %: Percentage VH: Very High H:High L: Low and VL:Very low

Findings in table 3 revealed that 88.8% respondents felt that Standardized test scores of the pupils at G.S Kiyanzi TSS was high 71.9 % respondents held the same view that assignment completion rate was high. 88.8% respondents believed that egular attendance is a strong was high and leading to better exam scores and engagement of the pupils at G.S Kiyanzi. TSS Furthermore, 91.6% respondents felt that the scores in school assignments were high while 71.9% respondents noted that Scores in District mocks was moderate at it was not said by all respondents that scores in national exams were high and very high. The above findings were in line with secondary data that based on national trends in Rwanda for the 2024/2025 academic year in G.S. Kiyanzi TSS generally reflect high performance, with a 98% pass rate. Students likely show high proficiency in school assignments and strong results in national exams, aligning with national goals for high pass rates (Government of Rwanda, 2025). The school has shown outstanding results, achieving a 98% pass rate in 2024–2025. High completion rates of school assignments and active participation are key factors influencing student achievement, as reported in studies on Rwandan schools.The interview results clarify this that light Nursery and Primary School Kiyanzi (often referred in regional contexts near G.S. Kiyanzi TSS in Kirehe District) achieved a 100% pass rate in the Primary Leaving Examinations (PLE), indicating high-level performance. Kirehe District itself was a top performer (91.3% pass rate) in national tests. Records show schools in the Kiyanzi/Kirehe area performed very well, with the local school achieving 100% pass rates. As part of Kirehe District, students at G.S. Kiyanzi TSS likely benefit from the district's strong educational focus, which produced top-performing results and While public records do not detail specific internal assignment grades, the high national exam results correlate with consistent performance in daily school work.

Table 4: Students' performance before and after school feeding programmes at G.S Kiyanzi TTS in four years (2021-2025)

After and before SFP	E	Summ Scores And Frequencies In Four Years before and after SFP						Total pupils	Mode	Average
	M	0-19	20-39	40-59	60-79	80-99	100			
After SFP	N	56	34	153	86	21	0	360	40-59	59.5
	D	33	101	60	112	54	0	360	60-79	
	S	29	63	155	51	68	0	360	40-59	
Before SFP	N	82	152	75	49	39	0	360	20-39	49.5
	D	79	133	141	32	12	0	360	40-59	
	S	102	87	86	99	29	0	360	60-79	

Source: Secondary data from the school mark records in four years

Legend;

- ❖ Ge = gender M= Marks, E= Exams,
- ❖ N= NESAs (Sum of grades in four years)
- ❖ D= District mock (sum of grades in four years)
- ❖ S=School records (G.S Kiyanzi TSS sum scores in four years)

From Table 4, it can be noted that the pupils obtained higher scores in NESAs Exams after implementation of SFP at school because a high number or frequencies of the pupils obtained 40-59 marks out of 100 compared to a high number of pupils before learners had obtained 40-59 marks out of 100 for example after implementation of SFP, 153 Pupils obtained 40-59 marks out of 100 in NESAs exams compare to 141 pupils obtained the same marks range before implementation of SFP. Concerning, the District exams, a high number of pupils attained a score ranged from 60 to 79 (112 pupils) after implementation of SFP compare to 32 pupils obtained the same marks before implementation of SFP in the school. For school exam, more pupils (102) failed (they have scored ranges from 0-19) before SFP implementation compare to 29 pupils failed after implementation of SFP. Conclusively, pupils performed well after implementation of SFP than before implementation because the average marks after is 59.5% compared to 49.5% before implementation of the programme. In order to test whether there is a significant impact of SFP on the pupils' academic performance, the correlation coefficient was computed using SPSS program. The results are presented in table 5 below.

6.1.3 The impact of school feeding programme on pupils' performance in primary schools in Rwanda at G.S. Kiyanzi TSS.

The third objective of this study was to investigate the The impact of school feeding programme on pupils' performance in primary schools in Rwanda, especially at G.S. Kiyanzi. TSS With this objective, the following research question was set: What is the relationship between school feeding program and the students' academic performance at G.S Kiyanzi TSS ??. The researcher computed this relationship using SPSS version 30.0 to reveal the correlation coefficient between two variables. Details of the findings are shown in Table 4.5 as below:

Table 5: Impact of SFP on students' performance in at G.S Kiyanzi TSS

	1	2	3
1 SFP	1.000		
2 Students performance	.809**	1.000	
3 Respondents	360	360	360

♣♣ $\sigma=0.01$ (correlation is significant at 0.01 level (2-tailed)) ♣ $\sigma=0.05$ (Correlation is significant at 0.05 level (1-tailed))

The researchers used SPSS version 30.0 to statistically determine the impact of SFP on students' performance in G.S Kiyanzi TSS the average score for independent variable dimensions was correlated with the corresponding average score value for dependent indicators This data was correlated under the following research questions: *"What is the relationship between school feeding program and the students' academic performance at G.S Kiyanzi TSS?"*. The study results presented in Table 4.9 indicates there is a positive correlation between SFP and the pupils' academic performance considering the Pearson Correlation of 0.809 of students' academic performance in G.S Kiyanzi TSS. This was found to be statistically significant since the tabulated p-value was 0.00, below the p-alpha of 0.05. This justifies the opinions of the respondents meaning that in any way and all means providing food to students improve their performance.

Results of interview related to the factors that hinder effectiveness application of SFP to improve the students 'academic performance at G.S Kiyanzi TSS revealed that school furniture was mentioned by some of respondents that affected performance of learners. Key informants said that a child who was comfortable seated on a chair in the classroom could concentrate well during the lesson better than one who is either standing or sitting on the floor. A school administrator shared their perspective, saying, "Managing the SFP in our school has its challenges. One of the main issues we face is ensuring that we have enough trained personnel to oversee the program effectively. Being a school administrator doesn't automatically qualify you to be familiar with all aspects of the SFP, and we often require additional training. Moreover, coordinating with other stakeholders and ensuring a reliable supply chain can be challenging.

We have seen instances where food deliveries were delayed, disrupting the program's schedule. We also recognize the importance of involving the community more actively to ensure the program's sustainability. These challenges highlight the need for better coordination, training, and community engagement to make the SFP more successful." Key informants were agreed that school feeding program play a tangible role to performance of the learners not only in their school assessment but also in all assessment given to them including national examination. Learner, who studies well, performs well. The feeding providing to the learners, catalyse their teaching and learning activities which improve their academic performance. One key informants said narrated that: "The learner will be active when they are not hungry as French proverb said **"La vantage affamé n' a pas des oreilles"**.

This means that when a child is hungry, he/she cannot hear clearly what is said. So, school feeding program allow teacher to attain objective by allowing learners to be more active in the lesson so that they have to understand what is planned by teacher to be taught".Hence the previous studies have stressed that where they confirmed that school feeding program may increase the enrollment of students and their achievement. A study conducted in Malawi by WFP showed that a small, pilot, school feeding program over a three-month period led to a 5 percent increase in enrollment and up to 36 percent improvement in attendance (WFP, 2020). An evaluation of a school meal program in Jamaica found that after the first semester, the treatment class showed improved school attendance compared to the control classes (Powell, and Grantham-McGregor, 2022). Another evaluation of a school feeding program in Burkina Faso found that school canteens were associated with increased school enrollment, regular attendance, consistently lower repeater rates, lower dropout rates, and higher success rates on national exams, especially among girls (Uduku, 2021).

7. CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

This study examined the effect of the School Feeding Programme (SFP) on pupils' academic performance at G.S. Kiyanzi TSS. The findings revealed that the School Feeding Programme contributes significantly to improved educational outcomes by enhancing student enrolment, attendance, concentration, and academic performance. Statistical analysis established a strong positive relationship between the School Feeding Programme and pupils' academic performance, with a Pearson correlation coefficient of $r = 0.809$ and a significance level of $p = 0.000$, which is below the accepted threshold of 0.05. These findings indicate that the provision of school meals plays a crucial role in supporting learning and improving overall academic achievement.

Despite these positive outcomes, the implementation of the programme faces several challenges, including delays in the disbursement of government funds, inadequate cooking and dining facilities, insufficient infrastructure, and rising food prices that are not matched by corresponding increases in funding. These challenges affect the quality and dietary diversity of meals provided to learners, potentially limiting the programme's effectiveness. Nevertheless, the study

concludes that the School Feeding Programme remains an important intervention for promoting educational attainment and learner well-being.

7.2 Recommendations

Based on the findings, the study recommends that the Government of Rwanda increase and ensure the timely release of financial resources to support the effective implementation of School Feeding Programmes in secondary schools. Adequate funding would help schools maintain food quality, improve dietary diversity, and address operational challenges associated with meal preparation and service delivery.

District authorities and school leaders should strengthen community sensitization initiatives to raise awareness of the nutritional and educational benefits of school feeding. Increased community participation can enhance programme sustainability and encourage greater parental support for learners' education.

The study further recommends the establishment and expansion of school gardens to supplement meals with vegetables and other nutrient-rich crops. School gardens can improve the nutritional value of meals while simultaneously serving as practical learning resources for subjects such as agriculture, environmental science, and biology.

Finally, since this study was limited to G.S. Kiyanzi TSS, future research should be conducted in a larger sample of schools, including public, private, and boarding schools across different regions. Such studies would provide broader evidence on the effectiveness of School Feeding Programmes and enable comparisons across different educational settings.

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