

Influence of the School Feeding Programme on educational outcomes of pupils in public pre-primary schools in Mombasa County, Kenya

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Abstract: School feeding programmes constitute critical interventions that have been introduced in many developed and developing countries of the world to address poverty, stimulate school enrolment and enhance pupils' performance (Adekunle & Ogbodu, 2016). Through the SFP, children are energized and their class concentration is enhanced. In Kenya, the SFP supports the achievement of educational outcomes with a view to obtain Kenyan educational goal of free and compulsory education, and 100% transition. In cognizance of the foregoing, the objective of this study was to determine the level to which the school feeding programme influences educational outcomes in public pre-primary schools in Mombasa County, Kenya. Descriptive research design informed the study. The study's target population was all the 97 head teachers, 388 teachers and 7 Early Education supervisors in Mombasa County. A sample of 78 head teachers, 116 teachers and 7 supervisors was obtained based on stratified, purposive and simple random techniques. Questionnaire, interview schedule and observation guide were the three instruments used to collect data. Qualitative data was analysed thematically in prose and narrative forms. Quantitative data was analyzed using descriptive statistics by means of frequencies, percentages, means and standard deviations. T-tests was used to indicate differences among sub-groups that existed. The study revealed that provision of the school feeding programme positively influenced learners' enrollment, class attendance, retention, participation in outdoor activities, progression to the next class level, health and nutrition and transition. Using t-test, it was established that schools with SFPs had higher educational outcomes than those without SFP ($t = .293, p = 0.005, N = 53$). The study recommended the Ministry of education, Mombasa County government, parents and schools to seek for alternative strategies of providing school feeding programmes among pre-primary children.

Key words: school feeding programme, public primary schools, educational outcomes

I. INTRODUCTION

The 1990 Jomtien conference held in Thailand laid emphasis on Education For All (EFA) and declared that every person has a right to access quality education irrespective of their gender, race, colour or region. This declaration was further supported by the World Education Framework held in Dakar (2000), in Senegal. The Senegal forum focused its attention on provision of free and compulsory primary education for the vulnerable and marginalized children by 2015 (UNESCO, 2015). This

position is further cemented by goal number four of the 2030 vision agenda for Sustainable Development; it is envisaged that all children will access inclusive, free and compulsory education without discriminative bias (UNESCO, 2017). Moreover, the third Millennium Development Goal (MDGs) laid emphasis at ensuring that all school going children accomplish primary education of adequate quality (UNESCO, 2010; Republic of Kenya, 2017).

Children exposed to hunger cannot concentrate and master the activity content. According to World Food Programme (2018), school meals increase learners' school attendance and retention, hence they are able to attain the foreseen educational outcomes. It is for this reason that in 2013 the WFP fed slightly more than 15 million school children in 69 nations. In Kenya, the Government supports the provision of school feeding programme (SFP) which is anchored in the Convention Rights of Children and Kenya's vision (2030). The Convention recognizes the provision of basic human rights to health, education, food and decent life; while Vision 2030 aims to transform Kenya into an industrialized nation through a healthy citizenry. The SFP in Kenya plays an especially important role for families in low social-economic status, and in arid and other disadvantaged areas (Mabatuk, 2016). The provision of well-balanced meals in schools helps to minimize cases of disease infections, malnutrition and illness that would otherwise impede on the children attendance, drop-outs and reduced child's concentration in the teaching and learning process (WFO, 2014). Further, UNESCO (2010) notes that mental and emotional development of children only occurs with provision of proper nutrition.

The history of SFP dates back in 1930's when it was introduced in United Kingdom (UK) and USA with a view to develop children physical growth (Morley, 2006). In Mali, The World Bank introduced the SFP (Kremer & Vermeersch 2017). However, challenge of financial management and funding are the obstacles to sustainable SFP in Mali (Edoardo & Aulo, 2013). In an earlier study in Ghana, Lagbo (2012) asserted that SFP has led to increased school enrollment, attendance, and retention and minimized drop-out instances. In Tanzania, these sentiments were supported by Ramadhani (2014) who echoed that improved school attendance and

enrolment has been realized because of the SFP. In South Africa, Sitao (2018) affirmed presence of a statistical difference between the median number of absent days between schools with and without SFP. In Uganda, these views were supported by Haji (2010) who noted that provision of meals at schools is significantly related to improved students regular school attendance and academic performance, and its success is further reinforced by parents' participation.

In Kenya, the SFP was introduced in 1966. In 1979, the government introduced the milk programme in all public primary schools that aimed to improve children health and growth, attendance, retention, enrollment and reduced drop-out cases (Bekidusa, 2020). Yet, in 1990's this gain was inevitably countered by the government's initiative of cost-sharing in all learning institutions where parents had to pay part of the fees to sustain children in school. In 2009, the Government of Kenya started a national home grown school feeding programme to provide a meal to children at school; to support education achievements while also stimulating local agricultural production through purchase of food from smallholder farmers and local food suppliers. The present study will examine the influence of the feeding programme on educational outcomes.

1.2 Statement of the Problem

Provision of food has been considered as pivotal to effective learning among pre-primary school children. According to the World Bank (2012) the school feeding programme provides education and health and nutritional gains from, most vulnerable families, and in the process, increase enrolment, retention and regular class attendance and promote food security. In Kenya, most public pre-primary schools have some form of SFP from donors, County government or National Government of Kenya. However, this support is on the background that most Counties host a large number of children from low socio-economic backgrounds and thus cannot afford sufficient nutrition to sustain their daily school attendance. As reported by Mburungi (2018) pre-schools that did not have a school feeding program had inconsistent learner attendance and low retention rate; hence such schools had high rates of absenteeism and dropouts. Furthermore, according to UNICEF (2021) there is severe irreversible physical and cognitive damage that accompanies stunted growth that results from under nutrition; the devastating effects of stunting result in wasted abilities and inability to cope up with future life; and can last a lifetime and even affect the next generation.

Empirical studies hold that school feeding programmes have a positive influence on students' participation in education (Kiiru, Mange & Otieno, 2020). According to Mombasa County social protection strategy, the annual budgetary allocation for school milk programme increased from 136.2 million in 2020 to 156.6 million in 2021 annual budgets. The allocation was meant to promote children's health, retention and reduce dropout cases in pre-schools. Although several studies have been conducted on influence of SFP on learners'

educational achievement in Kenya (Kiiru, Mange & Otieno, 2020; Bekidusa, 2020; Bekidusa & Kisimbi, 2020), there is a dearth of studies on influence of school feeding programmes on educational outcomes in public pre- primary schools. Indeed, such a study is needed in Mombasa County to justify the budgetary allocation awarded, and increments of the same, to the programme.

1.3 Objectives of the Study

The objective of the study was to examine the influence of school feeding programmes on learners' educational outcomes in public pre-primary schools in Mombasa County, Kenya.

1.4 Research Question

How does the school feeding programme influence educational outcomes in public pre-primary schools in Mombasa County?

1.5 Significance of the Study

The findings of this study might be beneficial to the school administrations, educational policy makers, World Food Programme, parents and other stakeholders in making relevant and valid policies concerning school feeding programme and improved learners' educational outcomes. This study further intends to identify the benefits of education outcomes arising from school feeding programme that may be used to justify continued funding of these programmes.

1.6 Limitation of the Study

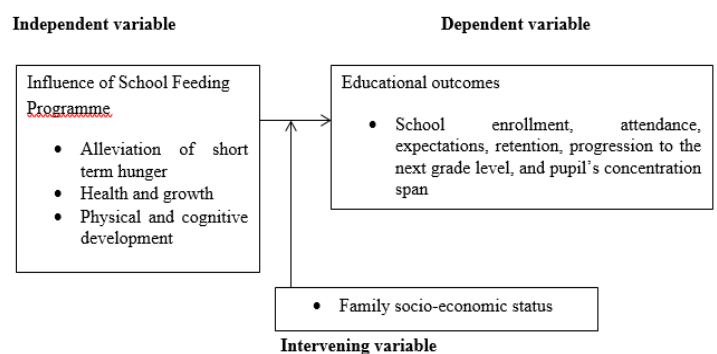
The results of this study should be generalized with caution as the study did not take into account the situations in private schools. Further, the geographical and socio-economic status of the Mombasa County may be substantially different from other Counties in Kenya.

1.7 Delimitation of the Study

The study participants were head teachers, teachers and Early Childhood Education supervisors in Mombasa County. The study only aimed to examine the influence of school feeding programme on learners' educational outcomes in public pre-primary schools in Mombasa County, Kenya.

1.8 Conceptual Framework

The study embraced the following conceptual framework.



1.9 Review of related literature

Most countries have embraced some child friendly school intervention in an attempt to ensure increased school attendance and retention. This is typically done through provision of School Feeding Programme (SFP), inclusion of methodological strategies, improvement of school infrastructural development, training and re-training of teachers among other Multilevel interventions (World Bank, 2018). A child's health and nutrition has a vital role in its development. The SFP aims to increase children retention, enrollment and attendance, decrease drop out cases and low educational achievement.

Many countries have embraced the SFP as a social impetus for provision of child friendly school imitative to provide children nutrition, learning and educational outcomes (Bundy, Burbano, Grosh, Gelli, Jukes and Drake, 2009). World Food Programme supports this by noting that the SFP increased children enrollment rate from three-fifth in 2002 to ninth-tenth in 2007. Yunusa (2014) states that the SFP has the ability to improve performance due to enhanced regular school attendance and effective learning. In Jamaica, performance of Grade two children in Arithmetic considerably improved with provision of School Feeding Programme. However, the impacts of SFP have raised mixed reactions. For example, Uduku (2011) argues that children's educational outcome is more dependent on teacher motivation, infrastructural facilities and instructional materials.

According to UNESCO (2017) provision of school feeding programme is considered important in enabling children to access nutritional food supplements in order to improve school attendance and educational outcomes. Ecker (2012) noted that malnutrition is the single most major barrier to human physical growth and health and economic development to developing countries. Moreover, Aila (2012) notes that a malnourished child has stunted growth, is emaciated and has limited cognitive and physical ability. In acknowledgement of this, World Food Programme (2006) avers that to mitigate the hunger crisis, provision of meals to school-going children should be encouraged to promote human resources and to make the learning process more effective. Thus, SFP is not only pivotal for short-term hunger elimination in children; it also enhances children concentration and attention (Aila, 2012). This notion is corroborated by Buttenheim et al. (2011) who note that SFP is closely linked with children's improved attendance, retention, cognitive abilities, class concentration and reduced malnutrition diseases that hampers school educational outcomes.

A study conducted by Adekunle and Ogbogu (2016) in Nigeria on effect of SFP on children's educational performance and enrollment affirmed that it increased learning opportunities such as attendance, enrollment, punctuality, retention and performance in outdoor activities. In Bangladesh, a study by The International Food Policy Research Institute on influence of school feeding programme established that school drop-out cases reduced by 7.5%,

enrollment increased by 14.2 % and school attendance improved by 1.3 days in a month. Furthermore, Dheressa (2011) concurs by noting that SFP is potentially efficient in increasing school attendance due to children's access to a school meal. However, He (2006) in Sri Lanka found a contrary finding that assistance of school feeding programme from the World Food Programmes had minimal impact on school attendance and enrollment. However, The World Food Programme (2006) affirms that the SFP assists vulnerable families to send their children to school.

It is important to note that 80% of Kenyan population is rural based with challenges of poor land quality and frequent shortage of water hence, perennial food insecurity (UNESCO, 2005). Although Kenya is an agricultural country, only 20% of its land is vital for food production. The rest (80%) is arid and semi-arid land, hosting 30% of population of the entire Kenyan population (MOA, 2010). The ASAL regions experience prolonged drought and food shortage. The school-going children are a group that is highly impacted by the realities in these regions. To mitigate the effect of drought, and low enrollment and retention, the Government of Kenya implemented the SFP in 1980 (Regnault De La Mothe, 2008).

Kiilu and Mugambi (2019) opined that school feeding programme is a precursor to children's attendance, reduced dropouts cases, improves school enrollment and enhances educational performance. Yet, according to Aila (2012) the SFP is lacking in most basic learning institutions. The study established a variance in learners participation in schools activities between those and without the SFP. The author concluded that learners in schools with SFP have a high test scores unlike those without. Furthermore, a study was conducted by Karaba, Gitumu and Mwaruvie (2019) on the influence of school feeding programme on learner's class involvement in Murang'a and Kiambu Counties in Kenya. The target population was 1163 head teachers, 2 directors of education and 54,629 learners in all the 1163 pre-school centres hosted in public primary schools in the two counties. The sample consisted of 2 directors of education, 20 head teachers and 380 learners. Purposive and simple random techniques were adapted for the choice of the 402 sample participants. Head teachers questionnaire, County director's interview guide and observation guide on pupils' participants informed the instruments of the study. The study established the link between schools feeding programme and learners' motivation, class concentration, physiological stability, and readiness to learn language and mathematics activities hence, influencing positive learning activities. The reviewed study had a strong methodology, that provided insights for the present study.

1.10 Justification of the Study

This study is worth investigating because of varied problems and challenges about public pre-school learners' attendance, retention and educational performance in Mombasa County. This is despite the various attempts to provide nutrition in pre-schools, including the Mombasa County social protection

strategy which increased its annual budgetary allocation for school milk programme, meant to promote children's health, retention and reduce dropout cases in pre-schools. Therefore, the study investigated the influence of the school feeding programme on learners' educational outcomes in public pre-primary schools in Mombasa County.

II. METHODOLOGY

The study was carried out in Mombasa County; the County is an island which lies in the South Eastern part of the Coastal region of Kenya. Administratively, the county has six Sub-Counties, namely: Kisauni, Mvita, Likoni, Nyali, Jomvu and Changamwe. The County host 97 public pre-schools. Descriptive research design informed the study because of its ability to test appropriate theories and provide detailed information from the respondents (Tashakkori & Teddlie, 2003). From a target population of 97 head teachers, 7 ECE supervisors and 388 ECE teachers; a sample of 154 participants that comprised 53 head teachers, 98 teachers and 3 ECE supervisors was used to provide information. The sample was selected by stratifying respondents by sub-county, and by using simple random and purposive sampling techniques. This is represented in Table 1.1.

Table 1.1 Target population, sample size and sampling techniques

Participants	Target population	Sample	Sampling technique	Percentage
Head teachers	97	78	Stratified and simple random	80
Teachers	388	116	Simple random	30
ECE Supervisors	7	7	Purposive	100
Total	492	201		

Questionnaire, interview guide and observation guide were the tools used to gather data. Instruments' validity and reliability was enhanced through expert and peer reviews to identify and adjust the limitations of the study tools. Quantitative data was analyzed using descriptive statistics; frequencies, percentages, means and standard deviations and findings presented using tables by aid of Statistical Package for Social Science (SPSS). T-tests and Pearson correlation coefficient were used to analyze the relationship between variables. Qualitative data was analyzed thematically in narrative and verbatim form based on the emerging themes of the study.

III. FINDINGS OF THE STUDY

Head teachers and teachers provided responses concerning how SFPs in their schools are organized and run, and how the programmes influenced educational outcomes.

The response were based on a 4-point Likert scale with strongly agree (4) and agree (3) implying agree; while disagree (2) and strongly disagree (1) implying disagree.

Table 1.2: Head teacher's (N=53) and teacher's (N=98) response on influence of school feeding programme and pre-school children educational outcome

Statement	Respondent	SA		A		D		SD		mean	Std dev.
		f	%	f	%	f	%	f	%		
There is constant SFP in the school	Head teacher	15	28.3	11	20.8	25	47.2	2	3.7	2.7358	.92302
	Teacher	31	31.6	24	24.5	33	33.7	10	10.2	2.7755	1.01057
SFP is provided by the County government	Head teacher	17	32.1	13	24.5	20	37.7	3	5.7	2.8302	.95547
	Teacher	21	21.4	26	26.5	32	32.6	19	19.5	2.5000	1.03794
Family is the major provider and funding of the SFP	Head teacher	28	52.8	12		9		4		3.2075	.98759
	Teacher	52	53.1	25		14		7		3.2449	.95314
Education partners provide the SFP	Head teacher	14		7		27	50.9	5		2.5660	.99052
	Teacher	21		23		40	40.8	14		2.5204	.98682
SFP improves children regular school attendance	Head teacher	32	60.4	21		0		0		3.6038	.49379
	Teacher	57	58.1	41		0		0		3.5816	.49583
SFP improves pre-school children enrolment	Head teacher	21	39.6	16		10		6		2.9811	1.02827
	Teacher	47	47.9	31		12		8		3.1939	.94877
SFP improves children retention rates	Head teacher	28	52.8	16		7		2		3.3208	.84974
	Teacher	62	63.3	28		5		3		3.5204	.73540
SFP improves pre-school children nutrition and health	Head teacher	34	64.2	11		4		4		3.4151	.92889
	Teacher	56	57.1	27		14		1		3.4082	.77108

SFP improves children active participation during outdoor activities	Head teacher	41	77.4	10		1		1		3.7170	.60056
	Teacher	56	57.1	30		10		2		3.4286	.75982
SFP improves children transition rate to the next level of primary education	Head teacher	15		8		24	39.6	6		2.6038	1.02544
	Teacher	14		19		38	38.8	27		2.2041	1.00472
SFP improves children classroom concentration	Head teacher	35	66.0	15		3		0		3.5472	.77375
	Teacher	54	55.1	34		7		3		3.4184	.75878

It can further be noted from Table 1.2 that almost half (49%) of head teachers and one third (56%) of teacher's opined that the school feeding programme in pre-primary schools was not stable. The finding was also supported by most pre-school supervisors who affirmed that full implementation of the school feeding programme had a long way to be realized. One supervisor reported that though there was a budgetary allocation for the school feeding programme, the programme was yet to fully be implemented in public pre-primary schools. The finding is supported by Aila (2012) whose study on impact of school feeding programme in Kibera Sub County affirmed that the SFP is lacking in most basic learning institutions.

According to the Constitution of Kenya 2010, pre-primary school education is managed by the County governments. Despite this, 37.7% of head teachers and 32.6% of teachers reported that the County government did not provide for the school feeding programme in pre-schools. Observation by the researcher confirmed the non-provision of the school feeding programme and the limited parental intervention in most public pre-primary schools. The ECE supervisors attributed non-provision of school feeding programme in pre-primary schools to budgetary constraints. According to the ECE supervisors, the County's education budget is mainly spent on teachers' salaries, teacher professional growth and infrastructural development.

For more than half of the schools, the SFP is mainly supported by families, as indicated by 52.8% of head teachers and 53.1% of teachers. The finding was supported by one ECE supervisor (Supervisor 3) who reiterated that "*Families are the major provider of successful school feeding programme.* The County government's support for the school feeding programme is not constant due to financial constraints and the need for infrastructural development."

Furthermore, the study finding summarized in Table 1.2 established that slightly more than half (50.9%) of head teachers and 40.8% of teachers reported that education partners do not assist in provision of pre-primary school feeding programme. The ECE supervisors decried the barriers that development partners face as a result of bureaucratic channels involved in enabling schools to access school feeding programme. This implies the inability of non-governmental organizations to fully assist schools with SFP. The study findings paint a picture of fragmented and unsteady

provision for the school feeding program. Schools have largely been left to their own devices and creativity to ensure the program runs.

On the influence of SFP on educational outcomes, almost two thirds (60.4%) of head teachers and 58.1% of teachers noted that the school feeding programme enhanced regular children attendance at school. On the same note, one of the ECE supervisor supported by noting the importance of the school feeding programme in attracting a large percentage of children to school regularly with the aim of having at least a meal a day, more so from low income families. Indeed, in the study, average absenteeism across the sampled schools was reported as being about 7 pupils per day. Further, the study noted high attendance of children in schools that offered school feeding programme. It can therefore be interpreted that the regular school attendance is attributable to school feeding programme. This is line with Dheressa (2011) who also found that school feeding programme was efficient in increasing school attendance due to children access to a school meal.

Additionally, about one quarter (39.6%) of head teachers and 47.9% of teachers opined that school feeding programme enhanced high enrollment in public pre-primary schools, as indicated in Table 1.2. The study findings showed that from a total sample of 53 pre-primary schools, mean enrollment in pre-primary schools was 75 pupils; this was the total number of pupils in Pre-primary 1 and Pre-primary 2 class. The foregoing findings were echoed by an ECE supervisor (Supervisor 2) who asserted that "*Enrollment of children in schools is increased as a result of low income families sending their children to school that provides at least a meal to their poverty stricken children*". The lower figures (39.6% and 47.9%) could be attributed to the fact that Kenya subscribes to the policy of free, compulsory basic and primary education; and 100% transition. Thus enrollment is high in most public pre-primary schools as it is a government directive that no learner should be turned away from school; however, where SFPs are in place, enrollment is even higher.

In the same vein, more than half (52.8%) of head teachers and 63.3% of teachers were in support that SFP results in improved retention rates in schools. A further follow-up insight from one of the ECE supervisor affirmed that school meals attract children to school by increased attendance and retention rate. An observation revealed high school attendance in schools with effective SFPs, and low attendance in schools

without the school feeding programme. This indicates that provision of school feeding programme allows children to constantly attend school and therefore minimize cases of dropout cases and absenteeism. The finding corroborates that of Adekunle and Ogbogu (2016) in Nigeria who established that the school feeding programme increased learning opportunities such as attendance, enrollment, punctuality, retention and performance in outdoor activities.

The present study further established that the feeding programme enhanced pre-primary children’s nutrition and health as shown by 64.2% of head teachers 57.1% of teachers, a shown in Table 1.2. An improved nutritional status leads to better health and protects children from malnutrition effects that would otherwise keep them away from school. Good health subsequently improves children’s educational outcomes through regular school attendance. Likewise, the school feeding programme reduces hunger and starvation hence, improved nutrition and education achievement. The finding corroborates that of Aila (2012) who reported that SFP is not only pivotal for short-term hunger elimination in children; it also enhances children concentration and attention (Aila, 2012).

Similarly, the finding affirmed the role played by school feeding programme in enhancing active participation of children in outdoor activities. More than three quarters (77.4%) of head teachers and 57.1% of teachers agreed that their school feeding programs enhanced participation in outdoor activities. Outdoor activities require a lot of energy, thus a hungry child will likely not participate actively in such activities. Active participation of children in play activities is very important as it enhances social and emotional competence that contribute to children’s physical and cognitive development, as well as improving their communication skills. Thus, without proper nutrition, children cannot attain holistic development.

In relation to transition, almost one quarter (39.6%) of head teachers and (38.8%) of teachers disagreed that SFP resulted in effective children transition to the next level of primary education. Although transition was reported at almost 100%, this was reported to be more attributable to the government directive of 100% transition that specifically to the SFP. However, it cannot be ignored that the SFP plays an important

supporting role in enhancing transitions as it has a positive influence on enrollment and attendance.

School feeding programme result to improved children improved classroom concentration as noted by more than two thirds (66.0%) of head teachers and (55.1%) of teachers. A further insight from one of the ECE supervisor (Supervisor 4) who noted that a hungry child cannot sustain attention during the whole learning process. From classroom observation, in schools without SFP, some children were seen to be dull, unhappy and had low concentration ability during learning. The findings echo those of Karaba, Gitumu and Mwaruvie (2019) that school feeding programme had an influence on learners’ motivation, class concentration, physiological stability, and readiness to learn.

The study sought to statistically establish whether there was a significant difference in educational outcomes depending on provision of School Feeding Programme. This was intended to answer the hypothesis that stated:

H₀₁: There is no significant difference in educational outcomes between schools with a feeding program and those without a school feeding program

Means of educational outcomes for two groups (schools with school feeding programme and schools without school feeding programme) were compared to determine whether they were statistically different using an independent t-test. The results of the two means of groups are indicated in Table 1.3.

Table 1.3: Influence of provision of school feeding programme on pre-primary schools educational outcomes

School Feeding Programme	Mean	Std. Deviation	Std. Error Mean
Provision of School Feeding Programme	3.053	.528	.073
Non-provision of School Feeding Programme	3.022	.730	.074

From Table 1.3, the mean of schools with school feeding programme was 3.053 whereas the mean for schools with non-provision of school feeding programme was 3.022. This means that educational outcomes in schools with school feeding programme were marginally higher than for schools with no feeding programme. In order to ascertain whether the two means were statistically significant, Hartley test for equal variance was run and the results tabulated in Table 1.4.

Table 1.4: T-test on availability of School Feeding Programme and educational outcomes

	Hartley Test for equality of variance				t-test for equality of means			
	F	Sig	t	dif.	Sig. (2-tailed)	Mean difference	Std. Error Difference	95% Confidence Interval of the Difference
							Lower	Upper
Equal variance assumed	1.908	0.00	.267	149.00	.015	.03	-0.194	.255
Equal variance not assumed			.293	136.67	.005	.03	-0.174	.235

Hartley test for equal variance: F = 1.908, p = 0.0055

From Table 1.4, Hartley's test of equality of variance revealed that the two variances were significantly different ($F = 1.908$, $p < 0.05$). So as not to violate the assumption of homogeneity of variances, the study took into account the t-value for equal variances not assumed. The reported $t = .293$ at $p = 0.005$ (less than 0.05) implying that the means of the two groups were statistically different. Given the higher mean in Table 4.18, it is concluded that schools with SFPs have higher educational outcomes as a result of the SFP which is a child friendly initiative. The finding is consistent with Mbunje (2018) who established that preschools that did not provide SFP had inconsistent learner attendance and low retention rate. The findings also support those of Buttenheim et al. (2011) who noted that the school feeding programme is closely linked with children's improved attendance, retention, cognitive abilities, class concentration and reduced malnutrition diseases that hamper school educational outcomes.

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