



ADDIS ABABA UNIVERSITY
COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES SCHOOL OF
PSYCHOLOGY MEASUREMENT AND EVALUATION UNIT

THE IMPACT OF SCHOOL FEEDING PROGRAMME ON STUDENTS ACADEMIC
PERFORMANCE: THE CASE OF SELECTED ELEMENTARY SCHOOLS IN DEBRE
LIBANOS WEREDA, OROMIA REGION

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By

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DECLARATION

I hereby declare that the work which is being presented in this thesis entitled “The Impact Of School Feeding Programme On Students Academic Performance (Students School Attendance Rate and Achievement Test Score rate)” is original work of my own, has not been presented for a degree to any other university and all the materials used for the thesis have been duly acknowledged.

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This is to certify that the above declaration made by the candidate is correct to the best of my knowledge.

Ato Daniel Tefera

(Thesis Advisor)

Date

Contents

ACKNOWLEDGEMENTS	vi
LIST OF ABBREVIATIONS AND ACRONYMS.....	vii
LIST OF TABLES.....	viii
LIST OF TABLES IN THE APPENDIX.....	ix
ABSTRACT.....	- 0 -
CHAPTER ONE	- 1 -
INTRODUCTION	- 1 -
1.1 Background	- 1 -
1.2 Statement of the Problem.....	- 2 -
1.3 Objectives of the Study	- 4 -
1.4 Research Questions	- 4 -
1.5 Significance of the Study	- 4 -
1.6 Delimitations of the Study	- 5 -
1.7 Meanings and Definitions of Variables.....	- 5 -
CHAPTER TWO	- 7 -
REVIEW OF RELATED LITERATURE	- 7 -
2.1 History of School Feeding	- 7 -
2.2 The Theoretical Interactions of SFP with Economic and Nutritional functions	- 8 -
2.3 School Feeding Program and School Performance.....	- 9 -
2.4 Conceptual Framework.....	- 13 -
2.5 School Feeding Program in Ethiopia	- 15 -
CHAPTER THREE	- 18 -
RESEARCH METHODOLOGY.....	- 18 -
3.1 Research Design.....	- 18 -
3.2 Participants.....	- 18 -
3.3 Sample Size and Sampling Technique.....	- 19 -
3.4 Research Instruments	- 20 -
3.5 Instrument Validity	- 20 -
3.6 Instrument Reliability	- 20 -
3.7 Methods and Procedures of Data Collection.....	- 20 -
3.8 Ethical Considerations	- 21 -

3.9	Data Analysis Procedure	- 21 -
3.10	Empirical model to assess the Impacts of SFP on Students school Performance	- 22 -
CHAPTER FOUR.....		- 23 -
RESULTS AND DISCUSSIONS		- 23 -
4.1	Socioeconomic and Demographic Characteristics of Students.....	- 23 -
4.2	Results of Paired and Independent Sample T-test (Between Treatment and Control Groups of Grade Four and Grade Three Students)	- 26 -
4.3.	Results of Paired and Independent Sample T-test (Between Treatment and Control Groups of Grade Two and Grade One Students)	- 27 -
4.4.	Discussions of the Findings of Paired and Independent Sample T-test (Between Treatment and Control Groups of Grade Four and Grade Three Students)	- 29 -
4.5.	Discussions of the Findings of Paired and Independent Sample T-test (Between Treatment and Control Groups of Grade Two and Grade One Students)	- 30 -
4.6.	Discussion of the Findings of Key Informant Interview.....	- 31 -
CHAPTER FIVE		- 32 -
SUMMARY AND RECOMMENDATIONS.....		- 32 -
5.1	Summary	- 32 -
5.2	Recommendations.....	- 33 -
REFERENCES		- 35 -
APPENDICES:		- 38 -
Appendix A: Result of Paired Sample T-Test.....		-38-
Appendix B: Result of Independent Sample T-Test.....		-40-
Appendix C: Questioners.....		-42-
Appendix D: Supporting Documents.....		-51-

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LIST OF ABBREVIATIONS AND ACRONYMS

CHILD-FFE	Children-In-Local-Development-Based Food for Education
CSA	Central Statistics Agency
CSB	Corn Soya Blend
DWEB	Debre Libanos Wereda Education Bureau
ESDP	Education Sector Development Program
FDRE	Federal Democratic Republic of Ethiopia
FFE	Food for Education
GER	Gross Enrollment Ratio
IFPRI	International Food Policy Research Institute
MANOVA	Multiple Analysis of Variance
MoE	Ministry of Education
NER	Net Enrollment Ratio
NGO	Non-governmental Organization
OEB	Oromia Education Bureau
PSNP	Productive Safety Net Program
SFP	School Feeding Program
SPSS	Statistical Package for Social Sciences
USAID	United Stat of America International Development
VAM	Vulnerability Analysis and Mapping
WFP	World Food Programme

LIST OF TABLES

Table	Pages
Table 1: SFP actual beneficiaries -----	17
Table 2: SFP food aid distribution yearly (in MT) -----	18
Table 3: Socioeconomic characteristics of students -----	25
Table 4: SFP and Enrolment Rate -----	26
Table 5: SFP and Dropout Rate -----	27
Table 6: SFP and Attendance Rate for grade IV-III -----	28
Table 7: SFP and educational achivement test score rate for grade IV-III -----	29
Table 8: SFP and Attendance Rate for grade II-I -----	31
Table 9: SFP and educational achivement test score rate II-I -----	32

LIST OF TABLES IN THE APPENDIX

Table 1: Paired sample t-test statistics results between Grade four & three students -----	40
Table 2: Paired sample t-test statistics results between Grade two & one students -----	41
Table 3: Independent sample t-test statistics results for grade four students between Treatment and Control Groups -----	42
Table 4: Independent sample t-test statistics results for grade two students between Treatment and Control Groups -----	43

ABSTRACT

The purpose of this study is to investigate if the school feeding program has significant impact on students' school performance specifically on students' achievement Test score and students' class attendance rates among primary school children in Debre Libanos Woreda. A mixed method research design specifically sequential explanatory approaches was employed and a combination of qualitative and quantitative data collected. The data sources for the research were both primary and secondary. The primary data were collected from school administration of 423 students (195 from treatment and 228 from Controlled groups) using structured questionnaire. Content analyses, Key Informant Interviews and Observation were the methods employed to collect both primary and secondary data. The analysis employed both descriptive and inferential statistics. The independent sample t-test statistics revealed that there was a statistically significant difference between the treatment and control group on attendance rate ($t = p < 0.01$) but the two groups of students were not different in their achievement test score ($t = p > 0.10$) using independent sample t-test. Thus, the possible explanation is that SFP is a fundamental instrument to increase academic performance specifically on students' school attendance rate.

CHAPTER ONE

INTRODUCTION

1.1 Background

Education aims at ensuring that all young people have the opportunity to complete basic primary education. More than ten years since the adoption of the Education for All (EFA) goals in Dakar, Senegal in 2000, many children are still out of school (UNESCO, 2010). There are still many countries that remain far from achieving their commitments towards meeting the six EFA goals by 2015 such as Liberia, Niger, Burkina Faso, Ethiopia, Burundi, Eritrea, Guinea, Mali, Sudan, Mozambique, Central African Republic and Chad where the number of children out of school exceeds the number of those attending (UNESCO, 2010).

For millions of children today, hunger has been an obstacle to school participation (Dheressa, 2008). A hunger-stricken child is not only unable to enroll in school at the right age but also cannot attend properly even if enrolled. Besides, such children are also likely to quit school because they have to deal with their immediate subsistence needs before they get ready for schooling. In addition, hunger is recurring problems in child education to be low school enrollment, low class attendance and high student drop-outs (Ahmed, 2004). Due to these reasons, hunger negatively affects the brain development of children and impedes their chances of educational success later on. More specifically, educational success has been low in many developing countries although both private and social returns to education are recognized to be high (Adelman, Gilligan & Lehrer, 2008).

Ethiopia is one of the poorest nations in the world, where agriculture plays a key role in sustaining the life and livelihood of the majority of the population. Nearly half of its population is food insecure or live below the poverty line and it has a long history of famines and food shortages that can be traced back to 250 B.C (Jema, 2008).

In addition, hunger has been a major barrier to child education. Thus, many primary school age children in food insecure areas remain out of school. On the other hand, even if schooling is free of charge, families in such areas still don't have the means to cover some costs as for books,

clothes, shoes or transportation. These constraints also keep children from participating in schools and to stay home and help parents in household everyday jobs.

In Ethiopia, SFP has another twin component called Children-In-Local-Development-Based Food for Education (CHILD-FFE) that was included in the World Food Program (WFP) Country Program. UN-WFP, together with Government of Ethiopia (GoE), sponsored School Meal Program (SMP) started in Ethiopia in 1994 with an initial pilot project covering 40 primary schools in selected food insecure woredas' of four regions of the country.

The pilot SMP was found to be successful in raising enrolment in primary schools in the target areas prompting the rollout of the SMP over successive years in further food insecure woredas' of the country (WFP, 2011). Under this package, each child is entitled to approximately 650 kcal (kilo calorie) per day in the form of Porridge. The food is prepared inside school premises by community paid cooks and the ingredients often used are Corn Soya Blend (CSB) mixed with a small amount of vegetable oil and salt, fortified with selected micronutrients (Riley & Ferguson, 2009). In general, it also aims at alleviating short-term hunger for children by feeding them in schools.

In addition, in line with the Millennium Development Goals, the Ethiopian Ministry of Education aims to achieve Universal Primary Education by 2015. In order to reach this goal, it is essential to provide incentives for parents to send their children to school. Thus, FFE is designed to promote increased enrolment and attendance and reduce dropouts in chronically food insecure districts in rural Ethiopia by providing a daily hot meal in school. FFE meals additionally make it easier for children to concentrate on their work, facilitating learning (WFP, 2011). In addition, Data shows that school enrolment increased by 3 percent in 2010, attendance rate increased from 90 percent in 2010, and dropout rates fell to 8 percent for girls and 9 percent for boys in FFE schools, which is lower than the national dropout rate of 14.6 percent for girls and 13 percent for boys (WFP, 2011).

1.2 Statement of the Problem

Globally, a total of 925 million people are estimated to be undernourished of which the majority of the world's undernourished people live in developing countries (FAO, 2010). Two-

thirds live in just seven countries (Bangladesh, China, Congo, Ethiopia, India, Indonesia and Pakistan). The proportion of undernourished people remains higher in Sub-Saharan Africa with about 239 million people (FAO, 2010).

Supporters of SFP claim that providing food in schools would ostensibly attract vulnerable children to school, improves their attendance and minimizes drop-outs in addition to food and nutrition security. According to the United Nations World Food Program, School Feeding Program is an incentive for vulnerable families to invest in children's education and encourages poor households to send children to school and helps to keep them there (WFP, 2008). In addition, empirical studies also reveal that SFPs indeed have significant positive impact on school participation which are effective in encouraging school enrollment, enhancing class attendances, and lowering student drop-outs (Ahmed, 2004; WFP, 2009). However, few other studies revealed a contrary result that there is no observable impact of SFP on school participation (He, 2009).

Almost every country in the world seeks to feed its school children. Based on a sample of 169 countries, it is estimated that at least 368 million children are fed daily when they are at school (WFP, 2004). Given current estimates of the per capita cost of school feeding, this translates into a potential annual investment of between US\$47 billion and US\$75 billion, with most of this money coming from government budgets. In addition, FFE is one of WFP Ethiopia's ongoing development activities, designed to enhance communities' ability to cope with future periods of food insecurity. Food assistance is targeted to primary schools in pastoral and food insecure districts where access to education is lower, especially for girls. Currently, school meals are provided for 1,186 schools in 172 woreda as in Afar, Amhara, Oromiya, SNNP, Somali and Tigray regions. The Total number of children who will receive assistance through FFE in 2014 are 625, 800 children. Over the last 7 years (1997 to 2003), the total amount of food distributed was 45,000 MT which is varied every year between 1,488 MT and 10,459 MT (WFP, 2004).

Debre Libanos woreda is currently one of chronically food insecure woreda in North Shewa Zone, Oromia Region. The largest portion of the woreda experiences frequent crop failure and usually is vulnerable to food shortage. Thus, relief assistance is provided frequently by governmental and non-governmental organizations. There are 31 schools in the woreda and the

total number of students in the woreda currently is 11,293 and from the total number of students in the Wereda 10,282 students are elementary and the remaining 1,011 students are high school. In addition, from the total 31 schools, three schools were selected for SFP and the total numbers of students who are assisted by the SF program in the three schools are 2,184 students (DWEB, 2015). So, it will be of paramount importance to investigate and analyze the academic performance of the students and to identify the impacts of SFP on students' school performance. Moreover, assessing the impact of SFP on food insecure students as well as their potentials to their academic performance would help to draw policy options.

1.3 Objectives of the Study

The general objective of this study is to evaluate the impact of School Feeding Program on students' school performances, in Debre Libanos Woreda, Kasim and Sele elementary School students in Oromia Region.

1.4 Research Questions

More specifically, the study addressed the following research questions:

- Does School Feeding Program have significant impact on students' school attendance?
- Does School Feeding Program have significant impact on students' Achievement Test Score?

1.5 Significance of the Study

Having clear picture and information on the status of school feeding program in the study areas, can provide basis for a detailed analysis on school performance in the country. A better understanding of factors affecting the status of school participation at micro level is required by organizations concerned with community development, researchers, and development policy makers. The study would also provide directions for further research and development schemes that would benefit the school population.

1.6 Delimitations of the Study

The study was conducted to identify the impact of SFP on students' school performance (specifically, school attendance and school Achievement Test Score) of grade one and three (pre intervention) and grade two and four (post intervention) students in Kasim primary school (Treatment group) and Sele Elementary School (Control Group). Although the impacts of SFP are studied in various ways such as the impacts on nutrition, cognitive development, agricultural production, and so on, yet these aspects are beyond the scope of this research and hence are not covered here. In terms of geography, the study was conducted in Debre Libanos woreda, one of the provinces of North Shewa Zone of the Oromia Region in Ethiopia.

1.7 Meanings and Definitions of Variables

School feeding (SF) is defined here as the provision of food to school children. There are as many types of programmes as there are countries, but they can be classified into two main groups based on their modalities: (1) in-school feeding, where children are fed in school; and (2) take-home rations, where families are given food if their children attend school. In-school feeding can, in turn, be divided into two common categories: (1) programmes that provide meals; and (2) programmes that provide high-energy biscuits or snacks.

Students School participation: It includes students' school enrolment, students' school attendance, and student school drop-out.

Student Enrollment Ratio(ER) is the ratio of the total number of children going to primary school to the number primary school age children in that woreda (those from 7 to 14 years). Thus like GER calculation also involves over-age, under-age and/or grade repeating children, which thus can result in ratio of more than hundred percent. $GER = \text{number of actual students enrolled} / \text{number of potential students to be enrolled}$.

Absence Rate (AR) is the second indicator employed in this study and it measures class attendance. Thus, the attendance rate has been measured by pupil absentee days over the study period. In other words, Absence Rate measures the number of days a primary school child failed to fully attend class during the academic year.

Drop-out Ratio (DR) compares the number of children who failed to complete the academic year as a percentage of all children actually enrolled in to school the same year. In other words, it is the ratio of the number of children who dropped out of school during the academic year divided by those who were actually enrolled in to school the same year.

Achievement test is a test developed to assess skill or knowledge of students. The most common type of achievement test is a standardized test developed to measure skills and knowledge learned in a given grade level, usually through planned instruction, such as training or classroom instruction.

Achievement test scores are often used in an educational system to determine what level of instruction for which a student is prepared. High achievement test scores usually indicate a mastery of grade-level material, and the readiness for advanced instruction. Low achievement scores can indicate the need for remediation or repeating a course grade.

In the next chapter; I will present the Literature Review section (Chapter Two)

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The theoretical basis for this research includes, among others, the works of national and international researchers, documents of the Ethiopian government, particularly Ministry of Education, Ministry of Agriculture and Rural Development, Ministry of Finance and Economic Development, the Central Statistical Agency of Ethiopia, documents of international organizations (WFP, USAID and FAO).

This chapter attempts to examine the findings of various studies conducted in the area of School Feeding Program and its impact on school performance. The majority of the literature discussed in this chapter maintains the claim that School Feeding Program has indeed significant positive impact on students School performance (Students' school attendance and students' academic achievement test score).

2.1 History of School Feeding

As early as 1790, a combined programme of teaching and feeding hungry children was begun in Munich, Germany, and in France in 1867, a school lunch programme for needy children was established in about 464 areas . In Norway, the Oslo Breakfast was introduced in 1897, consisted of half a pint of milk, whole meal bread, cheese, half an orange and half an apple, and from September to March, one dose of cod-liver oil (FAO, 2005). In the USA, the Children's Aid Society of New York began serving lunches to children at a vocational school as far back as 1853, and in Philadelphia the Starr Center Association began serving penny lunches in one school in 1894 (Gunderson, 1971). The Netherlands became the first country to adopt national legislation specifically to provide school lunches in 1900. In Switzerland, lunches were provided by private societies to about eight percent of the primary school children. This was done to encourage school attendance by children who lived far from school and who were unable to go home for lunch (FAO, 2005).It was implemented experimental programme by 1921, in Chicago, America serving 31 000 children daily. It was also introduced in Los Angeles by 1921 a school feeding scheme, serving a snack at 10 a.m. or lunch at noon to underfed children. Even if lunches

were intended to be distributed at cost, it was given free to the children who were unable to pay (Gundersen, 1971).

School feeding programmes are powerful tools for alleviating day-to-day hunger pains. It is suggested that giving children a daily breakfast at school may improve their scholastic achievement. It was indicated that breakfast usually provides children with approximately one-third of their daily energy and other nutritional requirements. So, as the result revealed, the alleviation of short-term hunger may affect cognitive functions, such as memory and with increasing efficiency of information processing (Grantham-McGregor, Chang, & Walker; 1998).

2.2 The Theoretical Interactions of SFP with Economic and Nutritional functions

This section will outline some of the theoretical links between School Feeding Program and school participation. However, it should be noted that SFPs also seek to address nutritional objectives. Although the sole focus of this study is to evaluate the educational objective of SFP, it must be understood that the interplay between SFP and school participation and achievement test scores works in different ways. In this section, the economic and nutritional functions of SFPs are presented.

2.2.1 The Economic Function of School Feeding Program

Many poor and credit constrained households usually invest less than what is privately or socially optimal, though the economic motivations for investing in education are well established (Adelman, Gilligan & Lehrer, 2008). As a result, levels of education attainment remain extremely low in many developing countries despite enormous evidences that indicate both private and social returns to education are high (Hanushek, 1986). Households' immediate priority is not educational need but survival of day to day problems. So; the poverty restricts households from sending their children to school. Consequently, such households cannot provide children the opportunity to go to school and learn. In addition, even though some costs such as school fees are free, households still don't have the means to cover other costs such as for books, clothes, shoes or transportation. Thus, such households are unable to afford the cost of schooling and instead keep their children to work in money generating activities or make them care for younger siblings at home. In response to such and other economic constraints for school participation, SFPs provide economic incentives for households to send their children to school.

According to Adelman, Gilligan & Lehrer (2008), the decision of households on whether to send their children to school is determined by comparing the expected future benefits of this education to the current cost. The current value of these future benefits is a measure of household's discount rate i.e., how much household values the improvements in current well-being over future improvements in well-being. On the other hand, if the costs of schooling exceed the expected benefits; the idea is that households will not send their children to school. Hence, food-based incentives such as school meals and take-home rations will compensate for both direct and opportunity costs resulting from the loss of household labor due to school participation (He, 2009).

2.2.2 The Nutritional Function of School Feeding Program

There are three ways to understand the interaction between nutrition and education. First, it was indicated that nutrition and health statuses influence the child's learning and his/her performance in school. That is poor nutrition among children affects their cognitive function and hence reduces their ability to participate in learning activities at school. Second, children who are malnourished or who are unhealthy are unable to attend school regularly and which in turn leads to poor academic performances. Third, hungry children encounter difficulties to concentrate and perform complex tasks than well-nourished ones (Kazianga, de Walque, & Alderman; 2009).

In addition; one of the three SFP impacts on children is the improvement of the nutritional status of school-going children and the reduction of malnutrition rates in addition to the improvement of school enrolment, school attendance and cognitive performance, also reducing the gender gap herein and the improvement of an increase effect on the demand for locally produced foods (Hall, Hahn, Farley, Quynh & Valdivia; 2007). On the other hand, improving nutritional status is thought to require a range of interventions, varying from supplementary feeding for mothers and young children to school feeding and other food based strategies (Bennett, 2003; Allen, 2001). This may indicate that school feeding programmes on their own may not be sufficient to improve nutritional status of primary school children.

2.3 School Feeding Program and School Performance

Having examined the conceptual relationships between school meals and school performance, this section discusses some of the relevant empirical studies. The majority of the

literature analyzed for this study revealed that SFP have indeed positive impact on school participation as measured by school enrollment, class attendance, student drop-out, and student test score (Ahmed, 2004). According to Briggs (2008), School meals programmes are seen as an effective tool for attracting pupils to school, reducing dropout rate, increasing female enrolment, alleviating short term hunger, thereby improving concentration ability and academic achievement, and improving nutritional and micronutrient status, thereby improving learning capacity.

In addition, different studies have shown an increase in both Gross Primary School Enrolment Rates (GSPER) and Net Primary School Enrolment Rates (NSPER), an increase in school attendance rates and a reduction of drop-out rates compared to control schools (Ahmed, 2004; Bennett, 2003; Del Rosso, 1996).

2.3.1 School Feeding Program and School Enrollment

As was discussed previously, the availability of subsidized in-school meals will increase school enrollment if the program changes the household's schooling decision for some children who would not have been enrolled in school otherwise. And for these households to enroll their children, they need to be convinced that the net benefits of participating in the program exceed the gap between direct and opportunity cost of schooling and the expected benefit of schooling (Adelman, Gilligan & Lehrer, 2008). In other words, households usually compare the size of the transfer relative to the size of the cost-benefit gap and these comparisons ultimately determine the magnitude of the increase in enrollment rates. Another important point is about the roles that school meals play in encouraging early enrollment.

Powell, Walker, Chang, & Grantham-McGregor, (1998) found increased participation resulting from school breakfasts in Jamaica, Peru and Kenya, respectively. On the other hand, Kazianga, de Walque, & Alderman, (2009) found that school lunches as well as take home rations increase new enrollment for girls by 5 to 6 percentage points. In addition, Dreze and Goyal (2003) found an 18%, 11%, and 14% increase in enrollment in their Rajasthan, Chhattisgarh and Karnataka villages, respectively.

On the other hand, one of the important impacts of SFP is that it has a power of reducing the gender gap by increasing girls' primary school enrolment than boys which leads the gross enrolment difference to be smaller between boys and girls (Allen, 2001). In addition, it was

found that a 44% increase in enrolment for girls and a 28% increase in boys' enrolment in Food for Education (FFE) schools in Bangladesh where take home rations were provided to children (Ahmed, 2004).

2.3.2 School Feeding Program and Class Attendance

Class attendance is believed that school meals can be effective at increasing class attendance because children receive the meal only when they attend school.

According to Ahmed (2004), the impact of school feeding on attendance in Bangladesh was evaluated and found that the SFP has a statistically significant positive impact and the programme showed an increment of class attendance of participating pupils by 1.34 days per month. However, class attendance from school registers showed attendance increased in both programme and control schools during this period, and that the increase was 1.1 percentage points higher in programme schools (Adelman, Gilligan & Lehrer, 2008).

Another study conducted on 814 children in second-through fifth-grade classrooms in rural primary schools in Jamaica where children were randomly assigned to receive a breakfast (576–703 kcal and 27 g of protein) or placebo (orange slice with 18 kcal) each day for one school year found a small improvement in attendance rates for children receiving breakfast over the control group (Powell, Walker, Chang, & Grantham-McGregor, 1998).

2.3.3 School Feeding Program and Student Drop-out

Adelman, Gilligan & Lehrer (2008) presented the interplay between school meals on one hand and grade repetition, learning achievement, and school performance on the other. They show that this effect works in two mechanisms. First, because school meals improve class attendance, children will spend more time learning in school. So the more time children spend in school, the better they learn and these interplays ultimately result in improved school performance, which thus minimizes the probabilities of drop-out. This is however dependent on other factors such as school quality, availability of learning materials and teacher quality. Thus, unless properly implemented, school feeding has rather the potential to worsen drop-outs. Second, improved nutrition may also enhance school retention and performance in the short and overlong run. In the short run, school meals could alleviate hunger and make children concentrate and learn better so that school performance will be improved and hence drop-out is

minimized. In the long run, school meals could enhance learning provided that school meals improve the nutritional status of children and if nutritional status also affects learning.

According to Ahmed (2004), School Feeding Programme has a statistically significant negative impact on pupil drop-out based on a study in Bangladesh. This study reveals that the primary school drop-out rate in the programme rural area was 29 percent and that the overall completion rate in this area is 6 percentage points higher than control rural areas. Controlling for child and household characteristics, he found that school feeding programmes reduce the probability of dropping out of school by 7.5 percent.

2.3.4 School Feeding Program and Student Achievements Test Score

Evaluations to determine the impact of school feeding programs on academic achievement are sparse and most of them lack scientific rigor. Only a few investigators have examined the effects of school meals on school achievement levels, using quasi-experimental designs with matched treatment and control groups. Even such evaluations did not show consistent results.

The inconsistencies may be because of the limited degree of control over experimental conditions, the differences in the analytical approaches and the initial characteristics of the children (Simeon & Grantham-McGregor, 1989).

One of the first papers that reviewed the impact of feeding children in school on education outcomes appeared in 1978 (Pollitt, Gersovitz, & Gargiulo, 1978). Even if the earlier studies had lacked well-defined hypotheses, the authors concluded that provision of breakfast seemed to benefit students emotionally and enhance their performance on school-type tasks but no conclusion could be drawn upon the long-term effects.

Pollit (1995) reviewed several studies conducted in Chile, United Kingdom and the United States from 1978 to 1995. The author concluded that brain function is sensitive to short term variations in the availability of nutrient supplies. Such indication is particularly strong for undernourished children. For these children, omitting breakfast alters brain function, particularly in the speed and accuracy of information retrieval in working memory. This evidence has strong implications for the developing world where a large percentage of school children are nutritionally at-risk.

According to Powell, Walker, Chang, & Grantham-McGregor (1998), the effect of school meals on educational achievements based on 407 moderately undernourished pupils received

breakfast before the start of classes on all school days; they were matched by age, sex, school and class with 407 adequately nourished pupils forming the control group which was conducted in 1994. Using multiple regression analysis the findings suggest that although undernourished pupils didn't outperform the adequately nourished group, their achievements in arithmetic were significant and moderate, representing approximately 30 percent of a year's progress. In arithmetic, younger children in grade 2 and 3 benefited most from the treatment. The effect on reading and spelling was found to be not significant. Girls performed generally better than boys on all 3 scores. The absence of a difference between the treatment and control group could be due to a moderate level of undernourishment. The improvements in scores suggested are associated with the relief of short term hunger and/or better nutritional.

Similarly, Whaley et al. (2003) explored the effect of 3 different diets (meat, milk, and energy) on cognitive development, suggesting that animal source food have a greater impact on cognitive function. Intelligence tests were administered in rural Kenya to school children before and after the controlled and treatment that lasted for 21 months and provided 240 and 313 k calorie the first and second years, respectively. Using hierarchical linear random effects models the authors found that children treated with meat supplementation outperformed other groups on the Raven's Progressive Matrices. On the other hand, those treated with milk only, or energy only and those in the control group had no significant difference in scores compared with each other. Students that received meat or energy did better than others on arithmetic tests. Thus, different animal source food is argued to produce unequal results on cognitive functioning.

2.4 Conceptual Framework

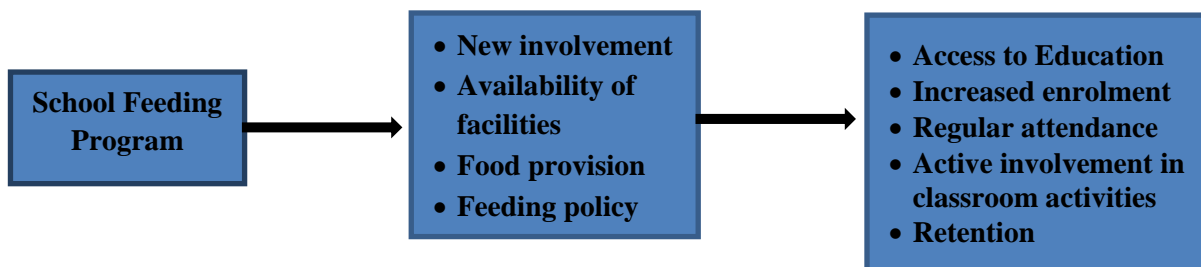
According to John (2013); the study is based on the concept that school feeding programme would attract more pupils' access to education through increased enrolment, attending school regularly, continuing with education without dropping out and active involvement in classroom activities. The school feeding programme is the independent variable while access to education is the dependent variable. They will be influenced by school feeding programme as it acts as a strong motivating factor to the suffering children to attend school and acquire education (See Figure1 below). Therefore the incentive of SFP on education will lead to increased pupil enrolment, regular attendance, active involvement of pupils in classroom learning activities and

retention enhance achievement of universal primary education. The framework illustrates that access to education results from the motivating factor (SFP) and the pupil's interest and expectation of acquiring reward (good meal and education to be successful in future) (John, 2013).

According to Vroom (1964), the intensity of a tendency to perform in a particular manner is dependent on the intensity of an expectation that the performance will be followed by a definite outcome and on the appeal of the outcome to the individual according to his expectancy theory of motivation. On the other hand, in Vroom's theory, valence is the emotional orientations toward particular outcomes (rewards) or is the value the person attaches to the outcome.

Therefore, it is the attractiveness or performance for a particular outcome of an individual. The school feeding programme is an incentive to attract children to school and enable them to learn. Expectancy is a momentary belief concerning the likelihood that a particular act will be followed by a particular outcome (the belief that better efforts will result to better performance). Then instrumentality that good performance will lead to valid outcome. To the pupils, expectancy is the (internal) beliefs that going to school (regularly) will enable them acquire quality education and the education empowers them to be free from the pains of hunger and drought in the future. Therefore, school feeding programme facilitates pupils to learn by solving short-term hunger and making them healthy to cope with class work.

Figure 1: How School Feeding Programme Influences Pupils' Participation



Source: John (2013)

2.5 School Feeding Program in Ethiopia

In Ethiopia, the SFP targets 5 food-insecure regions (Afar, Amhara, Oromia, Somali and Tigray). The program sites have been selected in areas identified as highly chronically food-insecure by the WFP as well as by Public Authorities. Within the food-insecure areas, the Regional Authorities selected schools in rural areas that could benefit from the programme and based on logistical constraints, schools near roads are generally selected. In most cases the schools participating in the ongoing programme are those involved in the previous programme, with the exception of urban schools, no longer eligible under the new programme (2003-2006) (WFP, 2006).

Table 1
School Feeding Program Actual Beneficiaries

Year	Boys	Girls	Total	% girls
1997	34,132	30,268	64,400	47
1998	54,984	44,988	99,972	45
1999	76,767	63,000	139,767	45
2000	115,082	94,160	209,242	45
2001	156,689	129,000	285,689	45
2002	158,000	129,000	287,000	45
2003	202,805	146,858	349,663	42

Sources: WFP standardized project report 1997 to 2003.

The main beneficiaries of the SFP are both boys and girls from primary schools located in food-insecure areas. While their number is increasing every year; the proportion of girls seems constant around 42-45%.

According to WFP (2006), more than 5.1 million children were out of school, with gender disparities in rural areas. Child labor, cultural practices (such as early marriages), distance from school and poverty are generally indicated as the main causes of low enrolment and attendance rates. This was confirmed by field discussions that could not however confirm whether children from the poorest households were actually reached by the programme.

In addition, full food ration is received and distributed at schools in a timely manner which contributes to relieve short term hunger. Over the last 7 years (from 1997 to 2003), the total amount of food distributed was 1, 488 MT which is varied every year between 1,488 MT and 10,459 MT (WFP, 2006).

Table 2

SFP food aid distributed yearly (in MT)

Serial No.	Year	MT	%age of Distribution
1.	1997	1,488	3.48%
2.	1998	3,791	8.87%
3.	1999	4,818	11.27%
4.	2000	7,274	17.02%
5.	2001	1,0459	24.47%
6.	2002	6,748	15.79%
7.	2003	8,168	19.11%
8.	Total	42,746	100.00%

Sources: WFP Standardized Project Report 1997 to 2003.

The composition of the ration changed over time. During the previous programming period it was composed mainly of biscuits, famix, wheat and oil. Since 2001 the ration is composed of Corn and Soya Blend, oil and salt. Generally, the children do not appreciate the CSB; when asked about their preferences during the school visits, all favored the ration received before 2001(WFP, 2006).

As important as the type of food received is the regularity with which it is distributed. WFP staffs field visits have shown that delays of between one and three months in food distribution were recorded in the initial years. This is mainly due to the transfer of responsibility from WFP to the BoE for the transport of food from the agreed delivery points to the schools. There are several reasons for these gaps: i) transport of food is not a normal activity for the Bureau of Education (BoE) and some time will be required to integrate all aspects of this activity (budgeting, tendering, timing, etc.); ii) the BoE budget is reported to be tight and mostly spent on

salaries; iii) at regional level, this activity is not necessarily considered as a priority when preparing the budget (WFP, 2006).

Moreover, According to the WFP (2006), SFP monitoring and evaluation matrix, the expected impact of the SFP is investment by households in food-insecure areas in the education of children, especially that of girls. The WFP assessment of the SFP also concluded that: *“the project met its educational objectives by increasing enrolment rates and decreasing dropout rates in primary schools, particularly for girls. The impact was slightly higher in Amhara region although differences among all regions considered were marginal”*.

In the next chapter; I will present the Research Methodology section (Chapter Three)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

The overall research design of this study was experimental research design specifically ex-post facto analyses using comparative research questions with as it entails studying two contrasting cases students with and without the intervention program. Thus, the method compared students with the program (treatment groups) and those without the program (control groups), as a way to measure the impacts of the SFP on students' academic performance. This approach assumes that both students with control and program intervention have similar characteristics, and any observed difference between the two groups is attributed to the effect of program.

3.2 Participants

3.2.1. Target population. The target population for the study includes all the primary school students from all the public primary schools in Debre Libanos Wereda. According to the Debre Libanos wereda Education Bureau (DWEB) (2015), there are 31 public primary schools in the wereda. The wereda has 11,000 students and 364 teachers.

3.2.2. Study site description. Debre Libanos Wereda is one of the weredas' in the Oromia Region. It is named after the important monastery of Debre Libanos. It was part of former Yaya Gulelena Debre Liban worda. Part of the Semien Shewa Zone, Debre Libanos is bordered on the North West by GerarJarso, on the south west by Yaya Gulele, on the south and south east by Wuchale and on the north east by Amhara Region. The administrative center of Debre Libanos Wereda is Debre Tsigie. It is located 108 Km from Addis Ababa and 198 km the city, Adama. The 2007 national census reported a total population for this wereda of 45,179, of whom 23,351 were men and 21,828 were women and 8,955 or 19.82% of its population were urban dwellers. The majority of the inhabitants said they practiced the Ethiopian Orthodox Christianity, with 99.29% of the population reporting they practiced that religion. The total elementary and high

schools in the wereda are thirty four in number from which thirty one schools are elementary and the remaining three schools are high schools (DWEB, 2015).

3.3 Sample Size and Sampling Technique

There are three elementary schools in Debre Libanos woreda which have been supported by the contemporary WFP School Feeding Program starting from 2001/02 academic year. The total SFP students in the Wereda are 2,184 of which 1,304 are males and the rest 880 students are females. This study is however conducted on one of them: Kasim primary school (Treatment Group) which was established in 1981 GC as of elementary school and Sele Elementary school (Control Group) which was related with treatment school before intervention started and it was established in 1984 GC as an elementary school. The main reasons for choosing this site are because it offered potential accessibility of data compared to any other site in the region and because it encompassed schools which are relatively deemed worthy by WFP local office. Besides, the study school presented far better credential opportunities where official records are also readily available in comparison to other villages.

Thereafter, a three-stage sampling technique was used to select sample students. In the first stage, due to time, financial and material constraints, only Kasim Elementary school was selected from a total of three schools which are supported by School Feeding program in Debre Libanos woreda, in the second stage the researcher selected 423 sample students of which 195 students were from treatment group for both pre intervention group (grade one and three students) and post intervention group (grade two and four students) from Kasim Elementary School (Treatment group) and 228 students were from control group for both pre and post nonintervention groups as the same as treatment group grades were selected from Sele Elementary School (Control group). Finally, the researcher used total enumeration survey of sampling technique of grade two and four for post intervention and grade one and three for pre intervention students in both Kasim and Sele Elementary schools. The students from the school were identified by the list obtained from the school administration.

3.4 Research Instruments

Adopting from Dheressa (2011), research instruments consisted of questionnaires modified by the researcher. According to Orodho (2004) questionnaires allow for measurement for or against a particular viewpoint and emphasizes that a questionnaire has the ability to collect a large amount of information in a reasonably quick space of time.

3.5 Instrument Validity

Content validity of a measuring instrument is the extent to which it provides adequate coverage of the investigative questions guiding the study (Mugenda & Mugenda, 2003). In this study, content validity was determined by consulting the expertise of the supervisor and two other measurement and school feeding program experts. These experts and the research advisor looked at every question in the questionnaire and did their own analysis to ascertain that the questions answer research objectives of the area under study. Recommendations (to continue with the instrument with some correction) from the experts were taken into consideration in order to improve the instruments.

3.6 Instrument Reliability

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials Mugenda & Mugenda (2003). In this study, inter-rater reliability was determined by the degree of agreement between two raters. It is useful in refining the tools given to human judges, for example by determining if a particular scale is appropriate for measuring a particular variable. So, for this research, the researcher selected spearman's rank correlation coefficient to establish inter-rater reliability. So, in this study, the result revealed that a reliability coefficient of 0.78.

3.7 Methods and Procedures of Data Collection

The study made use of both primary and secondary data which were collected from schools and different institutions, respectively. The quantitative data was collected from school administration principals through questionnaires. Besides, additional quantitative data was also

obtained from school records and WFP official documents. The qualitative data, on the other hand, was collected through Key Informant Interviews with School Principals and WFP local officers. To facilitate and speed up data collection, two field assistants were recruited and given 2 days training on both theoretical and practical aspects of field work.

In addition, questionnaire was pre-tested to check its clarity by respondents and the questioner was clear by the respondents as it was expected. To get quality data, the researcher supervised the data collection using methods like on the spot check, re-interviewing key questions and consistency check-up.

3.8 Ethical Considerations

Participation of respondents was strictly on voluntary basis. Participants were fully informed as to the purpose of the study and consented verbally. Measures were taken to ensure the respect, dignity and freedom of each individual participating and to assure confidentiality in the study. In addition, participants were informed that the information they provide would be kept confidential and would not be disclosed to anyone else including anyone in the schools.

3.9 Data Analysis Procedure

After the field work, the quantitative data was coded, entered into SPSS package, and cleaned and verified. Following this the data were analyzed using three stages. First, the researcher made use of descriptive statistics including measures of central tendency, variations, ratios, percentages and tables to describe the study area and samples in the study area.

At the second stage, to compare the two dependent variables at ratio level and one independent variable with two levels, statistical test was done by paired sample t-tests and at the third stage independent sample t-tests was used to assess the impact of SFP on academic performance using appropriate statistical package of SPSS. Moreover, the qualitative data was analyzed and integrated into the findings of the quantitative data at interpretation level to strengthen the discussion. This means that the result of the Key Informant Interviews was juxtaposed with the quantitative results wherever necessary.

3.10 Empirical model to assess the Impacts of SFP on Students school Performance

To determine the impacts of SFP on Students Academic Performance (students school attendance and students' academic achievement test score) of some given students involved in the yearly record of students in school rosters which is available for both groups; the researcher used independent sample t-test statistics to compare treatment group with the control group . The independent-samples t-test (or independent t-test, for short) compares the means between two unrelated groups on the same continuous, dependent variable.

In the next chapter; I will present the Results and Discussions section (Chapter Four).

CHAPTER FOUR

RESULTS AND DISCUSSIONS

Study results were presented in two categories as descriptive and inferential statistics of the survey data. Descriptive statistics such as frequency distribution, mean, standard deviation, and percentage were employed to assess the socioeconomic and demographic characteristics and inferential statistics were employed using paired and independent samples t-test to assess the impacts of School Feeding Program on students’ educational performances at elementary school level.

4.1 Socioeconomic and Demographic Characteristics of Students

4.1.1. Students with and without the program by Gender

The summary of the basic characteristics of students in both treatment and controlled groups indicated as follows:

From the total 195 students of SFP School (Treatment Group), 102 students are Male and the rest of students are female. On the other hand, from the total of 228 non-SFP students (control Group), 107 students are males and the remaining 121 students are females.

Moreover, from the total SFP students, female and male students accounted for about 52% and 48%, respectively. On the other hand, from Non-SFP students, female and male students accounted for about 47% and 53%, respectively. The findings can also be interpreted to mean that the ratio of boys and girls is almost the same in the two groups.

Table 3
Students with and without the school feeding program by gender

SEX	SFP		Total SFP	Non-SFP		Total Non-SFP
	Post	pre		post	pre	
Male	49	53	102	54	53	107
Female	47	46	93	65	56	121
Total	96	99	195	119	109	228

4.1.2. SFP and Students Enrolment

From the total 188 SFP enrolled students (Treatment Group), 96 students are post treatment groups of which 42 students are in grade 4 and the remaining 54 students are from grade two students. In addition, from the total 188 SFP group, 99 students are pretreatment students of which 41 students are from grade 3 and the remaining 58 students are from grade one.

On the other hand, from the total of 228 non-SFP enrolled students (control Group), 104 students are from post treatment groups, from which 61 students are from grade 4 and the remaining 43 students are from grade two. In addition, pre students of the control groups are 124 students of which 63 students are from grade three and the remaining 61 students are from grade one groups (See Table 4 below).

On the other hand, a highest enrolment rate change is not observed between the baselines and follows up surveys in both the Intervention and the Control schools, as shown in Table 4 below. However, there is a difference between the Intervention and the Control schools in the change in enrolment rate; the increment was not extremely different between the two groups.

Table 4
Students School Enrolment by Grade

Students Grade Level	SFP	%	Non SFP	%
Grade One Students	58	29.74	61	26.75
Grade Two Students	54	27.69	43	18.86
Grade Three Students	41	21.03	63	27.63
Grade Four Students	42	21.54	61	26.75
Total Enrolled Students	195	100.00	228	100.00

Source: Own survey result, 2015

4.1.3. SFP and Students Dropout Rate

From the total 17 SFP dropout students (treatment Group), 11 students are from post treatment group of which 4 students are in grade 4 and the remaining 7 students are from grade

two group. In addition, from the SFP School, 6 students are in the pretreatment group of which 3 students are from grade 3 and the remaining 3 students are from grade one students.

On the other hand, from the total number of 37 Non-SFP (control group) students were dropouts, of which 13 students are follow up students, from which 2 students are from grade 4 and the remaining 11 students are from grade two students. In addition, 24 students are from baseline groups of which 10 students are from grade three and the remaining 14 students are from grade one.

On the other hand, dropout rate changes observed between the baselines and follow up surveys in both the Intervention and the Control schools, as shown in Table 5 below. However, there is a difference between the Intervention and the Control schools in the change in dropout rate; the declines were not extremely different between the two groups.

On the other hand, as a result showed, a total percentage change of control group of school student dropouts is greater than the treatment group of school students' dropout out rate. In addition, there is a decline dropout rate in control group than the treatment group between base line and follow up groups or periods as shown in table 5 below.

Table 5
School Dropout by Grade

Dropout by Grade	Proportion of Dropouts in both Intervention and Non-intervention Groups			
	SFP(N=195)		Non-SFP(N=228)	
	N	%*	N	%
Grade One Students	3	5.45	14	24.14
Grade Two Students	7	12.28	11	20.00
Grade Three Students	3	5.45	10	17.54
Grade Four Students	4	7.27	2	3.22
Total	17	7.73	37	15.95

Source: Own survey result, 2015

*Students %age value calculated as dropouts divided by enrolled student for each grade level

4.2 Results of Paired and Independent Sample T-test (Between Treatment and Control Groups of Grade Four and Grade Three Students)

4.2.1 SFP and Students Attendance Rate

SFP was hypothesized to be one of the variables that make a difference on the level of attendance that was intended to increase attendance rate by providing an incentive to children for attending school each day. Attendance figures were collected in the academic year of the schools. Table 6 shows the baseline and follow up attendance rate for intervention and control schools, and shows the difference in the change between the two groups. Attendance rates increased between baseline and follow-up for both genders in the treatment schools. Increases in attendance were consistently very slightly higher for girls than boys.

On the other hand, in the control schools, small increases in attendance were also observed, but the differences is almost the same between male and female students. Thus, Comparing the level of changes between schools with the program and without the program, treatment schools consistently showed greater increases in attendance rate; these differences were significant ($t = 14.833$, $p < 0.01$) as shown in table 6. Thus, since t-observed value is greater than the t-critical value, we reject the null hypothesis. On the other hand, there is a difference between treatment and control groups in attendance rate at a significant level ($t = 17.719$, $p < 0.01$).

Table 6
Students Attendance Rate by sex of students

Sex	***Average Attendance Rate for the Intervention and Non-intervention Groups						
	Intervention schools (N=195)			Control Schools (N=228)			Intervention and Control Schools
	Post (Grade 4)	Pre (Grade 3)	Paired t-test	Post (Grade 4)	Pre (Grade 3)	Paired t-test	Independent t-test
Male	95.105	73.473	11.223*	78.000	76.809	1.073	10.288*
Female	95.315	78.526	10.556*	80.928	79.964	1.025	15.263*
Total	95.211	76.000	14.833*	79.673	78.612	1.494	17.719*

*Significant level at $P < 0.01$. ***Average Attendance rate computed counting Total days student attended in the academic year divided by total school days in the year.

4.2.2. SFP and Students Achievement Test Score Rate

SFP was hypothesized to be one of the variables that make a difference on the level of students' academic achievement test scores. One of the goals of the SFP is to improve academic achievement test scores through improved capacity to learn. Table 7 shows the test scores separately for programme and non-programme schools. The scores in both treatment and control schools show a decline between baselines and follow up periods which are a contradictory result with the hypothesized sign. Thus, after comparing the level of changes between treatment and control group schools those with the program and without the programme, the result revealed that there is no a significant difference in test scores between the two groups.

Table 7
Students Achievement Test Score by Gender

Gender	Students Achievement Scores Compared*						
	SFP Schools (N=195)			Non-SFP Schools (N=228)			SFP and Non-SFP Schools
	Post (Grade 4)	Pre (Grade 3)	Paired t-test	Post (Grade 4)	Pre (Grade 3)	Paired t- test	Independe nt t-test
Male	58.653	64.421	-1.696	60.057	69.205	-1.906	-.213
Female	60.942	67.747	-1.412	66.854	70.218	-.960	-1.006
Total	59.797	66.084	-2.160	63.941	69.784	-2.036	-1.043

Source: Own survey result, 2015;

*Student Achievement Scores are computed from students' school record.

4.3. Results of Paired and Independent Sample T-test (Between Treatment and Control Groups of Grade Two and Grade One Students)

4.3.1. SFP and Students Attendance Rate

SFP was hypothesized to be one of the variables that make a difference on the level of attendance that was intended to increase attendance rate by providing an incentive to children for attending school each day. Attendance figures were collected in the academic year of the schools. Table 8 shows the baseline and follow up attendance rate for intervention and control schools, and shows the difference in the change between the two groups.

As the result revealed, attendance rates increased between baseline and follow-up periods for both genders in the treatment schools. Increases in attendance were consistently very slightly higher for girls than boys. On the other hand, a small decrease in attendance were also observed in the control schools for both male and female students, but the difference is almost the same between male and female students.

Thus, comparing the level of changes between schools with the program and without the programme, treatment schools consistently showed greater increases in attendance rate; these differences were significant ($t=16.69$, $p<0.01$).

Table 8
Students Attendance Rate by Sex of Students

Gender	***Average Attendance Rate of the Study Participants						
	SFP Schools (N=195)			Non-SFP Schools (N=228)			SFP and Non-SFP Schools
	Post (Grade 4)	Pre (Grade 3)	Paired t-test	Post (Grade 4)	Pre (Grade 3)	Paired t-test	Independent t-test
Male	93.579	78.526	13.902*	77.500	81.300	-1.786	14.597*
Female	94.000	76.577	13.654*	77.800	80.133	-1.047	10.806*
Total	93.745	77.006	16.679*	77.777	79.826	-1.501	16.690*

Source: Own survey result, 2015, * $p < 0.01$. ***Average Attendance rate computed counting Total days student attended in the academic year divided by total school days in the year.

4.3.2. SFP and Students Achievement Test Score Rate

SFP was hypothesized to be one of the variables that make a difference on the level of students' academic achievement test score rate. Table 9 shows the test scores separately for

programme and non-programme schools. The scores both in the treatment and control schools show a decline between baselines and follow up periods.

On the other hand, we conclude that the experimental condition has made a significant difference between treatment and control group. But, the negative significant value observed between treatment and control groups. On the other hand, the declined value was significant at ($t = P < 0.05$).

Table 9
Students Achievement Test Score by Sex of Students

Gender	*Achievement Scores of the Study Participants						
	SFP Schools (N=195)			Non-SFP Schools (N=228)			SFP and Non-SFP Schools
	Post (Grade 4)	Pre (Grade 3)	Paired t-test	Post (Grade 4)	Pre (Grade 3)	Paired t-test	Independent t-test
Male	59.284	60.721	-0.574	68.640	71.680	-0.707	-3.522
Female	63.168	62.840	0.127	64.840	70.540	-1.333	-0.791
Total	61.702	63.251	-0.676	66.822	70.604	-1.477	-2.467

Source: Own survey result, 2015,

*Student Achievement Scores are computed from students' school record.

4.4. Discussions of the Findings of Paired and Independent Sample T-test (Between Treatment and Control Groups of Grade Four and Grade Three Students)

4.4.1. SFP and Students Attendance Rate

The possible explanation is that SFP is a fundamental instrument to increase students' attendance rate in treatment group different from control group. This is similar to the claim that School Feeding Program improves the nutritional status of children so that they can attend school (Adelman & Gilligan, 2008). Thus, the nutritional function of SFP might be high to have significant effect on attendance.

4.4.2. SFP and Students Academic achievement score

As the result, the activation of short-term hunger may not affect cognitive functions, such as memory and with increasing of efficiency of information processing and the capacity children's' to achieve their test result (Ahmed, 2004).The possible explanation is that SFP is not a fundamental instrument to increase the achievement test results in treatment group different from control group. The result is contradictory for the majority of the literature analyzed for this study which reveals that SFP have indeed positive impact on school performance as measured by school achievement test score (Meng and Ryan 2003; Ahmed, 2004).

4.5. Discussions of the Findings of Paired and Independent Sample T-test (Between Treatment and Control Groups of Grade Two and Grade One Students)

4.5.1. SFP and Students Attendance Rate

The possible explanation is that SFP is a fundamental instrument to increase the attendance rate in treatment group different from control group. On the other hand, school feeding program is a motivation factor to attract students to attend school as expected. This is similar to the claim that School Feeding Program improves the nutritional status of children so that they can attend school. Thus the nutritional function of SFP might be high to have significant effect on attendance (see Adelman & Gilligan, 2008).

4.5.2. SFP and Students Academic achievement score

The possible explanation is that SFP is not a fundamental instrument to increase the achievement test scores in the treatment group (with the program schools) different from control group (without the program schools).

So, as the result, the activation of short-term hunger may not affect cognitive functions, such as memory and with increasing of efficiency of information processing and the capacity of children to achieve their test result (Ahmed, 2004). The result is contradictory for the majority of the literature analyzed for this study (see Meng and Ryan 2003; Ahmed 2004).

4.6. Discussion of the Findings of Key Informant Interview

In Key Informant Interview (KII), eight key informants from WFP SFP Officers and seven key informants from school principal were interviewed. So, Key Informant interview members said that the introduction of the SFP increased their sense of participation in school. They said that they are more interested because of a sense of purpose and that they do not mind the extra work because they find their involvement in the programme rewarding.

KII also expressed concern about the quality of the porridge provided, suggested provision of milk along with the porridge, and thought that a greater variety of food should be provided by the programme. Certainly, quality control is important, even though reports of spoilage were rare. In addition, they discussed that there is no privilege to clean water for the students both for drinking and sanitation, even if the school management committee raised the issues a long time ago.

In addition, there was a problem of shelter for cooking and feeding the children in the respected school with fulfilled chairs and tables. So, the children are forced to take their share of food to eat on the field place of the school compound. On the other hand, fire wood is not sufficient enough to cook the food for the students in a sufficient manner. So, the students are forced to contribute money for fire wood in monthly bases that was even difficult for some students as the area is considered chronically food insecure area in the region.

Finally, the group discussed that the study shows that school meals are provided during the break hours of the schools, and thus children who travel long distances to reach school remain hungry during the first half of the school day. On the other hand, the group said that School Feeding Programs need to be designed as part of an effective package of interventions that address the nutrition and health needs of school-age children.

CHAPTER FIVE

SUMMARY AND RECOMMENDATIONS

On the basis of the findings of the results presented in the preceding chapter, this chapter attempts to give summary and policy recommendations.

5.1 Summary

The major objective of the study was to measure the impacts of School Feeding Program on students' academic performances. Also, the present study attempts to assess the impact of SFP on students' academic performance specifically on students' school attendance rate and students' academic achievement test score rate in the study schools of Debre Libanos wereda.

A mixed method research design specifically sequential explanatory approaches was employed and a combination of qualitative and quantitative data was collected. The data sources for the research were both primary and secondary. The primary data were collected from school administration of 423 students (195 and 228 students from treatment and Controlled groups, respectively) through using structured questionnaire. Content analyses and Key Informant Interviews were the methods employed to collect the data.

The analysis employed both descriptive and inferential statistics. Descriptive statistics were employed to describe SFP with students' sex using percentage, frequencies and mean. Inferential statistics were employed using paired and Independent sample t-test to asses and evaluate the impacts of SFP on students' Academic performance (students attendance rate and students achievement test score) whereas the qualitative data are analyzed along with the quantitative results.

The test statistics revealed that there was a significant difference between the treatment and controlled groups on attendance rate of dependent variable with the hypothesis sign at significant level. Thus, comparing the level of changes between schools with the program and without the programme, treatment schools consistently showed greater increases in attendance rate; these differences were highly significant at $p < 0.01$ as shown in the table. As the result revealed, there is a difference between treatment and control groups in attendance rate at a significant level that the SFP has made significant difference. Thus, the possible explanation is that SFP is a

fundamental instrument to increase the attendance rate in the treatment group different from the control group.

On the other hand, the study did not find significant impact of School Feeding Program on students' achievement test score rate using independent sample t-test. So, as the result, we conclude that even if the experimental condition has made a difference between treatment and control group, it was contradictory negative t-value from the hypothesis. Thus, the possible explanation is that SFP is not a fundamental instrument to increase the achievement test scores in the treatment group (with the program schools) different from control group (without the program schools).

Key Informant Interview also expressed concern about the quality of the porridge provided, suggested provision of milk along with the porridge, and thought that a greater variety of food should be provided by the programme. Certainly, quality control is important, even though reports of spoilage were rare.

5.2 Recommendations

After summarizing the findings of this study, the possible policy recommendations that can be made from this study are as follows:

Based on Independent t-test results, the study established that there was an increase in attendance rate of pupils in Debre Libanos Wereda as a result of SFP. So, the study recommends that the government may insure that a constant supply of school feeding program in schools in the food insecure areas so as to maintain regular school attendance.

In addition, the government and the donors may ensure the school feeding programme has the right nutrients so as to keep the children alert in class to actively participate in the learning process.

On the other hand, it is a great opportunity to increase academic performance through introducing for different schools which is food insecure. So, the government or other concerned parties may strengthen use of SFP through the close coordination between WFP and governmental and nongovernmental organization in the area which ensures provision of SFP timely and to encourage the use of available supplies.

Based on KII, Quality of the porridge may be improved and provision of milk along with the porridge and a greater variety of food may be provided by the programme. In addition, program administrators should look for ways to improve both the quantity and quality of school meals if the objectives are to be satisfactorily achieved. To this end, the School Feeding Programs need to be designed as part of an effective package of interventions that address the nutrition and health needs of school-age children.

Program managers and policy makers may, therefore, consider the possibility of delivering meals early in the day before lesson begins so that children do not leave school early in the day. The School Feeding Program could be scaled up to reach Non SFP students as well.

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APPENDICES:

Appendix A: Results of Paired Sample T-Test

Appendix Table 1: Paired Sample T-Test Results Summary Table for grade four & three

Paired Samples Test

Variables	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 postAttendance - PreAttendance	19.211	7.983	1.295	16.586	21.834	14.833	37	.000
Pair 2 conpostAttendance - conpreAttendance	1.061	4.972	.71035	-.367	2.489	1.494	48	.142
Pair 3 postTSCOR - preTSCOR	-6.286	17.938	2.910	-12.183	-.390	-2.160	37	.037
Pair 4 conpostTestscore - conpreTestscore	-5.842	20.086	2.869	-11.612	-.073	-2.036	48	.047
Pair 5 PostMaleAtt - PreMaleAtt	21.631	8.401	1.927	17.582	25.680	11.223	18	.000
Pair 6 PostFemAtt - PreFemalAtt	16.789	6.932	1.590	13.447	20.131	10.556	18	.000
Pair 7 PostMaleTS - PreMaleTS	-5.768	14.821	3.400	-12.912	1.375	-1.696	18	.107
Pair 8 PostFemTS - PreFemTs	-6.805	21.004	4.818	-16.929	3.318	-1.412	18	.175
Pair 9 ConPosMaleAt - ConPreMalAt	1.190	5.085	1.109	-1.124	3.505	1.073	20	.296
Pair 10 ConPosFemAt - ConPreFemAt	.964	4.977	.940	-.965	2.894	1.025	27	.314
Pair 11 ConPosMalTS - ConPreMalTS	-9.147	21.991	4.798	-19.157	.862	-1.906	20	.071
Pair 12 ConPosFemTS - ConPreFemTS	-3.364	18.551	3.505	-10.557	3.829	-.960	27	.346

Appendix Table 2: Paired Sample T-Test Results Summary Table for grade two and one

Paired Samples Test

Variables	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 postAttendance - PreAttendance	16.745	6.882	1.004	14.724	18.765	16.679	46	.000
Pair 2 conpostAttendance - conpreAttendance	-2.826	9.028	1.883	-6.730	1.078	-1.501	22	.148
Pair 3 postTSCOR - preTSCOR	-1.548	15.697	2.289	-6.157	3.059	-.676	46	.502
Pair 4 conpostTestscore - conpreTestscore	-3.783	12.280	2.561	-9.092	1.527	-1.477	22	.154
Pair 5 PostMaleAtt - PreMaleAtt	15.053	4.719	1.083	12.778	17.327	13.902	18	.000
Pair 6 PostFemAtt - PreFemalAtt	17.423	6.506	1.276	14.795	20.051	13.654	25	.000
Pair 7 PostMaleTS - PreMaleTS	-1.436	10.903	2.501	-6.691	3.818	-.574	18	.573
Pair 8 PostFemTS - PreFemTs	.328	12.865	2.573	-4.982	5.638	.127	24	.900
Pair 9 ConPosMaleAt - ConPreMalAt	-3.800	6.729	2.12	-8.614	1.014	-1.786	9	.108
Pair 10 ConPosFemAt - ConPreFemAt	-2.333	8.633	2.228	-7.113	2.447	-1.047	14	.313
Pair 11 ConPosMalTS - ConPreMalTS	-3.040	13.589	4.297	-12.761	6.681	-.707	9	.497
Pair 12 ConPosFemTS - ConPreFemTS	-5.700	16.561	4.276	-14.871	3.471	-1.333	14	.204

Appendix B: Results of Independent Sample T-Test

Appendix Table 3: Summary Table of Independent Samples T-Test Results between Treatment and Control Groups for grade four Students

Variables	t-test for Equality of Means						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
femfematt Equal variances assumed	15.263	55	.000	15.512	1.016	13.475	17.549
	18.230	54.935	.000	15.512	.851	13.807	17.217
femfemTS Equal variances assumed	-1.006	55	.319	-4.353	4.327	-13.027	4.319
	-1.029	41.725	.309	-4.353	4.229	-12.891	4.183

Appendix Table 4: Summary Table of Independent Samples T-Test Results between Treatment and Control Groups for grade two Students

Independent Samples Test

Variables		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Attendance	Equal variances assumed	16.690	77	.000	15.401	.923	13.563	17.238
	Equal variances not assumed	14.754	40.443	.000	15.401	1.044	13.292	17.509
Testscore	Equal variances assumed	-2.467	77	.016	-6.657	2.699	-12.031	-1.284
	Equal variances not assumed	-2.522	71.508	.014	-6.657	2.639	-11.920	-1.394

Appendix C: Questionnaires

Appendix Table 7: Key Informant Interview with School principal

1. Zone _____
2. Woreda /District _____
4. Name of the school _____
5. Name of the principal _____
6. Enumerator's name _____
7. Supervisor's name _____
8. Date of Interview _____
9. Signature _____

Consent Form

My name is Ermias Assefa, a graduate student of Measurement and Evaluation at Addis Ababa University. The purpose of this interview is to collect data for my master's thesis about the Impacts of School Feeding Program on Students Academic performance on selected schools in Debre Libanos Wereda, Oromia Region. The information gathered in this interview will be used only for academic purposes and are strictly confidential. Your full name will not be written down anywhere and there will be no way to identify you. Your participation is voluntary. You may refuse to answer any question and choose to stop the discussion at any time. You can also ask questions about this study at any time. There is no direct benefit or money to be given for you in participating to this study. However, I hope that the study will benefit your community by helping me understand the impacts of School Feeding Program and recommending what should be done to improve school performance.

Thank you in advance!

1. When was the school established?

2. When was the Feeding Scheme introduced in the school?

3. What type of food is served?

4. How much food is allocated for each student during the school day?

5. What time of day are meals served?

6. Who is responsible for cooking and monitoring the feeding session?

7. Is every child in the school entitled to the feeding scheme? If No, why?

8. How do you evaluate the impacts of feeding program on school participation (enrollment, attendance, drop-outs and test score)?

9. In your opinion, what other factors affect participation of students in your school?

10. What are the associated problems with School feeding, if any?

11. What is your overall comment on the program?

Questioner Developed for data collection from school roster

1. What is the total enrollment of Grade 4 and 3 Students group during the 2001/02 AY?

Boys: -----

Girls: -----

Total: -----

2. What is the total enrollment of Grade 2 and 1 Students during the 2001/02 AY?

Boys: -----

Girls: -----

Total: -----

3. What is the total Grade 4 and 3 student dropped out rate during the 2001/02 AY?

Boys: -----

Girls: -----

Total: -----

(Dropout Rate= T. Dropout Students/T. Enrolled Students-2001/02AY)

4. What is the total Grade 2 and one student dropped out rate during the 2001/02 AY?

Boys: -----

Girls: -----

Total: -----

(Dropout Rate= T. Dropout Students/T. Enrolled Students-2001/02AY)

5. What is the total Grade 4 and 3 students' attendance rate during the 2001/02 AY?

Boys: -----

Girls: -----

Total: -----

(Attendance Rate=Avg., attended days/T. academic year in days (198(9x22)-2001/02 AY)

(Avg., attended days=Sum of Total Students attended days/ Total Students)

6. What is the total Grade two and one student attendance rate during the 2001/02 AY?

Boys: -----

Girls: -----

Total: -----

(Attendance Rate=Avg., attended days/T. academic year in days (198(9x22)-2001/02 AY)

(Avg., attended days=Sum of Total Students attended days/ Total Students)

7. What is the total student Average Test score of Grade 4 and 3 students during the 2001/02 AY?

Boys: -----

Girls: -----

Total: -----

(Avg. test score rate-2001/02 AY): Sum of Total students Avg. test score/T. No of Students

8. What is the total student Average Test score of Grade two and one during the 2001/02 AY?

Boys: -----

Girls: -----

Total: -----

(Avg. test score rate-2001/02 AY): Sum of Total students Avg. test score/T. No of Students

Appendix 7.2: Key Informant Interview with WFP SFP Officer

1. Place: _____
2. Name of the Officer _____
3. Enumerator's name _____
4. Supervisor's name _____
5. Date of Interview _____
6. Signature _____

Consent Form

My name is Ermias Assefa, a graduate student of Measurement and Evaluation at Addis Ababa University. The purpose of this interview is to collect data for my master's thesis about the Impacts of School Feeding Program on Students Academic performance on selected schools in Debre Libanos Wereda, Oromia Region. The information gathered in this interview will be used only for academic purposes and that they are strictly confidential. Your full name will not be written down anywhere and there will be no way to identify you. Your participation is voluntary. You may refuse to answer any question and choose to stop the discussion at any time. You can also ask questions about this study at any time. There is no direct benefit or money to be given for you in participating to this study. However, I hope that the study will benefit your community by helping me understand the impacts of School Feeding Program and recommending what should be done to improve school performance.

Thank you in advance!

1. Why did WFP choose the schools in different regions woreda to be part of SFP?

2. What was the basis of targeting those schools?

3. Does WFP believe students get enough meal while in school? If not, why?

4. How many times scaled up school feeding program before to support more schools?

5. What kind of feedbacks do you get regarding the impacts of school feeding program on school participation?

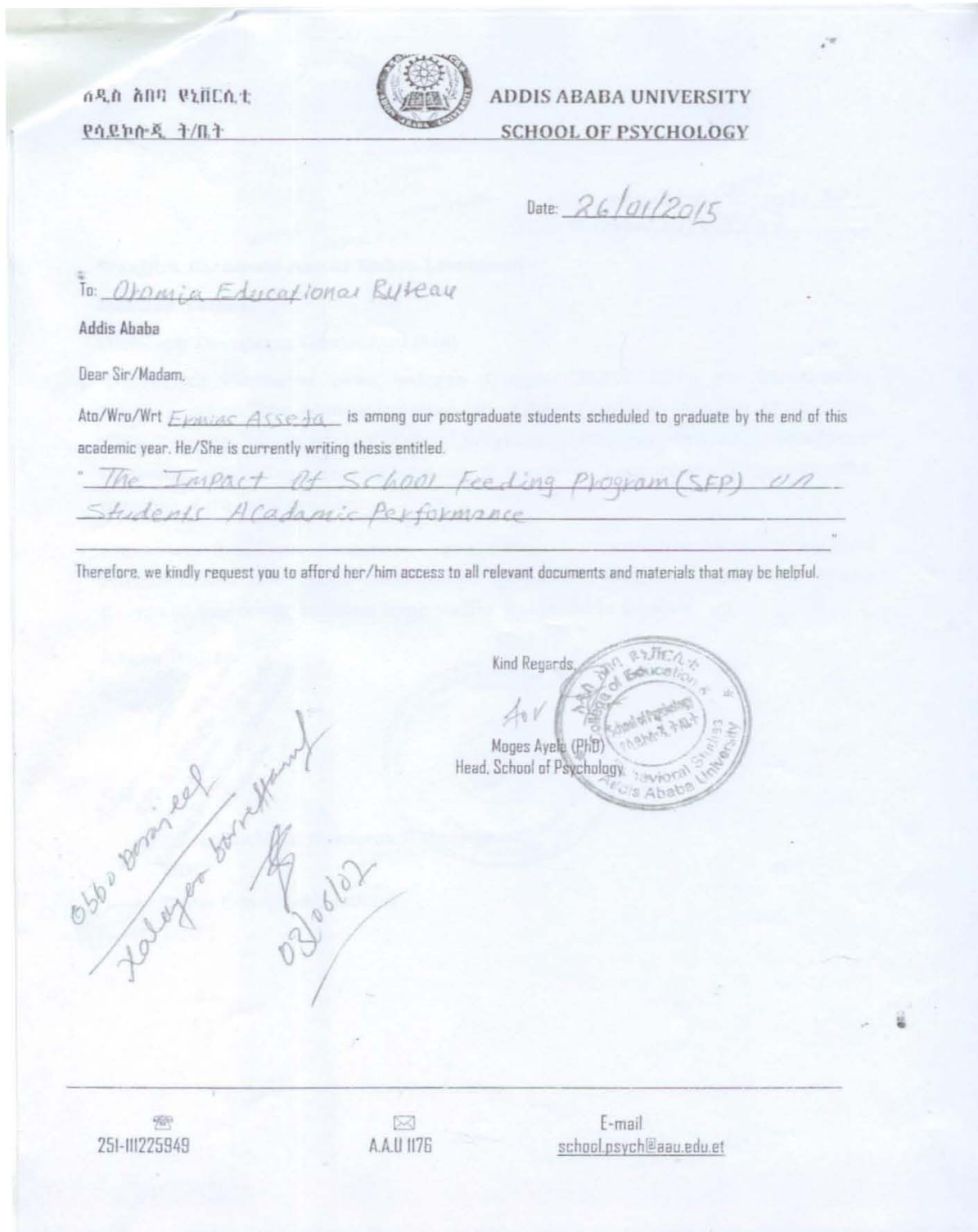
6. What are the challenges that WFP is facing with regard to the program?

7. What kind of measures are undertaken to improve the performance of school feeding program?

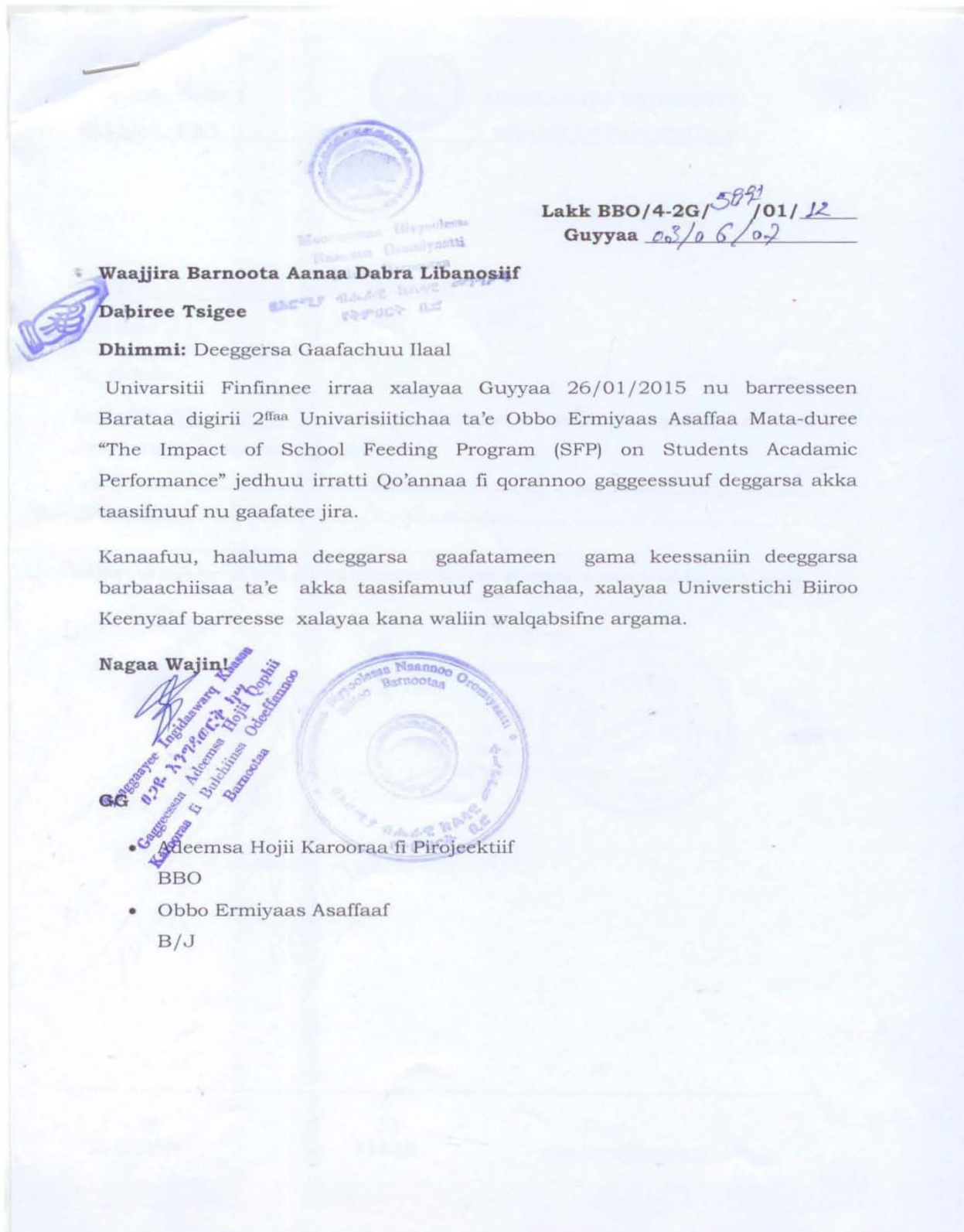
8. What is your overall comment on the program?

Appendix D: Supporting Documents

Appendix 8: "To Whom It may Concern Letter" from AAU to Oromia Education Bureau. (OEB)



Annex 2: “Ethical Consent Letter” from Oromia Education Bureau to D/Libanos Wereda Education Bureau



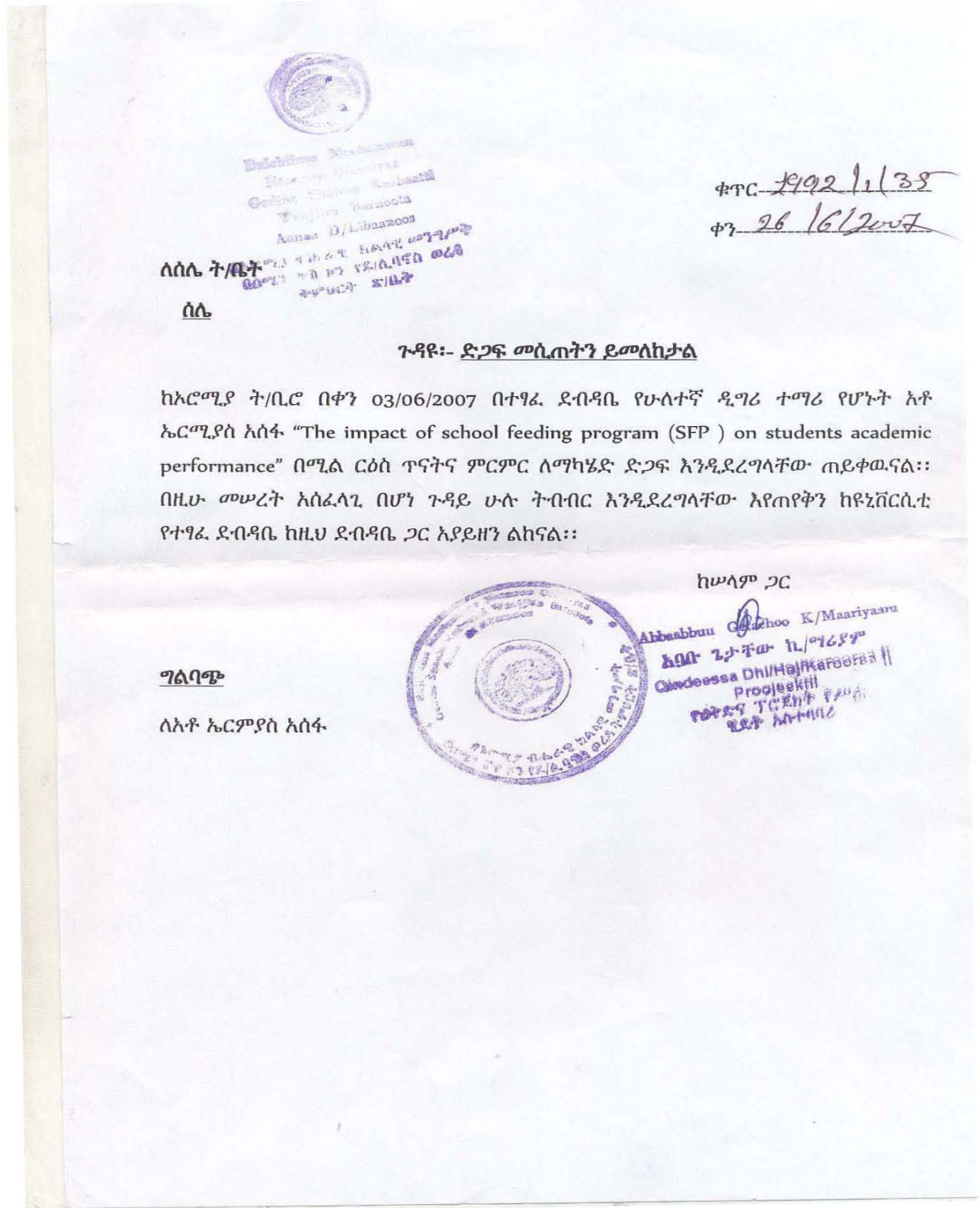
Annex 3: "To Whom It may Concern Letter" from D/Libanos WEB to Kasim Elementary School



Annex 4: "To Whom It may Concern Letter" from D/Libanos WEB to Sheraro Elementary School



Annex 5: "To Whom It may Concern Letter" from D/Libanos WEB to Sheraro Elementary School



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ቁጥር 2992/11/38
 ቀን 26/6/2007

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ጉዳዩ:- ድጋፍ መስጠትን ይመለከታል

ከኦሪጂናል ት/ቤት በቀን 03/06/2007 በተፃፈ ደብዳቤ የሁለተኛ ዲግሪ ተማሪ የሆኑት አቶ ኤርሚያስ አሰፋ "The impact of school feeding program (SFP) on students academic performance" በሚል ርዕስ ጥናትና ምርምር ለማካሄድ ድጋፍ እንዲደረግላቸው ጠይቀዋል። በዚህ መሠረት አሰፈላጊ በሆነ ጉዳይ ሁሉ ትብብር እንዲደረግላቸው እየጠየቅን ከዩኒቨርሲቲ የተፃፈ ደብዳቤ ከዚህ ደብዳቤ ጋር አያይዘን ልክናል።

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Annex 6: "To Whom It may Concern Letter" from AAU to UN-WFP

አዲስ አበባ ዩኒቨርሲቲ
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ADDIS ABABA UNIVERSITY
SCHOOL OF PSYCHOLOGY

Date: 09/12/2014

To: UN-WFP

Addis Ababa

Dear Sir/Madam,

Ato/Wro/Wrt Ermias Assefa is among our postgraduate students scheduled to graduate by the end of this academic year. He/She is currently writing thesis entitled.

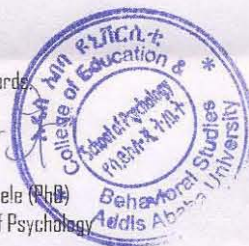
"THE IMPACT OF SCHOOL FEEDING PROGRAMME ON STUDENTS ACHIEVEMENT TEST SCORES, ENROLMENT, DROPOUT, AND ATTENDANCE RATE."

Therefore, we kindly request you to afford her/him access to all relevant documents and materials that may be helpful.

Kind Regards,

Moges Ayele

Moges Ayele (PhD)
Head, School of Psychology



251-111225949

A.A.U 1176

E-mail
school.psych@aau.edu.et

Annex 7: Pictures of Kasim Elementary School of students lunch program



Annex 7: (...Continued)



Annex 8: Pictures of Sele Elementary School

