Innovations

The Economic Contributions of Child Sponsorship Centers: The Case of Evangelical Projects in Yirgalem Town

Abyot Seifu Gebre

Lecturer, Department of Economics, Hawassa University, Ethiopia

Corresponding Email: yahweshalom@gmail.com

Received: 14 May 2022 **Accepted:** 15 June 2022 **Published:** 30 June 2022

Abstract

The purpose of this study was to evaluate the contributions of Child Sponsorship Centers to human capital development: the case of Evangelical Projects in Yirgalem town. A cross-sectional survey was employed to gauge the tangible impacts of the projects. The study was conducted in 8 kebeles and respondents were selected by systematic random sampling method. Interview, field observations and document consultations were conducted. The project students' educational performance was measured by student's grade 10 General School Leaving Certificate Examination (GSLCE) result as proxy for Educational development. The results of data analyzed showed that participation in the projects had brought significant impact on student's grade result. On the other hand, the result which comes from key informant interview shows that some of the beneficiaries are non-poor and are getting aid from the projects while the poor children are suffering from poverty and forced to drop schooling due to the lack of educational accessibilities. And thus, it is recommended that the projects should make adjustments and other concerned government bodies should monitor and take corrective measures. All in all, the educational performance of the project beneficiary students excels than that of non-beneficiary students of the same socio economic status of the area. In this regard, the study has revealed that the projects' objectives were appropriate for mitigating the educational problems and promoting educational development in Yirgalem, Ethiopia.

Key words; *1.Educational development, 2.projects, 3.Participation, 4.GSLCE, 5.poverity*

Introduction

The origin of human capital goes back to the emergence of classical economics in 1776, and thereafter developed a scientific theory (Fitzsimons, 1999). After the manifestation of that concept as a theory, Schultz (1961) recognized the human capital as one of important factors for a national economic growth in the modern economy. According to Ngin (2005), the human capital theory was first put forth by Theodore Schultz in 1963 to explain the relationship between individual investments in education and training, and income differentials. The theory assumes that the individual is rational and methodical, and seeks to maximize his lifetime earnings by making individual decisions to invest his resources in education. The theory also assumes a causal link between education, productivity and increases in earnings. Essentially, human capital theory assumes that the stock of human capital is directly correlated to productivity. I.e.

increases in the stock enhance productivity, and the individual worker is compensated for increases in productivity. Since investments in education and training are direct avenues to increasing the stock of human capital, the individual will make investment decisions by comparing the costs of those investments to the present value of the increase in income stream they produce. Investments will be undertaken if the present value exceeds the associated costs and the rate of return is greater than that from other available alternatives. With the emergence and development of human capital as an academic field, some researchers expansively attempted to clarify how the human capital could contribute to sociopolitical development and freedom (Alexander, 1996).

The concept of human capital can be variously categorized by each perspective of academic fields. The first viewpoint is based on the individual aspects. Schultz (1961), recognized the human capital as 'something akin to property' against the concept of labor force in the classical perspective, and conceptualized 'the productive capacity of human beings in now vastly larger than all other forms of wealth taken together'. Most of researchers have accepted that his thought viewing the capacity of human being is knowledge and skills embedded in an individual (Beach, 2009). Rastogi (2002) conceptualizes the human capital as 'knowledge, competency, attitude and behavior embedded in an individual'.

More recently, Frank & Bemanke (2007), define that human capital is an amalgam of factors such as education, experience, training, intelligence, energy, work habits, trustworthiness, and initiative that affect the value of a worker's marginal product.

Statement of the Problem

The government in the study area is trying to make many improvements in educational sector not only through its own sole efforts but also through many NGOs, which have played significant role to it. Child Sponsorship Centers are some of these NGOs which cover the eight "kebeles" from Yirgalem town and the "woreda" in supplementing the effort of the government in promoting child education and enhancing community participation (including developing sense of ownership).

Hence, it has attracted the attention of the researcher for the study. Besides, the researcher had given various trainings for the project beneficiaries in different periods. Moreover, the impact that the projects brought on children's' educational attainment of those beneficiaries is yet not well known as there has been no any research conducted in the area as far as my observation is concerned.

Objectives of the Study

The general objective of the study is to evaluate the impact of Child Sponsorship Centers (CIET) on human capita development in Yirgalem.

The specific objectives of the study are to:

- Assess the major contributions of the Child Sponsorship Centers in terms of increasing access to education.
- Identify variables affecting the probability of participation of children in Child Sponsorship Centers in the study area.
- Estimate the impact of Child Sponsorship Centers on student's GSLCE result in grade 10 of beneficiaries in reference to non-beneficiaries.

Scope of the Study

Similar Child Sponsorship Centers which are assisted by Compassion International Ethiopia (CIET) operates in around 390 projects throughout the country in collaboration with different evangelical local churches. Thus, the researcher cannot cover all the Compassion assisted projects in all local churches throughout different towns of the country due to financial, time and other related constraints. Moreover, the study

focused only on the education sector of the projects. The research therefore was restricted to four projects particularly on education sector located in four local churches of Yirgalem town in which the beneficiaries are from 3 kebeles of the town and 5 village kebeles of the woreda.

Data Type and Sources

This study was made depending on primary and secondary data. To achieve the stated objective, primary data were collected through questionnaires from sampled respondents (100 Child Sponsorship Centers and 116 non participants). Following this, interview schedule were used to collect information from selected respondents. In addition Key Informant (KI) interview were employed to collect the required primary data that guide discussion with the concerned bodies in obtaining in-depth information about different issues related with the study objectives. Eight key informants were also selected from different sectors/bodies. A secondary data was also obtained and used in the study from each project offices regarding the students' GSLCE results in grade 10 (Which was used as proxy for education).

Sample Size

To identify sample size for the study, rule of thumb suggested by Green (1991) cited in Wisconsin La Crosse University (2007) was followed. Green (1991) provides a comprehensive overview of the procedures used to determine regression sample sizes. He suggests N > 50+8 m (where m is the number of independent variables) for testing the Multi co linearity and N > 104+ m for testing individual predictors (assuming a medium sized relationship). If testing both, use the larger sample size. He suggested that, n ≥50+8m (where n is sample size of the study and m is number of independent variables). Since the independent variable (m) in this study will be 16;

n ≥ 50+8(16), thus n ≥178.

From this, the sample size for this study should be greater than or equals to 178 as there are fifteen identified independent variables. But for the purpose of this study, 216 households (100 participants and 116 non participants as control group) will be determined as a sample size of the study. The main reason for this is to get enough number of matches that will enables to give generalization on research objectives.

Sampling Technique

In determining the sample for this particular study, multi stage sampling method was employed. In the first stage, the study "Woreda" and town were selected purposively for the Child Sponsorship Centers beneficiaries. In the second stage, eight "Kebeles" were selected purposively based on their inclusion of Child Sponsorship Center beneficiaries. In the third stage, within eight selected "Kebeles", households/children were stratified into two strata (participant and non-participant in Child Sponsorship Centers). The researcher has used a sample of 216 elements from all participants and non-participants. This sample is selected from 100 participants and 116 from non-participants (as control group).

Result and Discussion

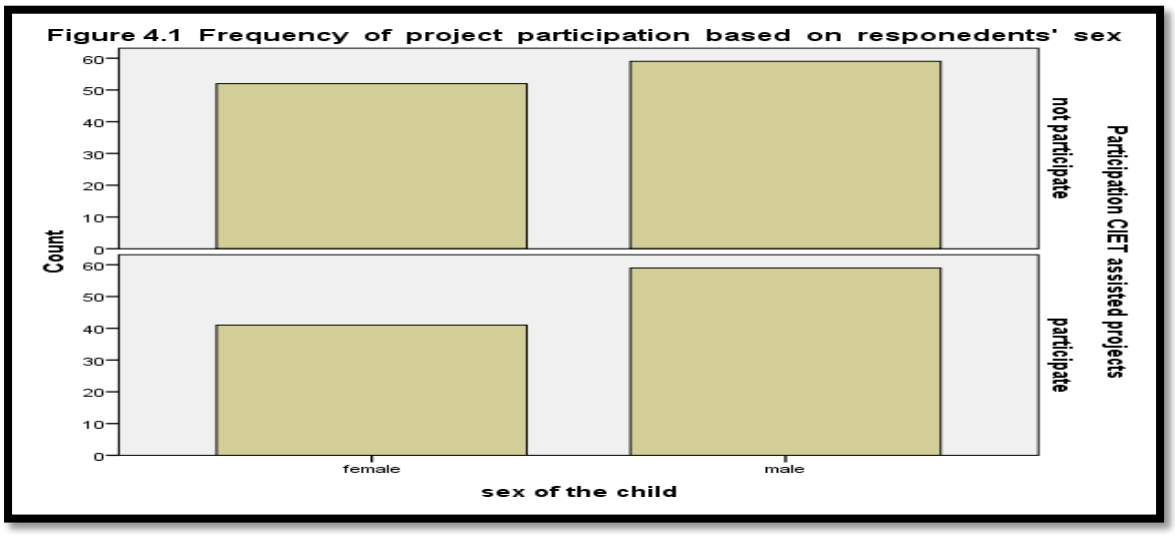
This chapter presents the main results and discussions. It is divided into two sub-sections. The first sub section provides the characteristics of sample households (students) while the second subsection discusses econometric estimation results. Out of the total 216 questionnaires distributed to project beneficiary and non-beneficiary students, 2 (97.7%) filled out and collected.

Descriptions of Sample Respondents' Characteristics

Household/family background

Figure 4.1 below presents the frequency of project participants and non-participants of the respondents. The result shows that there are 100(47.4%) project participants from the sample respondents. Out of which 40 are females and 60 are males. And 111 (52.6%) are non-participants from the respondents out of which 50

are female and 60 are males. There is no statically significant difference in the sex of the respondents in the two areas as shown in table



Source: Own estimation result (2021)

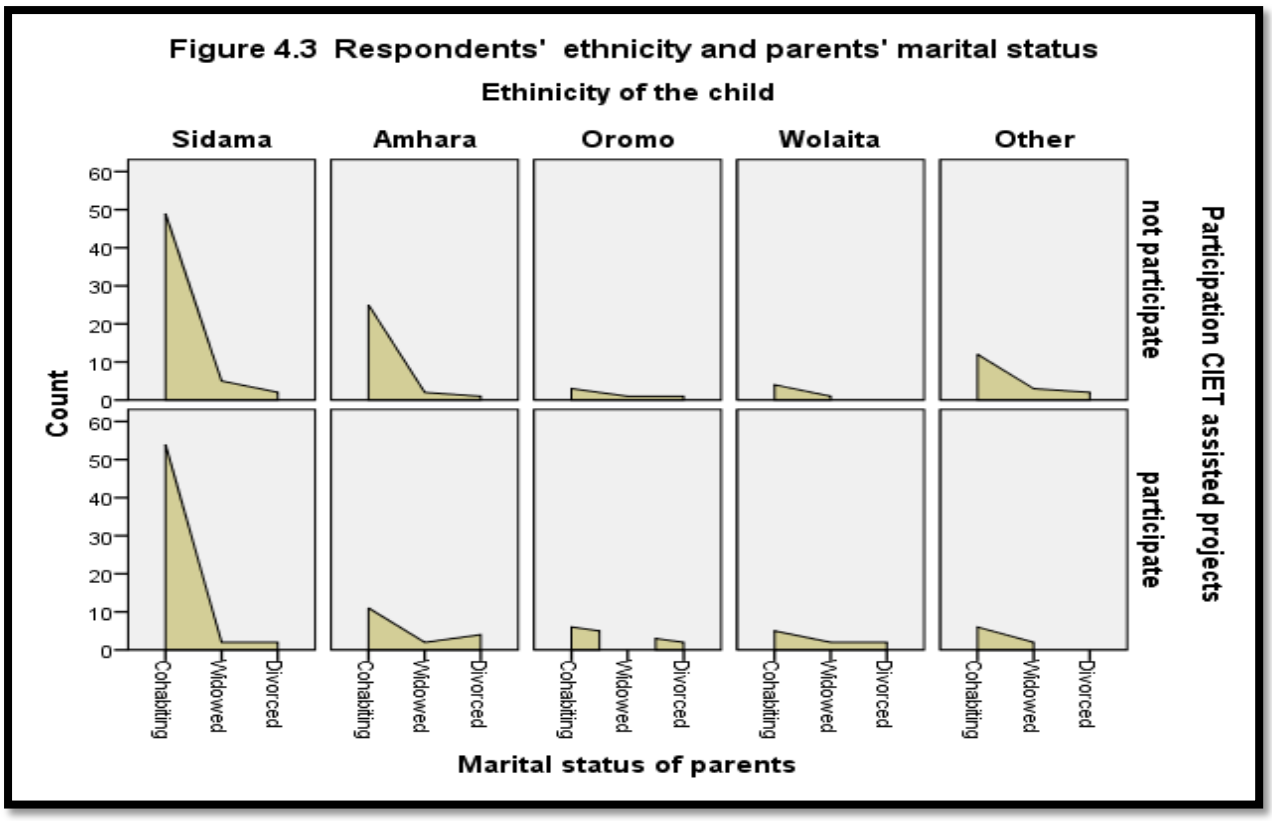
Looking at the age structure of the respondents, the proportion of respondents age 18 is greater in both participant (53) and non-participant (57) as depicted in table 4.1. The average age is slightly higher in non-participants which are 18.8 years while the participants' average age is 18.3. There is no statistically significant difference between the two groups as presented in the mean comparison test in table 4.7.

Table 4.1: Age Structure of Respondents

Age	**Non participant**		**Participant**	
	Frequency	**Percent**	**Frequency**	**Percent**
17	8	7.2	10	10.0
18	57	51.4	53	53.0
19	33	29.7	31	31.0
20	9	8.1	5	5.0
21	3	2.7	1	1.0
Average	18.80		18.30	

Source: Own estimation result (2021)

It is depicted in figure 4.3 below that the majority of respondents (both participants and non participants) are from Sidama ethnicity. And respondents from Amhara ethnicity are a bit more than the other remaining ones (Oromo, Wolaita and other).



Source: Own estimation result (2021)

Concerning respondents' family marital status in all ethnicities, the majority of respondents' mothers and fathers are cohabiting as can be seen in the above figure (both participants and non participants). From the sample taken in the study, there are no divorced parents in Wolaita ethnicity from non participants and other ethnicities from participants. But there are few divorce cases from both participants and non participants from the remaining ethnic groups. Except Oromo ethnicity from participants, there are few widow cases in all ethnicities (from both participants and non participants). But this difference didn't appear to be statistically significant in the mean comparison test as can be seen in table 4.7 below.

Looking to the distribution of respondents' parents according to their educational qualification in table 4.2, majority of respondents' fathers (i.e. 35(35%) participants' fathers and 39(35%) non participants' fathers are high school level and 24%, 21% and 15% of participants' fathers completed 1-8 education level, diploma level and illiterates respectively while 29%, 30% and 10%of non participants' fathers Completed 1-8 education level, diploma level and illiterates.

There are only 5% and 3% of degree holders of participants' and non participants' fathers respectively. Concerning educational level of respondents' mothers; 27%, 38%, 26%, 8%, 1% and 37%, 50%, 19%, 3% and 2% of participants' and non participants' fathers respectively are illiterates, Completed 1-8 education level, diploma and degree holders respectively. The statistics from the mean comparison test reveals the fact that there is a 5% significant difference in the education status mothers in the two areas as depicted in table 4.7 below.

Table - 4.2: Education Level of Respondents' Parents

Variable	Participation CIET assisted projects	Category	Frequency	Percent
Education level of father	Participants	Illiterate	15	15
		Completed 1-8 education level	24	24
		Completed 9 -12 education level	35	35
		Diploma	21	21
		Degree	5	5
	Non participants	Illiterate	10	9
		Completed 1-8 education level	29	26
		Completed 9 -12 education level	39	35
		Diploma	30	27
		Degree	3	3
Education level of Mother	Participants	Illiterate	27	27
		Completed 1-8 education level	38	38
		Completed 9 -12 education level	26	26
		Diploma	8	8
		Degree	1	1
	Non participants	Illiterate	37	37
		Completed 1-8 education level	50	45
		Completed 9 -12 education level	19	17
		Diploma	3	3
		Degree	2	2

Source: Own estimation result (2021)

The ANOVA result also indicates that the combination of the variables in table 4.3 does not significantly predict the dependent variables.

Majority of project participants' (i.e. 62(62%) and non participants 60(54%) are protestants while 34(34%) of participants and 32(29%) non participants are orthodox believers. 4(4%) of project participants and 18(17%) of non participants are Muslim religion followers as depicted in table 4.3. There is no statically significant difference in the religion of the respondents in the two areas as can be seen in the mean comparison test in table 4.7 below.

While considering health condition of the respondents, table 4.3 depicts that 76(76%) and 24(24%) of participants are almost normal and have only conditional illnesses respectively while 85(76.6%) and 26(23.4%) of non participants are almost normal and have only conditional illnesses respectively. Moreover, considering physical situation of respondents, majority (i.e. 99(99%) participants and 109(98.2%) non participants) are almost normal. Only1 (1%) of participant has unspecified type of physical problem and 2(1.8%) of non participants are unable to speak as can be seen in table 4.3.

Table 4.4 below, shows livelihood and house hold annual average income of respondents' households. Higher amount of non participant households are engaged in farming (18%) than participant households which is 9%. Equal amount of households (11) engaged in livestock fattening in both cases. The livelihood of 30(%) of participant households and 37(33%) of non participant households is daily laborer. 24(24%) of participant

households and 27(24.3%) of non participant households are engaged in petty trading. Greater amount of participant households (26 or 26%) do not have well known kind of income generating activities than non participant households which is 16(14.4%). An average annual income of project participants' households is 16860 ETB while non participant households' average annual income is 23773 ETB. There is a 1% statistically significant difference in the average annual income between project participants and non participants as can be seen in the mean comparison test in table 4.7 below.

Table - 4.3: Religion, Physical and Health Condition of Respondents

Variable	Participation CIET assisted projects	Category	Frequency	Percent
Religion of respondents	Participants	Orthodox	34	34.0
		Muslim	4	4.0
		Protestant	62	62.0
		Catholic	0	1.0
		Others	0	0
		Total	100	100
	Non participants	Orthodox	32	29
		Muslim	18	16.99
		Protestant	60	54
		Catholic	0	0.0
		Others	1	0.9
The child health condition	not participate	has some conditional illness	26	23.4
		almost normal	85	76.6
	Participate	has some conditional illness	24	24.0
		almost normal	76	76.0
The child physical condition	not participate	unable to speak	2	1.8
		almost normal	109	98.2
	Participate	almost normal	99	99.0
		Other	1	1.0

Source: own estimation result (2021)

The majority of both project participants and non participant children do not engage in child labor work. Compared to participant students (2 or 2%), greater amount of non participant students (16 or 14.4 %) participate rarely in child labor. Unlike project children, 3(2.7%) non project children participate in child labor at different season as can be seen in table 4.4. There is a 1% significant difference in the labor participation of the respondents in the two areas in the mean comparison test as can be seen in table 4.7 below.

Views of the Respondents about Public Educational Facilities Accessibility

Table 4.5 gives the description of the views of the respondents about public educational facilities accessibility. Out of the selected 211 respondents, all (100%) replied that they access free secondary school education. It takes less than an hour for 98 (98%) project beneficiary students and 77(69 %) non beneficiaries and an hour and more for 2 (2 %) project beneficiary students and 34 (34 %) non beneficiaries.

Concerning access to transportation to school, both beneficiaries and non beneficiaries all (100%) replied that they do not have access to transportation to school. 16(16%) project beneficiary students and 33(29.7%) non beneficiaries replied that they have no both access and habit or either to study in the library while 84 (84 %) project beneficiary students and 78(77.7 %) non beneficiaries replied that they have both access and habit to study there.

Table - 4.4: Livelihood of Respondents' and Child Participation in Seasonal Labor

Variable	Participation CIET assisted projects	Category	Frequency	Percent
Livelihood of the house hold	Participants	Farming	9	9.0
		Livestock fattening	11	11.0
		Daily laborer	30	30.0
		Petty trader	24	24.0
		Other	26	26.0
	Non participants	Farming	20	18.0
		Livestock fattening	11	9.9
		Daily laborer	37	33.3
		Petty trader	27	24.3
		Other	16	14.4
Child participation in seasonal labor	Participants	not participate	96	96.0
		participate rarely	2	2.0
		participate during coffee harvest season	2	2.0
		participate at different season	0	0
	Non participants	not participate	91	82.0
		participate rarely	16	14.4
		participate during coffee harvest season	1	0.9
		participate at different season	3	2.7
Child's family annual average income	Participants	< 6000	26	26
		6000 – 12000	27	27
		12000- 24000	35	35
		>24000	12	12
	Non participants	< 6000	9	8
		6000 – 12000	44	40
		12000- 24000	39	35
		>24000	19	17

Source: Own estimation result (2021)

Table 4.5 depicts that 53(53%) beneficiaries and 84 (75.7 %) non beneficiary students have ownership of home while 47(47%) beneficiaries and 27 (24.3%) non beneficiary students do not have. Compared to the non beneficiary students more beneficiary students do not have their own home and live in rented house. But there is 5% significant difference in the ownership of home for the respondents (their parents) in the two areas as can be seen in the mean comparison test in table 4.7 below.

Family Contribution for the Child Education

Majority of the respondents (94 or 94 %) of project beneficiary students and 84(75.7%) of non beneficiaries have accessibility of electricity at home. On contrary to ownership of own home, more beneficiary students have accessibility of electricity at home compared to the non beneficiary students. Only 6(6%) beneficiaries and 27(24.3%) non beneficiary students do not have electric light access at home according to their response as shown in table 4.5.

Table 4.5 Descriptions of the views of the respondents about public educational facilities accessibility

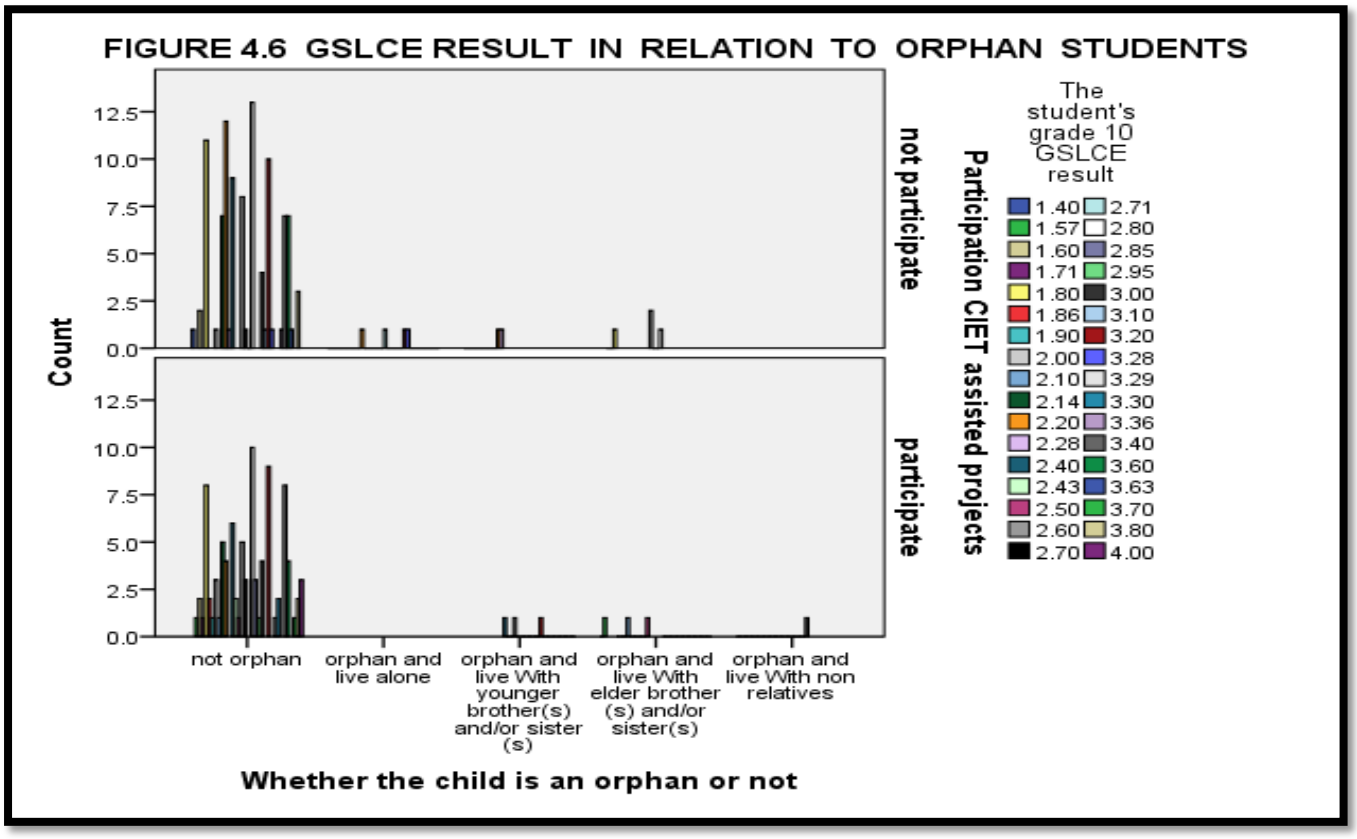
Variable	Participation CIET Assisted projects	Category	Frequency	Percent
Did you get access to free secondary school education? (Nearby)	Participants	Yes	100	100
		No	0	0
	Non participants	Yes	111	100
		No	0	0
How long does it take your school from home (Minute/Hour)?	Participants	< 1 hour	98	98
	Non participants		77	69
	Participants	> = 1 hour	2	2
	Non participants		34	31
Did you get access to transportation to your school?	Participants	Yes	0	0
		No	100	100
	Non participants	Yes	0	0
		No	111	100
Did you have habit of Study in the library?	Participants	Has no both access and habit or either	16	16
		Has both access and habit to study in the library	84	84
	Non participants	Has no both access and habit or either	33	29.7
		Has both access and habit to study in the library	78	70.3
Ownership of home	Participants	Yes	53	53
		No	47	47
	Non participants	Yes	84	75.7
		No	27	24.3
Electricity availability at Home	Participants	Yes	94	94
		No	6	6
	Non participants	Yes	84	75.7
		No	27	24.3

Source: Own estimation result (2021)

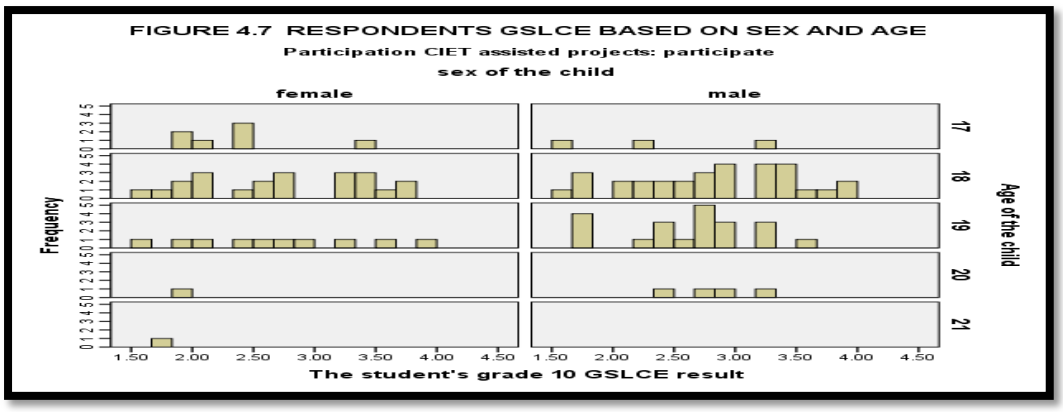
Educational Development Services

There is no respondent from project participants in 2011while there were six non participants and registered much more results compared to other years from which the samples taken, both male (around 4.00) and female around (3.50). There were 21, 83, and 92 respondents in 2009, 2010 and 2011 respectively. All respondents (from both project participants and non participants) in the above stated three consecutive years registered GSLCE result 1.50 to 3.50.

Figure 4.6 below, shows that there are more orphan students from the participant students of the sample taken than that of the non participant student of the sample. The data collected tells us also that orphan students registered lower GSLCE result compared with that of non orphan students who registered greater results (up to 4.00).



As it can be seen below in figure 4.7, If we arrange a cut of point for students' GSLCE results and given value 0, for students' GSLCE result < 2.5(2.5 which is taken as average students' result for both males and females for three years as a minimum point for entering preparatory school) and a value of 1, for GSLCE results > = 2.50. For the age between 17 and 18 in project beneficiaries, both males and females GSLCE result shows increasing trends. For the age above18, GSLCE result decreases for both males and females. The ANOVA result also indicates that the combination of the variables except ownership of home in table 4.5 does not significantly predict the dependent variables. While taking non project beneficiaries, the result is becoming very low for age above 20 for females but the result is very promising for male students as age increases from 17 to 22. Even though female students' in the case of both project participants and non participants scored below the cut of point (2.5) at higher ages, female project beneficiaries' result becoming low and do not allow for entering preparatory school for ages starting from 20 but for female students' of the none beneficiaries' result which prevents from entering preparatory school starts from age 21.



This shows that at higher age's project girl's school performance is lower than the school performance of the non beneficiary girls. Compared to male students' of project beneficiaries, non beneficiary male students perform better at higher ages. Generally, both male and female project beneficiaries students' GSLCE result decreases at higher ages even though the problem aggravates among female students.

Table 4.6: Any family member joined; Preparatory/University before the child

Variable	Participation CIET assisted projects	Category	Frequency	Percent
Any family member joined; prep/university before the child	Not participate	No	45	40.5
		Yes	66	59.5
	Participate	No	45	45.0
		Yes	55	55.0
Type of educational service the provider supply	Not participate	no service	45	40.5
		counseling concerning education	27	24.3
		Tutorial class	16	14.4
		Almost all the services	23	20.7
	Participate	no service	10	10.0
		counseling concerning education	12	12.0
		Tutorial class	3	3.0
		CIET assisted library	24	24.0
		Almost all the services	51	51.0
Counseling given to the student for preparation of GSLCE exam	Not participate	no advice obtained	4	3.6
		the child family	27	24.3
		School teachers	24	21.6
		All	56	50.5
	Participate	no advice obtained	4	4.0
		CIET experts	78	78.0
		the child family	11	11.0
		School teachers	3	3.0
		All	4	4.0
The participant benefit from CIET project	Not participate	no benefit from CIET assisted projects	110	99.1
		all kinds	1	.9
	Participate	food support	5	5.0
		all kinds	95	95.0

Source: Own estimation result (2021)

Least number of family members of project participant children joined preparatory school or higher commission before the child (55 or 55%) compared to the non participants of the project which is 66(59.5%) as shown in table 4.6. From this, the researcher assumes that project students obtained less technical guidance about their education from their families compared to the non participating students. Table 4.6 also depicts that unlike non participant children, participants' access additional CIET assisted library. Moreover, more of the non project participant 45(40.5%) do not access educational services other than class room services compared to project students which is only 10(10%). 51(51%) of project children get almost all educational services while only 23(20.7%) of non participants get almost all educational services. The ANOVA result also indicates that the combination of the variables except ownership of home in table 4.5 does not significantly predict the dependent variables.

Compared to the non participant students, significant number of project students, i.e. 78(78%) from Child Sponsorship Centers experts 11(11%) from family members and 3(3%) from school teachers obtain advice about GSLCE examination. But concerning the non participant students, only 27 (24.3%) from family members and 24(21.6%) from school teachers obtain advice about GSLCE examination even though many of the students get advice from different sources as shown in table 4.6.

The table additionally depicts that unlike non participants 95(95%) of project children obtained different types of services which helped them for their education from Child Sponsorship Centers. The remaining 5(5%) of project children receive food support in addition to the above mentioned serves as highly vulnerable children(HVC) from the project.

Table 4.7: Mean Comparison Test among Treated and Controlled Children

	Control Children		**Treated Children**		
Variable	Mean	Std.err.	Mean	Std.err.	**T test**
AGECH	18.775	.087	18.25	.077	
MARSTUS	1.0901	.050	1.14	.064	
EDUM	6.027	.386	4.88	.454	**
EDUF	6.1441	.425	7.98	.482	
RELIGION	2.2793	.097	2.3	.096	
HHSIZE	6.234	.162	5.92	.186	
ORPHANGE	.18018	.060	.22	.078	
PARTLABR	.09009	.058	.03	.031	*
INCOME	23773	1018.92	16860	1173.588	*
HOME	.53	.041	.40541	.837	**
No. of obs.	111		100		

** = significant at 5% and * = 1% at significant

Source: Own estimation result (2021)

Conclusion

In this study the impact of CIET assisted projects on Human Capital Development (Education) in yirgalem SNRS of Ethiopia has been evaluated using cross sectional data collected from Yirgalem Town 3 Kebeles and Woreda 5 Kebeles. In addition, the study has also identified factors affecting participation. The primary data for this study were collected from 100 CIET assisted projects and 111 non CIET assisted projects Children using a structured questionnaire. The research questions were "what would the level of Grade 10 students' GSLCE result have been if the CIET assisted projects had not been implemented?" Answering the question requires the data drawn from children with the same socioeconomic condition with and without the CIET assisted projects which is practically impossible to obtain such

children/households with both states simultaneously due to the missing counter-factual data problem. For a randomized experiment, the impact of a program can be evaluated simply by estimating the mean difference between the participants and controlling groups.

However, for non experimental design, the simple with-and-without comparison of means for the treated and control groups would make the biased estimates because the program placement creates a selection effect.

Participation in the CIET assisted projects was influenced by education level of child's mother, annual average income, child's participation in labor work and ownership of home by the child's family.

The non project beneficiaries students GSLCE result is becoming very low for age above 20 for females but the result is very promising for male students as age increases from 17 to 22. Even though female students' in the case of both project participants and non participants scored below the cut of point (2.5) at higher ages, female project beneficiaries' result becoming low and do not allow for entering preparatory school for ages starting from 20 but for female students' of the none beneficiaries' result which prevents from entering preparatory school starts from age 21.

At higher ages project girls' school performance is lower than the school performance of the non beneficiary girls. Compared to male students' of project beneficiaries, non beneficiary male students perform better at higher ages. Generally, both male and female project beneficiaries students' GSLCE result decreases at higher ages even though the problem aggravates among female students. The data collected tells us also that orphan students registered lower GSLCE result compared with that of non orphan students who registered greater results (up to 4.00).

Generally, the impact estimation result shows that CIET assisted Projects were able to create significant impact on the human capital development on participants of the projects in the area of the study in Yirgalem SNRS of Ethiopia.

Reference

1. *Ahmad, I.G. (2002). Role of Ngo's in Pakistan: An Overview,* MA Thesis: *University of the Punjab, Lahore: Pakistan.*
2. *Beach, M. J. (2009). A Critique of Human Capital Formation in the U.S. and the Economic Returns to Sub-Baccalaureate Credentials: Educational Studies: A Journal of the American Educational Studies, 45(1), 24–38.*
3. *European Commission (2012): Joint Research Centre Institute for the Protection and Security of the Citizen. JRC Science and policy reports; a note on the impact evaluation of public policies: the counterfactual analysis. Massimo, L. And Margarida, R. Italy.*
4. *Green SB. (1991). How many subjects does it take to do a regression analysis? Multivariate Behav. Res. 26:499–510.*
5. *Fitzsimons, P. (1999). Human capital theory and education: The Encyclopedia of Education. London: Macmillan.*
6. *Frank, R. H., & Bernanke, B. S.(2007). Principles of Microeconomics: 3rd Ed. New York: McGraw-Hill/Irwin.*

7. *Ngin, P. C. (2005). Approved for public release; distribution is unlimited. Applying human capital management to Model manpower readiness: A conceptual framework, Naval Postgraduate School Monterey: California.*
8. *Pradhan, M. and L.B.(2002). The Impact and Targeting of Social Infrastructure Investments: Lessons from the Nicaraguan Social Fund. The World Bank Economic Review, 16 (2): 275 295.*
9. *Schultz, T. W. (1961). Investment in Human Capital: American Economic Review, 51, 1-17. New York.*
10. *Rastogi, P. N. (2002). Knowledge Management and Intellectual Capital as a Paradigm of Value Creation: Human Systems Management, 21(4): 229-240.*
11. *Wisconsin-La Crosse University (2007): Understanding Power and Rules of Thumb for Determining Sample Sizes: Tutorials in Quantitative Methods for Psychology 2007: Van Voorhis, C. R. W. and Morgan, B. L.: vol. 3 (2), p. 43-50.*