



**FACTORS AFFECTING STUDENTS' ACADEMIC
ACHIEVEMENTS IN PUBLIC PRIMARY SCHOOLS:
THE CASE OF YEKA SUB-CITY, ADDIS ABABA,
ETHIOPIA**

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ETHIOPIA**

**A Thesis Submitted to the Department of Economics in
Partial Fulfillment of the Requirement for Master of Science
Degree in Development Economics**

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This is to certify that the thesis titled “Factors Affecting Students’ Academic Achievements in Public Primary Schools in Yeka Sub-city, Addis Ababa, Ethiopia” prepared by Lemmi Hundesa submitted in partial fulfillment of the requirements for the Degree of Master of Science in Development Economics complies with the regulations of the University and meets the accepted standards with respect to originality and quality. Signed by the Examining Committee:

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Declaration

I, the undersigned, declare that the thesis titled “*Factors Affecting Students’ Academic Achievements in Public Primary Schools in Yeka Sub-city, Addis Ababa, Ethiopia*” is my original work and done by me for the degree of Master of Science in Development Economics under the guidance and supervision of Berhanu Denu (PhD). This thesis has not been presented for a degree in any University and that all source of materials used for the thesis have been duly acknowledged.

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Lemmi Hundesa

Date _____

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ACRONYMS AND ABBREVIATIONS

FAO	Food and Agriculture Organization
WFP	World Food Program
SAA	Students' Academic Achievements
OLS	Ordinary List Square
FI	Family Income
GD	Gender Difference
SF	School Feeding
EL	Education Level
MoE	Ministry of Education
NLA	National Learning Assessment
EAES	Educational Assessment and Examinations Services
ETB	Ethiopian Birr
VIF	Variance Inflation Factor

ABSTRACT

This study was undertaken to estimate factors affecting students' academic achievements in public primary schools in Yeka sub-city using data from a cross-sectional survey of 397 randomly selected respondents (students, teachers, principals and parents). The survey was conducted using a direct face-to-face interview as well as questionnaires to get necessary information from the respondents. This study was motivated based on the results of National Learning Assessment that has been conducted in Ethiopia since 2000 every four years in primary schools, and measures the students' academic achievements showed that the students' academic achievements were below the minimum expected score of 50 percent target(EAES, 2023) and it invites researchers for further investigation why it was so. The ordered logit model was used to investigate factors affecting students' academic achievements. The results of the model revealed that each significant variable among the total of 11 explanatory variables was interpreted based on its corresponding coefficient. These significant variables are: study hour at 5%, school distance at 1%, number of students in the given class at 5% and doing homework at 1% significance levels, respectively. Thus, study hour that students spend studying per day helps students' achieve higher semester's average score, as far as school distance increases the semester's average of students decreases, the higher the number of students in the given class the result of students lowers and the burden of homework on the same day also hinders the students not to score higher results. And also this study puts its recommendations for the stakeholders like supervisors, principals and ministry of education to solve or even try to minimize the problem of large class sizes (large number of students in the given class) to make learning environment conducive. And also as far as doing homework is mandatory to students since it helps them practice activities, it will also be burden if all subjects will be given on the same day to students. so, it is recommended that teachers have to prepare home work schedule and give it for students. Similarly, the researcher forwards recommendations for the unexplained variables that require diagnosis in further investigation to fit the model summary.

Key words: Academic Achievements, Factors, Students

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Education is the way by which human beings transmit their experiences, new findings, and values accumulated over years, in their struggle for survival and development, through generation. And also education is the instrument which empowers human beings to get development, to provide democracy, justice, and gender equality, social and economic development (Negash, 1996). Education as whole and primary school as specific is one of the very important necessities for mankind. The advanced countries most probably worked on education specially investing on primary schools which highly contributed for their development. Because primary school is where the basic education which is used as a pillar for the future knowledge of the students starts. Most of the time, once the mind-set of the pupils is shaped properly, it can be easy to handle them and also they will be tough at their tasks (Basazen, 2017)

On the other hand, our world nowadays needs modern education and educated person who is part of the problem solving, innovator, critical thinker, and so on due to globalization. Similarly, educated citizen knows how to use scarce natural resources, understands nearby natural environment to use them wisely and uses technology to grow economically, socially, culturally, politically, psychologically, and so on which in turn contributes for the development of one country (Bukari, 2023)

In most of the developing countries, students learn being in hardships (stresses) due to different factors like family background (family income, family education level), school feeding, teachers' behavior, domicile (dwelling), religion of parents, sex, age and different societal problems which make them not to get good marks (i.e. affects their academic achievement) and even hinders them not to promote from one grade level to the next likewise it may enforce them to stop learning and search for the job. On the other way, there are also students who may learn being in comfortable situation if they are from advanced families (Habibullah, 2013)

What so ever the economic status of the countries, according to the advocators of human capital thought, in the advanced countries knowledge is replacing labour and raw materials as resources in the economic development and also it is becoming detrimental towards competitiveness in the international market. So, there is

consensus that quality education has to work to strengthen economic and human development (Bonai, 2023).

According to educational assessment and examinations services, National Learning Assessment has been conducted in Ethiopia since 2000 every four years in primary schools on some core subjects like Mother tongue, Mathematics, English and Sciences to measure their academic achievements. Based on that study, the results of primary school students of the last six rounds showed that their achievements were below the minimum expected score of 50 percent target. However, the system has tried to improve the students' achievement, the students learning outcomes have not shown progress due to different factors (EAES, 2023).

Ethiopia has been facing so many challenges regarding the provision of quality of education to students under different governments. Similarly, there was no special attention and continuous action taken by the stakeholders to bring sustainable progress on the students' academic achievements. For instance, after the down fall of Dergue regime, different educational policies and strategies were designed to improve Education qualities and students' achievements in Ethiopia. Likewise, the government inducted the general education quality improvement program, anticipating to improve the delivery of quality education (World Bank, 2008), and also set the goal of ensuring universal access to and completion of basic Education in order to reduce the adult illiteracy rate by 2015 (Lasonen, 2005).

According to The Federal Ministry of Education (2008), the study conducted in its third National Learning Assessment (NLA) identified that the level of academic achievement has been rated as insufficient because of the fact that students have been promoted from lower grades to higher grades without sufficient knowledge. Similarly, it has investigated that few parents feel satisfied with their students' achievements. At the same time, most expressed dissatisfaction with the achievement and behavioural qualities of the students. For the alarming issues mentioned earlier, the research indicated that students' main causes of failure were such as school environment, parents' socio-economic status, and gender-related factors, and also it suggests as it needs further investigations (MoE, 2008).

These days, though the provision of quality of education in Ethiopia is getting motivated through government attention, still it needs more priority to work on

education specially on primary schools which were neglected due to different factors and hence students at that stage couldn't get expected knowledge at their grade levels properly. But this grade level (primary school) is very important stage where the students have to be sharpened extremely in all sides. Similarly, students from government schools at primary levels were allowed to promote from one grade level to the next without attaining what they have to know. For example, there are so many students who face difficulties to spell their names properly even though there are also few brilliant students in reality.

On the other hand, there are also so many students who attend their education being in hardships which affect their academic achievements. This may be due to economic status of families, most of the students join either public or private schools to attend their education. This means, more advanced families make their students join private schools while low income families send their pupils to join public schools according to our societal perspectives. And also the achievement of students in public schools is lower when considered on average with that of private schools. For this reason, this paper aims to assess factors that hinders or advances the students' academic achievements in public primary schools.

1.2 Statement of the problem

According to different scholars, primary schools are where the pupils are expected to get very important basic knowledge for their future career. But in most developing countries, these kids face different challenges which is beyond their capacity to overcome and hinders them from achieving good results at schools (EHASS, 2020).

For instance, factors like family background (income, education level and large family size), lack of food (hunger), teachers' behavior, distance from school, religion of parents, sex and age are societal problems which make students not to score good marks (i.e. affects their academic achievement) and even hinders them not to promote from one grade level to the next likewise it may enforce them to stop learning. Developing countries have to invest on primary schools by identifying factors that affect students' academic achievements and even have to formulate appropriate education policy to get creative and innovative generation who can be problem solving and hence the hope of that country (Bukari, 2023).

There are arguments among findings of some researchers regarding factors affecting students' academic achievements. For instance, considering family income: Daniel Basazen (2017), Anantnag Kashmir (2022) and Tao Lin and Han Lv (2017), revealed that family income has direct relationship with students' academic achievement. But Ngangi (2023) and Gemechu Abera Gobena (2018), suggested that family income has no positive relationship or doesn't bring anything new to students' academic achievement.

Likewise, when the education background of family is considered, Gizem Engin (2020), identified that parents' educational level has positive impact on students' academic achievement. On the contrary, Oladele K. and Ogunsola (2014) suggested that family education background doesn't have significant relationship with students' academic achievement.

The other factor that different literatures didn't reach on consensus is teachers' characteristics on students' academic achievement. For example, Leibniz institute for economic research at the University of Munich (2021), identified that holding master's degree and teaching experience have no significant effect on students' academic achievement. But according to Gizem Engin (2020), as the teachers' motivational level increases, the students' achievement will also increase.

Regarding Students' characteristics on their academic achievement, Zhonglu Li and Zeqi Qiu (2018), stated that though families' socio-economic status is higher and can send their kids to well facilitated schools, the learning behaviour of their students was lower. But the converse of this idea states that the main thing that can make students achieve better is the parents' follow up. Both ideas mean that students' learning behaviour doesn't depend on families' socio-economic status, but it depends on families' follow up at most.

When the school environment on students' academic achievement is reviewed, it is understood that there is contradicting ideas. Firstly, Tariq Mahmoud and Muhammad Bashir Gondal (2017), identified that the school environment has positive effect on students' academic achievement. Secondly, on the contrary, Geoffrey D. Borman (2011) suggested that school characteristics are not strongly related to students' achievements.

As it is mentioned above, the suggestions given by different researchers regarding factors affecting students' academic achievement are contradictory even though the findings in few cases like peer group, gender and age factors are nearly similar.

For those reasons mentioned above, our country, Ethiopia, is also one of the developing countries which is facing difficulty of quality of education as well as low academic achievements and in need to work and invest on primary schools to get well educated generation who will be guarantee for the development of this country. Thus, this paper aims to investigate the factors which positively or negatively affect the students' academic achievements in Yeka sub-city public primary schools as a sample for study area because kids from primary schools lose maturity to confront or handle challenges though primary school is the crucial grade level where the kids have to be handled very well. Similarly, the students' achievements are not showing improvement from time to time because a lot of students were failed to score pass marks regarding grade eight as well as grade twelve regional and national examinations, respectively. For these problems, it is suspected that the main reason to this failurity may be due to the accumulated problems from lower grades which needs further study.

In addition to this, there is no same study done at this area yet regarding factors affecting students' academic achievement as well as variables like school feeding are also a current issue to be studied as a new factor that may affect students' academic achievement at this area.

For those aforementioned reasons, this paper aims to assess and identify factors (variables) which affect the students' academic achievements in public primary schools in order to fill these gaps.

1.3 Objectives of the study

1.3.1 General objective of the study

The general objective of this study is to estimate factors affecting students' academic achievements in public primary schools in Yeka Sub-city.

1.3.2 Specific objectives

1. To analyse the effects of students' study hour on their academic achievements.
2. To examine the effects of home distance from school towards grade eight students' academic achievements in Yeka sub-city public primary schools.
3. To investigate the consequence of number of students in the given classes of grade eight students on their academic achievements in Yeka sub city public primary schools.
4. To assess the most challenging areas of emphasis to bring success in students' academic achievements in Yeka sub-city public primary schools

1.4 Significance of the study

Education is the corner stone for the development of one country. This paper will be conducted in the field of education to identify the factors which affect the academic achievement of kids who are the hope for the futurity of the given country. So, after it identifies those factors, the pupils, family, teachers, principals, the society of Yeka sub-city as a whole and the country turn by turn will be benefited from the finding of this study directly or indirectly. Similarly, the finding of this study can be an input for the ministry of education to formulate appropriate education policy because in our country, education has faced huge challenges which suspects to bring generation gaps regarding education. For this reason, this study is planned to be conducted in primary schools to assess factors affecting students' academic achievement where education has to be given properly and used as a grass root for students' future knowledge.

1.5 Scope (delimitation) of the Study

This study will take place in Addis Ababa, the capital city of Ethiopia, specifically called Yeka Sub-city. It is one of the 11 sub-cities and located to the north-east of Addis Ababa. It has 14 districts and covers around 86 square kilometres. Its latitude and longitude are 9.0373° N and 38.835° E, respectively.

This study focuses on factors affecting students' academic achievement in public primary schools like family background (income, education level), school feeding, teachers' characteristics, students' study hours, sex and age even though there may be other different factors that can affect students' academic achievement. Similarly, it

considered only public primary schools (grade eight students as a proxy) since it is too vast to cover all divisions as well as every grade levels.

1.7. Limitation of the study

There was shortage of budget and lack of perfect information from unwilling respondents and at the same time there was lack of research experience and knowledge by the researcher.

1.8. Organization of the Study

The remaining part of the study is organized as follows. Chapter 2 deals with a review of related literature. Chapter 3 forwards about the methodology of the study. Chapter 4 is concerned with discussions and findings of the research. Finally, the last chapter presents summary, conclusions and recommendations

CHAPTER TWO: LITERATURE REVIEW

2.1 Definition and Concepts of Academic Achievements

Academic achievement is the knowledge that learners accomplished or skills developed in school subjects, usually determined by test scores or marks assigned by teachers or both and also it can be considered as a level of attainment or proficiencies in academic works as evaluated by the teachers, standardized tests, or by a combination of both parties (Chaplin, 1965).

According to Welberg (1981), academic achievement is the content or skill a student or a learner learns (gains) in specific period relative to the preplanned goal to be attained. Similarly, Walberg's theory of academic achievement states that 'academy' refers to an institution, society or group that promotes learning, education and scholarly pursuits, often focused on specific disciplines like literature, arts or sciences. And also it considers an achievement as the notable accomplishments or successes within the field such as the publication of significant works, critical acclaim or scholarly recognition (Walberg, 1981).

2.2 Theoretical Literature Reviews of students' academic achievements

Walberg's theory of educational productivity, which was formulated by Herbert J. Walberg, studied about the influences on learners that affects the academic performance of students. He used different methods to identify factors affecting students' academic achievement by integrating his theory with so many other theorists. In his theory, he classified eleven influential variables, of which eight of them were focused on social emotional influences namely: parental support, classroom management, student-teacher interaction, social behavioural attributes, motivational effective attributes, the peer group, school culture and classroom climate. But others like school policies, distance from school, organizational characteristics and curriculum are less influential. Among the aforementioned factors (variables), classroom climate, home environment, peer group and exposure to media represent aspects of the psychological environment, too. Based on his finding, he suggested that the effects of these variables may cause problems with the academic achievement of the students unless they are properly guided (Walberg, 1997).

Other scholars also say that students' academic achievement is the students' attainment or what individual students have accumulated throughout the learning process. Similarly, Walberg (1981), presented the first systematization of research on modelling school learning and its products, and then identified factors that influence effective learning for instance age, home environment, and mass media (Kauertz, 2016).

According to Gage (1972), teachers' effectiveness has two different approaches. One of these is teaching process paradigm and the second approach is the criterion of effectiveness. The teaching process paradigm is about performance criteria, for example, teachers' behaviour, derived from experts' experience of classroom teaching. On the other hand, the criterion of effectiveness approach on outcome criteria, for example, is student achievement for measuring teacher effectiveness. Similarly, Rosenshine and Furst (1971), state a lack of substantial research on teachers' characteristics relating to higher student achievement demand further research in this field to back up the relevance of the characteristics compiled by them. In another attempt to summarize the general factors that influence classroom learning, they developed the so called process-product model of classroom learning. The model embraces four classes of variables: teacher characteristics (e.g., personality), context variables (e.g, classroom environment), process variables (e.g., learning activities), and product variables (e.g, student achievements) (Rosenshine, 1971)

Though it was not formal, education is not exactly new to a country like Ethiopia that is one of the homes to ancient civilizations. In addition to this, from fourth A.D, when Christianity entered Ethiopia, and also after the emergence of Islamic religion, education has been given by Christianity religion leaders and Islamic educational institutions to the society, respectively. Gradually, from time to time to yet, the campaign to eradicate illiteracy probably is one of the efforts made during these periods, though it couldn't be solved since it was neglected by coming and passing governments.

According to Workneh (2013), Ethiopia's new education and training policy in recent years addressed several issues, including introducing standardized students (MOE, 1994) and as a result of the new education and training policy, there was a gap between what was to be done and what exists, in reality, to achieve the proposed

outcomes of all class students' academic achievement that could be carried out because related issues were strongly identified in terms of many factors, some of which were student activity, class size, school facilities, teacher competence, and parent involvement.

2.3. Empirical Literature Review

2.3.1 Family background

Family background is among factors affecting students' academic achievement. It is also wider and has different variables like family income, education background, family size, and so on in itself. But as far as different literatures have been reviewed, family income and education background of family have raised controversies among literatures. Thus, this paper is going to consider and investigate the effects of these two variables found in the family background.

According to Daniel Basazen (2017), who studied about factors influencing academic achievement of students has identified factors like students related problems (gender of students, students' participation, domestic working hour, studying hour of students), school related factors (tutorial class attendant), parents related factors (home tutorial by teachers, whether parents are divorced, parents' literacy, parents' income, family size) through primary and secondary data and simple random sampling technique. It took place in some schools in Addis Ababa by using 255 sample sizes from students by using tobit regression model as a preferred model to analyse the effects of those factors. Based on this, he has got the following findings: among the sex factors, male students were better in their academic performance than female students, there is no significant difference in academic achievement between students who participate in school clubs and those who do not participate, as the study hour increases, their achievement will also increase, students who scored higher class tests would also score better in primary school leaving examination, the school with well structured environment like small class size have positive effect on students' academic achievement, parents literacy and relationship, as well as family income have direct relationship with students' academic achievement. But large family size has negative impact on students' academic performance than small family size (Basazen, 2017).

The study conducted on family background and its impact on students' academic achievement in 2022 by Raashid Iqbal Bhat at Nowgam Kutam Anantnag Kashmir revealed that parents' involvement in their children's schooling has a significant impact on their accomplishment. It also added that families with higher socio-economic status can afford their kids to well facilitated schools, and also make their children to study at home during after class since they are at better financial position and increase their kids' achievement (Bhat, 2022).

Similarly, Tao Lin and Han Lv (2017), conducted a research on the effects of family income on children's education in Jinan University, Guangzhou, Guangdong, in China, by using OLS and Logistic regression model could identify that family income has a significant influence on children's academic achievement. They also found that in rural areas, the increasing family income does play a greater role in enhancing children's education level than in urban students (Lv, 2017).

On the other hand, an assessment of parental level of income on students' academic performance in public school was taken a place in Kenya in 2023, and assessed by using simple random and stratified random sampling techniques and using questionnaire as well as interview for the stake holders of 498 respondents through descriptive method. This study identified that even though students from poor family couldn't get fulfilled basic needs like shelter, clothes, foods and health care as well as learning materials by their families, they could achieve better than students from advantageous family. The finding of this study suggested that family income and students' academic achievements have weak relationships (Ngangi, 2023).

Similarly, Gemechu Abera Gobena (2018), who studied about the family socio-economic status effect on students' academic achievement at college of education and behavioural sciences, Haramaya University, Eastern Ethiopia, explained that family income didn't bring anything new to students' academic achievement (Gobena, 2018).

According to Gizem Engin (2020), parents' education level has positive impact on students' academic achievement. As the result of this study shows, the students from educated families score better results relative to students from illiterate families. And also, the finding of this study identified that as teachers' motivational level increases, the students' academic achievement also increases (Engin, 2020).

According to Oladele K. and Ogunsola (2014), studies on parental and related factors affecting students' academic achievement in Oyo state, Nigeria, there are factors like role of students, schools, governments, peer groups, and so on which were identified by the researchers by using 100 sample size which were randomly selected, questionnaire and interview of students as data collection technique. This study had summarized its finding by saying that family income, regularity of teachers, study habits of students and family relationships were found to have a direct relationship in determining academic achievement of students whereas family size and peer influence were identified as factors which affect academic attainment of students negatively. On the other hand, it suggested that family education background and income don't have significant relationship with students' academic achievement (Oladele K., 2014).

2.3.2. Teachers' characteristics

Leibniz institute for economic research at the University of Munich conducted a research on the effects of teachers' characteristics on students' science achievement in 2021, and found that the teachers' specialization in the specific field of study has a positive and significant effect on students' academic achievement whereas holding master's degree and teaching experience have no significant effect on students' achievement (Sancassani, 2021). But according to Gizem Engin, as the teachers' motivational level increases, the students' achievement will also increase (Engin, 2020).

In the similar way, Clotfelter (2014) and Ogbonnaya (2009), suggested that factors like teacher's qualification and teacher's experience are consistently associated with student's academic achievement specially years of teaching experience more than six years has positive relationship, but their first or two years of experiences didn't bring any significant change or value-added in learners' performance and also regarding teachers' qualification, it states that all teachers must possess qualified skills to maximize the learner's outcomes approved by the government (Gebreseleassie, 2013).

2.3.3 School environment

School environment is a place where having required materials or facilities like appropriate classroom, infrastructure, healthy discipline, policy and peaceful surroundings.

According to Tariq Mahmood and Muhammad Bashir Gondal (2017), the study conducted in Pakistan on the impact of school environment on the academic achievement of students identified that the school environment has positive effect on students' academic achievement (Tariq Mahmood , 2017)

On the other hand, according to Geoffrey D. Borman (2011) who conducted research on family background and school effects on students' achievement by using both regression multivariate level models found that school characteristics are not strongly related to student achievement (Borman, 2011).

School feeding is defined as a meal provision to school children (WFP, 2018). According to Mulat Abebe Reta (2020), who studied about school feeding program and its contribution to quality of education identified that there is positive and significant relationship between school feeding program and students' academic achievement (Reta, 2020).

Similarly, Shabani N. Maijo (2018), studied about the impact of school feeding program on learners' academic performance in Mlunduzi Ward, Tanzania by using cross-sectional data of students and teachers, and found that the school feeding program has shown significant impact on students' academic performance by increasing students' exam results (Maijo, 2018).

As African research review (2010), conducted research on average distance travelled to school by primary and secondary school students in Nigeria has collected data through questionnaire from the total sample size selected by simple random sampling technique suggested that those students who are at distant from school have less academic achievement relative to the students who are found at less distance to school (Duze, 2010).

According to Abu Bakar (2021), who studied about effect of home environment on students' academic achievement in Soochow University, Suzhou, china has identified that the home environment and students' academic achievement has weak positive relationships (Bakar, 2021)

2.3.4. Students' characteristics

Zhonglu Li and Zeqi Qiu (2018), studied how family background affects children's educational achievement in China, and reached at the result which reveals: the higher the families' socio-economic status, the higher the qualified school the children can join, but the lower the students' learning behaviour. On the other hand, it has found that the families' participation in following up their kids has a positive effect on students' learning behaviour and makes kids achieve better in academy (Qiu, 2018).

In Kenya, the study conducted on the effects of gender on students' academic achievement in public schools in Marakwet East sub-county in 2021, by Charles K and Kisigot, used 278 selected sample size by using stratified and simple random sampling technique, used questionnaire, interview and observation to collect data from respondents, used descriptive and inferential statistics way of analysing data and found that girls' performances are lower relative to boys'. It also identified that this was because of the type of school the students are attending affects the girls' performance the most (Charles K. et al., 2021).

Ibiye Omieibi-Davids (2022), studied about age and academic performance of primary school pupils in River states, Nigeria by using simple random and stratified sampling techniques to choose 498 respondents and used questionnaire to collect data. The finding of this study concluded that the age difference doesn't have significant impact on students' academic achievement (Omieibi-Davids, 2022).

2.4. Conceptual framework of the study

Education is a pillar for the development of one country. This is the evidence kept by different scholars regarding the cause of development of countries with advanced economies. As of those scholars, these countries mostly focused and invested on education, especially on the primary schools where the kids have the highest possibility to be sharpened properly. Conversely, in our country Ethiopia, education has faced a big challenge since different governments who come and pass didn't give serious attention to it other than changing curriculums from time to time. Thus, this proposal aims to see the factors that contributes for these challenges which hinders pupils not achieve good results on their academy as well as opportunities if there is. Mainly this study focuses on public primary schools because on average it is expected that public schools are mostly victims of these challenges than private schools. So, to

conduct this study, some common variables are going to be used to study about students' academic achievement in public primary schools. For instance, family background, teachers' characteristics, students' characteristics, distance from school, gender, age, school feeding and school environment as common independent variables.

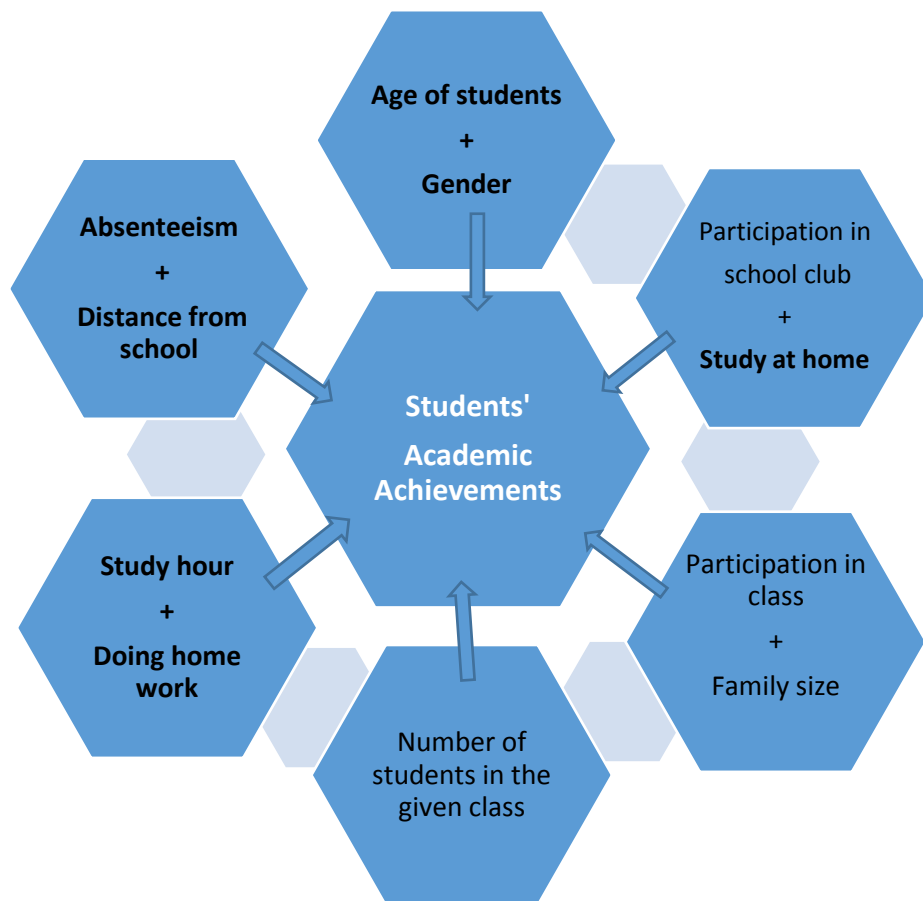


Figure 1: The conceptual framework of students' achievement

CHAPTER THREE: METHODOLOGY

3.1 Description of the study area

This study took place in one of Addis Ababa (the capital of Ethiopia) Sub-cities called Yeka Sub-city. This sub-city is found at the North-Eastern part of Addis Ababa having 2,300 metre altitude above sea level, 9.0373⁰N and 38.835⁰E. And also it contains 14 districts with total population of 488,537 among this 46.2% are males and 53.8% are females, respectively. Similarly, this sub-city has area of 86 square kilometres, and also it contains 31 number of public primary schools, 29,753 number of students (15,944 male and 17,183 female) according to the data from Yeka sub-city education bureau in 2023. According to the planned goal of the study, the study was conducted in four selected public primary schools found in this sub-city.

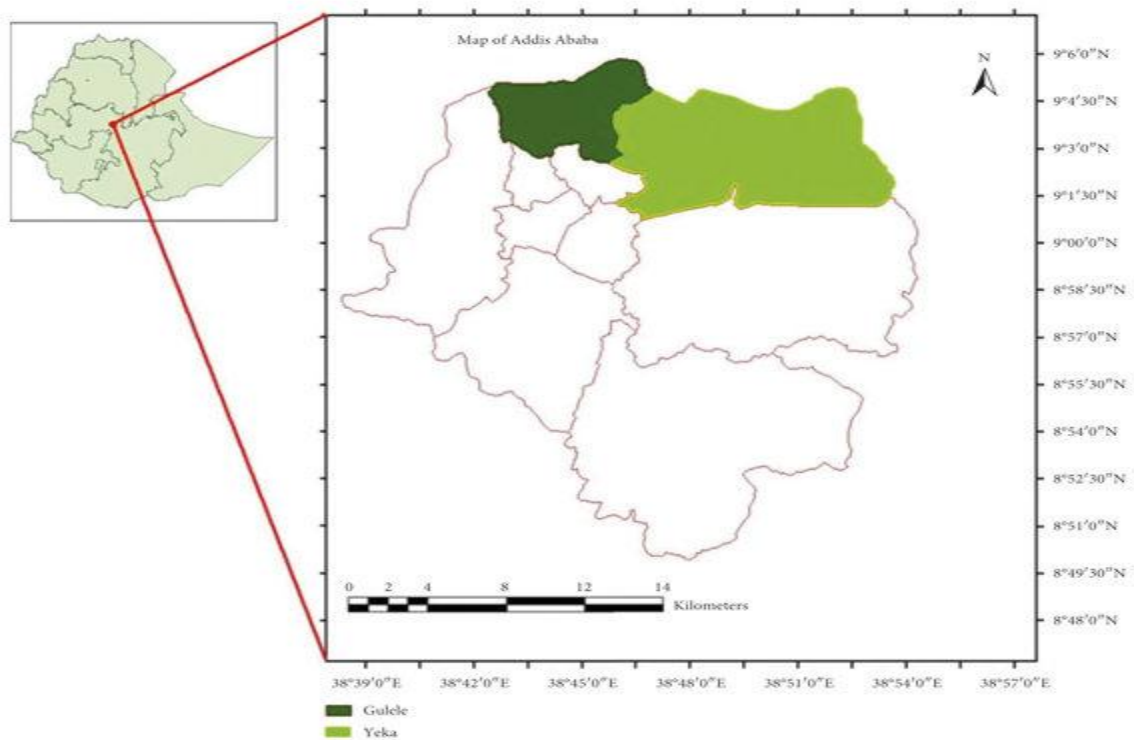


Figure 2: Map of the study area

3.2 Design of the study

The data for this paper was collected from four public primary schools. These four schools were chosen by using random sampling method from 31 public schools by listing their names and drawing it as a lottery method to give them equal chances. In each chosen schools, a survey was conducted at randomly selected students from

grade eight, teachers and principals of the same schools. The total number of participants were determined by using Yemane (1967) sample size calculation formula and then total number of 397 respondents (189 students, 15 teachers, 189 parents and 4 principals) were surveyed from the study area. But the number of surveys across schools varied depending on the total number of grade eight students and also total number of teachers. Thus, probability proportional to population size was applied. After that, information was collected from students, teachers and parents through questionnaire, but interview was conducted for principals. The study used both qualitative and quantitative approaches to gather relevant data. Quantitative method was employed to collect data related to the academic achievement of students whereas qualitative method was used to satisfaction of study objectives.

3.3. Methods of data analysis.

The descriptive statistics were used for general comparison like percentages, standard deviation, mean, minimum and maximum observations of the collected data. The effect of independent groups or explanatory variables were tested by using independent t-test. The relationship between dependent and independent variables were explained by using graphs and also Pearson product moment was used to compute the correlation coefficients

3.4. Data type, data sources and data collection method

3.4.1 Data type and data sources

Primary data was collected from selected samples of Yeka sub-city elementary school students, teachers, principals and parents.

3.4.2 Data collection method

The cross-sectional data was collected from randomly selected samples of students, teachers and families through questionnaire, and the principals were interviewed to get over all sufficient information about their schools from them.

3.5 Sampling technique and sample design

The study was conducted based on a cross-sectional data survey on factors affecting students' academic achievement in public elementary schools in Yeka sub-city. Multi-stage sampling technique was employed to select sample respondents from the whole grade eight students found in this Sub-city. At the first stage of sampling, 31 primary schools found in this sub-city were listed on a piece of paper and rolled equally to

give them equal chances, and then four schools were randomly drawn as lottery method among those schools.

At the second stage, based on the number of grade eight students each four selected schools had, the proportionality was done and the corresponding number of students to be asked were identified.

At the third and final stage, simple random sampling technique was used to distribute questionnaire and collect data from selected sample of target population: students. The same method was applied for the selection of teachers to be asked in this sub-city. But principals were purposively taken from each of these four schools selected and interviewed whereas the family of the students were randomly selected.

In short, there were 61,705 total populations (primary school students, teachers, principals and parents). Among these total population, there were 29,753 students, 2,168 teachers and 31 principals. But for parents, since it was too difficult to know the exact number of family having students at school, it was assumed to contact the family of each selected students and equal number of parents were given equal chance with their corresponding students. Based on the above information, the sample size for this study was calculated using a simplified formula for proportions that was introduced by (Yamane, 1967).

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

where, n is the sample size,

N is total number of population,

e is the desired level of precision with 5%

So, 397 number of sample size was determined from 61,705 total number of population (students, teachers, principals and parents) under consideration. Based on the proportion of their corresponding population, 189 number of students, 15 number of teachers, 189 number of parents were selected according to their share from the total number of sample size and data was collected by using simple random sampling. But principals were purposively considered from each selected schools (i.e. 4 principals totally) since it was very important to contact them to get sufficient information and data about their schools.

The following table 1 shows that total number of 189 students, 15 teachers, 189 parents and 4 principals were asked and gave their responses through questionnaires as well as interview. Specifically, principals were interviewed about the whole environment of their school compound and said that they do have the problem (shortage) of laboratories, problem of large class size, problem assigning teachers regarding their field of study. But on the other hand, each of these principals raised about school feeding as one of the best things which is very crucial to motivate students to achieve more. Similarly, they also explained how tutorial class has been given to different categories of students depending on their performances or the subject the students were in need of. For students, though questionnaire was prepared for them, during randomly selecting respondents, one of the students with sight problems was selected. Since she couldn't read and reply my written questions, she was interviewed and replied that "they (her and her victimised class mate) need special treatment because they cannot see to go up and down the stairs, and also they went to school and back home with the help of their parents, which was tiresome for her and her class mate. And also she added that they will be very happy and become very good achievers if dormitory will be prepared by government and she will get that opportunity. Similarly, she told that she needs psychological counsellors, too."

Table 1: Name of schools where the respondents (students, teachers and principals) were selected and number of respondents that was taken after calculated proportionally.

School name	N. of students		N. of teachers		N. of principals		N. of parents		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
Wondrad	32	26	3	2	1	0	103	86	
Karra Allo	26	25	2	2	1	0			
Kotobe	20	22	1	2	0	1			
Hiwot	21	17	2	1	1	0			
Total	99	90	8	7	3	1	103	86	397

Source: Own survey

3.6. Structured questionnaire

Structured questionnaire was developed by using review of published research articles, discussing with different education officers and also different stakeholders. It was prepared in the way that the respondents (students, parents and teachers) can understand easily (free from ambiguity) and also in the language they can read and

understand and/or speak. Even though all instruments and study items were prepared in English language, they were translated into Amharic and Afaan Oromo to avoid language barriers.

Similarly, an interview with detailed contents were addressed carefully for principals and also specially for respondents who couldn't read and write. After that the information gathered from the respondents were analysed and interpreted.

3.7. Model specification

For the purpose of this study, Ordered Logit Model was selected and used in estimating the effects of independent variables (factors) affecting students' academic achievements because the value which are assigned to each outcome are no longer arbitrary (Woodrigde, 2002).

According to the principle of Jeffrey M. Woodridge (2002), ordinal logistic regression model, also known as the proportional odds model, predicts the probability of an ordinal outcome. Based on this, ordinal logistic regression model was preferred to estimate the effects of those factors like students' characteristics, school environment (number of students in the class), distance from school, gender, age, study hour, class participation and etc since they were expected to affect the students' academic achievements either positively or negatively.

Thus, the Ordered logit is kept as:

$$\begin{aligned} \text{Logit}[\Pr(Y_i \leq j)] &= \ln \left(\frac{\Pr(Y_i \leq j)}{\Pr(Y_i > j)} \right) = \ln \left(\frac{\Pr(Y_i \leq j)}{[1 - \Pr(Y_i \leq j)]} \right) \\ &= \alpha_j - \sum_{n=1}^k \beta_n X_n \quad j=1,2,3,\dots,(j-1) \text{ or (Excellent, very good, satisfactory, fair or poor)} \end{aligned}$$

where,

. $\Pr(Y_i \leq j)$ represents the cumulative probability of the dependent variable (the student's academic achievements), being in category (j) or lower (i.e from poor to excellent semester average marks).

. α_j is the intercept term specific to category j,

. $\beta_1, \beta_2, \beta_3, \dots, \beta_n$ are the regression coefficients associated with each predictor variable ($X_1, X_2, X_3, \dots, X_n$)

. ($X_1, X_2, X_3, \dots, X_n$) are the predictor variables used in the analysis

3.8. Definition of variables and working hypothesis

The definition of working hypothesis of dependent and independent variables were explained (described) in the following paragraphs.

3.8.1. The definition of dependent variable

Students' academic achievement refers to the result (performance) that the students (learners) achieve in academics.

For the purpose of this study, the standardized intervals that MoE has determined and which is written on students' report cards (average marks) as poor (less than 50), fair (50-59), satisfactory (60-79), very good (80-89) and excellent (90-100) were used (ordered type of dependent variables) to assess the effects of independent variables (factors) which affect the results(average semester marks) of grade 8 students' to be less than 50 (poor), fair (50-59), good (60-79), very good (80-89) and excellent (90-100), respectively.

3.8.2. Independent variables and their hypothesis effects

The selected explanatory variables and their respective expected hypothesis effects were kept as follows.

- a. Age of students: age of the students is a continuous variable which is measured in number of years. A positive relationship is expected between age of students and students' academic achievement (Omieibi-Davids, 2022).
- b. Gender: is the sex of respondents which is a discrete variable to be 1 for male and 0 for female (Debalke, 2018).
- c. Studying at home (Homestudy): is a dummy variable which is the students' role (attempt) towards education that can be explained if they study after school or not. It is expected to have a positive relationship with students' academic achievement (Basazen, 2017).
- d. Students' study hour (Studyhour): is a continuous variable that is measured by hours that students spend studying their lessons per day. It is expected to have a positive relationship with students' average score (Basazen, 2017).
- e. Home work: is a dummy variable which is categorized as 'yes' or 'no' if the students do their home works or not, respectively. A positive relationship is expected if students study and their academic achievements (Borman, 2011).

- f. Class participation (Classpart): is a categorical variable which can be estimated by giving 1 for students who participate in the class and 0 for who do not (Husaini, 2023).
- g. Absenteeism (Absent): number of days of absence from school per semester will be mentioned and it is expected to have negative relationship with students' semester scores (Qiu, 2018).
- h. Family size (Famsize): is a continuous variable that represents the number of individuals in the households. It is expected to have negative relationship with students' academic achievements (Bhat, 2022).
- i. Distance from school (Schooldist): is a continuous variable measured in kilometre. A negative correlation is expected between distance from school and students' academic achievement (Duze, 2010).
- j. School club participation (Schoolclub): the clubs or extra-curricular activities like mini media, sports, science club, red cross and others that students participate in and it is expected to have negative relationship with the achievement of students (Basazen, 2017).
- k. Number of students in the class (N-students): is a continuous variable that tells about the number of students in a given class and expected to have inverse relationship with the marks (results) of students (Tariq Mahmood , 2017).

Table 2: Description of expected independent variables to affect dependent variable

Independent variables	Variable nature	Expected effect (sign)
Age of students	Continuous	+
Gender of students	Dummy	+
Home study	Dummy	+
Students' absenteeism	Continuous	-
Students' study hour	Continuous	+
Home work	Dummy	+
Class participation	Dummy	+
Family size	Continuous	-
Number of students in the class	Continuous	-
Distance from school	Continuous	-
School club participation	Dummy	-

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Descriptive Analysis

The questionnaires as well as interview were used during own survey and they were distributed to the randomly selected respondents and also all of them were successfully completed and returned back.

4.1.1 Students related factors and their academic achievements.

4.1.1.1 Age and sex of students

The result of own survey from table 3 below revealed that the majority of grade 8 students, 128 (67.8%), were above 14 years old whereas some of them, 61 (32.3%) were 14 years old, but there were no under the age of 14-year-old student. This indicates that most of the students didn't start grade one or didn't smoothly continue their education at the age of starting primary schools.

Regarding the gender of grade 8 students who were respondents, 99(52.38%) were male students and 90(47.62%) were female students, respectively.

Table 3: Age and gender of respondent students

Variables		N	Percent
Age of students	Less than 14 years	0	0
	14 years	61	32.2
	More than 14 years	128	67.8
	Total	189	100
Sex	Male	99	52.38
	Female	90	47.62
	Total	189	100

Source: Own survey

4.1.1.2. Age of students and their academic achievements based on average semester score.

From the table 4 below, according to MoE of Ethiopia, among students of age 14, 4.9% scored below 50% (poor), 11.5% scored between 50-59 (fair), 60.6% scored between 60-79 (good), 16.4% scored between 80-89 (very good achievement) and 6.6% scored 90-100 (excellent marks), respectively. Similarly, students aged above 14 years old scored as follows: 3.1% were poor (below 50), 14.8% were fair marks (50-59), 71.9% were good marks, 10.2% were very good marks (80-89) and none of them scored excellent marks (90-100), respectively.

As the result of own survey from table below showed that students of age 14 were who scored very good marks (greater than or equal to 80 average marks) than other age groups in that grade level. For this reason, the increment of age (addition of year) didn't help the students to be very good academic achiever.

Table 4: shows the relationship between age of students and their academic achievements.

Age	Freq.	Semester average score									
		<50	%	50-59	%	60-79	%	80-89	%	90-100	%
14	61	3	4.9	7	11.5	37	60.6	10	16.4	4	6.6
>14	128	4	3.1	19	14.8	92	71.9	13	10.2	0	0
Total	189	7	3.7	26	13.8	129	68.3	23	12.2	4	2.1

Source: Own survey

4.1.2 Gender of students and their average scores

As it can be observed from the table 5 below, 3(3%) male and 4(4.4%) female students, respectively couldn't score pass mark (50% average mark) at previous semester during the study time. Similarly, 15.2% male and 12.3 female students score 50-59 semester average marks, 66.7% males and 68.9% females score average marks between 60-79, 11.1% of both males and females score average marks between 80-89 and also 4% male and 3.3% female students score average marks between 90-100, respectively. In general, the percent of passed and failed male and female students were nearly similar (i.e. 3% males and 4.4% females failed, and 97% male and 95.6% female students scored above pass marks). This indicates that the effect of gender difference on students' average scores among male and female students couldn't show significant difference.

Table 5. The gender difference and semester scores.

Variable		Semester score of students										
		<50	%	50-59	%	60-79	%	80-89	%	90-100	%	Total
Gender	Male	3	3	15	15.2	66	66.7	11	11.1	4	4	99(100%)
	Female	4	4.4	11	12.3	62	68.9	10	11.1	3	3.3	90(100%)
	Total	7		26		132		21		4		189

Source: Own survey

4.1.3. The relationship between students' study hour and academic achievements

From the following table 6, it can be understood that the relationship between students' study hour (the time that the students spent studying per day) and their academic achievements were described as follows. Among the students who have been studying one hour and three hours per day, none of the scored less than 50% average marks whereas 4.3% of those who have been studying per day scored less than 50% average semester scores. From those who have been studied 1hr, 2hrs and 3 hrs per day, 22.6%, 10% and 12%, respectively scored between 50-59 averages, 69.8%, 65.7% and 60% scored between 60-79%, 7.6%, 10% and 28% scored between 80-89%, scored respectively. But only 10% of those who have been studying 2hrs scored 90-100% whereas none of those who studied 1hr and 3hrs per day couldn't score 90-100% average marks.

Table 6: Students' study hour and their average scores

Variable12.2		Students' semester scores										
		<50	%	50-59	%	60-79	%	80-89	%	90-100	%	Total
Study hour per day	1hr	0	0	12	22.6	37	69.8	4	7.6	0	0	53(100%)
	2hrs	3	4.3	7	10	45	65.7	7	10	7	10	69(100%)
	3hrs	0	0	3	12	15	60	7	28	0	0	25(100%)
	Total	3		22		97		18		7		147

Source: Own survey

4.1.4. Students' participation in school clubs and their academic achievements

From the table 7 below, the result of descriptive statistics from own survey revealed that none of the non-participant students scored less than 50 marks whereas 7(6%) of participant students cored less than 50 semester average marks. Similarly, among non-participant students, 16% scored fair, 64.9% scored satisfactory, 18.9% scored very good and no one scored excellent average marks per semester, respectively. On the other hand, among school club participant students, 12% scored fair, 70% scored satisfactory, 6% scored very good and 6% scored excellent average marks per semester, respectively.

Table 7: Shows participant and non-participant students in school clubs and their corresponding average scores (achievements).

Variable		Students' semester scores										
		<50	%	50 - 59	%	60-79	%	80 - 89	%	90-100	%	Total
School club participation	Non-participants	0	0	12	16	48	64.9	14	18.9	0	0	74(100%)
	Participants	7	6	14	12	80	70	7	6	7	6	115(100%)
	Total	7		26		128		21		7		189

Source: Own survey

4.1.5. Students' Absenteeism and their average scores

From the table 8 below, among 56 students who were absent only for one day from school per the whole semester: no one scored less than 50 average mark (poor), 14.3% scored fair marks, 73.2% scored satisfactory marks, 7.1% scored very good marks and 5.4% scored excellent marks, respectively. But those students who were absent from school for 2,3 and more than 3 days per semester, 4.5%, 11% and 0% scored poor marks, 6,8%, 4% and 37% scored fair marks, and 74.6%, 80.6% and 42% scored very good marks, respectively. In the similar way, among students who were absent for 2 days per semester, 6% scored excellent average marks whereas none of the students who were absent for 3 and more than 3 days per semester scored excellent average marks.

Table 8: Students' absenteeism and semester scores

Variable		Students' semester scores										
		<50	%	50-59	%	60-79	%	80-89	%	90-100	%	Total
Days of absence	1	0	0	8	14.3	41	73.2	4	7.1	3	5.4	56(100%)
	2	3	4.5	4	6	50	74.6	6	8.9	4	6	67(100%)
	3	4	11	3	8.4	29	80.6	0	0	0	0	36(100%)
	>3	0	0	7	37	8	42	4	21	0	0	19(100%)
	Total	7		22		128		14		7		178

Source: Own survey

4.2 Distance from school and students' semester score

The mean of home distance from school is 2.51 (i.e. maximum distance was 5 km and minimum distance was 1 km).

Table 9: The response of students about school distance from their homes

Variable	N	Min	Max	Mean	Std. Dev.
Distance from school (in KM)	189	1	5	2.51	1.15

Source: Own survey

4.3 Teachers related factors

4.3.1 Teachers' qualification and students' academic achievements

The teachers' qualification was described on the table 10 below that 26.7% were diploma holders, most of them (66,7%) were first degree holders and 6.6% were master's degree holders, respectively. But there were no teachers with certificate among those who were randomly selected teachers who were teaching grade eight students. Among these respondents, 62% of them thought that having degree and above has huge impact in increasing students' results because as far as someone upgrades him/herself, the potential to critically thinking of teachers increases and in turn helps students encouraging students to be innovator as well as problem solvers. But the rest (38%) teachers said that having more qualification (degree and above) by itself is not the only means to make students better achievers, but the kindness someone has matters more. In addition to this, they argued that having certificate or diploma only, there are renown teachers who are more talented in teaching and also

motivating students to be best achievers they observed during class observations and supervisions.

Table 10: Teachers' responses regarding their qualification

Variable	N	Percent
Teachers' qualification	Certificate	0
	Diploma	4
	Degree	10
	Masters and above	1
	Total	15
		0
		26.7
		66.7
		6.6
		100

Source: Own survey

4.3.2 Teachers' experience and students' academic achievements

From the following table, the teaching experiences of respondent teachers in the study area ranged from 3 years up to 21 years. Whereas the average mean of teachers' experiences were 10 and half years. And those teachers thought that having more experience in teaching itself can give them to be far sighted person to understand things, to tolerate students, to teach kids from simple to complex, to use best teaching methodologies like demonstration, group discussion and so on.

Table 11: Teachers' response about their experience.

Variable	N	Min	Max	Mean	Std. Dev.
Teachers' experience (in years)	15	3	21	10.67	5.57

Source: Own survey

4.4. Descriptive analysis of principals

Most of the principals (75%) were master degree holders whereas 25 were first degree holders, respectively.

Table 12: Principals' responses regarding their qualification

Variable	N	Percent
Principals' qualification	Degree	1
	Masters and above	3
	Total	4
		25
		75
		100

Source: Own survey

4.4.1 Principals' responses about school facilities and teaching activities

According to the response of the principals from different schools who were randomly selected, their schools were ranked as excellent, very good, good and poor based on the supervision that supervisors from their districts as well as sub-city gave them.

Based on this, when it was kept in percent, 25% of the principals said that their schools were ranked as excellent schools, 50% of them replied that their schools were very good schools and 25% responded that their schools were categorized as good schools.

Regarding the school facilities, 25% of the principals responded that there were shortage of school field where students could play during their recess as well as lunch times whereas 75% of them said that their school had enough school fields. Similarly, 25% of the principals said that there were shortage of library whereas 75% of them had library at their schools. On the other hand, 100% of the principals responded that their schools were facing the problem of large class size which made the class not convenient for teachers to teach properly. On the contrary, 100% of the respondents replied that there were no shortage of teachers at their schools though there were the problems of assigning teachers considering the field of study they were qualified with. Regarding laboratory, 75% of the principals said that there were no effective laboratories where as 25% of them said that their schools had effective laboratory.

4.4.2 School feeding and students' academic achievements

According to the principals' responses, all of the schools randomly chosen were feeding students at school twice a day during school days. They also added that because of this school feeding, so many noticeable changes could occur. For example, the students' results have shown improvement, punctuality of students has increased, the participation of students in the class has increased, the drop out has minimised and also absenteeism was minimized. In addition to this, they noted that due to school feeding, some mothers could get job opportunity.

Table 13: Principals' responses on school feeding and tutorial classes.

Response	School feeding	Percent	Tutorial class	Percent
Yes	4	100	4	100
No	0	0	0	0
Total	4	100	4	100

Source: Own survey

4.5 Family education background

From the table 14 below, the family who do not have education were 8.99%, who learnt primary education were 37.57%, who have got secondary education were 32.8 whereas who learned college and above were 20.64%, respectively.

Table14: The family education level

Variable	Education level	N	Percent
Family education level	Primary	71	37.57
	Secondary	62	32.8
	College and above	39	20.64
	No education	17	8.99
	Total	189	100

4.6. Marital status and occupation of respondents (family)

Most of the respondents, (73.5%) were married whereas 13.8% were divorced, 6.9% were single and 5.8% were widowed respectively. Regarding the occupation of the respondents, most of them (72.5%) were self-employed, 17.5% were government employees and the rest 10% had different occupations.

Table 15 Shows marital status and occupation of respondents (family).

Variables		N	Percent
Marital status	Single	13	6.9
	Married	139	73.5
	Widowed	11	5.8
	Divorced	26	13.8
Occupation	Government employee	33	17.5
	Self-employed	137	72.5
	Others	19	10

Source: Own survey

4.7 Family income related effects

As the result of the survey showed on the following table 16 that the minimum income of the family who have kids at grade eight public primary schools were 1700 ETB whereas the maximum income was 11500 ETB and also having the mean of 4498.94. According to the response collected from the parents, most of them (86% of the respondents) couldn't support their students due to low income that did not afford them other than covering their food, house rents, clothes and others. Whereas the rest 14% of respondents could not support their children since they don't have enough

time due that their working hours were too long and hinders them from giving time for their children, and also they do have other reasons. For this reason, almost all of the parents raised that they were over excited with the school feeding that the government is supplying for their kids. Graphs were included to show the relationship between dependent and independent variables (Appendix 4).

Table16: Monthly income of the respondents

Variable	N	Min	Max	Mean	Std.Dev
Family income per month (in ETB)	189	1700	11500	4498.94	1656.87

Source: Own survey

4.8. Family size related factors

The mean of family size of the respondents was 4.93 since the maximum and minimum family size were 9 and 2, respectively.

Table 17: Descriptive statistics of family size

Variable	N	Min	Max	Mean	Std.Dev
Number of household family size	189	2	9	5	1.624

Source: Own survey

4.9 Econometric Analysis

4.9.1 Ordinal Logistic Regression Results

The relationship between the explanatory variables and grade eight students' semester average achievements in Yeka Sub-city public primary schools which was estimated by ordinal logistic regression model (table 15 below) are explained as follows. Each significant variable among the total of 11 explanatory variables was interpreted based on its corresponding coefficient. These significant variables are: study hour at 5%, school distance at 1%, number of students in the given class at 5% and doing homework at 1% significance levels, respectively.

For a unit increase in study hour, it is expected that there will be an increase in the average semester score of students by 0.564 in to the next higher category of average score at 5% level of significance given that all other variables kept constant. In other case, for every additional hour spent studying, the log odds of being in a higher score

category increases by 0.564. This relationship coincides with the expected result and also similar with the findings of other literatures (Basazen, 2017).

The result of the model also shows that at 1% level of significance, for each unit increase in the home distance, the log odds of being in a higher score category decreases by 0.961 keeping other factors constant. This result is also similar with the expected result and hence matches with the finding of other research findings (Duze, 2010).

Regarding the number of students in the given class, the result from the model at 5% significance level expresses that for each additional number of student to the given class, the log odds of being in a higher score category decreases by 0.069 *ceteris paribus*. This effect is what was expected and also it is similar with the findings of some literatures (Tariq Mahmood , 2017)

Eventually, the model shows that for a unit increase in performing homework, the log odds of being in the higher category of the average semester score decreases by 2.959 at a significance level of 1% keeping other variables constant. This relationship is the converse of the expected result and also the opposite of some literatures which reasoned it out as due to the nature of home works and also the burden of home works given by teachers (Borman, 2011).

But age of students, gender of students, number of days of absenteeism from school, family size, Students' participation in school clubs, students' participation in class and studying at home after class were found to be not significantly affect the students' academic achievements according to the result of the model in this study.

For the validity of the model, Pearson product moment was used to compute correlation coefficient. The Breusch-Pagan test for heteroskedasticity, variance inflation factors (VIF) for multicollinearity test and omitted variable test were employed for diagnostic tests (Appendix 2). The result of the ordinary logistic regression model and goodness-of-fit of explanatory variables were tested and kept in Appendix 3.

Table 15. Ordinal Logistic Regression Results on Students' academic achievement

		Estimate	Std. Error	Wald	Df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	[Scores = 1]	-10.816	3.311	10.672	1	.001	-17.306	-4.327
	[Scores = 2]	-8.826	3.271	7.280	1	.007	-15.237	-2.415
	[Scores = 3]	-4.508	3.180	2.009	1	.156	-10.742	1.725
	[Scores = 4]	-2.824	3.198	.780	1	.377	-9.091	3.443
Location	Age	-.107	.175	.376	1	.540	-.449	.235
	Studyhour	.564	.277	4.164	1	.041**	.022	1.107
	Abs_days	-.227	.166	1.866	1	.172	-.552	.099
	Homedist	-.961	.173	30.773	1	.000***	-1.301	-.622
	Famsize	.043	.111	.147	1	.701	-.175	.260
	N_students	-.069	.035	3.877	1	.049**	-.137	.000
	[Gender=0]	.259	.347	.558	1	.455	-.421	.939
	[Gender=1]	0 ^a	.	.	0	.	.	.
	[Classpart=0]	.133	1.272	.011	1	.917	-2.361	2.626
	[Classpart=1]	0 ^a	.	.	0	.	.	.
	[Homestudy=0]	-.162	.494	.107	1	.743	-1.131	.807
	[Homestudy=1]	0 ^a	.	.	0	.	.	.
	[Schoolclub=0]	.200	.349	.328	1	.567	-.485	.885
	[Schoolclub=1]	0 ^a	.	.	0	.	.	.
	[Homework=0]	-2.959	1.089	7.377	1	.007***	-5.094	-.824
	[Homework=1]	0 ^a	.	.	0	.	.	.

Link function: Logit.

NB: ** and * represent the level of significance at one and five per cents, respectively.

From the open ended questions, there were some factors that respondents raised during interview as well as when they were asked which affect students' academic achievements, but not significantly explained by the model. For instance, family income was one of the factors that parents considered as a big factor that hinders students not to score better results. And also teachers' experiences and qualifications were other factors those would have been expected as some detrimental factors in hindering students not to achieve very good and above (80 and above) average marks. Because as they have raised that the more experienced the teacher is, the more he/she can understand the problem of students and be part of problem solving. The same was

true for that of teachers' qualification in that most of them replied that the problem of assigning teachers to teach without their field of study was one thing which upset teachers in primary schools and might be that affects students' achievements.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Education is the way by which human beings transmit their experiences, new findings, and values accumulated over years, in their struggle for survival and development, through generation. And also it is the instrument which empowers human beings to get development, to provide democracy, justice, and gender equality, social and economic developments.

Regarding the school facilities which affects students' achievements, 25% of the principals responded that there were shortage of school field where students could play during their recess as well as lunch times whereas 75% of them said that their school had enough school fields. Similarly, 25% of the principals said that there were shortage of library whereas 75% of them had library at their schools. On the other hand, 100% of the principals responded that their schools were facing the problem of large class size which made the class not convenient for teachers to teach properly. On the contrary, 100% of the respondents replied that there were no shortage of teachers at their schools though there were the problems of assigning teachers considering the field of study they were qualified with. Regarding laboratory, 75% of the principals said that there were no effective laboratories where as 25% of them said that their schools had effective laboratory.

Each significant variable among the total of 11 explanatory variables was interpreted based on its corresponding coefficient. These significant variables are: study hour at 5%, school distance at 1%, number of students in the given class at 5% and doing homework at 1% significance levels, respectively. Thus, study hour that students spend studying per day, school distance, number of students in the given class and doing homework on time were significant factors which affect the students' achievements.

5.3. Recommendation

Based on the findings of this study, suggestions about the practical implication and further investigation were forwarded by the researcher to the concerned bodies: School directors, supervisors, and teachers should have the potential to strengthen the students' achievement to 80 and above average marks by motivating and facilitating appropriate learning materials in and outside the class to maintain the consistent achievement of students in collaborating with parents.

Teachers are crucial persons on the achievement of students, and thus, they should be encouraged to implement suitable methodologies and continuous assessments in regular classes and adjust special classes according to their needs.

The school needs to solve or even tries to minimize the problem of large class sizes to make learning environment conducive.

As far as doing homework is mandatory to students since it helps them practice activities, it will also be burden if all subjects will be given on the same day to students. so, it is recommended that to give homeworks by schedule for subjects.

School feeding is one of the best action that government has taken to improve quality of education, in turn to improve the students' achievements. But also it has to be diversified to all schools which are in need.

It is also important to conduct research in the future on whether family income and occupation affect students' achievement to appreciate the number of students who can score 80 and above average marks.

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APPENDICES

APPENDIX 1: QUESTIONNAIRES AND INTERVIEW FOR RESPONDENTS

ADDIS ABABA UNIVERSITY

DEPARTMENT OF DEVELOPMENT ECONOMICS

A SURVEY QUESTIONNAIRE FOR ESTIMATING STUDENTS' ACADEMIC ACHIEVEMENT IN PUBLIC PRIMARY SCHOOLS.

This survey will be conducted only for academic purpose and will be kept confidential. Hence, I request you to participate in the discussion voluntarily and truly. The questionnaire is designed to obtain information on factors affecting students' academic achievement in public primary schools in Yeka sub-city, Addis Ababa, Ethiopia.

Thank you for your cooperation!

Section1: A survey questions to students regarding students' academic achievement in Yeka public primary schools.

1. Age _____
2. Sex: A. Male B. Female
3. Do you participate in the class? A. Yes B. No
4. If your answer on question 3 is yes, how often do you participate in the class?
A. Rarely B. Sometimes C. Always
5. Do you study at home after school? A. Yes b. No
6. If your answer on number 5 is No, why?
 - a. I don't have family support
 - b. I understand everything in the class
 - c. I help my parents the whole time after school
 - d. I don't like studying at home
 - e. The situation at home is inconvenient to study for me.
 - f. Other, specify _____
7. If your answer on number 16 is Yes, how long do you study?
 - a. An hour b. 2 hours c. 3hours d. More than 4 hours
8. Is your class average result for the previous semester is above 50?
 - a. Yes b. No

9. If your answer on question number 8 is no, why do you think is so?
- A. Because I have no learning materials (books, pens, exercise books)
 - B. Because I don't have family support
 - C. Because I don't study at home at all
 - D. Because I don't listen to teachers in the class
 - E. Others, specify _____
10. If your answer on question 10 is yes, what is the range of your average?
- a. 50-59 b. 60-79 c. 80-89 d. 90-100
11. Were you ever absent from school in a semester? A. Yes B. No
12. If your answer on number 11 is Yes, how many days were you absent from school in a semester? A.1 B. 2 C.3 D. other _____
13. How far is your home from school?
- a. Less than 1 km c. About 1-2 km away
 - b. About 3-4 km away d. 5 or more km away
14. Have you ever gone to school lately? a. Yes b. No
15. If number 14 is yes, what is its effect?
- a. It was difficult to understand the missed course
 - b. It was difficult to do home works after that missed class
 - c. It lessens my results
 - d. Others _____
16. Do you participate in school clubs? a. Yes b. No
17. If your answer on 17 is yes, how do you relate it to your time?
- a. It doesn't affect my study time and my result
 - b. It affects my study time and my result
 - c. It helps me to score better results
 - d. Other, specify _____
18. Do you do your home works at home? a. Yes b. No
19. If your answer on number 18 is Yes, how often do you do it?
- a. rarely b. sometimes c. most of the times d. always
20. Do your parents help you to do your homework at home? a. Yes b. No
21. If your answer on number 20 is NO, how do you do it?
- a. I do it on my own
 - b. I copy it from classmates
 - c. I don't do it most of the time

- d. Other, specify _____
22. Number of students in your section _____.

Section 2. School related questions for principals

1. How is your school environment for teaching and learning process?
a. Excellent b. very good c. good d. poor
2. Is there shortage of facilities that are necessary for teaching and learning processes in your school? a. yes b. no
3. If yes, what is/are this/these shortage(s)?
a. Shortage of teaching materials like books, boards, seats
b. Shortage of school field e. Shortage of teachers
c. c. Shortage of library f. Shortage of laboratory
d. The problem of large class size
g. Other, specify _____
4. Is there school feeding at your school? a. Yes b. No
5. If question 3 is Yes, how often do you give it to students?
a. Once a day b. Twice a day c. Thrice a day
6. If school feeding is there, is there any change you observed on students after starting school feeding? a. Yes b. No
7. If your answer on number 5 is Yes, what type of change do you observe?
a. Their results have shown improvement
b. Punctuality of students has increased
c. The participation of students in the class has increased
d. The drop out has minimised
e. Absenteeism has minimized
f. Other, specify _____
8. Does your school give tutorial class for students? A. yes B. no
9. If your answer is yes for no7, to which category of students?
a. To slow learners c. To medium students
b. To active learners d. To all students

Section 3. Teachers related questions

1. What is your qualification?
a. Certificate b. Diploma c. Degree d. Other, specify _____
2. How long have you been teaching? Please specify it _____

3. Do you think that teachers' experience has effect on students' academic achievement?
 - a. Yes b. No
4. If your answer on number 3 is Yes, why is it so? Because:
 - a. As teacher's experience increases, it helps the students to understand the subject easily.
 - b. More experienced teachers would get more positive approach with students.
 - c. Other, specify _____
5. How would you rate the overall academic achievement of your students?
 - a. Excellent b. very good c. good d. fair e. poor
6. If number 5 is 'e', what is the reason?
 - a. Students are not giving attention to learn in the class
 - b. Families are not following up their students
 - c. Lack of school facilities
 - d. Specify, others _____
7. Do you notice difference in academic achievement among students due to gender?
 - a. Yes b. No
8. If your answer on 6 is yes, which gender category is more achiever?
 - a. male b. female
9. What teaching methods do you find most effective in promoting academic success among your students?
 - a. Lecture b. Group work
 - c. Hands- on activities
 - d. Other, specify _____
10. How do you describe the overall learning environment in your school?
 - a. Supportive b. challenging c. distracting
11. To what extent do you believe students' home environment affects their academic achievement?
 - a. significantly b. moderately c. slightly d. not at all
12. In your experience, what are some specific challenges that students in public schools face that may affect their academic achievement?

13. What do you think are the effective strategies or interventions in supporting students who are struggling academically in public primary schools?

Section 4. Family related questions.

1. How is your marital status?
a. Single b. married c. divorced d. widow/widower
2. Number of household family size _____
3. What is the level of your education?
A. Illiterate B. elementary C. secondary D. tertiary (College/University)
4. Do you think that your level of education has effect on the academic achievement of your children?
A. Yes B. No
5. If your answer on number 4 is yes, what is its effect?
A. It helps students not to cheat during exams.
B. It motivates them to score good results.
C. It helps them to be confident
D. Other, specify _____
6. What is your occupation?
a. Government employee
b. Self-employed
c. Other, specify _____
7. How much do you earn per month (in ETB)?
a. Less than 5000
b. 5000-1000

- c. More than 10,000
8. How often do you support your child/children?
- a. I can't support
 - b. Some time
 - c. Always
9. Do you follow up your children at school? a. Yes b. No
10. If your answer on 9 is No, why? Because:
- a. I don't have time
 - b. School is at distant from home
 - c. Others, specify _____

APPENDIX 2: The result of Multicollinearity Test

Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	Age of students	.814	1.229
	Gender of students	.763	1.311
	Do you participate in class?	.853	1.172
	How long do you study per day?	.765	1.307
	How many days were you absent from school in a semester?	.773	1.294
	Do you participate in school club?	.759	1.317
	Number of household family size	.793	1.262
	What is the number of students in your section?	.926	1.080
	How far is your home from school?	.911	1.098

a. Dependent Variable: Students' semester scores

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	(Constant)	Age of students	Gender of students	Do you participate in class?	How long do you study per day?	Variance Proportions					
									How many days were you absent from school in a semester?	Do you participate in school club?	Number of household family size	What is the number of students in your section?	How far is your home from school?	
1	1	8.650	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.482	4.236	.00	.00	.53	.00	.01	.00	.07	.00	.00	.00	.02
	3	.340	5.047	.00	.00	.12	.00	.01	.06	.53	.00	.00	.00	.01
	4	.179	6.950	.00	.00	.02	.00	.00	.25	.08	.07	.00	.00	.28
	5	.163	7.278	.00	.00	.00	.00	.18	.19	.02	.02	.00	.00	.46
	6	.103	9.160	.00	.00	.25	.00	.35	.34	.18	.09	.00	.00	.17
	7	.046	13.738	.00	.05	.00	.10	.41	.00	.01	.55	.01	.00	.04
	8	.022	19.860	.00	.32	.01	.64	.01	.00	.08	.00	.00	.00	.01
	9	.012	27.181	.01	.29	.00	.19	.00	.12	.02	.18	.54	.02	.02
	10	.003	50.656	.98	.33	.07	.07	.01	.04	.00	.08	.45	.00	.00

a. Dependent Variable: Students' semester scores

APPENDIX 3: Parameter estimates and goodness-of-fit of ordinary logistic regression model

Case Processing Summary

		N	Marginal Percentage
Students' semester scores	<50	7	3.8%
	50-59	26	14.1%
	60-79	124	67.0%
	80-89	21	11.4%
	90-100	7	3.8%
Gender of students	Male	99	53.5%
	Female	86	46.5%
Do you participate in class?	No	4	2.2%
	Yes	181	97.8%
Do you study at home?	No	38	20.5%
	Yes	147	79.5%
Do you do your homeworks on time?	No	4	2.2%
	Yes	181	97.8%
Do you participate in school club?	No	71	38.4%
	Yes	114	61.6%
Valid		185	100.0%
Missing		4	
Total		189	

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	384.325			
Final	325.134	59.192	11	.000

Link function: Logit.

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	597.911	721	1.000
Deviance	325.134	721	1.000

Link function: Logit.

Pseudo R-Square

Cox and Snell	.274
Nagelkerke	.313
McFadden	.154

Link function: Logit.

Parameter Estimates

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	[Scores = 1]	-10.816	3.311	10.672	1	.001	-17.306	-4.327
	[Scores = 2]	-8.826	3.271	7.280	1	.007	-15.237	-2.415
	[Scores = 3]	-4.508	3.180	2.009	1	.156	-10.742	1.725
	[Scores = 4]	-2.824	3.198	.780	1	.377	-9.091	3.443
Location	Age	-.107	.175	.376	1	.540	-.449	.235
	Studyhr	.564	.277	4.164	1	.041	.022	1.107
	Abs_days	-.227	.166	1.866	1	.172	-.552	.099
	Homedist	-.961	.173	30.773	1	.000	-1.301	-.622
	N_students	-.069	.035	3.877	1	.049	-.137	.000
	Famsize	.043	.111	.147	1	.701	-.175	.260
	[Gender=0]	.259	.347	.558	1	.455	-.421	.939
	[Gender=1]	0 ^a	.	.	0	.	.	.
	[Cpart=0]	.133	1.272	.011	1	.917	-2.361	2.626
	[Cpart=1]	0 ^a	.	.	0	.	.	.
	[Hstud=0]	-.162	.494	.107	1	.743	-1.131	.807
	[Hstud=1]	0 ^a	.	.	0	.	.	.
	[Homewrk=0]	-2.959	1.089	7.377	1	.007	-5.094	-.824
	[Homewrk=1]	0 ^a	.	.	0	.	.	.
	[Sclub=0]	.200	.349	.328	1	.567	-.485	.885
	[Sclub=1]	0 ^a	.	.	0	.	.	.

Link function: Logit.

a. This parameter is set to zero because it is redundant.

APPENDIX 4: Family income per month

Statistics

How much do you earn per month

(in ETB)?

N	Valid	189
	Missing	0
Mean		4498.94
Std. Deviation		1656.868
Minimum		1700
Maximum		11500

How much do you earn per month (in ETB)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1700	1	.5	.5	.5
	1800	1	.5	.5	1.1
	1900	1	.5	.5	1.6
	2000	3	1.6	1.6	3.2
	2100	2	1.1	1.1	4.2
	2200	1	.5	.5	4.8
	2300	3	1.6	1.6	6.3
	2400	4	2.1	2.1	8.5
	2500	3	1.6	1.6	10.1
	2600	4	2.1	2.1	12.2
	2700	4	2.1	2.1	14.3
	2800	5	2.6	2.6	16.9
	2900	2	1.1	1.1	18.0
	3000	3	1.6	1.6	19.6
	3100	2	1.1	1.1	20.6
	3200	4	2.1	2.1	22.8
	3300	4	2.1	2.1	24.9
	3400	4	2.1	2.1	27.0
	3500	4	2.1	2.1	29.1
	3600	5	2.6	2.6	31.7
	3700	4	2.1	2.1	33.9
3800	6	3.2	3.2	37.0	
3900	4	2.1	2.1	39.2	
4000	5	2.6	2.6	41.8	
4100	4	2.1	2.1	43.9	
4200	4	2.1	2.1	46.0	

4300	4	2.1	2.1	48.1
4400	4	2.1	2.1	50.3
4500	8	4.2	4.2	54.5
4600	6	3.2	3.2	57.7
4700	4	2.1	2.1	59.8
4800	6	3.2	3.2	63.0
4900	4	2.1	2.1	65.1
5000	6	3.2	3.2	68.3
5100	5	2.6	2.6	70.9
5200	6	3.2	3.2	74.1
5300	3	1.6	1.6	75.7
5400	4	2.1	2.1	77.8
5500	5	2.6	2.6	80.4
5600	3	1.6	1.6	82.0
5700	2	1.1	1.1	83.1
5800	2	1.1	1.1	84.1
5900	2	1.1	1.1	85.2
6000	3	1.6	1.6	86.8
6100	4	2.1	2.1	88.9
6200	3	1.6	1.6	90.5
6300	1	.5	.5	91.0
6400	2	1.1	1.1	92.1
6500	1	.5	.5	92.6
6700	1	.5	.5	93.1
6800	1	.5	.5	93.7
7000	1	.5	.5	94.2
7200	1	.5	.5	94.7
7500	1	.5	.5	95.2
8000	1	.5	.5	95.8
8200	1	.5	.5	96.3
8400	1	.5	.5	96.8
8500	1	.5	.5	97.4
9000	1	.5	.5	97.9
9500	1	.5	.5	98.4
10000	1	.5	.5	98.9
10500	1	.5	.5	99.5
11500	1	.5	.5	100.0
Total	189	100.0	100.0	

