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Socioeconomic Determinants of Girls Schooling Achievement in Tigray Region (A case in Hintalo-Wejerat Wereda)

By:

Tsegay Alem Siyoum

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Principal advisor: Fredu Nega (PhD)

Co-advisor: Taddesse Mezgebo (MA)

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DECLARATION:

I, Tsegay Alem Siyuom, do hereby declared that the thesis entitled "socioeconomic determinants of girls schooling achievement in Tigray region", submitted by me in partial fulfillment of the requirements for the award of Master of Science degree in economics (development policy analysis) of Mekelle, Tigray is original work and it has not been presented for the award of any degree or diploma of any other institution.

Tsegay Alem Siyoum

Signature_____ Date _____

Place, Mekelle, Tigray, Ethiopia

CERTIFICATION

I certify that this thesis entitled "socioeconomic determinants of girls schooling achievement in Tigray region" is a genuine work of Mr. Tsegay Alem, Id,No.CBE/PGS091/02 who carried out the research under my guidance. Certified further, that to the best of my knowledge the work reported here in does not form part of any thesis or the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Principal Advisor: Fredu Nega (PhD)

Signature_____ Date_____

Co-advisor: Taddesse Mezgebo (MA)

Signature_____ Date_____

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ABSTRACT:

This study \examines the determinants of girl's secondary school performance using school based assessment techniques as a curriculum success. The thesis focuses on the basics of the socioeconomic background of parents and girls and its role on their overall academic achievement. It is based on cross sectional data collected from two secondary schools directly from girl students and their household heads. The data gained via questionnaire has been analyzed through multiple linear regression models with OLS estimation technique. The thesis tried to address both issues and challenges of girl's secondary school performance and its indispensable determinants using the effect of parental and girls' background variables keeping the school contexts controlled. The academic performance and achievement of girls at school is not the only outcome of their learning, rather many direct and indirect forces react to each other to determine its success. Among the direct forces which driven performance at school; the role and expectation of parents is the main and divergent factor in shaping and supporting students both at school and home. Therefore, the socioeconomic statuses of parents principally determine the degree of influencing their girl students learning at secondary school. That is why the thesis was objectively addressed the socioeconomic effects of parents on girls schooling performance. It informs us that parental education level especially of biological mother's year of schooling; girls English language skill and were statistically significant at 5% and distance to school, age of household head, parental income, tutorial class and birth order were seen as strongly statistical significance at 1%.Home facilities like electricity was statistically significant at 10%. Whereas student's demographic age of both school start and current age is insignificant to determine level of achievement. Therefore, the thesis strongly concludes that socioeconomic determinants of girls were centrally relied on parental SES and in turn is a significant factor for girl's achievement at secondary school level.

***Key words**: academic performance, OLS model, Hintalo-Wejrat*

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List of Abbreviations

AIDS = Acquired immune deficiency virus

AY= Academic Year

CSA= Central Statistical Agency

EFA= Education for All

ESDP= Education sector Development program

GPI = Gender parity index

HIV = Human immune virus

ICFE= International Conference Female education

ICPD = International Conference on population and development

MDGs = Millennium Development Goals

MoE = Ministry of education

OECD = Organization for Economic cooperation and development

OLS = Ordinary Least Square

RASI = Revised approach to studying inventory

SES = socioeconomic status

SPQ = Study process questionnaire

TVET = Technical and vocational education training

UDHR = Universal Declaration of human right

UNESCO = United Nations education science cultural organization

UNICEF = United nation international children's education fund

UK = United Kingdom

USAID = United state Agency for international Development

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Chapter One: Introduction

1. Back ground of the study:

There is increasing empirical evidence that education matters for economic growth and development. Education matters, not only for the personal development, health status, social inclusion, and labor market prospects of individual learners, but also for the broader economic performance of countries (OECD, 2006). In addition, education is seen as a means to improve health and reduce fertility (Schuitz,1999 and 2002), being an intrinsic good in itself (Sen, 1999; Berhrman 1999 and Glewwe, 2002) provide reviews of the micro economic literature on the impact of education on income and other out comes in developing countries.

Recently the focus has also been shifted not only on the importance of education on growth but on determinants of educational out comes at school. In the case of developing countries like Ethiopia, majorities of persons with no or little education are Girls and Women and belong to the poorest groups (UNESCO, 2008). Unterhalter (2008) reminded us "UNESCO analysis of attendance show being poor, rural and a Girl means you are more likely to be in school irregularly." Enhanced implementation measures to ensure secondary school education for these women and girls should therefore be a priority in any strategy directed to both fight extreme poverty/inequality and fully realize the right to education (National Girls Education 2010). Unlike many studies that are focused on gender disparity in primary education, this study examines the impact of socioeconomic status of families on girls' secondary school academic performance in northern Ethiopia which has both urban and peri-urban setting.

Recently the emphasis in the education sector is not only on universal access and enrollment on education, but also on checking the quality outcome of the sector. Hence, gender dimension of the disadvantaged sex, internal efficiency of schools, assessment mechanisms and issues of learning outcome have got attention. The Economist (2007) quoted in Muluken (2012) stated that the existing realities reveal, the socioeconomic and historical back ground of communities determine the progress of girl students to the most important education ladder of both secondary and tertiary education at all levels. Many empirical evidences were sought to identify the costs and benefits of enrollment and attendance of primary schooling but fail to show young girls academic performance at secondary school. Currently, government and public interest is to maintain secondary school enrolled girl students and progression to Tertiary and advanced level of education. Therefore, the main focus of this thesis is to uncover the socioeconomic and

demographic determinants of girl's education performance at secondary schools. In the case of our country, there is insufficient empirical evidence on the area under investigation rather previous studies relied on the school and teacher characteristics as a determinant for academic performance. Therefore, it is analytically advisable to see the causes, as measured by parental and students' socio economic characteristic, of gaps in girl's academic performance.

1.1 Why emphasis on girls secondary school performance?

According to Gary Becker's Human Capital Theory (1968), wages differ because jobs differ and workers differ. Each worker brings a unique set of skills and ability to the labor force (human capital) determines their compensation. This theory defines economic success as completing high school with improved academic performance and therefore aims to determine the human capital investments that determine this "economic success" (pp 75).

The difference in wage is biased against women as they are challenged by deep rooted socio economic patterns in many nations over time by ignoring not only individual benefit but also marginalizing the expected communal success in economic growth. Essentially, women's educational attainment and performance influences women's occupation and earnings, which are themselves indicators of women's status. Also it allows women to make better informed decisions about affairs in their own household. Educational attainment creates better household which in turn determines the overall socio economic status of the community (Ingrum, 1999). Moreover, this study assumes that mothers with higher levels of education enjoy higher socioeconomic status and also their daughters. Substantial evidence shows that educated girls, especially those who have completed secondary education, were less likely to marry young , to have an unwanted pregnancy and to engage in high risk behavior such as drug abuse and un safe sex(Binyam,2009). In particular, female education at the late primary school levels has been show in a number of studies to be closely related to lower fertility and improved child health measured by lower infant and child mortality or improved nutritional status. In addition, it has a multiplier effect since it also has an impact on mother's desire and ability to educate her children and female education is shown to have a greater effect on these factors than male education. In similar vein the Economist (2006) quoted in Binyam (2009) stated that one mechanism for developing countries to bring a better life standard of people is to invest in education of girls. In its view of far reaching advantage of girl's education, the article continued to state that "not only will educated women be more productive, but they were also

bring up better educated and healthier children. More girls in Government office could also boost Economic growth." As different factors are considered for the educational performance of young adolescent girls at their higher schools, parental, peer and personal factors were emphasized in the paper and it is also evident that the current investment priority given to the expansion of primary school by Ethiopian government is in line with the Millennium development goal. This expansion would therefore be a key entry point for the long term development performance at secondary schools. Therefore realities in Ethiopia, as in most developing countries, fewer girls go to, stay in and graduate from high school. In 2009, the national gross enrollment ratio for grades secondary school education was 39% and 30% for boys and girls respectively with 0.77% GPI (UNESCO year ending in, 2009). In Ethiopia besides for low enrollment and completion rates, many enrolled girl students display week academic performance and it is unclear what educational policies would improve their performance. Quality of schools, experience and years of schooling for teachers are more or less universal over regions in the country to determine girl's academic performance in high schools. This paper investigates the determinants of learning out comes measured in academic performance among ninth grade in Tigray region. But, those extremely dynamic and inconsistent socioeconomic factors, which varies over time and place is complex to manage for improving girl's academic performance at secondary schools (Taddese, 2009, Muluken, 2012). Hence, the central focus and aim of this paper is to reflect on the existing socioeconomic and demographic determinants over the academic scores of girl students at secondary school level. As data in the wereda shows, school performance at secondary school is poor in over all indicators of school achievements. This form of education gap is reflected with low level of enrollment, learning outcomes, performance at exam and progression to the next possible expected level of grade. In most cases, of performance of girls at secondary school is much lower than that of their counter parts of male students. In the area deep rooted traditional and local expectation of girl's future and existing social role in combination with other factors hurdles the academic performance of girls by affecting their average score at exam. Therefore, the existing level of low girl's school performance with pronounced level of school wastage in terms of dropout, repeat, delayed enrollment and low completion rates causes to identify the empirical evidence over this thesis. As explained in the table 1.1 and 1.2 the number of students is decreasing when the level of grades advanced from primary to secondary school and this is highly pronounced in girls than boys. In similar case, learning at secondary school is highly

influenced by dropout, grade failure and low performance rate at exam (Hintalo-wejerat Education office, 2013).

Low and unsupportive perception of the community towards girls schooling simply allows them to attend elementary school until their age reaches 13 and 14. After the age of 14, most girls discontinue their education due to early marriage or they move to urban areas and outside the country mainly to the Gulf States in search of employment. Hence, performance is by far affected by low motivation, peer and family affection at secondary school (Hintalo wejerat wereda Education office, 2012). It has been generally noticed that female students in the wereda perform far poorly than their counter parts of male students at schools. In this case, such a thesis is expected to produce possible estimates and policy oriented recommendations to contribute on the improvement of girl's academic performance in the wereda. Moreover, it demonstrates the socioeconomic and demographic interaction of parental and girl students on the overall score at exam for girls at secondary school. For the base of analysis the outcome variable relied with the data collected from students under the schools based on the school tests of 2013 academic year.

1.2 Statement of the problem

The study is aimed to explore the effects and roles of families and students in cooperating with the school to foster academic score and performance of girls at school. For this reason, it entirely is based on school test results to estimate performance of girls taking the socioeconomic back grounds of families in to account and the case is limited to performance at high school level only. It focuses on looking the efficiency and interaction effect of parental socioeconomic back ground on the existing levels of girl's secondary school performance by controlling school context. The fact that girls secondary school education performance is not getting due attention from parents, community and even school experts could explain the existing poor performance and low school completion prevailing in secondary schools Therefore, understanding the determinants of girl's performance at school requires well organized empirical evidence on its level and factors. Hence, the prime motive to undertake the study is to explore the socioeconomic, demographic and cultural characteristics at household and community level that influence girls' secondary education performance.

1.3 Objectives of the study

The general objective of this study is to examine and oversee the socioeconomic and demographic factors which influence girl's academic performance at secondary education level and suggest relevant policy implications to address the problem.

The Specific Objectives:

- To examine parental socioeconomic determinants of young girls secondary education performance.
- To scrutinize the background of girls own demographic and learning skills on their academic performance at school level.
- To proffer policy implications and relevant strategy for improving academic performance of adolescent girls at secondary school.

1.4. Research Questions:

Following the research objectives listed out above, the study addresses the following research questions:

1. What are the parental socioeconomic factors that affect girl's performance at school?
2. How do the learning skills and other personal characteristics of the girls themselves affect their School performance?
3. What policy implication and relevant strategy could be used to improve academic performance of adolescent girls at secondary school?

1.5. Hypothesis:

The study conducted on the main concepts of girl's secondary school performance and its determinant factors formulates the following hypotheses.

- ❖ Low level of parental economic status is the cause for poor performance of girls at secondary school.
- ❖ Students demographic and learning skills are significant determinants for academic performance of girls at secondary school.
- ❖ Parental education is significant factor for girl's academic performance at secondary school.

1.6 Significance

The study briefly explores the key notes of contemporary challenges, investments and smart moves of collective efforts in the study area. Hence, it serves as a part of accurate and workable indicator on evidence based relevant local empowerment and response program on girls and education. It also shows multidirectional problems and initiatives against hopes, benefits and girls schooling progression and social transformation processes in the locality. The study will have an unquestioned attribute in identifying and analyzing cause versus output relationship between contextual variables of overall influential roles. Besides informing, convincing and creating room for discussion among planners, implementers, decision makers and beneficiaries, the study will be of interest to researchers to make further research in the area.

1.7 Scope and limitation

In the area of education many factors influence student academic achievements. This paper investigated the factors that influence school achievements. However, it is only limited to the identifying the socioeconomic determinants of girls' school achievement at secondary school focusing on grade nine. The scope and central focus of the present study is to assess the existing contemporary situations of adolescent girl's academic performance in the area. It uses school based assessment of students performance in terms of average score record for courses under the curriculum. Hence, it will justify the success of the curriculum by judging girls average score and academic performance by taking the stated parameters. Geographically, the thesis investigates issues and factors of parental socioeconomic status and girls demographic and learning skills in Hintalo-Wejerat wereda in Tigray regional state of Northern Ethiopia. It also looks the performance of girls in the targeted two secondary schools as a reference of girl's achievement of school based tests in 2013.

1.8 Thesis organization

The thesis is composed of five main chapters with each chapter further divided into topics and themes. The thesis begins with general introduction followed by conceptual and empirical literature review, sources, methods and instruments of data collection. Research methodology and descriptive analysis through summary statistics and econometric model result interpretation are presented in the third and fourth chapters. Finally, conclusion, recommendation, and policy implications are forwarded in last chapter. The different parts of the study were analyzed keeping its truck of consistency and logical flow of contents as per the relevant topics of the paper.

Chapter-Two: Review of Related literature

2.1. Theoretical and conceptual frame work

2.1.1. Concepts and definition of girl's education

Education remains the key for unlocking the individual's intellectual and creative potential "Education and innovation will be the currency of the21thcentury"USAID,(FEBRUARY,2011) In the increasingly open global economy, countries with high rates of female illiteracy and gender gaps in educational attainment tend to be less competitive, because foreign investors seek labor that is skilled as well as inexpensive. Various global trends pose special challenges to women who are illiterate or have limited education (Cynthia B.Lioyd, 2007). Girl's education is foundational to human development and critical to broad based economic growth. Few societies have achieved high and sustained rates of growth or significantly reduced poverty without first investing in expanding access to quality education. Further, education has proven essential for developing an informed and active citizenry, required for healthy democratic practice and for enabling individuals to make smarter choices affecting health and house hold welfare. The theoretical back ground for this study stems from production function. An education production function is an application of the socioeconomic concept of a production function to the field of education. It relates various inputs affecting a student's learning (schools, families, peers, neighborhoods, etc) to measure out puts including subsequent labor market success, college attendance, graduatation rates and enrollment rate (checchi, 2006). Family back ground is usually characterized by such socio-demographic characteristics as parental education, income, and family size. Peer inputs, when included, are typically aggregates of student socio-demographic characteristics or achievement for a school or class room (Rivkin et al., 2005). *European journal of social science as – volume 15, Number 4(2010), 501*). Granting an equal opportunity to all school age children to attend school is only the first step "once pupils find seats in a class room, they need quality and equity, otherwise there will be little motivation to persist in school"(ICFE 2000,p.8). Unsatisfactory quality is one of the factors leading to poor academic performance of girls in secondary and tertiary education.

2.1.2. Girls Education: A social right and development imperative

Education's importance has been emphasized by a number of international conventions, the UDHR, the program of action of the 1994ICDP,the fourth world conference on women in Beijing in 1995, recognized that women's participation in decision making in society and to improving families wellbeing. In addition, the United Nations has articulated the millennium development goals (MDGs), which include goals for improved education, gender equality and women's empowerment (see box1, page2 on MDGs, 2000) .while generally in many developing countries boys, outwit girls in terms of access, performance and retention rates etc, Gender differences, vary widely across countries as well as within same countries (depending on subject matter, grade level etc) ICEF (2000).many survey result show that generally girls outperform boys at lower grades usually excelling in literacy while boys outperform girls in numeracy. See also maliyamkono and Ogbu (1999). But now a day, it is not the importance rather the determinants of girls academic performance should be brief for parents, schools, and decision making units at all levels. Certain benefits associated with school performance for girls appear to be nearly universal regardless of the type and quality of school attended. These include greater gender equity between boys and girls in time use and work burdens while they remain enrolled (Arends-Kunning and Amin, 2004; LIoyd and Grant, 2005; LIoyd, 2005). A reduced risk of premarital sex, particularly girls and a decline in rates of early marriage, particularly in sub-Saharan Africa (Mensch, singh, and Caster line,(2005). Furthermore, it appears that adolescents who do become sexually active while still in school are more likely to use contraception than their same-age peers who are no longer is secondary school; thus they face less risk of unwanted pregnancy or sexually transmitted diseases including HIV/AIDS (LIoyd, 2005).

2.1.3. Determinants of Girls School performance in developing countries

The global financial crisis is taking a heavy toll on families and communities everywhere and when money is short, it is young girls and women who are most affected (plan UK, 2009). Millions of women have migrated out of their countries and are working abroad; at least half of all international migrants are women. Young women often see migration as an opportunity but it can expose them to jobs that are open to exploitation. These include jobs in agriculture, heavy industry, house hold service, and tourism and entertainment industries in relation to low girls academic scale and achievement. They send millions of dollars in remittances back to their homes and families, money spent on food, clothing, education and health care, adding to the

local economy (Because I am a Girl the state of the world's Girls 2009 Girls in Global economy; Adding it All up).

Factors responsible for determinants to girl's education performance can be categorized according to how one perceives and defines determinants. Determinants to girls' education performance can take differential forms across nations /societies depending upon the socioeconomic, religious and cultural contexts. Furthermore, determinants can be perceived as either intrinsic or extrinsic to girls in relation to how they experience educational participation and performance. As well, some determinants can be obvious while others are subtle and unstated. What needs to be acknowledged is that the concept of determinants to girls' education is highly complex. Hence, for the analysis to be comprehensive, the lived experiential meanings will have to be unpacked through qualitative, phenomenological and hermeneutic inquiry processes. Students with parents who were both college educated tended to achieve at the highest levels. Children whose parents are high educational scores have a better statistical chance of performing in secondary education (Oloo, 2003), Important factors include parental involvement in their children education (hammer, 2003). This is further supported by (Ahawa 2009) who observed than in modern society's parents' influence played a very important role in the academic life of a student. (Otula, 2007) supported this by stating that effective learning involves partnership of students, teachers and parents. (Ahwa, 2009) observed that parents' involvement determines the emotional and material input that further determined the motivation level in children towards education performance. Socioeconomic status of parents in one way or the other affects academic achievement. (Omrake, 2001), noted that girls with rich parents have certain needs, physical and sociological which when met contribute to their academic performance. A number of explanations have been offered to explain the relative low performance of girls. They include cultural attitudes towards the education of girls. Girls and women required to work more inside or outside the home early marriage and pregnancy and less ambitious expectations by parents etc (ICFE, 2000). Though extra domestic chores are cited, it still puzzles to see that even girls in boarding schools where such activities are absent, are still outperformed by boys. It is therefore important to analyze those factors that affect parents' decision of investing in girl's secondary education and why it is "convenient" for poor house hold to educate more boys than girls. The reasons for gender bias in education can be grouped in to three.

-High costs (both direct and indirect) of sending a girl child to school.

- Low private returns to women's education.

- Role of women in traditional societies.

Parents' socioeconomic status which was conceptualized as parents' education, parents' income, and parents' occupation, is linked to academic performance of girls at secondary school (Kyashaba Martha, 2005). Studies show that academic performance is dependent on parents' socioeconomic status. That is students from high socioeconomic back grounds will perform better than their counter parts from low socioeconomic back grounds as discussed. This is supported by (Dills 2006) and (Owens 1999).It also in line with (Hansen and Mastekaasa, 2006) who argued that according to the cultural capital theory one could expect students from families who are closest to the academic culture to have greatest success.

2.1.4. Mind the development gaps in girl's academic performance

The analysis of the causes for the low level of education and in particular of women's education, in poor countries must be analyzed by considering both the costs (direct and indirect) and the returns for the families of sending their children to school (Research No, o3.1 Amon Mbelle joviter kalabaro). In poor countries, like in developed countries, both private and public returns to education are positive, better educated people are more productive in market and domestic activities, earn higher incomes and can spend more on health care for themselves and for their children. In particular, public returns to female education are very high. Because, better educated women get married later, are more inclined to accept contraceptive methods, have better job opportunities and therefore want fewer children. Moreover, better educated women are also more productive in child rearing activities and spend more for their children health; stimulated the effect of an increasing in female education. Achieving gender equality in education by 2015 was the first "missed Millennium development Goals." Continued failure to achieve that goal puts the other MDGs at risk as female education reduces fertility, child malnutrition and child mortality and promotes higher economic growth (Burns et al, 2003; Herz, 2006; Klasen, 2002, sen, 1999; Smith and Haddad 1999). Most of the variation in girl's secondary educational performance (around 70%) is explained by factors at the house hold level, of which socioeconomic factors are most important (Huisman and Smits, 2009; Mingat,2007; Shavit and Blossfeld,1993; Jencks, 1972; coleman et al, 1996).over all, there is a

need for more rigorous impact evaluations to find what is the most effective and cost effective way of improving performance in academics to promote girls secondary education (Getting girls in to school, a development benefit for all number 8 may 2009).

2.1.5. The MDGs and Girls Education

The UNMillennium summit, held in September 2000, produced a set of eight millennium development goals (MDGs) covering a range of development issues which is going to be addressed by female education directly, reducing child mortality, fighting various infectious diseases, eradicating illiteracy, and empowering women. The MDGs and their associated targets and indicators were designed as bench marks for monitoring progress in developing countries and to provide a frame work for sustaining development and eliminating poverty. The international community recognizes that unless girls' education performance improves, few of the MDGs will be achieved. In addition, the benefits of female education at secondary school level and further for women's empowerment and gender equality are broadly recognized.

- As female secondary education rises, fertility, population growth, and infant and child mortality fall and family health improves.
- Increases in girls' secondary school attainment are associated with increases in women's participation in the labor force and their contributions to house hold and national income.
- Women's increased earning capacity, in return, has a positive effect on child nutrition.
- Children especially daughters of educated mothers are more likely to be enrolled in school and to have higher levels of educational attainment.
- Educated women are more politically active and better informed about their legal rights and how to exercise them.

2.1.6 Measuring Girls secondary school education performance

After achieving success in secondary education, the next logical step would be to evaluate other aspects of schooling, particularity the quality of schools and teaching. One way of determining the quality of teaching in schools is by looking at the intermediate outcome of student performance (Sanders, 1999). There are several ways of evaluating a student's quality attributable to secondary education, but the most tractable indicator is how he or she performs in tests (World Bank, 2003). There are, however, important caveats to using testing as a

measure the quality of schooling. Students' output quality depends very much on their socioeconomic status. So in other words, gauging the quality of schools depends on measuring how much learning value is added to a student who enrolls in particular school. A study in OECD countries on the role of deviations in students' characteristics to their performance showed that students whose parents (especially mothers) have high school certificates or higher qualifications perform better than their peers (OECD, 2001). Family affluence is also a very decisive factor, although students in less affluence families in some OECD countries perform better than the OECD average (OECD, 2001). The study itself discussed many other differences in student characteristics and back ground that may contribute to differences in student performance such as age, family socioeconomic status, culture, language spoken at home and family structure. As for academic factors, prior academic achievement and family back ground is a key academic predictor of the students' further performance at high school levels of study. A number of studies have shown that it plays a dominant role in predicting students' learning outcomes (McKenzie and SchWeitzer, 2001; McKenzie, Gow et al, 2004).

Learning skills and habits have been reported to influence academic performance (Abbott-Chapman,et al. 1992). Learning strategies and approaches have also been well researched in relation to academic performance. For example, (Watkings and Hattie, 1981) employed the Biggs study process Questionnaire (SPQ) (Biggs, 1987), while (Saddler smith, 1996) and (Duff, Boyle et al., 2004) used the "Revised Approaches to studying Inventory" (RASI) to study the above relationships. These studies shown that approaches to learning and initial characteristics at home from families had some predictive value for academic achievement.

2.1.7. Girl's Education practice in Ethiopia; situation analysis

Despite progress Ethiopian education indicators' are still poor &below sub-Saharan averages, Ethiopia ranking 126th out of 127 countries in the Education for all (EFA) development index and it is unlikely to meet the EFA Goals by 2015. The situation is too serious and experienced with erratic attendance, how completion rate, poor academic score or performance and high dropout of rural young girls in many secondary schools of the country (EFA global monitoring Report in 2009). As it is evident from the statistics, Ethiopian boys have more access to education than Ethiopian girls. As the greatest disparity can be found in secondary education and adult literacy, action must be taken in order to eliminate the gender gap in the areas (Tadese, 2009). According to the statistics, for every 100 boys enrolled in secondary school

education, there are approximately 77 girls only. The number of female dropouts is high in the country, especially in the transition from primary to secondary school education. In 2009, only 41% of girls survived to the last grade of primary school education and there were only 30% enrolled in secondary school education, over 1.8 million adolescent girls were out of school (UNESCO, 2011).

The research findings in literature indicated that the set of variables consisting family characteristics such as socioeconomic status of parents, level of education, occupation, and income are highly influential in female students' academic achievement in secondary schools of Ethiopia (Tadese, 2009). In the context of Ethiopian public school girls are always outperformed by boys both in size and performance and this is acute in the case of secondary schools. This was due to the existing disadvantages from home to school agents' peers and even scholastic institutions (Tamere, 2010). Girl's school performance is constrained economic, socio-cultural, familial, personal and school factors. The economic problems relate to parents' inability to send girl children to school especially if schools are far from home or girls dropout due to lack of finances. The problem is more serious in rural areas, particularly in pastoralist region. The traditional divisions of labor in homes constrain girl's success in education. School distance and harassment, feelings of discomfort to participate equally with men are stumbling blocks for female students. In addition, dropout in high school is fuelled by the practice of early marriage and marriage by abduction. Gender equality is already a major priority area and a cross-cutting issue in ESDP III (MoE, 2010).

Despite this major achievement, the gender gap in education performance prevails at all levels of the system. The gap becomes more visible as one goes higher up the educational ladder. The share of girls admitted to secondary and preparatory education is only about a third hand. The number of female students in TVET is closed to male students, but closer look reveals that female students are concentrated in areas that are considered female's (MoE, 2010 Gender directorate). Especially in the country's context, few economics studies have attempted to explore the connection between extrinsic socioeconomic variables and the formation of intrinsic educational aspirations and performance, with the latter influencing educational outcomes. Within the household, and how factors such as income, wealth and child age affect the relative importance of these aspirations, a proxy for decision making power (Gansu survey of children and families Dissertations university of Pennsylvania year,2009).

2.1.7.1 Factors of Girls' secondary school educational performance in Ethiopia

In Ethiopia, the overall obstacles to advancing female enrollment and achievement in education are indicated as follows. The first obstacle is the long-standing cultural misconception of the community and the family more specifically; early and forced marriage, verbal insult, beating up insecurity, rape etc persist unresolved until now especially at secondary school level (SCA and Bekele, 2008).

The second obstacle is economic problem related to insufficient involvement of concerned government bodies, community and parents in mobilizing resources to finance and little focus in creating sufficient opportunities to girls' secondary education, the demand by parents on girls' labor, especially as these parents having low income do not afford to cover costs for stationery and food and they are reluctant to send their children to school. Those parents, who are in a position to cover some of the costs, give priority school enrollment opportunity for boys' child over their child girl. Girls are forced to excessive work both at home and for income generating

The third obstacle is related to low level of parental socioeconomic status, low level of awareness on the special support for girls, lack of curriculum design for promoting gender equality and sexual harassment in school. On the way to and from school, housing problems at secondary level in particular etc continue to hamper the performance of girls in education.

The fourth obstacle that could mention here is that through there is a strong government commitment to gender issues, implementing bodies at different levels do not pay attention due to the absence of accountability (ESDP, 2010). Studies carried out recently include the following findings that support the aforesaid social, economic and institutional obstacles to the education of girls. (UNICEF, 2007), harmful traditional practices, parents' level of understanding to the education of their child girls, limited implementation capacity of institutions etc are the causes for low achievement and performance level of girls in secondary school education.

2.2. Empirical Literature

2.2.1. Socioeconomic status and girls academic performance

Educational services are often not tangible and are difficult to measure because they result in the form of transformation of knowledge, life skills and behavior modifications of learners (Tsinidou et al., 2010). So there is no commonly agreed upon definition of quality that is applied to education field. The definition of quality of education varies from culture to culture (Michael, 1998). The environment and the personal characteristics of learners play an important role in their academic performance. The school personnel, number of the families and Communities provide help and support to students for the quality of their academic performance. This social assistance has a crucial role for the accomplishment of performance goals of students at school (Goddard, 2003). Besides the social structure, parents' involvement in their child's education increases the rate of academic performance of their girl students at secondary school (Furstenberg and Hughes, 1995). Above and beyond the other demographic factors, the effects of socioeconomic status are still prevalent at the individual level (Capraro, M-, capraro, R, and Wiggins, 2000). The socioeconomic can be deliberated in a number of different ways; it is most often calculated by looking at parental education, occupation, income and facilities used by individuals separately or collectively. Parental education and socioeconomic status level have positive correlations with the girl student's quality of achievement and performance at their secondary school (Caldas and Bankston, 1977; Jeynes, 2002; Parelius, D., and parelius,A., 1987; Mitchell and collom, 2001; Ma. And Klinger, 2000). The girl students with high level of socioeconomic status perform better than the middle class students and the middle class students perform better than the students with low level of socioeconomic status (Garzon and Kahlenberg, 2006; Kirkup,2008). The achievement of students is negatively correlated with the low level of parent's socioeconomic status because it hinders the individual in gaining access to sources and resources of learning (Duke, 2000 Eamon, 2005; Lopez, 1995). Low level of socioeconomic status is strongly affects the achievement of students, dragging them down to a lower level (Sander, 2001). This effect is most visible at secondary and post- secondary level (Trusty, 2000).it is also observed that the economically disadvantaged parents are less able to afford the cost of education of their children at higher levels and consequently they do not work at their fullest potential (Rouse and Barrow, 2006). Academic performance refers aptitude (ability, development and motivation), instruction (amount and quality), Environment (home, peers and television), (Roberts, 2007),

(Marzano, 2003). The academic performance of girl students heavily depends upon the parental involvement in their academic activities to attain the higher level of quality in academic success (Barnard, 2004; Henderson, 1998; Shumox and Lomax, 2001). There is a range of factors that affect on the quality of performance of girl students at their high schools (Waters and Marzano, 2006). These variables are inside and outside school that affect students' quality of academic achievement. These factors may be termed as student factors, family factors and peer factors (Crosnoe et al., 2004). (Sakho, 2003) carried out a study of the determinants of academic performance of HEC-Lausanne graduates using an econometric (Tobit) model. He analyses econometrically the relationship between different variables and the average grade obtained during the license studies by 156 students. The finding suggest that a large number of different factors related with the personal and family back ground interact together in order to explain the variation of HEC students' performance.

(Akanle, 2007) was studied socioeconomic factors influencing students' academic performance in Nigeria using some explanations from a local survey. The major instrument used in collecting data for the study was the self- developed instrument tagged socioeconomic and academic performance rating scale of the students, using the concepts of financial capital, human capital, and social capital (Chow, 2000) attempted to disentangle the major factors which affected the academic performance of 368 recent Hong Kong immigrant students' attending 26 different public high schools in Toronto. Results of the ordinary least square regression analysis used indicated that parental back ground, higher self-rated socioeconomic status and higher level of English proficiency were significantly and positively related to academic performance. There is evidence that in poorer countries family characteristics are more important for educational achievement than it richer ones (long, 2006; Heinemann and Loxley, 1983). (Jing-lin, 2009) studied the determinants of students' academic performance using a multiple regression analysis. The perceived importance of learning success to family, English writing ability and communication are significant predictors for all international secondary school and under graduate students. The study instead of using multi-nominal logit or probit model has employed the ordinary least squares (OLS) procedure in determining the determinants of academic performance (Nottingham University, UK Rank 20). Academic performance is measured by the average mark obtained by the average mark in percentages (Stricker and Rock, 1995). The measurement used to the dependent variables allows analyzing the distribution of performance across the students and the level of motivation needed to improve the academic performance.

In similar cases, with respect to the determinants of academic performance, there are several studies based on the OLS estimation. (Spector and Mazzeo, 1980) produced the first study that applied a qualitative model to determine academic performance. However, their ordered probit analysis concentrated on the probability of getting a letter grade of “A” versus the probability of not getting an “A”. Because, there are more than two categories in a grading system, the study fails to give enough evidence.

Chapter three: Methodology and data source

3.1 Description of the Study Area:

Hintalo-wejerat wereda is found in the south eastern zone of the Tigray regional state. The capital city of the wereda known as Adigudom is 37 km far from the capital of its zone and the capital city of the regional state of Tigray, mekelle.The wereda covering a total land mass of 193,309 squares kilometers is bordered by the Afar regional state in the east, Raya azebo wereda in the south east , Alaje wereda in the south , Saharti-Samre wereda in the west and Enderta wereda in the North.The absolute location of the study area is between 39^0 27' 98''E - 39^0 87' 76''and 12^0 88' 39"-13^0 44' 54"N. The wereda is found at an elevation which ranges from the lowest 1825 meters to the highest 2625 meters above sea level. The climate classifications of the area comprises of 22.5% kola, 63.75%weina-Dega and 13.75% Dega. Its Topography constitutes large mountainous areas to the south and south eastern parts and low lands to the North direction. Teff, wheat, barley, sorghum and vegetables are the most common types of crops growing in many places of the wereda. The wereda receives an average rainfall that ranges from the lowest 336mm to the highest 933.75mm per annum. The total population of the wereda is 180739 of which 88,950 are males and 91,789 are females. And there are 41,915 total house hold heads of which 31,338 are males and 10,577 are females. Around 92% of the total population of the wereda depends on agriculture livelihood. Out of the total population, 19,530 (9646 males and 9884 females) live in urban areas and the remaining 157,024 (77,249 males and 79,775 females) live in rural areas. When we see the religious composition, nearly 99% of the total population is Christian- orthodox and the rest 1% are Muslims (Hintalo-wejerat wereda plan and finance development office, 2013).

The Socio Demographic and Economic composition of the district is characterized by low level of literacy, numeracy and low agricultural Productivity relied on rain fed agriculture and rearing of animals. Most of the population resides in rural area and practice mixed farming. In the district the socioeconomic status of women is highly affected by deep rooted multilayered local customs and cultures. Hence, women are simply house maid and loyal wives for their husband and characterized by low level of women literacy, participation and realization of their potential to cultivate their benefits and package of entitlements. (Hintalo-Wejerat education office, 2013).

3.2. Data Source and Instruments:

Relevant cross sectional data on girl student's academic performance at secondary schools has been collected from primary data under pertinent data collection instruments and sampling frames. Primary data has been collected using a structured questionnaire and liable to cross check with household heads and school supporting documents. Secondary data has been organized from the published and unpublished written materials, policies, programs and reports of stake holders under the area of the study. Systematic review of related literature; prior research works, and strategies from respective institutions and government offices have been used.

3.3 Sample Design and procedures:

Cross sectional data on students (girls) academic performance has been collected to get meaning full package for further analysis. Hence, manageable and fairly representative sample size and composition were carefully handled from the district with a coherent step and safe ethical standard. As the researchers believe in the study area, the challenges of girls' schooling are higher as compared to others in the south eastern zone of Tigray. Therefore, the district is automatically selected purposefully. In similar fashion, the challenges and issues of greater problem recline at secondary school performance of adolescent girls and two of the three available high schools in the wereda were included in the sample. A total of 200 interviewees (girl students) out of 1147 girl students distributed proportionately to the female student population of the students were selected. Finally a list of female students from each school was obtained and sample students were selected from the list at certain intervals with a random start. Out of the total sample size of 200 respondents, the questionnaires for 20 respondents were incomplete and hence dropped. Thus, data for 180 respondents was used for analysis.

The procedure deploys school assessment results of the 2013 school year performance in all the schools as an outcome variable. School assessment results are believed to objectively reflect immediate and most stable measurement other than standardized or public tests done nationally (ICEF, 2000).

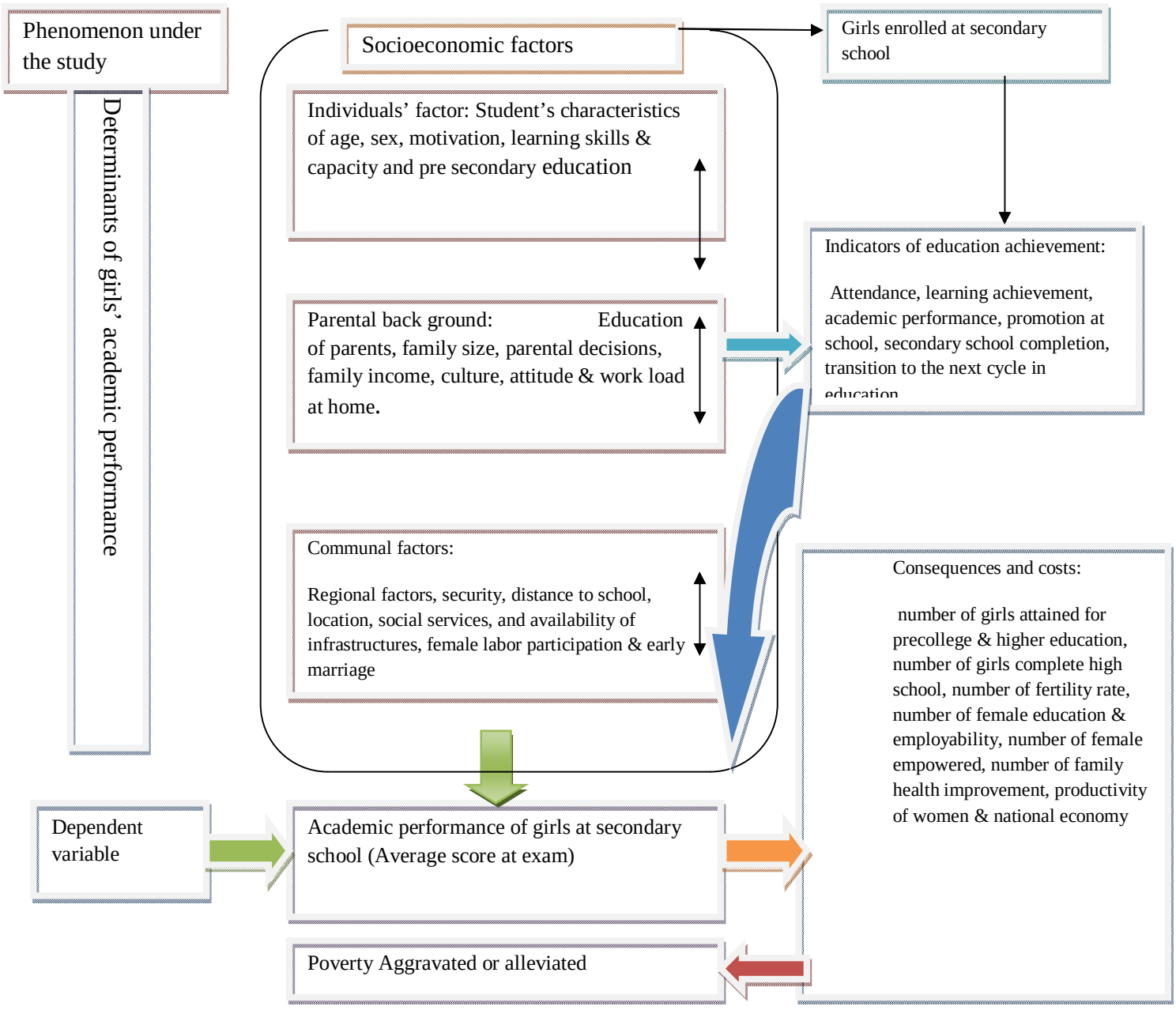
As all targeted schools are public and mixed (for girls and boys) in the district school based test result measured by continuous assessment for the year 2013 was taken as average score of performance. In the school curriculum, an average minimum score of 50 out of 100 is required

to pass the next possible (10^{th}) grade. The students self reported average score, which is subject to checking from school academic score registration list is amassed after getting both school and students permission to do so as an ethical consideration. Therefore, relevant data on both students and family back ground information were systematically collected through self prepared questionnaire from students and their parents also.

3.4 conceptualization of the study

The academic performance and school accomplishment of girl's at secondary school over a given period of time reflects the impact of various socioeconomic factors, originating from the community, families and the girl students themselves (Ibrahim Okumu, Mike Alex and Nakajjo Doreen Isoke, February, 2008). The socioeconomic variables can broadly be categorized into pupil's family back ground, pupil's personality and regional factors. Socioeconomic variables influence the performance of pupils directly by influencing the pupil's academic performance or their school average score. The academic performance of girls is therefore the interaction of both internal and external contexts. The current study focused to be evidence for these parental cognitive, affective and structural differences and their impact on academic performance by controlling school contexts. The following diagram clearly briefs the theoretical interaction of those expected determinants for girl's academic performance in secondary schools.

Fig3.1 Conceptual Frame works of the study at glance:



Source: The Author as perceived from previous work and current study:

3.5 Method of data collection

To get necessary data for the thesis both primary and secondary data has been collected. Primary data was collected through structured questionnaire. Prior to the start of the field work, the questionnaire was pre tested to make sure the questions are clear and could be understood by the respondents. Once tested and found relevant and measurable in addressing explanatory

variables of the research objectives, then data collection has been started from the selected respondents.

Secondary data from different sources like wereda educational office, published and unpublished written materials, policies, programs and reports of stake holders under the area of the study were incorporated.

3.6 Method of data analysis

To try to give answers to the research questions, both econometric and statistical tools of analysis has been pursued. **OLS model** has been used to analyze about how the various explanatory variables and behaviors affect the dependent variable.

Apart from these, descriptive statistical tools were employed to analyze the relationship between varieties of determinant variables academic performance. Econometric soft ware packages such as STATA were used to carry out the computation and obtain the required output.

3.7 Specification of the model

The study employed the Ordinary Least Squares (OLS) procedure in determining the determinants of academic performance of girls in the targeted secondary schools. The OLS methodology has been deemed appropriate because of the nature of the dependant variable used in the study. Academic performance is measured by the average mark scored by the girl student in the whole subjects and because of the disparity in performance of students; the study opts for OLS econometric model. The analysis of the paper is limited to the cross-sectional data from the sampled respondents. In addition, the paper were not analyze all the contexts of girl's education performance but focuses on parental and learner's (girls) socio-economic factors and learning outcomes measured in average score of performance at exam in secondary schools. However, other variables served as inputs in the analytical model for the purpose of controlling their effects on learning outcomes. Ordinary Least Squares (OLS) is chosen to illustrate the magnitude of the effects and the direction of such an effect. Testing for violations of classical assumptions in regressions OLS estimator augment the trustworthiness of the OLS results (Onsomu et al, *2006*). Descriptive data analysis techniques has been used in presenting situational analysis of girl's school performance in the area while inferential analysis tools were used to establish relationships between parental socio-economic and girls personal and demographic factors on girl's secondary school performance. The Economist (2002) quoted in

Suryadarma (2004) states that in analyzing the context of interaction in outcome variable and predictors should depend on the basis of firms production function and the multiple linear regression models to identify the determinants of poor academic performance is appropriate to show the variation of outcome variable and its predictors. The empirical model analysis is as follows:

ACA PERF = f (STAGE, Sexhhh, SchoolDis, LANG, PARENTSES, HOME LIGHT, TUTOR,) ----------1

$LogACAper=a_o+a_1logQ+a_2Qp+a_3HHI+a_4DIS+a_5ENGSK+a_6HOMELI+a_7TUTOR+u$-------2

Where;

ACAper =the academic performance measured in average score of the given girl

Student the school

Q = matrix characteristics of a girl student in the school

QP = matrix characteristics of a girl student's parent in the school

a3HHI= annual income of the house hold

a4DIS = distance to school

a5ENGSK= girls English language skill

a6HOMELIH = sources of light at home

a7TUTOR = whether attending extracurricular tutorial program or not

u = the error term in the model.

3.7.1 Relevance of variables in the model

Outcome variable: academic performance according to the Cambridge university reporter (2003) is frequently defined in terms of examination performance. In this study academic performance is characterized by performance in the tests in course work and performance in examinations of girl students at secondary school of grade ninth.

Academic performance measured in terms of average score of girls at secondary schools in all instructional courses. Hence, this is obtained by the technique of average score from school based assessment results of students at school. Because, results of school based tests are more relevant and stable to show students steady and continuous academic performance at exam. Therefore, performance disparity among girls at high school was continuously differ and affected by different parental and students learning back ground. Academic performance again determines other success measures in the education sector and decision making for quality assessment in school performance.

Independent variables: based on theoretical and empirical evidences relevant different factors related to families and students themselves were incorporated to the model to get subsumed results. Academic performance measures the direct learning outcomes which is sensitive to parental and students socioeconomic and behavioral factors.

Parental income: the size and composition of income at home determines the academic performance of girls by directly affecting their attendance, learning, stay and performance at school. When parental income is enough and adequate to parental consumption and other expenditures including school, it is likely that girls attend and score better by devoting their time on education than participation at labor. On the other hand, girls from better and wealthy family have a good look and better planed future education to capitalize on education in accessing school materials and resources as well (Filmer, 2004). Factors at home and supplies like, studding room, relaxed time and even consideration and motive is the result of income at house hold level.

Parental demographic characters: both age and sex of house hold head were expected to affect the academic performance of girls at school. Schooling decision at home, follow up and checking academic performance or progress of girls learning outcomes were directly influenced by the age of the house hold head and slightly by sex and as age advances care and responsibility for investing on girls education increases due to increase in experience, wealth and resources accumulation overtime. Here again, the gender of the house hold head decide in

understanding and advocating success for girls at home by increasing motive and protect from social and cultural taboos and house hold chores. It is also expected that mothers were likely to help girl's success than fathers (Barnard, 2004; Henderson, 1988; Shum ax, and Lomax, 2001).

Distance to school: the possible proximate distance to nearby school affects the effort of schooling and position of secondary school are far from home girls are suffering from travel and lose their time as compared to primary schooling with relative proximity to home. Hence, it is expected that distance as measured by travelled time adversely affects performance, in reducing school effort, motive and exposing girls for sexual violence from home to school and school to home travel.

English language skill: in the given school curriculum, English language is the media of school instruction language starting at high school and next cycles. What is more, at high school it is a transitional from mother tongue to second language in getting learning and interaction at school. Therefore, academic score is highly influenced by the skill and proficiency of English language at secondary schools. Not only academic achievement but also understanding and act at exam influenced by language effects.

Sources of light: it is believed that the sources and convenience of home determines the effort made to study for school performance. In our cases of school, students are learning and expected to support families at a day and obliged to study at night. Hence, the sources and smoothness to study more depends on the type of light sources (electricity, Kuraz, fuel wood) at home. Therefore, it is expected that girls having own room and proper light for study will perform better than those without access (Waters and Marzano, 2006).

Extracurricular participation: attending and participation in extracurricular tuition programs takes a dummy value of 1 and 0 for girls who attend and did not attend the specified tuition program. In the study, participation is expected to foster academic performance of girls with positive correlation with outcome variable of performance in school tests

Chapter Four: Result and Discussion:

In this part both descriptive and empirical analysis are presented in considering basic variables which are significantly related with the outcome variable.

4.*1* Descriptive Analysis:

In analyzing the variation of average score in academic performance as an outcome variable; key factors were pinpointed by taking their level of significance and overall effect. The school performance of girls especially of adolescent and youth once are affected by many external and internal factors at secondary school level. The thesis is strived to explain the determinant effects of those external factors related to parental socioeconomic and demographic behaviors. In search of such affecting powers the thesis goes through relevant variables depending on principal literatures and theories like human capital theories in pinpointing and describing association with the dependent variable. Hence, age, education level, marital status, sex, occupation and income were taken as a socioeconomic and demographic behavior of student's family as a key background deterrent variable.

Table 4.1 Academic performance of girls by school

School type	**Freq.**	**%**	**Average mark**	**Std.Dev.**	**95% conf. Interval**	
ESIRA ADi	101	56	62.82178	8.848046	61.07507	64.5685
Adigudom	79	44	63.97468	9.024148	61.95338	65.99598
Total	180	100	63.32778	8.91917		65.99598

Source**: computed from own data survey result, 2014**

As the above table clearly depicts 56%vs of the students under this study were from ESIR-ADi and the rest are from Adigudom with average mark score of 63 and 64 respectively. It has also been depicted that the average mark of students falls between 64.57 and 61.07 for students from ESIRA-ADi and 62 to 66 for students from Adigudom with 5% p value (95% confidence interval) and the average mark of aggregate students falls between 62 and 64.6 marks with 5% p value (95% confidence interval).

4.1.1 Socioeconomic characteristics of parents and academic performance of girls:

Age of household head: the human capital theory justifies that age of the household head matters both for occupation and earnings through education and experience attainment over time. Hence, older households may accumulate more wealth than the younger once. This in turn reinforces the resource allocation and value of girls schooling over time in secondary schools. As a basic demographic variable age of students household head determines the interaction and decision role at the household and also at school. In this case, it is influential to affect student's average score of school /exam performance directly or indirectly. The sampled data reveals that the average age of the household head age is 54.8 years with 42 and 68 years are the minimum and maximum age in full years. Taking the average age of all respondents and categorizing the average performance of respondents above the average age and that of respondents below the average age, and conducting a **t-** test to see whether the performance differences between the two categories is significant or not shows a p value 0.0365. That is the average performance difference attributes to a change in age of the household head. (Bratti et al 2004) posited that human capital accumulation rates are affected by demographic variables. For example, they established that an increase in life expectancy at birth brings about an increase in secondary and tertiary education while a decrease in the juvenile dependence rate negatively affects secondary education.

Sex of household head: the variable sex was taken as a dummy variable 1 if it is male and 0 for female in the model. In the existing dynamics of gender interaction sex is a predominant factor in patchy the performance and achievement of school at various levels. Schooling decision in terms of enrollment, stay at school, completion and moreover performance at exam is highly affected by the gender of the household head and also the student. Therefore, in the study 85% of student's family head were male and the rest 15% female. The average performance difference of girl students who are from female headed households and that of male head households is found to be around 5.1 which is statistically significant with a p value of 0.0071. In other words, students from female headed households do perform better.

Marital status of household head: The girl students household head marital status were characterized by 84% married, 6% divorced and 10 % widowed. The condition of marital status affects the living of students with two or separated parents and household core participation and labor time in relation to stay and performance at school. Hence, students whose parents are living together and not are enforced to live either of their parents and this is correlated to academic performance indirectly by affecting attendance and household chores instead of their

mothers at home. Therefore, previous studies justified that those girls who lived with both of their parents are likely to perform well than others. Because it affects both girls in material, moral and motivation with parental support and care for their education with suit home conditions. As the marital status is an indicator variable with three categories, we need to do a chi2 test to see if there is significant average performance difference among girl students falling in each category. The test with a p value of 0.153 indicates that the average performance difference among the three categories is insignificant.

Education level of the household head: Education achievement of the household head is an underlined factor in affecting/determine intergenerational school achievement and average score of girls at secondary school as it was cited in M.S. Farooq, (2007) retrieved from (Capraro, M., Capraro, R., & Wiggins, 2000). In similar cases, it affects the rest socioeconomic representation and social class in terms of participation and benefit entitlements in the community. As a proxy determinant father's education and mother's education achievement were taken to see the variation of academic average score of girls at secondary school. Therefore, majority of respondent's household heads were categorized under attending primary school and limited to level of read and write than advanced educational ladders. With a p value of 0.0000 students who are from literate families do perform better in terms of average mark (6.47 mark difference) and this difference is significance at 1%

Therefore, the data reveals that, education level of the household especially that of mothers is statistically different from zero for variation of average score performance of girls at secondary school as it was supported in (Krashen 2005); (Fantuzzo & Tighe2000 and Trusty 1999). The individual **t**-test for each level of education category justifies that those parents who are literate significantly contributes to boost their girl's academic performance at school than those illiterate. On the other hand no or lower parental years of schooling affect the mean score of girl's academic performance negatively.

Occupation of parents: in the district the occupation of both mothers and fathers reflects the existing level of their social role and representation to undertake schooling decisions at household level. After securing school enrollment and attendance, girl student's average score performance at exam is highly influenced by the available time, parental interaction to school and participation of child labor in response to parental occupation as cited by (*A.H. Chaudhry, 2009)* retrieved from *(Caldas & Bankston, 1997; Jeynes, 2002; Ma & Klinger, 2000)*. The

occupation profile of students parents were 45% farmers (both father and mother) 25% and 9% employed in and 20% and 36.5 % were merchants for father and mothers respectively. For this reason, parental occupation especially those of mothers were taken as a determinant factor for girls secondary school average school performance. As parental occupation (mother) is advance to access essential infrastructures both at home and the public it is likely to foster and smooth the process of learning and particularly average score of exam /school performance of girls at secondary school. In similar fashion, household resources and comfortable learning supports were related to parental occupation like study time, private tutoring, participation in extracurricular courses, source of studding light, room and others.

Similarly, parents are leveling jobs on the base of their education achievement, environmental and employability criteria's. For this reason, majority of parents live in the position of getting their maximum occupational placement of rural(43%) urban and semi urban (57%) which again determines access and utilization of basic infrastructures like health, road, credit, school and communication systems. Eventually, those girl students average score is correlated positively with mothers or parental occupation level. Based on a chi2 test (with a p value of 0.0000), the study reveals that there is strong statistical difference of girls academic performance among the occupational categories.

Parental Income: Income of the house hold is a determinant factor in affecting students average score performance in different ways as it was cited by (Garzon, 2006; Kahlenberg, 2006; Kirkup, 2008). It affects girl student's average score directly by reducing their attendance, support, fulfillment, courage and time. It is obvious that those from the lowest income level are poor performers at exam, irregular attendants at school, exposed to dropouts and school wastages of before and after schooling. Hence to see if the performance difference is attributed to average income differences, the researcher took the average performance of girl students whose parents earn above 10216.00 ETB per year as one category and of those whose parents earn below the average as another category. The average girl student's performance difference falling in the two categories being subjected to **t-** test shows that such difference is not significant with p value of 0.5433. Those with better family/parental income get access to resources for their school investment expecting better future payoff at school in inter temporal consumption and investment decision. Moreover, parental income directly affects girl student's household job participation and opportunity cost of girls schooling in attending tutorial and formal sessions of study time. Especially for women and girls it eases and reduces labor like

cooking, washing and backing by smoothing materials and time in the district. In similar cases, parental income is likely correlated with average score performance of girls at secondary school with statistical difference for variation of average score among the respondents.

4.1.2 Socio demographic composition of respondents:

In determining average score performance, students personal qualities and behaviors were considered. These qualities and attributes were largely derived from their demographic and social transitions and expectation in the family, school and the community at large. Here the basic once are outlined

Age and sex of respondents: As many studies revealed that, learning and its immediate outcome, average score performance is related with student's biological age over time and grade level achieved. In the district, school starting and current average age of respondents were 7 and 17 years respectively. The researcher tried to see if the average girl student's performance difference between a group of students above and below the break point average age of overall students is statistically different. The difference (4.01) is found to be statistically significant with p value of 0.0058. This was due to the fact that, respondents were more or less in similar age groups of adolescent girls in high school. In comparison with normal progression of schooling on average respondents delayed one grade level in reference to their age of school started. In terms of respondent's biological sex, all respondents were female in sex because, many papers were revealed variation of performance with male and female but failed to show performance on girls only.

Table 4.2 Summary of t-test for continuous and dummy variables

Variable	Obs.	Mean	St.Dev.	Min	Max	T-value	p-value
Age HH				42	68		
Above average	91	64.116895	8.670399			-2.1075	0.0365
Below average	89	59.160601	8.999702				
Sex							
Female	26	67.65385	9.427374			2.7212	0.0071
Male	154	62.5974	8.650452				
Education							
Illiterate	55	58.83636	6.545464			-4.7429	0.0000
Literate	125	65.304	9.126551				
Source of light							
Electric	54	70.42593	8.399465			8.1747	0.0000
Kuraz	126	60.28571	7.273906				
Dropouts							
Dropped	162	63.2716	9.049913			-0.2528	0.8007
Not dropped	18	63.83333					
Students age				16	20		
Above average	53	66.15094	9.680266			2.79510	0.0058
Below average	127	62.14961	8.341975				
Income				800	28000		
Above average	90	62.92222	8.485583			-0.6090	0.5433
Below average	90	63.73333	9.362608				
Tutor class							
Yes	102	58.78431	6.249954			-9.6022	0.0000
No	78	69.26923	8.401721				
English skill							
Yes	9	76.77776	5.044249			4.9350	0.0000
No	171	62.61988	8.5137758				
HH size				2	11		
Above average	87	65.31183	9.662769				
Below av.	93	63.32778	8.919147				
School dist				10	60		
Above aver.	97	57.20619	5.843333			14.8575	0.0000
Below aver.	83	70.48193	6.12743				

Source: computed from own data survey result, 2014

4.1.3 Academic achievement of respondents:

School completion rates: According to the data, respondents are asked whether they had ever been dropped out of school and average performances of students who ever dropped out of school is compared with average performances of students who did not drop out. The t test conducted to see if this difference is significance bears a p value of 0.80 assuring us to conclude that there is no statistically significance difference between the two categories. That is average performance of girl students with dropout records is more or less identical with the average performance of girl students without dropout records.

Access to home facilities: as learning is not the entire outcome from school, rather it encompasses the efforts made at home and the community. For this reason, respondent's private and public facilities access like home light, time, material and school facilities with the nearest possible distance and ease of use is correlated with their outcome of school as a proxy of average score at exam (Roberts, 2007). Therefore, differences to access these schooling inputs had influenced the average score of respondents with statistically different effects. Hence, having adequacy and availability of the resources is directly related with respondent's average score in their academic performance.

Accordingly, 30% and 70% of the respondents were used electric and Kuraz (traditional light with kerosene) as a light source of home study. Statistical comparison between the average academic performance of girl students who have access to electricity (30%) and of those who have only Kuraz access shows a mere difference of 10.14 performance score difference which is found to be statistically significance at 1% with a p value of 0.0000. That is the average mark of girl students with access to electricity is statistically higher by about 10.14 scores.

Extracurricular participation: according to (Waters & Marzano, 2006) school contexts and facilities determining girl's secondary school performance in general and their average score in particular, school facilities and services are influential. But in terms of composition and scope, respondents are almost in similar school contexts except participation for entitlements. Hence only 57% of the respondents were participated in tutorial school programs.

It is expected that those students who attend tutorial class should score higher as compared to students who do not attend it. To test whether this performance difference between the two categories is statistically significant or not, the researcher made a t test and the girl students

average performance difference of 10.53 as a result of the tutorial class is quite significant with a p value of 0.000 which implies that those who attends tutorial class do have higher average academic performance than those who do not attend the class.

Table4.3. Chi Squared test for Selected Categorical Variables

Variable	**Freq.**	Chi2	p-value
Marital status			
Married	151	73.3644	0.153
Divorced	11		
Widowed	18		
Total	180		
Occuphhh			
Merchant	15	167.2175	0.000
Farmer	164		
Other	1		
Total	180		

Source: computed from own data survey result 2014

4.2 Econometric Results

The thesis used cross sectional data collected from schools based on school assessment test results as a dependent variable in the form of academic performance achieved by girls in percentages. Therefore it can't consider any form of other standardized public or skill based tests to incorporate other commendable factors related to student's natural ability and intelligent quotient which affects the learning outcome.

Similar studies have documented potential bias-generating issues in this kind of investigation. One potential bias stems from the potential correlation of student performance with unobservable (*Daniel Suryadarma & F. Halsey Rogers, 2004).* One such unobservable is the student's ability to learn or educability. This variable is difficult to measure accurately, even if some sort of aptitude test is available (it is not in our data), but it is certainly an important element in the educational production function. Omitting it will therefore introduce bias if the variable is correlated with other regressors, such as parental education or income (Graddy & Stevens, 2003). To try to address this problem, we include several variables that are likely to correlate with student educability – parental educational attainment, whether the student takes extracurricular lessons; and parental attention to the student's progress.

The thesis employed multiple regressions with specific log- log model specification to estimate the interaction effect of determinants' of academic performance at secondary schools. Multiple Regressions analysis is one of the most commonly used methods in exploring predictors of academic performance (Chen 2002; McKenzie and Schweitzer, 2001). This study followed the methodology to examine the significance of various factors discussed above in predicting

secondary school girl students' academic achievement. The dependent variable in the multiple regression models was the self reported average mark that students achieved in the school tests in 2013. OLS estimator result based analytical explanations were presented in brief as follows. The predictor's effect is briefly outlined by running regression using the log of the dependent variable and taking the log form of all explanatory variables. In this case, continuous disparity of the outcome variable was analyzed by fitted OLS estimator which is tasted to its basic assumptions which makes us confident on the interaction effect of the determinants.

Hence, the result of OLS estimation technique has been clearly stated as per the significance of those predictors in the model. Finally the predictors were crosschecked whether them are theoretically sound or not by taking literature as a reference and the basics of conceptual framework analysis and the human capital theory.

Table 4.4 reports that log -log regression model estimated: both for the parental SES and girls demographic and learning skills and academic performance in schools. The result of this model was served as a reference in order to test the hypotheses that there is significant correlation in the predictive power of the key factors on girl's academic performance. As the R^2 suggested, 83% and adjusted R^2 82 % of variance in academic performance of all girls in secondary school, were explained by the predictors considered in the model.

F-statistics with a result of Prob > F = 0.0000 and F value of 81.77, further indicated that the models as a whole are significant.

Therefore the analysis result interpretation was done based on the information stated in the regression table. Coefficient values of parameters, beta value of standard deviations and p value of significant with the stated confidence level has been used to explain the determinant of predictor's effect on the outcome variable.

Therefore the research questions, hypothesis and specific objectives have been addressed by using the results of the regression analysis which briefs us the interaction effect of those identified variables over the outcome variable. The interpretation of each result is referred with the normality of the citrus paribus assumption.

4.2.1 **Objective One: Effect of parental SES on girl's academic performance:**

Specifying the pattern and degree of academic determinants is a complex and difficult task. Because, external factors were complex and interconnected to affect the outcome of girls performance at school in different forms than internal school level factors (Taddesse, 2009). Therefore, socioeconomic status of parents was represented by relevant proxy variables which

represent the social and economic role and expectation of parents accordingly. Taking the school contexts controlled the socioeconomic factors were sought as an external but exerts a weighted pressure on girls school performance at public secondary school.

Therefore the expected and theoretically sound proxy and actual representation of those variables were summarized by the empirical analysis of OLS estimation technique. The interaction of those variables also determines the outcome variable at various degrees of affecting and predicting power.

Table 4.4 the result of regression analysis for predictors and outcome variable in the model:

Logacper	Coefficient	T-value	p>|t|
birth order	-.0276733	-6.86	0.000
AgeHH	.0022568	3.27	0.001
EDUM	.0126512	2.40	0.018
EDUCF	.0052097	0.45	0.653
SchoolDis	-0.0041155	-10.02	0.000
Tutorclass	0.0381627	3.25	0.001
LogHHI	0.0383415	3.17	0.002
Stuage	0.0045296	0.84	0.404
Lightsource	0.022605	1.93	0.055
Engskill	0.0478655	2.19	0.030
Cons	3.655321	23.71	0.000
Number of obs.	180		
F(10, 169)	81.77		
Prob> F	0.0000		
R-squared	0.8287		
Adj R-squared	0.8186		
R00t MSE	0.05982		

Source: **computed from own data survey result 2014**

Variable	Active
Birth order	-0.02767329***
AgeHH	0.00225683***
EDUCM	0.012665115**
EDUCF	0.00520967
SchoolDis	-0.00411549***
Tutorclass	0.03816272***
LogHHI	0.03834151***
Stuage	0.00452964
Lightsource	0.02260501*
Engskill	0.04786546**
Cons.	3.6553209
Chi2	
Df	
N	180

Legend: *p<.1; ** P<.05; ***p<.01
Source: computed from own survey result 2014

The detailed interpretations of independent variables were presented as follows as per their expected sign and magnitude effect on the outcome variable

Table 4.5 Summary of coefficient conversion for percentage interpretation

	Variable	% age
1	Mothers education level	$(e^{0.0126512} -1) \times 100 = 1.27$
2	Fathers education level	$(e^{0.0052097} -1) \times 100 = 0.52$
3	Tutor class	$(e^{0.0381627} -1) \times 100 = 3.90$
4	Light source	$(e^{0.022605} -1) \times 100 = 2.29$
5	English language skill	$(e^{0.0478615} -1) \times 100 = 4.90$

Mother's education level: As expected the education level of biological mothers positively affects that of girl student's academic performance which we can tell simply looking at the sign of 0.01265. Interpretation of the coefficient however needs some more restructuring. The coefficient of mothers educational status (i.e. 0.01265) is the power of the natural logarithm function (i.e. $e^{0.01265}$), which when one is deducted from and multiplied by 100 gives the average performance of girl students whose mothers are literate is higher by about (($e^{0.01265}$-1) x100% = 1.27%). Such average performance deviation is found to be statistically significant with p value of 0.018. As the finding indicates the education level of fathers is positive indirection but not significant (0.52%). This indicates that, investing on mother's education will

likely influence the learning of girls in the next generation. In many cases of studies the level of biological mother's school year is taken as a proxy of SES in alleviating factors related to cultural norms, traditional beliefs and practices which have a strong influence on girls' attendance and performance in secondary school (*Kenya Institute for Public Policy Research and Analysis No. 56 January, 2006).* Finally one concludes that biological mothers literacy rate improved not only their girls secondary school performance but it so far affects their girls continued attendance on the educational ladder with better support and enabling motive for their girls than their fathers did.

A study in OECD countries on the students performance showed that students whose parents (especially mothers) have high school certificates or higher qualifications perform better than their peers (*OECD, 2001*).The level of maternal education is the key determinant for academic performance of adolescent girls at secondary schools (*The Park Place Economist, Volume XIV, 2006*).

The level of maternal education directly affects the enrollment, attendance and education outcome generally and girls academic performance particularly (*Harsha Aturupane The World Bank, July 2007*).

Hence the result of the thesis coincides with the idea of previous studies in the very vast literatures of economics of education that level of maternal education is directly and positively related to improvement in girl's academic performance at secondary school.

Household income: The allocation of scarce household resources affects girls more than boys (Boadu, 2000). Hence, household income is significant at 1% and has a positive sign with 0.002 and 0.038 p and Beta values respectively. Therefore, the study reveals that when household income increase by 1%, average academic performance of girl students increases by about 3.8% other predictors remain constant.

Previous studies cited by (Suzanne Wisniewski, 2007); (Glewwe, Kremer and Moulin, 2006) suggest that parental income directly influence the score of academics by smoothing enabling environment at home and resources for schooling. The higher the economic position of the household, the higher the school attainment and performance is.

In the household especially when income is erratic and irregular it is that of young girls at school were influenced negatively in participating with labor to replace the gap than boys (Binyam, 2009). Therefore when level of income is adequate, parental occupation and earning will increase students stay and performance especially for adolescent girls at secondary school.

In similar manner it also increases school supplies and offers for better learning condition in securing other nutrition, social and health service costs.

Finally those students from better income families are performing better at school than poor families especially at school assessment exams by investing much time to study directly without participation in labor. The result of the thesis shows that when parental income increases by 1%, then the academic performance of female increases by 3.8 % keeping other predictors constant.

Household head age; The study reveals that when the age of the household head increases by 1%, average academic performance of girl students who belongs to this household head increases by 0.23% other predictor remains constant. This effect is significant at 1% with p value of 0.001. In literature the head age is taken by proxy variable of considering matured family management and schooling decision and also interaction in social institutions like schools. Commencing the advancing of head age girl's performance foster due to the increase of family expectation, attention and value for girls school performance. The results of prior studies (*Rohana Kamaruddi, quality learning, 2006*) showed that among the components of the learning environment are positively correlated with students' academic performance that is housing environment and school/teacher involvement decisions at home. Study done by (Hammer, 2003) the home environment management by family heads is as important as what goes on in the school. Important factors include parental involvement in their children's education were decided by those parent leaders and those with massive experience and social expectation are more responsible than the younger one. (*Bratti et al, 2004)* posited that human capital accumulation rates are affected by demographic variables. For example, they established that an increase in life expectancy at birth brings about an increase in secondary and tertiary education while a decrease in the juvenile dependence rate negatively affects secondary education. Therefore, the study exhibit that when household head age increases by 1% academic performance of young girls at secondary school improves by 0.23% keeping other factors constant.

Distance to school. School distance is found to be negatively correlated with girl's average mark as was expected. The output also reveals that a 1% increment in distance results in a 0.41% reduction in average mark of girl students other predictor remains constant.

Similarly, previous empirical studies in secondary schools in Bangladesh however, (Asadullah, *2002*; *Bonga, 2010*) found a significant negative sign on distance variable in determining

student achievements using both OLS and IV regressions. When the distance from school to home increases then girls suffer problems like sexual violations at journey and lose efforts with travel and got tired to attend school attentively. For such reasons, girls are experience poor academic score in relation to their distant from school even to use school facilities like library, laboratory, tutorial and special auxiliary programs and ceremonies in their spare time at School. Hence, the current study coincides to others reflects that when distance travelled on foot to school increases by a 1% then academic performance likely decreases by 0.41% other variables remains constant. Therefore, distance or access to secondary school is a significant community or a regional characteristic which negatively affects girl's academic performance at secondary schools in the area under investigation.

Electric Light at home: students who have access to electricity are found to score 2.26% higher as compared with students who have only access to kuraz the effect of other variables being constant. This average deviation is significant with a p value of 0.055.

4.2.2 Objective Two: girl's demographic, learning skills and academic performance:

Birth order: birth order of students is taken as a proxy variable for the number of siblings at the household, cognitive intelligent transfer from parent to offspring and also shows marginal attention of family to their kids (*Suzanne Wisniewski July, 2007*). Birth order has a negative coefficient as expected implying the higher the birth order in the family, the lower the average mark score of the girl student who belongs to that family. The output also reveals that 1 % percent increase in birth order results in a 2.8% reduction in average mark of girls students which were significant with a p value of 0.000.

Family size at the household has also been noted to have effect on the academic performance of girls at secondary school by directly affecting their share on resource depletion and opportunity cost for learning time (*European Journal of Social Sciences – Volume 15, Number 4 (2010).* (Lloyd, 1994) shown that various measures of education achievement in terms of academic performance are usually negatively associated with number of siblings at the family. Therefore, the thesis explains that the birth order as a proxy of number of siblings in the family is inversely related to girl's academic performance at exam in secondary schools. That's why, in the model of analysis when family size increases by one sibling then performance level will likely to decrease by 2.8% keeping other external factors unchanged. First-born children may have higher ability, perhaps due to lower maternal nutrient depletion (King, 2003), so that variable may reflect innate ability. It also strengthen the idea of the thesis that those with low

birth order and number of siblings in the family exhibited better academic score than those with higher stated variable under the normality of citrus paribus.

English language skill: In Ethiopia language of instruction in secondary schools is English. Surprisingly those students of grade nine are their first time and turning point in the life of their education to get classroom interaction for all subjects in English language (*Hintalo wejrat edu. office, 2012*). Hence, many students who come from junior schools face a difficulty of understanding and perform poorly at exam simply with language constraint.

Therefore, the current thesis revealed that students who have good English language skills score 4.8% higher as compared to those students who have English language problem other variables remain constant. This percentage variation has been found to be statistically significant with a p value of 0.030 leading us to conclude that the variation is significant at 5%. Previous literatures *(Jing-Lin, 2009; Garikai, 2010)* similar topic put forward that, those students with English language skill constraint perform poorly when compared to those without constraint. Hence, English skill is positively related to girl student's academic performance by fostering understanding and performance at exams of secondary schools.

Participation in extracurricular schooling: it was believed that, attending both private and public extracurricular tuition improves the academic performance of girls in school based tests. Because, it support and strengthen knowledge and skill transferred before in the formal learning systems. This is true especially for girls, as they were violated for household chores and gender based discriminations in schooling decision both at home and in schools (FAWE, 2010). Therefore, the results of the thesis hold up the idea of literatures' and those girls who attend extracurricular tutor classes were better perform than those who couldn't attend the program. In this case, attending in extra tuition class has an add value of increasing academic performance with p value of 0.001. From the result one can conclude that, attending of extracurricular tuition increases academic performance by 3.8% as compared to not attending extracurricular tuition under normality of citrus paribus condition.

Chapter Five: Conclusion and Recommendation:

5.1 Conclusions:

The research has been conducted in Hintalo wejerat wereda with a population of 1147. The area was chosen because of the fact that the researcher believes there were deep rooted challenges of girl students in the area and researchers financial problem to cover other areas as well. There are two secondary schools in the wereda under consideration and the researcher included both of the schools in the study. Having the list of all girls' students from the two schools, a random sample of 200 was taken and all of the students were subjected to a structured questionnaire. Only 180 comply to give a response though the non response of the 20 students were believed to be not systematic. Data representing the 180 sample were entered in to STATA version 11 and descriptive as well as econometric analysis was made. Descriptive analysis was used to see if the mean difference of girl's average academic mark significantly differs by each category. Students who lives in urban areas, having no English language problem, attending a tutorial class, having access to electricity and headed by literate families do perform higher than those who falls in the opposite categories. In each of those categories, the t test shows a p value of 0.0000. Average student mark difference has also been observed by sex of the household head categories with those who live with female headed household performing better.

The thesis is expected to come up with relevant findings whose result coincides with the rarely availed literature in the area of Economics of Education at level of secondary school performance. Of this aim, it analyzes the determinants of girl's secondary school academic performance in relation to their parent's socioeconomic and demographic qualities. In its conclusion, it signifies that learning at school especially for girls is not the only stature which is expected to be realized by schools rather the main challenge lies on parents, peers, communities and girl students themselves.

In determining the success and improvement of academic performance for girls; parental socioeconomic representation and girl's demographic and learning skills better explain academic performance than other external factors. Hence, socioeconomic determinants were really the direct engines for creating enabling learning environment: like motivation, family support, study time, private tutoring, and extracurricular participation and moreover in smoothing girl student's performance at school.

Both the interaction of socioeconomic status and demographic composition of family at home were critically examined as a significant factor for girl's academic performance.

There in, those girls from high socioeconomic back ground have better academic accomplishments via score in school examination. Of other research documented that young girls from better educated, adequate income, limited household size and with good skill of English language are significant and positively correlated with academic performance at school. Especially the highest school year of biological mothers was taken as to affect the rest component of SES in the family and the community as well.

Therefore, maternal education is the highest proxy variable in creating enabling home environment for girls and better interaction to school for girls extracurricular participation.

On the other hand the lowest SES and lower school years of biological mothers were likely influence girls academic achievement with greatest gender discrimination and uneven schooling decision both at school and home. Besides to that the human capital level of parents also coat the knowledge, attitude and practice level of understanding the existing gender dynamics at home and in the public. Therefore, limited human capital was highly correlated with low performance of girls at school by creating uneven playing ground both at home and at school. Although the public is evenly accessed for both it was unlikely that girls from two different family background perform equally at school.

In conclusion, the thesis investigates that the issue of SES of parents should be addressed critically if anyone likes for the success of economic growth measured through productivity of girls with high school completion and better performance at secondary education. Because being in high school was life form of fire age with sensitive adolescent personal qualities and it is the bridge between higher and lower schooling ladder in the curriculum. Therefore, acknowledging and recognizing such issues required some level of human capital and statue of SES at home to link the system well.

Consequently the investment of girls education performance at secondary education further influences the overall future economy and intergenerational learning of children especially daughters and girls more specifically. Recognizing the importance of girls education is a mere step in acknowledging ones nation development, rather the issue of current debate is to examine the determinants of girls performance at school as per the required level of success in academics.

In sum both girls and their parent's socioeconomic and demographic makeup were taken as the ends and means to determine success and achievement at school particularly when youth and in secondary school. In similar cases, girls' demographic and learning skills were also sought as an influential level in undertaking better performance in secondary schools. Therefore, the aforesaid determinants must be addressed to curb the existing pronounced poor and inconsistent academic performance at school so as to tackle household improve academic performance of girls in school.

5.2 Recommendation:

There are many factors of structural and behavioral restraints for girl's academic performance derived from the rough state of parental SES and girl's demographic and learning skills. The possible measures, to improve academic performance of girls at secondary schools have two basic forms of policy implications. These are those actions and policies which can be implemented with available scarce resources and coordination system in the short period of time and placed under the short run policy recommendations. While some other parts of the challenges required especial effort and resource under expanded period of time and will be made effective under the long run policy recommendation for sustained improvement of girl's academic performance and overall schooling success. Therefore, the best integration and joint policy implementation mechanisms, the jagged socioeconomic factors will be smooth down for the better accomplishment of girls at school. Here the thesis strives to advocate some critically examined issues to curb the impacts of socioeconomic factors on girl's poor academic score;

- Schools that takes fewer and fewer hours to reach motivates girl students to attend regular and tutorial class. So responsible government bodies should consider this variable during constructing new schools.
- It is advisable to training programs on behavioral and attitude shift of parents, students and teachers not only on the importance but on the key determinants of academic performance for girls at secondary school. Thereafter, gaps under SES status will be mitigated with experience sharing and developing mutually supportive jointly shared goal on girl's academic performance among students, teachers, parents and the general public as well.

- Ensure Resource mobilization and institutional fund raising channels for female education self and communal IGAs will likely solve the income problem of girls from poor families. In similar cases, communities start to value girl's education in recognizing both its importance and determinants of academic access for girls at secondary schools.

- Increased extracurricular participation (tutorial class) and related activities like establishing and strengthening girls clubs, arranging open discussions with peers like gender dialogue, peer education Hence girls will be equipped with self understanding to

solve any form of socioeconomic problems with better bargaining and participation at home and school in relation to their school progress.

- Arranging and strengthening especial and private tutor programs for both language skill improvement and academic progress at school will foster performance of girls.

- Expand access of adult learning to improve parental level of literacy for self and household empowerment as the factor for girl's academic performance in general and reduce dropout and school wastage in particular in the long run.

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Questionnaires

This questionnaire is to be disseminated for the adolescent Girl students and their Households in all secondary schools of Hintalo Wejerat Wereda of Tigray National regional state in Northern Ethiopia.

- Dear respondents: please be aware that the information you provide is with your own capacity and freedom as per the identification of socioeconomic factors of Girl's secondary schooling for the matter of data for a research not for other purpose. Thank you for your honesty and cooperation in reflecting the reality up on the issue under investigation. No one enforces you to act on the questionnaire if there is a sort of discomfort.
  Thank you in advance for your time and consideration.

Part one: **Back ground information of student's parent**

1. Parental socioeconomic status and demographic information
   1.1 .Age of the house holds head ----------in full year.
   1.2 .Location of the house hold resident 1.urban 2.Rural
   1.3 .Sex of the house hold head 1.Male 2.Female
   1.4. Marital statuses of the house hold head. 1. Married 2.divorsed 3.widowed 4.separate 5. Other cases
   1.5 House hold size----------
   1.6 Education level of father: 0.Illitrate 1.Read & write 2.primary 3.secondary 4.college/TVET 5. University 6. Others
   1.7 Education level of mother:0.Illiterate 1.Read & write 2.primary 3.secondary 4.college/TVET 5.university 6.others
   1.8 Occupation of the house hold head: 1.farmer 2. Merchant 3 professional employee 4.non-professional employee 5.daily laborer 6. Driver 7. Others
   1.9 Occupation of your mother (if the house hold in Q1.8, is not your mother): 1. Farmer 2. Merchant 3. Professional employee 4. Non-professional employee 5 .daily laborer 6.driver 7. Others
   1.10 Occupation of your father (if the house hold in Q1.8 is not your mother) : 1.farmer 2.merchant 3. Professional employee 4. Non-professional employee 5..daily laborer 6..driver 7.others
   1.11 Religion of the house hold head: 1.orthodox 2.Islam 3.protestant 4.catholic 5.others----------
   1.12 Annual revenues of the house hold in general in ETB----------
      a. From agricultural harvest---------- (amount in Birr).
      b. From off-farm income---------- (amount in Birr).

   1.13. Do you get remittance income? 1. Yes 2. No

      a. If yes, how much in ETB ----------

   1.14. Do you get social cash transfer income? 1. Yes 2. No

      a) if yes how much in ETB ----------

   1.15. Have you taken out a loan (credit)? 1. Yes 2. No

a) if yes, amount in Birr ---------- b). Source of credit----------

1.16. Does the house hold have saving account? 1. Yes 2. No

a).if yes, total amount in Birr----------

b). institution of saving----------

1.17. Access to land 1.yes 2. No

a) if yes, total amount in timad----------

b) if yes, does the house hold cultivated the land himself? 1. Yes 2. No

1.18. Does the house hold cultivate other house hold's land? 1. Yes 2. No

a) if yes, total amount in timad----------

1.19. Does the house hold have livestock? 1. Yes 2.no

a) if yes, total number and type of livestock----------

1) cow---------- 3) goat---------- 4) sheep----------

2) Oxen---------- 5) camel---------- 6) others----------

1.20. Do you have your own house? 1. Yes 2. No

a) if yes, total number of rooms----------

1.21. What is the nature of the house? (If Q, 1.20 yes)

a) Stone b) sar c) others

1.22. Access to electricity 1. Yes 2. No

1.23. Access to tape water 1. Yes 2. No

2 Girl student's information

2.1 Age of respondent/student----------in full year.

2.2 Educational performance level: 1.very good 2.Good 3.medium 4. Poor

2.3 Marital status: 1.single 2.married 3. Divorced 4. Widowed

2.4 Birth order----------.please specify with the number, age & sex of siblings under the Given range.

M<5 ----------. M, 5---10--------. M, 10—14 --------. M, 14—18 .-------

M,>18.----------Or F,<5.---------.F, 5-10.----------.F,10—14.---------

F, 14—18.---------. F,>18.----------

Household member	sex	Age	Level of education	Occupation

2.5 .with whom are you living with? 1. Both parents 2.father only

3. Mother only 4.Grand parents 5.others

2.6. Who is the bread winner in the family? 1. Father 2.mother 3.elder brother 4.elder

Sister 5. Grandparents 6. Others

2.7. How did you perform your primary schooling? 1. Excellent

2. Very good 3.Good 4.Fair 5.poor

2.8. What social risks girls experience when their age and Grade level

Advances? 1. Early marriage 2.migration 3.dropout from

School 4.All 5.None of the above

2.9. who needs more Education? 1. Girls 2.boys 3.both

Why----------

2.10. At what age did you start schooling ----------

2.11. Do you want to finish your education? 1, yes 2, No

a) if yes, what do expect the return? ---------- ----------

---

b) if No please specify the reason----------

2.12. Does your family support your Education? 1. Yes 2. No. please

Specify the way they support you ---------- ----------

2.13. Does your family treat you like your brother? 1. Yes 2. No

Please specify the way they treat you----------

2.14.How long would it take for you to reach to your school? Walking

Time and in Kilometer----------

2.15. How do you reach your school? 1. on foot 2.public transport

2.16.Have you ever repeated grades in the last three years?1.yes 2.No

2.17.Have you ever dropped grades in the last three years? 1.yes 2.No

2.18.what are the determinants of gender equality in our times at

School and home? ----------

2.19. Have you ever attended tutorial classes? 1. Yes 2.No

2.20. Have you ever missed classes in the last three weak?

1. Yes 2.No

2.21. Are you a member of any co curricular clubs at your school?

1. Yes 2.No

2.22. Have you ever rank 1—3 in your school? 1. Yes 2.No

2.23. Have you ever face a difficulty with English language skill

Constraint? 1. Yes 2.No

2.24. Have you ever participated in labor at home/community?

1. Yes 2.No

2.25. At what age girls merry in your community? Please specify-------

---

2.26. Have you ever been mistreated by your teacher/s or boys in the

School? 1. Yes 2. No

2.27. What are the three things you would want to see changed from Your school?

a/ ----------

b/ ----------

c/ ----------

2.28. Do your parents cover all Educational expenses? 1. Yes 2. No

2.29. Do you have a complete studying room? 1. Yes 2. No

2.30. How much time you study in a day? ----------

2.31. What is your source of light at home? 1 Electricity 2. Kuraz 3. Others

2.32. Please specify the Economic problems of girls schooling at your School in your locality? ----------

2.33. Please specify the social problems of girls at your school in your Locality? ----------

2.34. What must be done to improve the academic performance of girls at your school in the locality? ----------

"Thank you very much for your patience!!"

Appendix: 1 Correlation matrix in the Econometric model

```
. pwcorr birthorder AgeHH SchoolDis LogHHI stuage

             | birtho~r    AgeHH  School~s   LogHHI   stuage
-------------+-----------------------------------------------
  birthorder |   1.0000
       AgeHH |  -0.1861   1.0000
  SchoolDis |   0.5934  -0.2234   1.0000
      LogHHI |  -0.3091  -0.0796  -0.4024   1.0000
     stuage |   0.1896  -0.0789   0.2765  -0.1674   1.0000

.
```

Appendix: 2 Heteroskedasticity test

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of Logacper

         chi2(1)      =     0.62
         Prob > chi2  =   0.4313
```

```
. imtest

Cameron & Trivedi's decomposition of IM-test

---------------------------------------------------
              Source |       chi2     df       p
---------------------+-----------------------------
  Heteroskedasticity |      45.54     58    0.8827
            Skewness |      10.00     10    0.4404
            Kurtosis |       1.03      1    0.3091
---------------------+-----------------------------
               Total |      56.58     69    0.8579
---------------------------------------------------
```

Appendix: 3 Normality test for the error term

```
. sktest Res

                    Skewness/Kurtosis tests for Normality
                                                      ------ joint ------
    Variable |   Obs   Pr(Skewness)   Pr(Kurtosis)  adj chi2(2)  Prob>chi2
-------------+------------------------------------------------------------
         Res |   180        0.0000         0.0077        19.18     0.0001
```

Appendix: 4 VIF in the model

```
. . vif

    Variable |       VIF       1/VIF
-------------+----------------------
 birthorder  |      1.59    0.630053
       AgeHH |      1.17    0.851869
       EDUM  |      1.19    0.841989
       EDUf  |      1.10    0.909511
  SchoolDis  |      2.08    0.480371
 Tutorclass  |      1.71    0.586411
       LogHHI|      1.58    0.634884
      stuage |      1.20    0.836100
1.lightsource|      1.45    0.691082
 1.engskill  |      1.14    0.876553
-------------+----------------------
    Mean VIF |      1.42
```

Appendix: 5 the results of regression analysis for predictors and outcome variables

Source	SS	df	MS
Model	2.9257705	10	.29257705
Residual	.604662105	169	.003577882
Total	3.53043261	179	.019723087

Number of obs	= 180
F(10, 169)	= 81.77
Prob > F	= 0.0000
R-squared	= 0.8287
Adj R-squared	= 0.8186
Root MSE	= .05982

Logacper	Coef.	Std. Err.	t	P>|t|	Beta
birthorder	-.0276733	.0040343	-6.86	0.000	-.2751049
AgeHH	.0022568	.0006896	3.27	0.001	.1128846
EDUM	.0126512	.0052739	2.40	0.018	.0832235
EDUf	.0052097	.0115685	0.45	0.653	.0150324
SchoolDis	-.0041155	.0004107	-10.02	0.000	-.4602664
Tutorclass	.0381627	.011749	3.25	0.001	.1350319
LogHHI	.0383415	.0121041	3.17	0.002	.1265576
stuage	.0045296	.0054143	0.84	0.404	.0291268
1.lightsou~e	.022605	.0117031	1.93	0.055	.0739668
1.engskill	.0478655	.0218495	2.19	0.030	.0744889
_cons	3.655321	.1541786	23.71	0.000	.

Variable	active
birthorder	-.02767329***
AgeHH	.00225683***
EDUM	.01265115**
EDUf	.00520967
SchoolDis	-.00411549***
Tutorclass	.03816272***
LogHHI	.03834151***
stuage	.00452964
1.lightsou~e	.02260501*
1.engskill	.04786546**
_cons	3.6553209***
chi2	
df	
N	180

legend: * p<.1; ** p<.05; *** p<.01