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# GENDER EQUITY IN EDUCATION IN ETHIOPIA: HURDLES, INITIATIVES AND PROSPECTS

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**ABSTRACT:** *The gender-related consequences of being an African female manifest themselves in several ways: socially, economically, culturally and most relevantly educationally. For instance, Ethiopian females are less likely to go to school, to persist and to perform than boys in almost all settings and at all levels. Despite the fact that several Ethiopian studies have been conducted in connection to this issue, intervention based on the results of the studies has had no significant alleviative returns. Policy initiatives based on these studies do not seem to have led to significant changes. This inevitably calls for a supplementary study which takes care of the drawbacks of the former studies on which this study capitalizes. The present study uses logistic regression methods to investigate correlates of female school enrollment in rural and urban Ethiopia. The results of the study advocate the teaching of girls because the problems are exacerbated in girls with uneducated or under-educated mothers.*

## INTRODUCTION

Over the last decades, women around the world have made significant gains in areas such as health, work and education. Since the 1950s, women's life expectancy has increased from 49 to 68 years. Beginning the

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1960s, women's participation in the labor force has risen from 33 to 54 percent. And again from the 1970s, literacy rates for women have gone up from 54 to 64 percent. And since the 1980s, the gap between girls and boys' enrollment has narrowed down (PRB, 1998).

This progress is due, in part, to a growing awareness of the fact that continuing social and economic development depends on improving women's lives and on allowing women to participate fully in society. Many big international conferences have called for a greater push for women's progress and equality besides the direct struggle by women themselves who tried to demonstrate their ability and even to fight against a common enemy in the field.

Despite this progress, there are many indicators which demonstrate that women throughout the world, and particularly in less developed regions, still experience significant social and economic disadvantages. For instance, though the education gap between men and women is narrowing the world over, more men than women are literate (80 percent compared to 64 percent respectively). The difference is quite significant in less developed regions, where overall literacy rates are low. For instance, in Eastern Africa the rate is 67 for men compared to 46 for women (UNESCO, 1997). This shows that throughout most of the Third World, females do not attend school at rates equivalent to those of males. The reasons could be several. Examples may be shortage of schools, shortage of teachers and classrooms, pressures of current domestic duties, anticipation of impending house-wifery and maternity and the difficulty of reconciling society's idealized notions of femininity with pursuit of qualifications and job satisfaction.

In countries of Africa, Asia, Latin America and the Middle East, research on the determinants of access to education has suggested that individual background variables combined with market forces impels school enrollment regardless of sex in a logical demand-supply model (Ram, 1982). The larger the economic benefits reaped by those who are schooled, the greater the individual demand for schooling, provided that parents or students understand the relation between education and future income generation. Educated parents who themselves work in the market economy by virtue of their schooling tend to share this understanding and are more likely to send their children to school regardless of gender.

Parental education and income in Third World countries tend to predict a child's educational level. However, the relationship as compared to that found in North America and Europe is less strong for males (Foster, 1977; Heyneman, 1976) but more powerful for females (Weis, 1980; Bowman and Anderson, 1982). While not all well educated parents send their daughters to school, girls who enter school tend to come from relatively educated and high-income families more than boys do. A West African study showed that unless they are wealthy, parents prefer to educate their sons on the assumption that education 'pays off' in life-time wages more handsomely for males than for females (Ram, 1982; Bowman and Anderson, 1982; Woodhall, 1973).

In urban areas wage discrimination favoring men may account for equality in educational enrollments between males and females at all levels of schooling. Schiefelbein and Farrell (1982) in Ficker (1984) found Chilean parents tending to send their daughters to school for longer periods than their sons. The reason is that they think education enables girls to earn a wage equivalent to their brothers who have had less schooling. In Chile, for that reason, more women, as a percentage of

their age cohort, attend tertiary level educational institutions than in the United States or Japan.

Failures to send girls to school do have deep-rooted socio-cultural basis such as early marriage, child-bearing responsibility, and willingness to allow girls to travel (UNESCO, 1997). In many countries, girls are expected to contribute to childcare or household chores rather than go to school. Many poor families regard the education of girls as a low priority compared to the education of boys because they consider education of the latter as an investment in security for old age. A study in rural Peru (Gertler and Glewwe, 1989) indicated that sex is significantly negatively correlated with enrollment implying that female children are less likely to attend local secondary schools than otherwise identical males. They argued that this could be done either to lower expected future returns to schooling among female relatives to males, which could cause parents to educate sons rather than daughters, or to discriminate against girls regardless of their earning potential.

A similar study in Sudan (Maglad, 1994) found that families in rural areas are reluctant to send their daughters to school beyond the primary school level, especially if they have to travel outside their communities, because this causes parents to worry about sending their children (after puberty) to secondary schools in other towns.

In the case of Ethiopia, right from the outset the system of education had never been encouraging for women. Policies of education were highly affected by the religious, cultural and other values which brand the education of girls as a low priority. For instance, though formal education started as far back as 1908, girls' school participation rate remains very low. The figures for

primary, secondary and overall school enrollment were 34.8, 8.4 and 27 percent respectively. The percentage of females enrolled was 26 in the primary, 7 in the secondary and 20.6 in the overall schooling system. Similarly urban areas are dominant over rural areas in terms of enrollment (see Table 1 below).

**Table 1. Primary gross enrollment rate (Grades 1-8)**

| | Male | Female | Difference |
|---|---|---|---|
| Urban | 112.8 | 89.4 | 23.4 |
| Rural | 33.3 | 16.0 | 17.3 |
| Difference | 79.5 | 73.4 | |

**Source:** MOE, 1996/97 Education Statistics

Despite this, over the last few years, there have been some changes introduced by the government in its effort to ameliorate the situation that prevailed in the past. This includes the drafting and implementing of favorable policies, creating awareness in the general public and identifying major issues which contribute to the problem. However, the sex difference in school participation is still significant. The situation is particularly pronounced in the case of rural women. Contributing to the worsening of the situation, repetition and dropping out of school are higher for females than for males. In almost all grades in the primary cycle, as shown in Table 2, the repetition rate is significantly bigger for females than males.

**Table 2. Repetition Rate by Grade**

| Sex | Grade 1 | Grade 2 | Grade 3 | Grade 4 | Grade 5 | Grade 6 | Grade 7 | Grade 8 |
|---|---|---|---|---|---|---|---|---|
| M | 12.8 | 6.5 | 4.2 | 5.8 | 5.2 | 4.8 | 12.6 | 19.9 |
| F | 15.0 | 7.9 | 5.2 | 8.6 | 8.9 | 6.7 | 19.4 | 27.8 |

**Source:** MOE, 1996/97 Education Statistics

Most studies made in Africa relate the problem mainly to economic issues with the assumption that an economy based on agriculture highly demands child labor. And others relate it to some other demographic and social issues. For instance, studies carried out in Ethiopia, Sudan, Mali and Peru indicated that distance to school, parents' educational level, region of residence, quality of education, age of the person, family size and other demographic factors are important determinants of school enrollment (Mulugeta, 1998a and 1998b; PHRD, 1996; Maglad, 1994; USAID, 1993; Gertler and Glewwe, 1989; Birdsall,1987).

However, it seems that methodological differences yield different results. Most studies treat the problem without any emphasis on sex differences. Determinants of access to schooling for boys and girls were not separately done to the extent desired. That is why most studies have failed to identify the vicious circle in which an illiterate mother produces another of her own kind. It is very difficult to assume that factors affecting men and women in school enrollment are the same. Studying the problem mixing boys and girls is not wise either. Not only these, prioritizing the magnitude of the effect of each factor on each sex can be done only if the study is conducted separately.

The main objectives of this study are:

(i) to investigate and discuss the main factors affecting school enrollment for each sex separately, and

(ii) to make a comparative analysis on the magnitude of the effect of each factor on males and females.

Apparently, women are half part of the society if not more. They are very important to determine the social status of the family members. There is a saying that, "teaching the mother is teaching the family", which confirms the above statement. This study is, therefore, significant in that it attempts to make policy makers aware of the importance of gender differential factors affecting school enrollment in Ethiopia.

## DATA AND METHODOLOGY

### Data

The sources of the information are secondary data obtained from two different surveys undertaken by the Central Statistical Authority (CSA). The surveys include the 1995/96 Household Income, Consumption and Expenditure survey and Welfare-Monitoring Survey. The surveys covered more than 7000 households selected from 571 rural enumeration areas and more than 4000 households selected from 323 urban enumeration areas. Overall, the surveys covered around 11,000 households comprising nearly 23,000 school age persons. In fact this is the only data available comprehensively covering enrollment and socio-economic variables. Description about the data can be read from CSA(1997) and Mulugeta (1998a). The main limitation of these surveys is that they do not include in-school factors like student-teacher ratio, class size and quality of teachers, which are related to school enrollment.

## Variables selected for the study

The number of variables was constrained by the limitation of availability of data in the surveys, though they were the best surveys at our disposal. In fact it is worth mentioning that some variables were eliminated because they had many missing cases.

### Dependent variable

*Overall Enrollment (Y)*:- it is a discrete binary variable which assumes the value 1 if a sampled school age person (ages 7-24 ) is enrolled in grades 1 to University or 0 if not .

**Explanatory variables.**

| Variable | Description | Value labels | Comment |
|---|---|---|---|
| | | **PERSONAL VARIABLES** | |
| X1 | Age | | completed years |
| X2 | Sex | 1=male 0=female | |
| X3 | Relation | 1=common child 0=not common child | |
| X4 | Health | 1=healthy 0=not healthy | |
| X5 | Marital status | 1=married 0=never married | |
| | | **HOUSEHOLD VARIABLES** | |
| X6 | Family size | | |
| X7 | Age of the head | | completed years |
| X8 | Literacy of the head | 1=literate 0=illiterate | |
| X9 | Expenditure | | Proxy for income |
| X10 | Sex of head | 1=male 0=female | |
| X11 | Literacy of spouse | 1=literate 0=illiterate | |
| X12 | Occupation of spouse | 1=farmer 0=other | |
| X13 | Occupation of head | 1=farmer 0=other | |
| X14 | Mothers' education | | School years |
| X15 | Fathers' education | | |
| X16 | Employment of head | 1=employed 0=unemployed | |
| X17 | Employment of spouse | 1=employed 0=unemployed | |
| X18 | No. of school-age persons | | |
| X19 | Proportion of girls | | |
| | | **COMMUNITY VARIABLES** | |
| X20 | Income of the household | | In Birr |
| X21 | Returns from education | 1=yes 0=no | |
| X22 | School expenditure | | In Birr |
| X23 | Distance to primary school | | In kilometers |
| X24 | Distance to secondary school | | In kilometers |
| X25 | Location of residence | 1=urban 0=rural | |

Regional Dummies

The regional dummies assume the value 1 if the person under study is from the respective region and 0 if he/she is not from the region. The variables are: Tigray, Afar, Amhara, Oromia, Somali, Ben-Gum, Gambela, Harari, Diredawa, and Addis.

Remark: Interaction of some of the factors is also considered to investigate the joint effect of interacting factors on the dependent variable during the model-building process.

## Methodology

Regression methods have become an integral component of any data analysis concerned with describing the relationship between a response variable and one or more explanatory variables. It is often the case that the outcome variable is discrete, taking on two or more possible values. Over the last decade the logistic-regression model has become, in many fields, the standard method of analysis in this situation (Hosmer and Lemeshow,1989). This study used this method because it requires fewer assumptions than other similar methods.

## Logistic Regression

For a binary response $Y_j$ and a quantitative explanatory variable $X_{ij}$ , i=1,2,...k and j=1,2,..,n. Let $P_j = P(X_{ij})$ denote the "success probability'' when $X_{ij}$ takes the value $x_{ij}$ We can assume that the transformed variable $\ln\{P_j / (1-P_j)\}$, which lies in the interval $(-\infty, \infty)$, has a linear form for the logit of this probability , that is,

$$\textbf{logit}\ (P_j) = \textbf{Ln}\left(\frac{P_j}{1-P_j}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_K X_K$$

this implies,

$$P_j = \frac{\textbf{Exp}\ (\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_K X_K)}{1 + \textbf{Exp}(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_K X_K)}$$

Where

$\beta_i$ refers to the effect of $X_{ij}$ on the log odds that $Y_j=1$ , controlling for other X's. That is, for continuos $X_{ij}$ , it is the rate of change in the log odds for a unit change in the explanatory variable; while for a binary $X_{ij}$ , it is the rate of change in the log odds when the $X_{ij}$ changes from zero to one and,

$\text{Exp}(\beta_i)$ refers to the odds ratio, that is the multiplicative effect on the odds of a unit increase in $X_{ij}$ at fixed levels of the other X's.

In this situation we may express the value of the outcome variable given X as $Y_j = P_j + \varepsilon_j$. Here the quantity $\varepsilon_j$ may assume one of the two possible values. If Y=1 then $\varepsilon_j = 1-P_j$ with probability $P_j$, if Y=0 then $\varepsilon_j = -P_j$ with probability $1-P_j$. Thus, $\varepsilon_j$ has a binomial distribution with mean zero and variance $P_j(1-P_j)$.

Suppose we have a sample of n independent observations of the pair $(X_{ij}, Y_j)$, i=1,2...p and j=1,2,...n. To fit the logistic-regression model to a set of data requires that we estimate the parameters $\beta_i$'s. The general method of estimation that leads to the least squares function under the linear-regression model (when the error terms are normally distributed) is the maximum likelihood. This method yields values for the unknown parameters, which maximize the probability of obtaining the observed set of data.

After estimating the coefficients, our first look at the fitted model commonly concerns an assessment of the significance of the variables in the model. The question that arises at this step is whether or not the model that includes the variables in question tells us more about the outcome variable than the model that does not include that variable. That is, to test the significance of the effect of X on the binary response or $\mathbf{H_0}$: $\beta=0$ (the probability of success is independent of X). Since for a large sample size the Maximum Likelihood (ML) estimate is normally distributed, it can be used to test the hypothesis under consideration (Hosmer and Lemeshow,1989). Therefore, the test statistic for the likelihood ratio test is given by

> ***G = -2 Ln {LLW / LLWo}**, which is chi squared distributed with degrees of freedom, p-1, when $H_0$ is true. Large values of G result in the rejection of the null hypothesis.*

The criteria for the inclusion of a variable in a model may vary from one problem to another. The traditional approach involves seeking the most parsimonious model that still explains the data. The rationale for minimizing the number of variables in the model is to make the resultant model more likely to be numerically stable, and more easily generalizable. The more variables included in a model, the greater the

estimated standard error becomes, and the more dependent the model becomes on the observed data.

There are, however, certain steps one has to follow in the selection of variables in logistic regression. These are first a careful univariate analyses that have to be done by using chi-square or correlation analyses. Then, once the variables are identified, one has to begin with a model containing all of the selected variables. One problem with the univariate approach is that it ignores the possibility that a collection of variables, each of which is weakly associated with the dependent variable, can become an important predictor of outcome when taken together. Hence, to mitigate this problem, it is good to consider other multivariate methods.

Several multivariate model selection procedures are available in the different statistical packages at our disposal. In our case the backward elimination procedure, which starts with a complex model and that successively takes out terms, is used. At each stage, we eliminate the variable in the model that has the largest p-value when we test its coefficients that are equal to zero.

With the assumption that our model-building efforts are at least preliminarily satisfied, we can begin assessing the model. There are various ways of assessing whether or not the model fits the data. One way of doing this is to examine how "likely" the sample results actually are, given the parameter estimates. A good model is one that results in a high likelihood of the observed results (Agresti, 1996; Fineberg,1997). The other way is to compare our predictions to the observed outcome. That is, if the probability of misclassification of the fitted model is large, we say the fit is poor; otherwise we accept it as good.

## RESULTS OF THE STUDY

The results indicate that a multiplicity of factors stand in the way of gender equity in education in Ethiopia. Equation 1 shows that the probability of going to school for females is a function of education of the spouse, location of residence, occupation of the spouse, education of the head and relation of the child to the head and the spouse. When compared with equation 2, which shows the logistic function for males, there is some variation in the factors as well as in the degree of effect on the same factors.

*Equation 1: male enrollment*

**Logit(y) =-2.3475+ 2.0985$X_{25}$ + -0.2429$X_1$ + 0.0251$X_7$ + 3.1266$X_{11}$ + 0.4999$X_3$ + -0.7732$X_{13}$ + 0.4286$X_8$**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **s.e** | **(0.8189)** | **(0.3366)** | **(0.0302)** | **(0.0113)** | **(0.5199)** | **(0.2421)** | **(0.3204)** | **(0.1434)** |
| **p-value** | **(.0041)** | **(0.0000)** | **(0.0000)** | **(0.0260)** | **(0.0000)** | **(0.0390)** | **(0.0158)** | **(0.0028)** |

**Overall CLASSIFICATION 80.97%**

For example, the negative impact of living in rural areas is found significant only for females. Similarly, education of the spouse (most spouses in this survey data are females) has a big positive association with school enrollment of females than males. The worst comes when a female student with an illiterate mother resides in a rural area. Living in rural areas is associated with long distance to school and with highly traditionally-minded parents who believe that girls are suited only for housework and maternity.

The fact that the rate of return of schooling in rural Ethiopia is very low means that the indirect cost of schooling is very high and the low availability of schools at a relatively closer distance from home are associated with living in rural areas. If these factors are assessed one by one, their differential effect on females is prohibitive. The occupation of the average woman in rural Ethiopia is either midwifery or farming or both even when she is a graduate of the primary cycle of education. This means schooling has no returns for her. Consequently, she may not consider sending her daughter to school important. The maximum she can do is use her daughter's labor for household as well as other outdoor activities.

*Equation 2: female enrollment*

**Logit(y) =-0.49+ -0.198$X_1$ + 0.03$X_7$ + 2.28$X_{11}$ + -0.11$X_{23}$ + -0.653$X_{12}$ + 0.151$X_{16}$ + 0.633$X_3$ + -1.54$X_{13}$**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **s.e** | **(0.6786)** | **(0.026)** | **(0.0094)** | **(0.4031)** | **(0.0333)** | **(0.2737)** | **(0.310)** | **(0.238)** | **(0.2343)** |
| **p-value** | **(.4698)** | **(.000)** | **(0.005)** | **(0.0000)** | **(0.002)** | **(0.017)** | **(0.000)** | **(0.008)** | **(0.0000)** |

**Overall CLASSIFICATION 74.89%**

For obvious reasons it is not difficult to assume that factors affecting urban and rural areas are different. As Equation 4 shows, sex of the person, education and occupation of the spouse determine school enrollment in rural areas. While enrollment in urban areas (Equation 3) is mainly determined by education of the spouse, father's education, occupation of the head and spouse and age of the person.

*Equation 3: urban enrollment*

**Logit(y) =2.83+ -0.353$X_1$ + 2.569$X_{11}$ + -0.055$X_{15}$ + -0.564$X_{12}$ + 0.191$X_{16}$ + 0.736$X_3$ + -0.648$X_{13}$**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **s.e** | **(.571)** | **(0.271)** | **(0.444)** | **(0.023)** | **(0.217)** | **(0.032)** | **(0.226)** |
| **(0.314)** | | | | | | | |
| **p-value** | **(.000)** | **(.000)** | **(0.000)** | **(0.015)** | **(0.009)** | **(0.000)** | **(0.001)** |
| **(0.039)** | | | | | | | |

**Overall CLASSIFICATION 83.81%**

Equation 4: rural enrollment

**Logit(y) =-4.06+ 0.719$X_2$ + 0.039$X_7$ + 2.90$X_{11}$ + -0.011$X_{24}$ + 0.001$X_9$ + 0.095$X_{16}$ + -2.082$X_{13}$**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **s.e** | **(0.887)** | **(0.198)** | **(0.011)** | **(0.544)** | **(0.005)** | **(0.0003)** | **(0.0404)** |
| **(0.480)** | | | | | | | |
| **p-value** | **(.000)** | **(.0003)** | **(0.0003)** | **(0.0000)** | **(0.0301)** | **(0.0003)** | **(0.0184)** | **(0.0000)** |
| **(0.0000)** | | | | | | | |

**Overall CLASSIFICATION 75.70%**

The sex differential negative effect of living in rural areas is sound in females. Equations 5 and 6 show determinants of school enrollment for females for each location of residence. In both equations education and occupation of the spouse are found to be strongly positively associated with school enrollment of females. Unless they are educated, the negative influence of the parents, which can be highly correlated with longer distance to school, in rural areas is quite significant. Specially in localities where marriage by abduction is a normal marital condition, living in rural areas is highly associated with parents' reluctance to send their daughters to school.

Equation 5: urban female enrollment

**Logit(y) = 2.741+ -0.358$X_1$ + 3.187$X_{11}$ + -0.04$X_{24}$ + 0.132$X_{16}$ + -0.0723$X_{15}$ + 0.783$X_3$**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **s.e** | **(0.821)** | **(0.038)** | **(0.296)** | **(0.016)** | **(0.038)** | **(0.0316)** | **(0.0307)** |
| **p-value** | **(.0008)** | **(.000)** | **(0.000)** | **(0.0144)** | **(0.001)** | **(0.022)** | **(0.011)** |

**Overall CLASSIFICATION 82.86%**

Equation 6: rural female enrollment

**Logit(y) = -3.758+ 0.0378$X_7$ + 2.998$X_{11}$ + 0.0008$X_9$ + -2.248$X_{13}$**

| | | | | | |
|---|---|---|---|---|---|
| **s.e** | **(1.395)** | **(0.017)** | **(1.037)** | **(0.000)** | **(0.599)** |
| **p-value** | **(.0071)** | **(.027)** | **(0.000)** | **(0.042)** | **(0.000)** |

**Overall CLASSIFICATION 81.46%**

Comparative analysis is also made on each of the factors affecting males and females. As shown in Table 3, location of residence has a more than two-fold effect on females than males. Similarly, the effect of occupation of the spouse and marital status of the family to which the child belongs has a bigger effect on females. The interaction of sex and location of residence is found to be negative for females while it is positive for males. Similarly, the reinforced effect of an illiterate mother on the rural girl is seen in INT_1, indicating the interaction of mother's education and location of residence. These show the differential negative effect on females living in rural areas and having illiterate mothers.

**Table 3. Male-Female Comparison**

| | Male | | Female | |
|---|---|---|---|---|
| Variable | B | Sig | B | Sig |
| X1 | -.2097 | .0000 | -.2537 | .0000 |
| X3 | .6699 | .0088 | .7154 | .0104 |
| X4 | .3180 | .3290 | -.4909 | .0824 |
| X5 | -.3343 | .6259 | -.4781 | .4428 |
| X7 | .0232 | .0178 | .0250 | .0307 |
| X8 | -.0026 | .9898 | .0328 | .8822 |
| X9 | -2.9E-05 | .5683 | -5.3E-05 | .3056 |
| X16 | .1426 | .0003 | .1478 | .0006 |
| X19 | .2088 | .0796 | .4300 | .0015 |
| X23 | -.1143 | .0027 | .0020 | .9562 |
| X24 | -.0040 | .4863 | -.0059 | .4307 |
| X25 | .6438 | .2446 | 2.1924 | .0083 |
| INT_1 | .1748 | .1338 | -.1362 | .2755 |
| INT_2 | .0097 | .6533 | -.0125 | .4807 |
| Constant | -.1714 | .8779 | -1.8848 | .1223 |

Where INT_1 is the interaction of mother's education and location of residence

INT_2 is the interaction of distance to school and location of residence

## GENERAL DISCUSSION

The results indicate that in educational matters there are, almost in all instances, more hurdles for females than males and for rural females than urban females. Thus, girls are far less likely than boys to enroll or complete elementary education. A host of factors and their reinforced effects explain why girls fail to complete primary school and why many do not enroll at all.

One important reason for non-enrollment is the need for girls to work in the household and on the farm. The opportunity costs to girls' schooling are greater than boys' ( Segid etal 1989). Girls are expected to work in the household from an earlier age on than boys. A daughter is usually an unrecognized domestic worker and all schoolgirls for that matter (Chanana 1988). Their productive and reproductive chores mean a heavy burden and a subsequent unclear mind for school. Domestic burden means increased absences from school and divided attention standing in the way of commitment to school matters (Wanna and Tsion 1994). The effect is academic failure, a lowered academic self-concept and eventually a reduced global self-image as a female, which tragically permeates and perpetuates in the female sex. No doubt that the consequences of the problems faced by today's mothers are passed onto their daughters, a vicious circle in its own right.

Not uncommonly, children may come from single parent (only mother) families as fathers are likely to die earlier because of the fact that male life expectancy is lower than females' in addition to the fact that Ethiopian husbands are generally older than their wives. This may imply a need for the boys and girls to work to compensate for the absence of the father. Moreover, it probably implies the unhelpful presence of a

stepfather who may be less interested in the education of his step-children. Hence a crippling effect on the children's education and future.

Also family size, as a significant variable, impacts on children's chances of enrollment, persistence and performance. Studies show that the household size of children who do not go to school is likely to be smaller than that of those who do, imply that children are more likely to attend school if they have older brothers or sisters helping the household and contributing towards generating family income thereby allowing other siblings to attend school. If a family's ability to send its children to school is limited, it is likely that daughters are to be disfavored for patriarchal reasons. Customarily, it is boys who are preferred to be students.

Distance between home and school as a functional variable also plays a part in whether children, especially rural girls enroll, persist and perform satisfactorily. Distance is especially an obstacle for female students in so far as it means expending much needed time and a consequent fatigue or exhaustion, impinging on actual school time expenditures. Fatigue may mean reduced academic effectiveness because of travel exertion and a compensatory need for relaxation. Psychologically, especially for pubescent rural girls, distance means perceived or actual threats of highway rapists, a factor in itself contributing to division in attention, ebbing persistence and waning performance. Our study proves that distance more than twice impinges on female than male schooling.

Similarly, an Ethiopian study quoted in Rose et al.(1996), mentions that school attendance was determined by distance. While those within 30 minutes of walking distance to school attended, others living farther away were not able to do so. This has been a common rural phenomenon; but there are changes taking place. In the effort to offset non-enrollment and

non-persistence, schools are now being constructed involving the community as well as local and international aid agencies although these are less than sufficient (Tekeste 1996). In the initiatives to equalize access to school, international NGOs look poised to continue to be vital (Hall 1982; SIDA 1997). Also legal reforms against early marriage and marriage by abduction ( Helina 1996), which are credited to be propitious for female persistence at school, seem to be important initiatives although the effect has yet to be studied and attested. These initiatives may help to refute and eventually bring to an end the givens of rural patriarchal consensus that "A girl's place is in the home".

Understandably, a strong demotivating factor that incapacitates parents not to send their daughters to school has been low household income or economic status. On the average, an Ethiopian household is poor. Even if tuition is free, the direct costs of schooling are a burden to the household. The average yearly income may not be enough to sustain the households' life let alone to help cover school expenses. USAID (1994b) and Mulugeta (1998a, 1998b) demonstrated that the low economic status of households, which is in fact a common denominator for all non-mechanized agrarian economies, is the main reason for households not to send their children to school. More importantly, their low economic position is likely to cause high expenditure on girls. For instance, they are likely to need high-cost dressing. A relevant USAID survey shows that parents spend Birr 95 on dress, Birr 25 on shoes and Birr 15 on school supplies each year for school-going girls (Rose et al., 1996). Clearly, when there is familial pecuniary insufficiency, it is females who usually bear the brunt, because they are, by and large, more expensive to send to school. A study cited in Segid et al. (1989) found that when Kenyan parents could not pay fees and expenses for their children, daughters were most frequently sacrificed and kept out of school.

It is not only the direct costs that seem to be affecting the households decisions, but rather the indirect cost involved and the low return value of education. With the observed very high unemployment rate for primary and secondary school graduates in rural areas, a farmer may not see a reason for sending his/her children especially his/her daughters to school. In stead more pragmatically s/he may prefer to engage her/his daughters for a considerable length of time in productive and reproductive activities, which are of greater immediacy and importance to the uneducated rural family. However, in recent years, ameliorative developments by local and overseas aid agencies in the provision of piped- water and mills closer to rural homes have been introduced to reduce the reproductive chores at least in some areas. Although not widespread, there are also initiatives taken to introduce time and labor-saving technologies which may spare rural girls time for school (Tekeste, 1996). It seems, however, that there is not much that can be done to free girls from the burden of productive or gainful activities which are essential for families with poor economic backgrounds.

Parents' educational backgrounds are likely to shape children's attitude towards education. Since educated parents are likely to reward education, it may be expected that children who are normally coming from educated parental background persist and perform well at school. In addition to demonstrating the importance of fathers' education, this implies that female education has a 'multiplier effect' since it has a propitious impact on the mother's desire and ability to educate her children (Rose et al. 1996; Berhman 1991). The results of the study consolidate considerably this thesis that underpins maternal and paternal education. In this study, in equations 1 through 6, parents' education stands out to be a significant factor in determining the education of children in a family.

Thus, partly due to poor parental educational background, numbers of school girls progressively drop off, with every higher level placing on them higher demands and more hurdles. In addition to the initial lower enrollments, the overall numbers of girls in junior and senior secondary schools are progressively growing lower; in colleges the number is even much less demonstrating the fact that boys' benefits of state educational expenditure are disproportionately higher. Recent data indicate that females account for only 13.5 percent of the total enrollment in higher institutions in Ethiopia (Abebeyehu, 1998). This later translates into a segmentation of society into polarized classes of educated professional men and undereducated unprofessional women. Thus, more females than males tend to be concentrated in dead-end unprofessional jobs (Stevenson 1984; Eviota 1986; Seyoum 1986; Cock 1988; Asmott 1995). This gender-based occupational relegation of females is mainly due to progressively unequal access to education in favor of males .

But, needless to say, equal access to education is an important issue of equal rights and opportunities. Viewed in terms of rights, it is as political as voting. For this reason , girls' education deserves greater official attention and demonstrable commitment in view also of its far-reaching social implications. The prime beneficiaries of gender equity in education are girls themselves, but the benefits of girls' education transcend benefits directly to girls as one takes the long view. Female education has been linked to late marriage (Cochrane 1979; Kasarda et al. 1986), increased contraceptive use (UN 1986; Cochrane 1979) , reduced fertility (Kasarda et al 1986), and improved familial health ( Behrman and Wolf 1987; Kenkel 1991). Educating women does also mean making them aware of the path towards credit systems, family planning, and a large control over their resources. Moreover, employment opportunities are highly related to the educational status (Levine 1980). Female labour participation is a function of the number of years of schooling received

(Elzaga 1974). Thus, unless they are educated or trained, females cannot become meaningfully employable. Ultimately if they are not employed they cannot professionally participate in the overall economic and social activities of the country, and this implies a technically incompetent labor force, a big dependency ratio and a lower economic performance for the nation.

But there are several hurdles that do not help to encourage this demonstrated importance of female education. For instance, the culturally imposed low opinion of females' potential is no source of optimism for a rapid social change which, under present conditions, looks unlikely. Disadvantageously, it continues to be a major reason for female's under-utilization of their potential and underestimation of their ability, which is no help to females themselves, their children and their community whose low regard for females' potential has a boomerang effect (Betz and Fitzgerald 1987). There is no doubt that in technically advanced societies, the female contribution has a significant share in enhancing technical attainments which have happily been self-perpetuating for generations.

Also under the current bleak economic conditions, prospects for equity do not look to be encouraging and Ethiopia seems to have a long way to go to equalize access to education and promote female school performance (Assefa and Dilnesaw 1996; Brown 1998). However, according to official projections the admission rate is assumed to rise from 34 to 106 percent for girls and 62 to 102 percent for boys by 2008/09. Although this may prove to be a daunting task, much less a possibility, the government aims to provide all boys and girls a minimum of four years of elementary education by 2008/09 (USAID 1994b cited in Rose et al, 1996). But achieving numeric parity is not enough in its own right. Creating favorable conditions for female persistence and performance is unquestionably equally important. Given the current

considerably high rate of female dropout and repetition, there may not be much meaning in the equality of enrollments alone. Nevertheless, the projections are a cause for some optimism that at least there is an official recognition of the significance of girls' schooling and a stated commitment to gender equity in education. There are also community sensitization initiatives undertaken nationwide which should at least moderately brighten prospects for the attainment of equity. But since commitment for equity entails real actions, a range of recommendations on whose realization prospects for parity to a large extent pinned are suggested to help official intervention in this direction.

1. Subsidy-preferential assistance for girls in the form of providing learning materials. This is important for parents especially for those who cannot afford educational expenses; it can encourage them to send their daughters to school.

2. Literacy program-research shows that parents with some form of education are likely to appreciate their own learning and its impact on their everyday life experiences. They are also likely to want their daughters to have the benefits they themselves received from their learning experiences. For this reason, it would be beneficial to provide parents with learning opportunities in literacy programs.

3. Gender re-education - Even though it is difficult to measure, the effect of backward, cultural thinking on enrollment of girls is significant. It contributes to females' lower levels of self-esteem and lower aspirations. For instance, some cultures belittle girls as intellectually deficient and doom them to eventual failures. These early negative influences can, in course of time, accumulate and cripple their ambitions. It is, therefore, important that cultural initiatives that can lead to scientific attitudes towards women be

taken. This may include initiatives that can create awareness in parents. As a corollary, it is also important that males be taught to share the productive and reproductive loads of females so that girls' achievement is not negatively affected by their greater involvement in domestic duties. In fact, the meaning of a father's education can be seen from this perspective.

4. Reducing school distance - In view of the negative effect of distance to school on female enrolment and persistence, it is important that the government, in co-operation with national and international aid agencies as well as local communities, construct schools in the proximity of rural centers.

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