

DETERMINANTS OF HOUSEHOLD EXPENDITURE ON EDUCATION IN TOT DIVISION, ELGEYO MARAKWET COUNTY, KENYA

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Abstract

The main purpose of the study was to establish the determinants of household expenditures on education in Tot division in Elgeyo Marakwet County. This study adopted a descriptive research design on a target population drawn from five stratified locations, namely Kaben, Murkutwo, Endo, Koibirir and Mokoro. The total number of households in these locations was 5,114. A sample size of 357 households was drawn from the population. Each location proportionately contributed households included in the study sample. Respondents from each location were selected randomly using random numbers to constitute the sample frame. A structured questionnaire containing both closed and open ended questions was used to collect data. The questionnaire was pre-tested on 20 households in the neighboring Uasin Gishu County to test reliability. The pre-tested questionnaire was administered by the researcher with the help of three experienced research assistants. A multiple regression model was applied to establish relationships between determinants and household expenditure on education. The findings of the study indicated that gender of school going children, education level of household head, occupation of household head; household size and total household income have a significant effect on household expenditure. From the findings, household heads should be well educated; this will ensure the children get relatively high levels of education. In households where the heads have a high education level, the expenditure on education is relatively high. According to the findings, household in this area still prefer to invest in the male child rather than in the female child. Therefore there is need for families to invest more on the girl child.

Keywords: Household Expenditure, education, gender, education level

INTRODUCTION

The issue of education financing assumes increasing importance today, when the capacity of African states to finance the expansion of their education systems is being questioned. Indeed, after the recent successes noted in the development of primary schooling, the projections in enrollment growth show that few African governments will be able to finance the required development of their post primary cycles with public resources alone (Mingat, A., Ledoux, B., and M. Rakotomalala, 2010).

General discussion of user fees is often explicitly or implicitly about tuition fees. In practice, however, there are a large number of different “fees” that private households sometimes have to pay for publicly provided primary education, including tuition fees, textbook fees or costs and/or rental payments, compulsory uniforms, Parent Teacher Association (PTA) dues, and various special fees such as exam fees, community contributions to district education boards, and the like. This thesis refers to all these fees excluding fees that are not to do with education but rather with student welfare such as board and lodging charges at boarding schools, and charges for school meals (Raja, 2004).

There can be three additional economic costs to primary education. First, households often incur transport costs in sending their children to school. In Cambodia, for instance, these costs account for some 21 percent of household spending on education. Second, in many countries, especially but not only in Asia, it is customary to send children not only to public school but also to private tutors (often the very public school teachers) outside school hours (Bray, 2001).

Many countries all over the world have embraced the notion of basic education to include secondary schooling. Different regions have used different models of expansion of secondary schooling. For instance, in the early 1960s in USA, there emerged the thinking that schooling could make office clerks, shop floor workers, and farmers more productive (World Bank, 2005; Goldin, 2001). This thinking constituted a shift in education policy from physical to human capital development. The shift necessitated more investment in secondary school education that was characterized by public funding and provision, non-selective with no early specialization or academic segregation, an academic yet practical curriculum, numerous small-fiscally independent school districts, and secular control of schools and school funds (World Bank, 2005). This model has been criticized for being a hindrance to advancing education. Critics have argued that public funding and provision of secondary school education is insufficient and hence the introduction of vouchers and public funding of private providers. Though deemed by many as being attractive due to its egalitarian and non-elitist qualities, this system has now been accused by its critics of lacking in standards and accountability. The

decentralized nature of the US secondary school system increased investment and access to education though it led to funding inequalities (World Bank, 2005).

There has been a consistent increase in the education budget over the years. It increased by over KES 80 billion in the 16 years under consideration, from KES 12.7 billion to KES 92.3 billion. Although not included in the table, the education budget for FY 2007/08 increased to KES 119.5 billion – almost a ten-fold increase over the period. This arose partly from the transition from a regime of cost-sharing to heavy government subsidization of primary education. An analysis of funding levels per student shows that university per-student costs have been about 24 times that of recurrent public spending per primary-school pupil. The ratio, according to MoE (2007) for primary, secondary and university education was 1:3.3:23.5.

The increased public demand for education and training has stretched the Government budget, and in response partnerships have been intensified with parents and communities, individual investors, civil society and donors. The level of household expenditure is very high; that this constraints the households given the high poverty levels/ resource constraints in Tot. This study sought to examine various dimensions of household expenditures on education in Tot division in Elgeyo Marakwet County. There is little scientific literature on determinants of household expenditure on education specifically in Tot Division of Elgeyo Marakwet County. Thus, the study hypothesized that

***Ho₁:** There is no significant relationship between gender of school going children and household expenditure on education.*

***Ho₂:** There is no significant relationship between household income and household expenditure on education.*

LITERATURE REVIEW

Theoretical Framework (Human Capital Theory)

Education is an economic good because it is not easily obtainable and thus needs to be apportioned. Economists regard education as both consumer and capital good because it offers utility to a consumer and also serves as an input into the production of other goods and services. As a capital good, education can be used to develop the human resources necessary for economic and social transformation. The theoretical framework most responsible for the wholesome adoption of education and development policies has come to be known as human capital theory. Much subsequent human capital research, especially that conducted by economists, can be seen mainly as attempts to refine and extend the Mincer model. A large number of specific issues have been investigated. Of particular interest is the effect of gains in income through education relative to the opportunity costs in lost work time in attaining higher

education levels. There is also the question of whether education is of value because it contributes to knowledge and skill or whether education is merely a proxy for underlying ability. This view leads to the competing concept that education is not a cause of economic outcomes but is more of a screening device used by employers to select those most likely to have the desired abilities. For example, it may be most valuable to employers. The requirement for specific credentials for access to many highlevel occupations may be seen as an extreme example of the screening idea. This is illustrated by studies of sheepskin effects, or the additive effects of possessing a credential over that of years of education (Ferrer and Riddell, 2002).

Human capital theory emphasizes how education increases the productivity and efficiency of workers by increasing the level of cognitive stock of economically productive human capability which is a product of innate abilities and investment in human beings. The provision of formal education is seen as a productive investment in human capital, which the proponents of the theory have considered as equally or even more equally worthwhile than that of physical capital.

Dalton (2004) examined the question of whether there is a premium on the grades achieved in university, controlling for the effects of credentials, individual characteristics and labour market effects. Dalton was able to match the results from about 1,800 respondents to a 2002 follow-up survey of university graduates with the academic records of these same students. She was also able to extend the data set by incorporating labour market information on a variety of occupations from the 2003 edition of the Job Futures report published by Human Resources Development Canada. Dalton found that, on average, there is a return on grades. This return is small relative to the premiums on education level and credential but they persist even when these factors are controlled. The size of the return is specific to specific groups and contexts; in particular, inclusion of separate grades for Mathematics and English in the model results in a positive return for mathematics and a negative return for English. The return to academic major is positive in a bivariate model but becomes negative in a model with controls for individual and labour market characteristics and credential. The return to English in high unemployment rate occupations is negative for females and positive for males. The return to grades is stable across credential groups but varies across low and high unemployment groups.

Empirical findings on household expenditure on education

Afonso and Aubyn (2005) have systematically compared output from the secondary education systems of 25 countries with resources employed. They argue that education provision is efficient when its providers make the best possible use of available inputs. They assert that if an education system were not efficient, its outputs could be increased without spending more, or

the expense could actually be reduced without affecting the outputs, provided that more efficiency is assured.

In Kenya, Bédi G, Tonzibo ZF, ChopardC, Mahy JP, N'Guessan TY (2004), points out that attending school has both direct and indirect costs. Such cost lower the resources available for household consumption. Consequently, a household has to make a choice between benefits that accrue to education, including externalities and household consumption foregone. Bediet *al.* (2004) conceptualizes such choice in terms of a utility function that has to be maximized. Using panel data constructed from the 1992, 1994, and 1997 Kenya Welfare Monitoring Survey (WMS I, II, and III) data sets, direct costs, opportunity costs, and expected benefits were found to influence the decision to enroll a child in primary school in Kenya. Njeru and Orodho (2003) argue that there has been a considerable decline in secondary school gross enrollment ratio (GER), with wide and severe regional and gender disparities in access to secondary education in Kenya.

Gender of child

Although a large literature documents gender biases in food consumption, only a few studies investigate differential treatments in *educational* expenditure, all these being for India. A study by Tilak, (2002), on determinants of expenditure on education in rural India revealed that households have different levels of expenditure on the education of their male and female children. Gender differences exist and they are normally against girls. The preference for households to invest in the education of male children than that of the female children is widely prevalent. He observed that the pattern is the same whether children are enrolled in government or private schools. Such differences increase by increasing levels of education. While on the whole, households tend to spend less per student on the education of females than on males, this observation needs to be qualified further. Household expenditures do not differ much by gender in the case of children attending government schools; but the gender differences, measured as a simple coefficient of discrimination, are sizeable in the case of children attending government-aided or private (unaided) schools, where the expenditure levels are generally higher for both boys and girls. When it comes to higher education, Tilak (2002) asserts that gender bias seems to be more clearly noticeable in government colleges, less in government-aided and further less in private colleges. Parental prejudices against girls seem to decline, once girls go to college.

Jensen (2002) argues that in some developing countries, parents may have 'son preferring, differential stopping behaviour'. If parents have a strong preference for male children, they will continue child bearing until one (or their desired number of) male offspring is born. In

other words, if early born children are girls, parents will be less likely to stop bearing more children than if the early borns are boys. This type of fertility behaviour will imply that, on average, female children will have a larger number of siblings and larger household size than male children. In larger households, all children (male and female) are worse off than in smaller houses, since larger family sizes result in a dilution of household resources across children.

Aslam, Monazza and Kingdon, Geeta Gandhi (2008) studied gender and household education expenditure in Pakistan data from the fourth round of the Pakistan Integrated Household Survey (henceforth PIHS) 2001–2002. The PIHS contained rich information on more than 16 000 households from all regions of Pakistan (GOP, 2002). The analysis was limited to households with at least one child aged 5–24, which reduced the sample to 14 680 households. The results posit two potential channels of gender bias: bias in the decision whether to enroll/keep sons and daughters in school, and bias in the decision of education expenditure conditional on enrolling both sons and daughters in school. In middle and secondary school ages, evidence points to significant pro-male biases in both the enrolment decision as well as the decision of how much to spend conditional on enrolment. However, in the primary school age-group, only the former channel of bias applies. Results suggest that the observed strong gender difference in education expenditure is a within rather than an across household phenomenon.

Liu (2007) argues that if sex mix of siblings is greatly appreciated in parents' preferences, parents may invest *more* in education of each child when they have large size of mixed-sex siblings: for example, parents may *increase* educational investments in two first sons with an arrival of one younger daughter, if mixed sex of siblings reinforces parents' satisfaction for increased quality of each child at the expense of reduced consumption.

Dang (2007) investigated the determinants and impact of private tutoring classes in Vietnam using the Vietnam Living Standards Survey 1997-1998 and 1992-1993. The author found there is no gender discrimination on private tutoring expenditure. Ethnic minority students spend less on private tutoring, but only at the primary level.

Total household income

Tansel and Bircan (2006) found a unitary elasticity of private tutoring expenditure. They also found that households in urban areas and single mothers put more resources toward private tutoring of their children. Psacharopoulos & Papakonstantinou (2005) found evidence that private tutoring in Greece is highly inelastic and therefore is a necessity household expenditure. In another study of the demand for education, Glewwe & Jacoby (2003) used the panel data from Vietnam over the 1993-1998 periods and investigated determinants of child school

enrollment. They found that child school enrolment increased faster in households that experienced greater increases in wealth.

Ngware, Odebero, &Wamukuru, (2006) on a study on improving access to secondary education in Kenya and what can be done, reported that household income level increases the odds of a household decision to enroll a child in secondary school. This implies that the higher the level of household income, the higher the probability of enrolling children in secondary schools. Income provides the needed resources that a household can share among its unlimited needs. Thus, with higher income levels, a household will be able to invest more on the children’s education. On the other hand, low income implies that a household can only squeeze its budget to cater for the most basic needs.

RESEARCH METHODOLOGY

This study adopted a descriptive research design. The targeted 5,114 household heads were the target population in the study. The sample size was 357 households. A structured questionnaire In this study, the semi- structured questionnaire was used to collect data from all respondents. This research tool was tested for reliability and validity. Data collected was analyzed by use of quantitative technique; quantitative data was analyzed using descriptive statistical method, the statistical tools such as frequency distribution, tables, Measures of central tendency such as mean, mode and median were used. Regression analysis was used to analyze the data collected and data was presented using tables. Hypothesis was tested at 0.05 level of significance (95% confidence level) from the identified model.

The conceptual model underlying a typical expenditure function can be expressed as a functional relationship that relates expenditures to its determinants using the multiple regression model below:

$$HHEX = f(x_i) \dots \dots \dots (1)$$

Where, HHEX refers to household expenditure on education, and x_i is a set of independent variables.

Equation 1 takes the following functional form

$$HHEX = a + b_i x_i + \varepsilon_i \dots \dots \dots (2)$$

Where, HHEX refers to logarithm of annual household expenditure on education, b_i is the regression coefficient to be estimated that measures the extent to which various variables (i_s) influence the household expenditures on education, and ε the error term that is to be estimated by the equation.

The regression coefficients ***is*** indicate the change in the levels of expenditures associated with a one-unit change in the independent variable of interest. ***a*** is the intercept term

which gives the mean effect on the dependent variable of all the variables excluded from the model; or it is simply interpreted as the average value of the dependent variable when all the explanatory variables are set equal to zero.

$$HHEX = a + b_1x_1 + b_2x_2 + \varepsilon \dots \dots \dots (3)$$

x_1 represented, x_1 = Gender of child, x_2 =, Total household income

RESULTS AND DISCUSSION

Sample Characteristics

The demographic characteristics include: gender, marital status, highest level of education and age. This aspect of the analysis deals with the personal data on the respondents of the questionnaires given to them. The table below shows the details of background information of the respondents. Out of the 357 questionnaires, only 248 were analyzed, since other respondents were unreachable, due to the bad weather, in addition, some questionnaires were filled half way. Of the 248 respondents, 64.5% (160) of the respondents were male and 35.5% (88) were female. In regards to marital status, majority 89.1% (221) of the respondents were married, 7.7 % (19) were separated and 3.2% (8) were divorced. In relation to the highest level of education, 40.7% (101) of the respondents had secondary education as their highest level of education, 41.5% (103) certificate/diploma, 16.9% (42) primary level of education and 0.8% (2) of the respondents were below primary level of education. From the above findings, there are moderate levels of education in the study area.

Correlation Analysis

From the results, the most significant relationship exists between income and education expenditure with a correlation coefficient value of 0.646 (significant at $\alpha = 0.01$) which indicates that income contributes up to 64.6% of the change in education expenditure. Nonetheless, gender was negatively correlated to education expenditure as shown by correlation coefficient value of -0.208 which indicates that gender accounts for 20.8% change in education expenditure when considered (significant at $\alpha = 0.01$).

Table 1 Correlation Analysis

	Education expenditure	Gender	education
Education expenditure	1		
Gender	-.208**	1	
Income	.646**	-.157*	1

** Correlation is significant at the 0.01 level (2-tailed).

Hypothesis testing

Table 2 illustrates the model summary of multiple regression model, the results showed that all the five predictors (gender, income) explained 46.2 percent variation of education expenditure. This showed that considering the five study independent variables, there is a probability of predicting education expenditure by 46.2% (R squared =0.462). Study findings in ANOVA table 2 indicated that the above discussed coefficient of determination was significant as evidence of F ratio of 41.577 with p value 0.000 <0.05 (level of significance). Thus, the model was fit to predict education expenditure using gender and income.

Hypothesis 1 (H_{01}) revealed that gender has no significant effect on education expenditure. Research findings showed that indeed gender has no significant effect on education expenditure basing on $\beta_1 = -0.132$ (p-value = 0.083 which is less than $\alpha = 0.05$). Furthermore, the effect of gender was stated by the t-test value = -1.742 which implies that the standard error associated with the parameter is less than the effect of the parameter. Concurrently, a study by Tilak, (2002) revealed that households have different levels of expenditure on the education of their male and female children. In most cases, households prefer to invest in the education of male children than that of female children. The pattern is usually the same whether children are enrolled in government or private schools and it increases with the increase in level of education. According to Jensen (2002), in some developing countries, parents tend to have a strong preference for male children hence they continue child bearing until they have the desired number of male offspring. This implies that female children will have a large number of siblings and larger household size than male children resulting in dilution of household resources hence male and female children become worse off as compared to in smaller houses.

Additionally, a study by Aslam, Monazza and Kingdon, Geeta Gandhi (2008) on gender and household education expenditure in Pakistan showed that in middle and secondary school ages, there is a significant pro-male biases in both the enrolment decision as well as the decision of how much to spend conditional on enrolment. Nonetheless, in primary school age-group, gender bias exists in the decision whether to enroll sons and daughters in school and expenditure conditional on enrolling both sons and daughters in school.

Hypothesis 2 (H_{02}) stated that income has no significant effect on education expenditure. Findings showed that income had coefficients of estimate which was found significant basing on $\beta_4 = 0.653$ (p-value = 0.000 which is less than $\alpha = 0.05$) thus we reject the hypothesis and conclude that income has a significant effect on education expenditure. The effect of income is stated by the t-test value = 12.725 which point out that the effect of income is over 12 times that of the error associated with it. In agreement to study findings, Glewwe and Patrinos (1999)

revealed that as the incomes of households increase, the willingness to spend on education also increases. Similarly, Hashimoto and Health (1995) found income educational expenditure elasticity to be highest in households with a middle range of income, lower with low-income households but negative for the highest income families. Nevertheless, Tansel and Bircan (2006) found that households in urban areas and single mothers put more resources toward private tutoring of their children thus education was reported to be a necessary household expenditure. Moreover, Glewwe and Jacoby (2003) study on the determinants of child school enrollment found that child school enrolment increased faster in households that experienced greater increases in wealth hence families with high level of disposable income were more likely to invest in the education of their children. According to Tilak (1991), a small increase in income level of the government results in an increase in the government expenditure on education. However, an increase in household income leads to a less than proportionate increase in family expenditure on education. Cognate to study findings, Ngwareet al (2006) study on improving access to secondary education in Kenya reported that household income level increases the odds of a household decision to enroll a child in secondary school. Thus children have a high probability of being enrolled in school whenever household income is higher.

The rule of thumb was applied in the interpretation of the variance inflation factor. From table 2, the VIF for all the estimated parameters was found to be less than 4 which indicate the absence of multi-Collinearity among the independent factors. This implies that the variation contributed by each of the independent factors was significant independently and all the factors should be included in the prediction model.

Table 2 Estimated Coefficients

Variables	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	1.271	0.315		4.039	0.000		
Gender	-0.132	0.076	-0.086	-1.742	0.083	0.921	1.086
Income	0.653	0.051	0.611	12.725	0.000	0.964	1.037
R Square	0.462						
Adjusted R Square	0.451						
Durbin-Watson	1.871						

a Dependent Variable: log_exp

CONCLUSION

The findings of this study indicate that the gender of school going and total household income have a significant effect on household expenditure on education.

Based on the findings, households prefer to invest in the education of male children than that of female children. Specifically, in some developing countries, parents tend to have a strong preference for male children thus they continue child bearing until they have the desired number of male children. As a result, such households end up having many children leading to dilution of family resources. Further, the education level of the household head is instrumental in enhancing household expenditure on education. Particularly, households where the household heads have higher level of education, the expenditure on education is usually high.

Additionally, children in large families receive small education and show poor educational attainment due to economic strains that the households are going through hence they tend to spend less on the education of their children. Therefore, families with higher levels of disposable income are more likely to invest in the education of their children.

From the study findings it was deduced that the gender of the school going children has a significant effect on household expenditure on education. As evidenced from findings, households prefer investing in the education of their male children compared to female children. There is therefore need for households to offer the girl child equal opportunities in terms of educational opportunities so that women can be elevated to a level where they can better address inequity of resource allocations and labour responsibilities within the household. The sample was drawn from households within Elgeyo Marakwet County, thus this study may be limited in its generalizability of the findings to households in Elgeyo-Marakwet County. So, future research should have to draw sample of respondents from another county for the sake of generalizing the results of the study.

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