Increasing Access to Education in Africa: The Impact of the Removal of School Fees on Primary School Enrolment

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In the late 20ᵗʰ century, the development of highly impoverished countries around the world became a key focus for the international financial institutions such as the World Bank. Following the theory of neo-liberalism and open markets, structural adjustment programs (SAPs) were implemented in developing countries in Africa, attached to aid loans that they received from the World Bank. To increase the revenue for developing governments, the SAPs focused on income-generating programs. One of these programs was the institution of school fees for primary and middle school students in public schools. With the implementation of such fees on education, parents were prevented from sending their children to school because they could no longer afford it. This paper examines the impact of the policy to abolish these school fees in the three countries of Tanzania, Kenya, and Uganda in East Africa. The results from this study show that the abolishment of these fees had significant effects on the number of students enrolled in primary school in these countries. Most notably, waiving school fees for girls greatly increased their access to primary education, removing one of the many obstacles that they faced in order to attend school. This study supports the belief that the policy to abolish school fees is an effective way for developing countries to increase the access to education for the youngest generation.

Introduction

For rural families who are already struggling to feed and cloth the household, extra expenses for education make it prohibitive for them to support their children going to school. Implemented as a policy to increase revenue for the governments of developing nations, research has shown that instituting a school fee policy negatively affected enrolment numbers at all levels. Fees for basic primary education contribute to the strain on household incomes and a greater chance that young children are not allowed the opportunity to go to school. The question then stands: Would a new trend in policy-making where school fees are abolished significantly affect the enrolment rates at the primary school level? And if the abolishment of school fees does affect primary school, does the policy affect boys' and girls'

enrolment to the same degree? The press has covered the change in school fee policy in Africa over the past decade and has focused on the fact that enrolment rates have increased at the primary level since fees were waived in some countries. However, it would be interesting to see if the abolishment of the school fees actually had a statistically significant effect on enrolment numbers. If it did, it could help influence policies in other developing countries that have been maintaining the institution of school fees in their education system. Especially if the policy significantly impacted the enrolment of girls in primary school, it could be a potential answer to the opening of access to education for young girls in developing nations.

A cross-section time-series study is necessary to look at the effects of this policy on enrolment numbers. Along with defining a test variable, it is necessary to control for several other independent variables that could affect enrolment such as poverty rate, Gross Domestic Product (GDP) per capita, political stability, population growth rate, the presence of internal violence, and fertility rates. Running an ordinary least squares and a feasible generalized least squares regression can show whether the school fee abolishment policy had a truly significant impact on enrolment numbers at the primary level. The regressions showed that although enrolment numbers for boys did in fact rise dramatically, the policy had a more statistically significant effect on girls' enrolment numbers. With the abolishment of a portion of the financial burden for schooling, more parents were able to afford the absence of their daughters in the household, which allowed them to go to school at a higher rate.

The following paper outlines the study of the abolition of school fees in Kenya, Tanzania, and Uganda, and discusses the effects of such a policy on the access to education for young girls in developing nations. The Background is a discussion of corresponding

literature on the topic of gender equity in education systems in the developing world. This section also outlines the historical context of the implementation of school fees which were part of large economic overhaul policies known as structural adjustment programs. The Policy Description then describes the reason some nations such as the three target nations for this study decided to abolish school fees and the help they received from the international community. The Hypothesis reintroduces the question that the experiment focuses on and discusses what is predicted in the results. The Research Design explains the different independent variables discussed above along with the sources from which the data was collected. The Results section presents the regressions models that were used in the study to interpret the relationships between the test variables and the independent variables. It also shows how several of the independent variables are highly correlated and how two have a statistically significant impact on enrolment numbers for both boys and girls. The final Discussion explains that the results are robust and support the predictions of the hypothesis. Because of the cultural traditions of gender inequality in these three countries, it would follow logically that girls would be more excluded by the presence of school fees than boys and with the abolishment of that obstacle, more girls would be allowed to go to school.

Background

The 1970s in Sub-Saharan Africa was a time of upheaval and economic instability. While many of the African countries rebounded from the late 1970s oil crisis, they were also facing increasingly burdensome debt owed to the large international financial institutions like the World Bank and the International Monetary Fund (IMF). In response to this devastating problem for African governments and economies, the World Bank and IMF took to implementing an interventionist set of policies in hopes of liberalizing the African markets and bringing more monetary capital to these developing countries. These structural

adjustment programs (SAPs) were based on the Western-focused Washington Consensus[1] (Logan 1993). Over the past decade, this SAP approach has come under harsh criticism by international economists and African governments. Not only does liberalization make African economies more vulnerable to external economic shocks, it also increases the ability for industrialized nations to exploit their commodity markets by running up the prices on exports that they depend on greatly. Another criticism that was widely voiced was the prohibitive nature of the school fees, especially for primary school. In rural areas in particular, school fees made it impossible for parents to send their children to school. For girls who were already prevented from attending school because of the cultural emphasis placed on educating the male children, fees created an even larger barrier for their opportunities for education (Upendranadh 1993).

For decades, international development literature has discussed the multiple social impacts that education has on economic growth and political stability for a country. More recently the positive social impacts of educating girls has brought to light the importance of gender equity in education and increasing access to schooling for young girls. This is especially true in developing countries where educated women can improve a country's struggling domestic production of goods by expanding the skilled labor force and add a new perspective to policies formulated by local and national governments through civic participation. It has been found that developing countries could increase their per capita economic growth by 0.3% per year if they make gender equality a priority in schools (Global Campaign 2005).

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[1] The Washington Consensus refers to the set of policies instituted by the international financial institutions such as the World Bank and International Monetary Fund, to help developing countries improve their trade and economic policies and potentially expand their economic growth and efficiency. Elements of the Consensus include: better fiscal discipline, tax reform, deregulation to abolish trade barriers, privatization of national companies, trade liberalization and a competitive exchange rate. These policies, in theory, were meant to help stimulate the economies of developing countries and make them more accessible for foreign direct investment and trade opportunities (Global Trade Negotiations Homepage).

There are also health benefits for women that come with years of education. "Women with education are better able to resist practices such as female genital cutting, early marriage and domestic abuse" (Global Campaign 2005). These practices, although socially significant in many cultures, put women at risk for infections and early mortality. Giving them the tools to protect themselves and the confidence to make their own decisions would lead to a healthier population and thus a healthier, more productive country. There also have been studies showing the inverse relationship between years of education for women and fertility rates (Kravdal 2002). Thus, the more years of schooling, especially in developing countries, helps depress the amount of children a woman will have. This could be because of increased job opportunities and less time available for taking care of children. It also could be that education raises awareness of risky behavior and more attention would be made by women to protect themselves sexually and limit the number of births. The greatest impact of education is seen after a minimum of four years for girls. Typically, if they do go to school, girls in developing countries will attend primary school. High school and most certainly college are added financial burdens and time obligation that make it more difficult for girls to attend. This evidence helped the 189 leaders who met to arrange the UN Millennium Development Goals in 2000 decide to make education equality one of the goals for developing countries in the new Millennium. These goals are discussed below.

Since the abolition of school fees as a government policy is only about a decade old, in some countries only about three or four years, there is not yet extensive literature on the impacts of these fees. The press coverage surrounding the new policy to remove the fees focuses on the large increase in enrolment when the fees were finally waived. However, little as been said about a direct link between this policy and enrolment numbers. There has, on the other hand, been a comprehensive discussion concerning the relationship between

gender, income, and education access in the developing world. Gertler and Glewwe in 1992 show that there is a lack of motivation on the part of Peruvian parents to send their daughters to school. "The direct cost of school fees is likely to be the same [for both sexes], but a more important cost may be hours of work lost to the household due to a [girl] child's school attendance" (Gertler and Glewwe 1992). They go on to explain that "price elasticities for girls are always higher…which indicates that the demand for schooling for girls is more sensitive to price increases than for boys" (Gertler and Glewwe 1992). This argument supports the idea that decreasing the price of school fees or removing the fee all together in developing countries would increase the access for girls to the education system.

A study of the Vietnamese education system provides similar results when looking at the relationship between income elasticity and educating girls. Behrman and Knowles explain that "if incomes elasticities are higher for luxuries than for necessities, girls' schooling is treated as more of a luxury than boys' schooling" (Behrman and Knowles 1999). Thus, boys will be the first ones educated and only if the barriers for educating girls are very low, will low income families be able to afford the luxury of educating their daughters. This paper looks at another region of the developing world, East Africa, but similar characteristics of household choices are present here as they are in the Peruvian and Vietnamese studies. In this paper, a quantitative analysis is provided to show a direct relationship between the removal of financial obstacles and the increase of girls' enrolment numbers in primary education. These studies show the importance of making school as affordable as possible if the goal is to increase enrolment numbers. Implementing system-wide fees will prohibit thousands of children from gaining access to school and will decrease the earning potential of the next generation.

This paper focuses on the three East Africa countries of Kenya, Tanzania, and Uganda. They were chosen partly for the many similarities they have in history, culture, and economic situation, but they also all implemented a policy to abolish school fees in the last fifteen years. Historically, all three countries were initially exposed to Arabic and Indian cultures as traders worked their way south along the coast. Trade caravans moved gold, rubber trees, and ivory from the interior to markets along the coast. Beginning in the 1700s, Portuguese traders took full advantage of the coastal trading towns and increased their sphere of influence into Africa. The land grab by European powers during the Berlin Conference in 1884-1885 divided the African continent into colonial holdings. England ended up with a good portion of land, including Kenya and Uganda. After Germany surrendered in 1914 to end World War I, its former colonial holdings of Tanganyika and Zanzibar were integrated into the British Commonwealth and became Tanzania (Nalubwama 2009).

This similar colonial history explains the commonalities that can be found in these three countries. For one, the official languages of all three countries are English and Swahili. Also, the most common religion across the region is Christianity, although Islam is close behind. The economic make-up of the region is also similarly based on agriculture and tourism, with the main exports being coffee, sugarcane, and tobacco. The British colonial influence also can be seen in the education system which follows the same organization of levels of schooling and the requirement of national exams to progress to the next level. (Nalubwama 2009). All three countries claimed independence in the 1960s from Britain, giving them an equal amount of experience as independent states. They have also all been exposed to the atrocities in neighboring Rwanda and Democratic Republic of the Congo. For these reasons it is easier to control for the intervening variables of history and culture

and show the true effects of the school fee policy on the populations of these three countries.

With a well-organized education system in place, although lacking universal access, Kenya, Uganda, and Tanzania were more prepared for the surge in enrolment due to the change in school fee policy. For other countries such as Malawi who pioneered the abolishment policy in 1994 and Mozambique, lack of planning and monitoring of policy implementation led to an exhaustion of resources for education and threatened the efficiency and effectiveness of the education systems. For this reason, countries such as the Democratic Republic of the Congo and other less stable countries are looking for a more gradual approach to school fee abolishment which will hopefully lead to a more effective implementation of the policy (Nairobi SFAI Workshop 2006).

Policy Description

In 2000, the three countries of Uganda, Tanzania, and Kenya worked with Western nations, other developing countries, and officials from the UN to agree on nine main Millennium Development Goals (MDG) to be completed by 2015. These goals, theoretically, would help guide the work being done in developing nations and would present measurable endpoints to work towards. One important MDG was the goal of universal primary education for all children (Fleshman 2005). For this reason and in response to the burden that school fees were creating within these three East African countries, all of them moved toward complete removal of the school fee system within the last decade. Beginning with Uganda in 1997, Tanzania removed its school fee policy in 2001 and Kenya followed in 2003. Stagnant economic situations make it harder for "governments to raise revenues and they are more likely to resort to fees, where as parents simultaneously will find it harder to pay fees out of reduced or stagnant household incomes" (Kattan 2004). Thus, school fees

are found to exacerbate the dire situation of the poor in these countries, creating a larger problem for the governments who are trying to jump start their economies. Having fewer children in school at an early age due to the presence of fees also creates a smaller labor force of skilled and specialized workers for the future. Abolishing school fees helps remove a great stress on the poor and increasing the opportunity for children to gain knowledge and skills that will be useful later in their lives.

Millennium Development Goal #3, Promote Gender Equality and Empower Women, also focuses on gender equality "eliminating the gender disparity in primary and secondary education" by 2015 (Maurer 2006). Because school fees created potentially large obstacles to the education of young girls, policies implemented to abolish them would help developing countries work faster towards the gender equality MDG. "What is striking is the breadth of benefits derived from educating girls—not only economic benefits in terms of higher wages, greater agricultural productivity, and faster economic growth, but also health benefits, HIV prevention, and women's empowerment" (Sperling 2008). Eliminating school fees is one of the easiest and most effective ways of increasing the access for young girls to attend primary school. In September 2005, a world summit was held to discuss new initiatives to help with education and health. From this summit UNICEF and the World Bank began the School Fee Abolition Initiative (SFAI) "aiming to make a breakthrough in access to basic education and significantly scaling up progress to meet the MDGs" (UGEI). SFAI mainly has provided guidance for new countries wanting to change their school fee policy but has also worked with the countries that have successfully abolished them to collect information on positive and negative effects of the policy.

Hypothesis

This study looks at the effects of the policy to abolish school fees on the enrolment of primary school students in Kenya, Tanzania, and Uganda. It is predicted that the abolition of the school fees policy will be a significant factor in the increase of enrolment of students at the primary level, especially young girls. The measurement of enrolment is by numbers of students registered through an annual census. The enrolment numbers are for primary students who register at public schools in the three target countries and thus, do not include private or religious schools. These enrolment measures also do not account for students who dropout or have to repeat grades. There are two separate measurements of enrolments, one for the annual enrolment of girls in primary school and one for the annual enrolment of boys at the same level.

Research Design

This study is an experiment to test the effects of the policy to abolish school fees in the East African countries of Tanzania, Kenya, and Uganda by looking at enrolment numbers before implementation of the policy and after, over a fifteen-year time period. To reduce the effects of differences between countries, the three countries that were chosen have comparable British colonial history and recent political history. They share a similar culture and economic profile. As a cross section time series experiment, this study can be categorized as a quasi-experiment. The implementation of the policy within the countries was not dictated by the observer and the experiment tests the impact of this policy on comparable groups over a period of time.

However, like the non-experiment model, there are several variables that are controlled for such as: year, political stability, violence, population growth rate, per capita Gross Domestic Product, poverty rate, and fertility rate. The treatment variable, as discussed above, is the implementation of the policy to abolish school fees. It is measured in terms of

presence, where 1 defines the year that the policy was in action and 0 otherwise. Political stability in this study is defined by peaceful elections, peaceful changes of power to another party, and periods where there is an absence of corruption trials and political unrest from opposition parties by either demonstrations or boycotts of elections. The political stability data was collected from the World Bank's World Governance Indicators, a set of statistics that record the presence of good governance over time. The violence variable in this study is defined by the presence of violent action from the military, intervention in a neighboring country, or police violence against demonstrators or other political parties. Since much of the unrest in the three target countries derives from disagreement over elections or military action in another country, this variable has been labeled political violence. The political violence measure came from the CIA World Factbook, which traced these trends in all three countries. Both political stability and political violence are measured as 1 for the presence of either, and 0 otherwise.

The other variables that were controlled for in this study were the population growth rate measured in percent, per capita Gross Domestic Product measured in dollars per person, the poverty rate measured in percent, and the fertility rate measured in average number of children per female. The World Bank and CIA data comes from annual censuses and studies which are collected and compiled to create an overview of the target countries. As there is an absence of organized country-wide censuses conducted by the East African governments, the data for this experiment depended on international observers and thus, may not be as accurate or thorough as data gathered by in-country sources that have better access to rural populations.

The time series information for the enrolment estimates was collected through the UNdata database online. As part of the United Nations System, UNdata collects

demographic information and data on global indicators. Education data is compiled by the UN Educational, Scientific, and Cultural Organization's (UNESCO) Institute for Statistics. It has annual records and country profiles where education data is collected and recorded.

Results

The following tables give an overview of the data set collected for this study. The Descriptive Statistics for the data for boys and girls can be found in the Appendix in Section A. The descriptive statistics show that the mean enrolment number for boys in primary school is 2,771,544. This is in general larger than the primary enrolment rate for girls where the mean is 2,645,329. These tables also show the poverty situation in the three countries where the average GDP per capita is $831.35 a year with a maximum GDP per capita of $1467.00. The poverty rate is also dramatic, showing over the fifteen years of this time series, the average is 43.83% of the population is below the poverty rate with a minimum rate of 31%. The fertility rate gives an idea of the size of families trying to support students in school as the average number of children born is approximately six per woman. The support that so many children provide to the household makes this fertility rate understandable. However, many growing families, even if they want to educate their children through the public school system, face a financial burden of school fees that prohibit them from being able to support their children's education.

Table 1: Correlation of Independent Variables:

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. corr Fee Year Polstab PolViol PopGrowth PCGDP PovRate FertRate
(obs=45)
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	Fee	Year	Polstab	PolViol	PopGro~h	PCGDP	PovRate	FertRate
Fee	1.0000							
Year	0.7660	1.0000						
Polstab	-0.3633	-0.1719	1.0000					
PolViol	0.4568	0.3546	-0.6121	1.0000				
PopGrowth	0.1365	-0.0785	-0.0049	0.0820	1.0000			
PCGDP	0.1191	0.4598	-0.2125	0.1776	-0.2736	1.0000		
PovRate	-0.5280	-0.4884	0.2260	-0.2848	-0.0942	0.0233	1.0000	
FertRate	0.0961	-0.3621	-0.0303	0.0021	0.4793	-0.8086	-0.1649	1.0000

Table 2: Cross Section Times Series FGLS Regression where Y1 = Boys Enrolment

Table 3: Cross Section Time Series FGLS regression where Y2 = Girls enrolment

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. xtgls  EnrolGirls Fee Year Polstab PolViol PopGrowth PCGDP PovRate FertRate, panel (hetero) corr (psar1)

Cross-sectional time-series FGLS regression

Coefficients:   generalized least squares
Panels:         heteroskedastic
Correlation:    panel-specific AR(1)

Estimated covariances       =       3        Number of obs      =        45
Estimated autocorrelations =       3        Number of groups   =         3
Estimated coefficients      =       9        Time periods       =        15
                                             Wald chi2(8)       =     96.09
                                             Prob > chi2        =    0.0000
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EnrolGirls	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Fee	352046.2	127453.7	2.76	0.006	102241.5	601850.9
Year	68445.74	25184.58	2.72	0.007	19084.87	117806.6
Polstab	-29114.94	63020.75	-0.46	0.644	-152633.3	94403.45
PolViol	35101.05	65362.49	0.54	0.591	-93007.07	163209.2
PopGrowth	48057.71	106188.7	0.45	0.651	-160068.2	256183.7
PCGDP	726.6205	430.7822	1.69	0.092	-117.697	1570.938
PovRate	-20547.87	8046.028	-2.55	0.011	-36317.79	-4777.944
FertRate	29761.56	68254.94	0.44	0.663	-104015.7	163538.8
_cons	-1.34e+08	5.03e+07	-2.67	0.008	-2.33e+08	-3.57e+07

     When looking at the impact on enrolment for boys in primary school, it is interesting to observe that a linear regression model shows that the independent indicators explain a significant amount of the change in enrolment. In the model for Boys Enrolment, R^2 is .7157, showing approximately 72% of Y_1 is explained with the chosen independent variables. The R^2 for the Girls Enrolment model, from the OLS regression, is .8409, showing that 84% of Y_2 is explained by the selected independent variables. The OLS model can be found in the Appendix under Section B for girls and boys. In the model, the chi(2) value = 61 and Prob > chi = 0.00 for the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity, rejecting the null hypothesis that there is constant variance in the model and necessitating the use of the FGLS regression. I also account for time –series correlation within the three countries. Table 2 presents the FGLS results for Boys. The result is that the abolishment of

the fee shows an increase for boys enrolment by 58,064 students. Although this is not a statistically significant effect on enrolment, the increased amount of male students due to the abolishment of the fee is substantial. The presence of political stability and violence in this case seem to have little impact on primary school enrolment. However, the low GDP per capita and the high poverty rate describe an environment where school fees, no matter how low they are, are a large hurdle for parents to send their children to school. While families are still consisting on only an $831 annual income, the absence of school fees allows them to send more children to school and allocate the saved money toward covering other household expenses.

In contrast, when looking at the regression analysis for the enrolment rate for girls in primary school, the effect of the policy is statistically significant in all regression tests. This shows a specific relationship between the policy and enrolment rates when looking at girls participating in primary school. The coefficient for the fee variable clearly shows a dramatic increase of 352,046 female students who enroll in primary school after the fee is waived. The linear regression model also shows that, along with school fee policy, the poverty rate is a statistically significant indicator for girls' enrolment and even an increase in GDP per capita, as seen in the model for boys, increases the enrolment for girls. Even when tested for robustness, the two significant indicators do not lose the degree of their impact on girls' enrolment. When looking at the XTGLS and controlling for heteroskedasticity and autocorrelation, the year also becomes relatively significant. Similar results were found in the Y2 XTGLS as with the Y1 XTGLS, which is that there were three estimated autocorrelations within the independent variables, which could account to some degree for why the R squared is so high. There is also a presence of heteroskedasticity as $Chi(2) = 96.09$

and Prob > chi2 = 0.00 from the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity, again rejecting the null hypothesis that there is constant variance in the model.

The correlation matrix above shows that there is a strong correlation between political stability and political violence (.61), but also between fertility rate and per capita GDP (.80). These relationships are also shown in the presence of autocorrelation in the XTGLS tables. Though the policy to abolish fees is significant in most of the regressions for Y_1, the noteworthy fact is the policy has a statistically significant impact on Y_2, the enrolment of girls. From the data above, the hypothesis is supported, where enacting the policy to remove school fees significantly affects the enrolment of primary school students. More importantly, it greatly impacts the increase in enrolment for girls.

Discussion

From the data shown above, it can be concluded that the policy to abolish school fees does impact the enrolment of primary school students, leading to an increase in enrolment when the fees are removed. However, only for girls does this policy have a statistically significant impact in the regression models. This means that, though there is an impact on boys' enrolment, it is a much more significant factor for girls' enrolment. This supports the cultural traditions of these target countries, for boys are more likely to go to school than girls. The role of the female is distinctively in the domestic domain, and there has been little emphasis in the past to educate the female children. Especially in poor, rural areas, an educated male child can find more work than his educated sisters, eliminating the need to send the girls to school. Instead, they remain at home and help in the domestic sphere. There is also a tradition of girls marrying at a young age, and in many cases they are more valuable to their parents as brides, for their bride price, than they are for what small salary they could earn as educated females. The presence of a fee for primary school only

adds to these cultural factors in making it difficult for parents to financially and culturally support the education of their daughters. Thus, when the fee for primary school is removed, it affects the opportunities of the girls much more so than the boys as their parents have less of a burden to send them to school. The boys on the other hand would be going to school in any case, but the absence of fees does help expand the capability of more families to send their sons to school, or maybe send more than just their first son to school.

There are also a number of indicators that are purely qualitative but which might also affect the enrolment rate outside the indicators chosen. For one, religion can affect the motivations of the parents to educate their daughters as many Muslim practitioners see the role of the woman as remaining in the domestic sphere. It is difficult to quantitatively account for religious and cultural practices such as the presence of a bride price. If a girl is more valuable because of this, education is not an important investment for parents to make for their female children. Along with these, there are also social movements within the country that could have affected the increase in enrolment for girls. Two of the Millennium Development Goals apply to this study as was mentioned before: universal primary education and increase in equality for women. Local NGOs could have been working on publicity campaigns to persuade parents to send their daughters to school, or there could have been external pressure from the UN or other Western countries for the government to increase efforts to increase enrolment for girls. However, apart from these indicators, it is interesting to see that across the regressions, the removal of school fees does statistically impact the enrolment of girls, leading to the conclusion that these qualitative factors, if they do exist, do not have a significant impact though they might increase enrolment in some capacity.

There has been a lot of publicity around the removal of school fees in the past five years, especially when the World Bank initiated the SGAI program to help other developing countries implement similar policies in 2006. With the significant impact of indicators such as poverty rate and GDP per capita, it can be said that the removal of school fees will have similar positive effects on enrolment in any developing nation. The statistically significant impact of the policy on girls' enrolment can be generalizable, across the Africa and most likely in Asia and South America as well. Enrolment is quite dependent on the financial situation of the population and thus, any decrease in the financial burden of education will increase the access to it and enrolment rates will increase. With such a high R squared and the consistent significance of the impact of the policy, it can be said that the results of the experiment are robust. There might be some contamination from government programs or changes in the poverty rate, but there exists a strong correlation between the policy and increases in enrolment. This leads to the conclusion that there is a causal relationship between the dependent and test variables.

One weakness is that the N is not particularly large. It is over the threshold of 30 but including more countries could increase statistical validity. However, more cultural indicators would have to be controlled for as other countries would not have comparable colonial history or economic profile. If there was more country-specific data, more indicators could lead to more measurement reliability. GDP is not necessarily a good measure for the wealth of a country but it is one of the main factors. Others could be debt, percentage of foreign direct investment, and an equality index. However, these six additional independent variables give a balanced overview of the population, as it was a goal to find political, demographic, and economic variables that could be controlled for.

The idea of implementing school fee policy has been around for a decade or so but only recently, with the great successes in Tanzania, Kenya, and other African countries has there been serious conversation about it. For this reason there is very little literature on the topic and even less about quantitative studies that analyze the impacts of this policy. This study compiled country-specific data, controlled for several important indicators, and was able to confirm the press statements that the policy to abolish school fees does in fact significantly affect the enrolment for girls and positively affects the enrolment for boys at the primary level. This study could be expanded to look at middle and secondary school but it is likely that similar results will apply. However, as these developing countries abolish fees, they face an ever-growing demand on the education system that many were not prepared for. Work now must be done to increase the capacity of schools and the teaching force to accommodate for the huge influx of children into the school system. As the World Bank is helping other countries remove their school fees, more focus should be placed on improving the school systems and the management of the education resources in these developing countries. However, it can be quantitatively supported that, though the system may not be prepared for it, the abolition of school fees greatly increases the enrolment of students and allows greater access of girls into the education system. This is one positive step toward improving the lives of young people in developing nations.

Appendix

Section A: Descriptive Statistics Table

Variable	Observations	Mean	Std. Dev.	Min.	Max.
Country	0				
Year	45	1999	4.369314	1992	2006
Boys Enrolment	45	2771544	746221	1349759	4051676
Girls Enrolment	45	2645329	742136	1054086	3908208
Absence of School Fee	45	.4444444	.5025189	0	1
Political Stability	45	.6444444	.4840903	0	1
Political Violence	45	.3555556	.4840903	0	1
Pop. Growth Rate	45	2.709111	.4201613	2.07	3.82
Per capita GDP	45	831.35556	283.1339	418	1467
Poverty Rate	45	43.83111	7.188211	31	56
Fertility Rate	45	5.651778	1.179232	3.31	7.2

Section B: OLS Regression Models for Y1 and Y2

Table 4: Regression with Y1

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. regress EnrolBoys Fee Year Polstab PolViol PopGrowth PCGDP PovRate FertRate

      Source │      SS         df       MS              Number of obs =      45
─────────────┼────────────────────────────────          F(  8,    36) =   11.33
       Model │  1.7535e+13      8   2.1919e+12           Prob > F      =  0.0000
    Residual │  6.9659e+12     36   1.9350e+11           R-squared     =  0.7157
─────────────┼────────────────────────────────          Adj R-squared =  0.6525
       Total │  2.4501e+13     44   5.5685e+11           Root MSE      =  4.4e+05

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    EnrolBoys │     Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
─────────────┼────────────────────────────────────────────────────────────────
         Fee │   531513.3   285756.7     1.86   0.071    -48028.17    1111055
        Year │  -157528.4   36199.65    -4.35   0.000    -230944.7   -84112.07
      Polstab │   25781.55   192928.5     0.13   0.894    -365495.6    417058.7
      PolViol │    106717   185187.8     0.58   0.568    -268861.4    482295.3
    PopGrowth │    42283.4   187015.5     0.23   0.822    -337001.5    421568.3
        PCGDP │   312.5174   461.5493     0.68   0.503    -623.5481    1248.583
      PovRate │   39692.15    11794.8     3.37   0.002     15771.2    63613.11
     FertRate │  -6552.452   128658.4    -0.05   0.960    -267483.7    254378.8
        _cons │   3.15e+08    7.26e+07     4.34   0.000     1.68e+08    4.63e+08
```

Table 5: Regression with Y2

```
. regress EnrolGirls Fee Year Polstab PolViol PopGrowth PCGDP PovRate FertRate

      Source |       SS       df       MS              Number of obs =      45
-------------+------------------------------           F(  8,    36) =   23.79
       Model |  2.0378e+13       8  2.5473e+12           Prob > F      =  0.0000
    Residual |  3.8552e+12      36  1.0709e+11           R-squared     =  0.8409
-------------+------------------------------           Adj R-squared =  0.8056
       Total |  2.4234e+13      44  5.5077e+11           Root MSE      =  3.3e+05


  EnrolGirls |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         Fee |   446420.9   212585.9     2.10   0.043     15276.65    877565.2
        Year |   19207.05   26930.38     0.71   0.480    -35410.29     73824.4
     Polstab |  -12038.21   143527.3    -0.08   0.934    -303125.1    279048.6
     PolViol |   45035.37   137768.7     0.33   0.746    -234372.5    324443.2
   PopGrowth |   139391.1   139128.3     1.00   0.323    -142774.3    421556.4
       PCGDP |   1289.094   343.3652     3.75   0.001     592.7175    1985.471
     PovRate |  -45326.85   8774.625    -5.17   0.000    -63122.61   -27531.09
    FertRate |   50787.58   95714.14     0.53   0.599    -143329.7    244904.8
       _cons |   -3.57e+07   5.40e+07    -0.66   0.513    -1.45e+08    7.39e+07
```

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