Reducing the constraints to school access and progress: assessing the effects of a school scholarship program in Malawi

Stephen Hunsaker
Honors Thesis

REDUCING THE CONSTRAINTS TO SCHOOL ACCESS AND PROGRESS: ASSESSING THE EFFECTS OF A SCHOOL SCHOLARSHIP PROGRAM IN MALAWI

by
Stephen Kent Hunsaker Jr

Submitted to Brigham Young University in partial fulfillment of graduation requirements for University Honors

Political Science Department
Brigham Young University
April 2018

Advisor: Dr. Donald Baum
Honors Coordinator: Dr. John Holbein
ABSTRACT

REDUCING THE CONSTRAINTS TO SCHOOL ACCESS AND PROGRESS: ASSESSING THE EFFECTS OF A SCHOOL SCHOLARSHIP PROGRAM IN MALAWI

Stephen Kent Hunsaker Jr
Political Science Department
Political Science Bachelor of Arts

The study utilizes a causal-comparative research design to compare the educational experiences and outcomes of two student groups – those who did and those who did not receive a needs-based scholarship to attend secondary or tertiary school. We administered surveys to 89 scholarship recipients and 57 non-recipients in the Dowa, Kasungu and Lilongwe Districts of Malawi. Surveys included items to determine group differences across a range of short and medium-term outcomes, including: career aspirations, attendance rate, withdrawal rate, graduation rate, employment status, time unemployed since graduation, and employment quality (using the Tanzanian Standard Classification of Occupations). This study included students currently in school as well as those who had graduated or were of graduation age.

We found that those that receive the scholarship graduated at an average rate of 97% across secondary and tertiary schooling, while non-recipients graduate at an average of 19% for tertiary school and 50% for secondary school. Overall, scholarship recipients are more likely to attend because the scholarship
covered boarding school which in turn made them less likely to withdrawal. Recipients are receiving jobs at higher rates; however, the quality of that work is not significant between recipients and non-recipients. It is hypothesized that this is due to the struggling job market of Malawi in which many must take job in which they are underqualified. Overall, the scholarship program has positive significant effects on many of the desired outcomes.
I would like to thank all those that have helped make this paper possible. I would like to specifically thank Dr. Donald Baum for being my key mentor and helping put this research together from the very beginning. I would like to thank Nelson Banda for his untiring work to meet our interview quotes and Austin Kamanga for being an incredible translator. I would like to thank my wife, Brooke for her support and help with data entry while in-country and for editing my work numerous times. I would also like to thank Dr. Nielson for his advice during the research. Thanks to Katy Ducos for being an incredible co-investigator especially during long hour days of interviewing. Lastly, I would like to thank NuSkin and the Force for Good Foundation for their support throughout this entire process.
# Table of Contents

Title ......................................................................................................................... i  
Abstract ................................................................................................................ ii  
Acknowledgements .......................................................................................... iii  
Table of Contents ................................................................................................. iv  
List of Tables and Figures ................................................................................. v

I. Introduction ........................................................................................................ 1
II. Malawi Education Context ........................................................................... 2
III. Theoretical Framework ................................................................................ 3
IV. Research Questions ........................................................................................ 7
V. Methods ............................................................................................................ 8
   i. Limitations .................................................................................................. 12
VI. Results ............................................................................................................ 14
   i. Educational Attainment and Family Income ........................................ 15
   ii. School Costs ............................................................................................ 20
   iii. Employment & Income .......................................................................... 21
   iv. Community Impact .................................................................................. 27
   v. Results Summary ...................................................................................... 27
VII. Suggestions .................................................................................................... 29
VIII. Conclusion ................................................................................................... 32
Works Cited ......................................................................................................... 33
LIST OF TABLES & FIGURES

FIGURE 1: Group breakdown .........................................................................................8
FIGURE 2: Family income difference .............................................................................13
TABLE 1: Household income .......................................................................................16
TABLE 2: Withdrawals .................................................................................................16
TABLE 3: Absences .....................................................................................................17
FIGURE 3: Absences by distance to school .................................................................18
TABLE 4: Highest grade level ....................................................................................19
FIGURE 4: Graduation rates .........................................................................................20
FIGURE 5: Borrowing amount for secondary students .............................................21
FIGURE 6: Borrowing amount for college students ....................................................21
FIGURE 7: Job status ...................................................................................................22
TABLE 5: Hierarchy of occupations .........................................................................23
TABLE 6: Occupation category .................................................................................23
FIGURE 8: Student income .........................................................................................24
FIGURE 9: Income by graduation year .......................................................................25
TABLE 7: Adjusted yearly wage ..................................................................................26
TABLE 8: Income .......................................................................................................27
Introduction

While 48 of the 54 countries in Africa have free primary education, there are still many barriers that inhibit students to continue to secondary school after primary school. A large barrier that many face is the cost of a secondary education. This is especially true in Malawi. Of 187 countries globally, Malawi ranks 174th in the number of years that children spend in school (UNDP 2013). This is partially due to the inability of millions to pay for school. In Malawi, the government covers the cost of school up to 8th grade, but in order for students to continue to the secondary grades (9-12th), they have to pay high tuition rates and meet a rigorous performance expectation. In a country where GDP per capita is only $300 per year, it costs the average student $300 to attend secondary school (World Bank 2016). This amount is much higher than many families can afford—even for a single child (Banda 2016). In addition to these direct school fees, households face high opportunity costs to send their children to both secondary school and college.

This research studies the effectiveness of the scholarship program Educate the Children, on alleviating barriers to secondary school and its effect on graduation rates, employment rates and quality, and community impact. By examining scholarship programs that cover the direct cost of school we expect to understand the extent to which these intended outcomes are being produced. The direct costs consist of tuition and board, while indirect costs include but are not limited to: transportation, books, uniforms, etc., given that the program covers all
of the direct costs of schooling, students are still paying some of the indirect costs out of pocket.

**Malawi Education Context**

Malawi introduced free primary education in 1994, eliminating all fees in public schools such as tuition, uniforms and textbooks (Inoue, Oketch 2008). While championed as a great success, the initial shock was hard on the education sector. There was not an adequate number of teachers and many of those teachers were not properly trained. While a great feat for the country at the time, the pupil-teacher ratio shot up to 80:1, giving Malawi one of the highest ratios in Africa, and double that of its regional neighbors in the Southern African Development Community (SADC) (World Bank 2010). Today, nearly two-and-a-half decades later, that number remains worryingly high at 70:1 (World Bank data 2015). However, secondary school ratios for the country dip to 20:1, below even that of the SADC and SSA averages (22:1 and 28:1). This is not due to more teachers going into secondary school teaching but less students going into secondary school.

The acceptance rate into Malawi’s secondary grades is one of the lowest in Africa (16.3%), particularly for girls – only 67 girls are admitted for every 100 boys (World Bank 2010). While 86% of Malawian children start primary school and almost 81% finish 8th grade, only 28% start secondary school, and a mere 11% finish (UNICEF 2013). The situation is most acute for poor families, whose children complete secondary school at a dismal 1% compared to 31% of those
from rich families (UNESCO 2016). With over 80% of the population agrarian, and 71% living on less than the international poverty line of $1.90 a day, the cost of school is too high for the vast majority of the country. The per-pupil expenditure for a secondary student in Malawi is at 33% of the GDP per capita, which is twice that of the low-income country median of 16% (Education and Policy Data Center 2014). Yet, these resources are not going to the neediest students. In total, 72% of the national education resources go to the top 10% of students (Education and Policy Data Center 2014).

Overall Malawi was not equipped for the mass influx of students into primary school and has been unable to build itself since that time. The system suffers from high secondary school costs compared to GDP per capita, disparities in equal opportunity for girls and rural students, uneven distribution of resources and much more.

**Theoretical Framework**

Demand-side interventions help to curb the constraints that recur from the financial and opportunity cost of fee-paying secondary schooling. One type of demand-side funding for education is school scholarship programs. Scholarship program cover the direct cost of secondary school, leaving only small out-of-pocket expenses on the family, and give the neediest children opportunities at education. Other approaches to demand-side constraints is also cash transfers, both conditional and unconditional, and private school vouchers. It is important to see how each adds to the conversation of how to curb demand-side constraints.
Conditional cash transfers have been used to increase financial support for the purposes of raising school enrollment, attendance and student test scores in developing countries. Conditional cash transfers, or CCTs, work at targeting household needs at a micro level by providing cash with certain requirements or conditions dependent upon the receivers’ actions, such as consistent school attendance. Unconditional cash transfers (UCTs) are very similar to conditional cash transfers only in that they do not have stipulations or conditions based on action for its receivers. Baird et al. (2013) conducted a systematic review of CCT and UCT programs in developing countries, and found that they improve the odds of being enrolled in and attending school compared to those not receiving CCTs and UCTs. The authors found CCTs to have larger effect sizes than UCTs, though not statically significant, with the strength of conditions and enforcement to be significantly different in favor of CCTs. However, notwithstanding the positive effects of cash transfers on student participation in school, their impact on test scores is “small at best.” Saavedra and Garcia (2017) also looked at the effects of CCTs on education outcomes and found similar impacts on enrolment, attendance and retention. They also found that their first prediction - that the more generous the transfers the larger the effects - was false. They explained that “we do not find evidence in support for this prediction. All else constant, transfer amounts are not statistically correlated to effect sizes for any outcome or schooling level.” (Saavedra, Garcia 2017). In Malawi’s CCT program, impacts on educational outcomes such as dropout do not vary with transfer amounts (Baird et al., 2011).
In 2011, Baird et al. conducted research on cash transfers targeted at adolescent girls in Malawi. They found that while both CCTs and UCTs had declines in dropout rates, CCTs had much larger impacts during the two-year program. CCTs also outperformed UCTs in English reading comprehension and but teenage pregnancy and marriage rates were substantially lower in the UCTs than the CCTs (Baird et al. 2011). Conditional and unconditional cash transfers have proven to be successful demand-side interventions. While they do have certain limitations they demonstrate positive effects compared to those who received no cash transfer.

With an ever-increasing number of students selecting private schools in developing countries, private school vouchers are becoming a more commonly used practice for eliminating some of the financial barriers to secondary school access in developing countries. Baum explains that private school vouchers are a part of a public-private partnership or PPP, in which the government funds the students by giving vouchers to attend fee-paying private schools (Baum 2018). While these vouchers can come in different forms ranging from tuition waivers/subsidies, tax-credit scholarships, or education savings accounts, among others, the idea is the same – that children, usually in disadvantaged situations, have the opportunity to access higher quality education. The interest of governments in such a program can be tied back to the fact that, for many countries, there is still not equitable access to school; therefore, if private schools are built and run by a private organization then governments can send at-risk demographic groups to these schools for a better education than the government could provide. Private school vouchers are seen to have various other advantages
such as relieving overburdened government schools with already diminished resources and budgets, or sending students to schools capable of producing higher learning outcomes. However, the latter must be stated with reservation – given that, in studies of the difference in learning outcomes between private and public schools, there is an inherent bias that students attending private schools come from families who are more well off and therefore have already received more advantage prior to entering into the private school (Pratham 2015). Overall, private school vouchers are targeted at breaking down barriers for students but also for governments who do not have adequate resources and institutions to target at-risk demographics and low-income areas.

One additional approach to demand-side education finance is scholarship programs. These programs aim to take away the largest financial barriers that exist for secondary school attendance. By covering either all or part of the direct cost of tuition, housing and other expenses, scholarships allow low income households to send their child to school without much financial burden on themselves. Many families also face opportunity costs when sending a child to school. By allowing their child to attend school they are losing help on the farm. While there is an opportunity cost for the family when a child attends school, the long-term benefits surpass that cost. A case study by Sineta, in Malawi, showed that scholarship programs for girls reduced the drop-out rate from the national average of 11% to 0.8%, nearly zero (Sineta 2012). This showed that the students and their parents saw the benefits of schooling and determined they outweigh the loss of help in the home. This was especially significant since girls will usually be selected last in a family to receive education, where most families will opt to send
their sons to school when funds are limited (Chimombo et al. 2000). Scholarship programs provide opportunities for the neediest, those that cannot afford both the direct costs of fee-paying school and the indirect cost of school supplies. Some cost-benefit analyses critique scholarship programs, stating that the cost to send one student is very high compared to other interventions, such as deworming. However, since one of the largest barriers for school attendance, completion and eventually graduation is financial, scholarship programs are able to target and resolve all of those issues.

**Research Questions**

Responding to the current conditions of the education system in Malawi, this research seeks to better understand the potential impacts of one intervention – a secondary and tertiary school scholarship program – for overcoming the financial barriers to school attendance and completion. In this vein, I seek to answer the following research questions, in relation to an ongoing secondary school scholarship program:

What are the primary constraints that keep students from attending school?

What is the relationship between the household cost of attending secondary and tertiary schooling and students’ ability to successfully progress through the education system?

Do scholarship recipients graduate school at higher rates than non-recipients?

Do scholarship recipients have a higher rate of employment after graduation than non-recipients?
Are scholarship recipients employed in higher quality (higher skill) jobs after graduation than non-recipients?

**Methods**

The study utilizes a causal-comparative research design to compare the educational experiences and outcomes of two student groups – those who applied for and received a needs-based scholarship (referred to as ‘recipients’), and those who applied for but did not receive a scholarship (‘non-recipients’) to attend secondary school or college (See Figure 1).

![Figure 1: The breakdown of the eight groups used in the study.](image)

We administered surveys to 89 scholarship recipients and 57 non-recipients in the Dowa, Kasungu, and Lilongwe Districts of Malawi. The recipients came from the program Educate the Children, a branch of the Force for Good Foundation based in Malawi. Educate the Children gives a certain number of scholarships out each year, the number fluctuates due to funding, but it is usually around 40. The recipients are selected from a pool of around 200 applicants. The application asks students basic demographic questions about their home village, age, family, etc. Applicants are also asked about the school they are applying for,
the cost for tuition, boarding, tests, books, and lab fees. The application then states that the scholarship is for students who have no other resources and asks what their personal difficulties are. Students are then asked how much their family and others they know will be able to contribute. The application then states the requirements for maintaining the scholarship, if received. These requirements include attending class, passing exams, and having good behavior. It also specifies that college applicants must be going into a certain field. These fields are: accounting, engineering, electricity, mechanics, computer science, nursing, or medicine. When the director was asked about this requirement, he stated that they do not always stand by it and that they also accept students from other disciplines. The final requirement for the application is a school transcript, an admission letter, a MSCE certificate (for college applicants), a letter of recommendation from their headmaster, and a one-page paper explaining why they are applying for assistance and how they will use this to build up the nation of Malawi.

The selection process for the scholarship consists of two rounds. The first round is applying for the scholarship at the office in Lumbadzi. If the student cannot make their way to the office, they were allowed to turn in their application via email. However, since most Malawians do not have email there is limited outreach of the scholarship. Applicants are mostly from within the districts of Dowa, Lilongwe, Ntchisi, and Kasungu. After the first round the director filters through and selects the students that have a need for the scholarship. This is done by looking at the questions that the students filled out determining if their parents could support their school fees. The director commented that most of the
applicants made it through this first round. The second round consists of taking the applicants to the board of directors of Educate the Children. The board reviews each applicant and determines which have the greatest need for the scholarship. The board provides the number of selected applicants to the directors in the United States who then respond with the amount of funding available. If too many applicants were selected, the board meets again and narrows down applicants to an amount the available funding can cover. This process usually leaves around 40 applicants selected for the scholarship program each year.

The scholarship covers 100% of their tuition and board and the student chooses which school they wish to attend. These interviews were conducted in person with the help of translators Austin Kamanga and Nelson Banda. We traveled to schools in order to contact and interview current students in both secondary school and college. We then contacted and interviewed former students and many non-recipients by calling them and setting a meeting place, usually close to their home village or work.

We categorized former students into two groups: those who had completed school and those who dropped out. If we interviewed someone who applied for a scholarship for secondary school in 2013 but did not receive it, they would be considered a secondary school former non-recipient. Since four years had passed since they applied, this implies that they either graduated or would have graduated had they continued school.
I lived in Malawi for the space of three months in a remote village where the organization is located. My interview team and I traveled and conducted interviews for twelve hours a day, a few times each week. The average travel time between each interview was between an hour to two hours. This was due to the random selection of students from our eight groups. Since each lived in different parts of the country, it was necessary to travel to many different parts of the country. All of the interviews were conducted face to face, with nearly all done through a translator who would ask the questions and then dictate their responses. Some tertiary students could speak English and would be given the interview in English. All interviews were done verbally in order to account for the potential of illiteracy and in order to not discomfort the interviewees. Over four hundred hours were put into the collection of the data alone. This did not include the numerous additional hours spent collecting files necessary for the proper randomization of participants.

Our survey was a standardized questionnaire with mostly closed-ended questions and a few open-ended questions. This method is most effective in providing standardization in responses, and thus an ability to conduct quantitative analysis on the resulting data. While it provides more standardization, it is also time consuming. Surveys included items to determine group differences across a range of short and medium-term outcomes, including: career aspirations, attendance rate, withdrawal rate, graduation rate, employment status, time unemployed since graduation, and employment quality (using the Tanzanian Standard Classification of Occupations). In addition to questions on direct and indirect school costs, the study addresses some of the
non-financial constraints that students face in accessing formal education services. These include gender, distance to school, means of transportation, and access to a boarding school. Lastly, we explore the associations between education/economic outcomes and student perceptions of their own affluence, relative to their peers and neighbors.

**Limitations**

Upon arrival in Malawi, we collected the master list of both recipients and non-recipients, former and current, from Nelson Banda, the head of the scholarship program. From this master list, we planned to randomly select participants within each of our study groups. However, due to computer issues that Nelson Banda experienced a few years ago, many of the lists of students from the earlier years of the program were lost. We used the remaining lists to randomly select our subject pool. We stayed true to the randomized list for six of our eight groups, but our secondary former non-recipients and college non-recipients were hard to locate, and many of the people on the list had no contact information. As such, some of those interviewed in each group were interviewed by convenience of location. This can potentially skew the evaluation’s representativeness for former non-recipient students. There is also the issue that because the program does not randomly choose those who will receive the scholarship, we see differences in characteristics between recipients and non-recipients (e.g., household income), and as such. We cannot be fully confident that the results presented here represent the true impact of the program. Some of
the success of the program shown here could be driven by the fact that recipients are coming from more affluent families. When looking at the average income for the families of these students we see for both secondary school and college recipients their parents have higher incomes than the parents of the non-recipients. These results could be biasing the data in favor of scholarships recipients. We see a 21% difference for secondary students and a 41% difference for college students. This translates to a $47 difference for secondary students and a $281 difference for college students (See Figure 2). This could be due to the simple fact that family income is not a part of the application process for the scholarship and therefore is not a factor in the selection of students for the scholarship.

Figure 2: Income difference in US dollars between the four current student groups. This is the student’s family income not their personal income.

However, we feel that, given the size of the evidence in favor of the scholarship’s positive impact, some of the results would potentially remain after
fully accounting for differences in characteristics between treatment and comparison students. The wealth index was created to look at living standard from a different approach than income. Income is not the best indicator of stability in Malawi, many of those that we interviewed in rural areas did not have more than $100 dollars in cash at a given time. We chose to create an index that weighted certain household items as standards of living. The wealth index helps to capture the larger picture. We asked each student about 18 different household items that they own, beginning with small items such as a borehole, table, bed, bicycle, phone, and leading up to larger items like a motorcycle, car, electricity, or smartphone. We also asked about the type of flooring, walls, and roofing their house had. From this we weighted the items and determined their score. We found that there was no statistically significant difference between the wealth index scores of recipients and non-recipient current students. This means that while there was a significant income difference between recipients and non-recipients, it didn’t have an effect on the wealth index score.

**Results**

As seen in figure 1 of the methods section, we split our findings into key areas between our recipient and non-recipient pools. Those areas were then divided among current students and former students. For current students, we measured the effects of scholarship reception on attendance, absences, withdrawals, borrowing rates, and use of boarding schools. For former students
we measured the effects of scholarship reception on educational attainment, graduation rates, employment rates, employment quality, and income.

We use independent sample t-tests and ordinary least squares (OLS) regression, holding constant certain student and household factors (income, school cost, boarding school status, wealth index, education level, graduation year etc.) to test for differences in outcomes between recipients and non-recipients (i.e., reflective of performance difference between all scholarship recipients and non-recipients).

Educational Attainment and Family Income

The findings show that, overall, the scholarship program helps Malawian secondary and college students to graduate, attend class and boarding schools, receive more years of education, increase income after graduation, and avoid withdrawal at higher rates than their non-recipient peers. In part, this is due to a reduction in the out-of-pocket costs associated with attending school.

One indicator of educational attainment from the scholarship program was the rate of withdrawals. Common reasons for withdrawal range include funerals, teachers on strike, help needed at home during harvest, but much of the time it is due to inadequate funds to pay school fees and expenses. The student’s family income and whether they are recipients of the scholarship are both significant predictors of withdrawal rates (see Table 1).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Absence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recipient</td>
<td>-3.306**</td>
</tr>
</tbody>
</table>
Table 1: This regression model shows that student household income and scholarship reception are significant predictors of school withdrawal.

We found that recipients are withdrawing at lower rates and those that did withdrawal are not withdrawing for financial reasons. Results show that recipients of the scholarship are 16% less likely to withdraw from school (see Table 2).

Table 2: This logistic regression table looks at withdrawal, controlling for income and recipients. The odds ratio for recipients shows that they are 16% less likely to withdraw from school than non-recipients.

However, recipients do not have significantly fewer absences from school. While scholarship reception is not a good indicator of absences from school, the
distance the student lives from school is a good indicator—and the reception of the scholarship does impact this (see Table 3). This is due to the fact that non-recipients must travel 4 times longer than recipients because they must commute from their home villages, while recipients are in the boarding houses provided by the schools.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Absence Robust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recipient</td>
<td>-0.815</td>
</tr>
<tr>
<td></td>
<td>(0.739)</td>
</tr>
<tr>
<td>Boarding School</td>
<td>0.072</td>
</tr>
<tr>
<td></td>
<td>(0.612)</td>
</tr>
<tr>
<td>Income</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
</tr>
<tr>
<td>How Long from School</td>
<td>0.053***</td>
</tr>
<tr>
<td></td>
<td>(0.013)</td>
</tr>
<tr>
<td>Cost</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
</tr>
<tr>
<td>Student in Secondary School</td>
<td>0.938</td>
</tr>
<tr>
<td></td>
<td>(0.643)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.354</td>
</tr>
<tr>
<td></td>
<td>(0.956)</td>
</tr>
<tr>
<td>Observations</td>
<td>50</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.394</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3: This robust regression model shows that the distance from school is a significant predictor of absences. While being a recipient is not a significant variable (p-value of .276), there is a high correlation between being a recipient and attending a boarding school, therefore reducing the distance from school.
In contrast, most recipients are attending boarding schools because it is provided in their scholarship. Therefore, receiving the scholarship does have an impact on the number of absences a student has from school (See Figure 3).

![Absences by Distance to School](image)

*Figure 3: This scatterplot shows a sharp increase in absences the further the student had to travel to get to school.*

Results show that, overall, recipients are attaining 1 additional year of schooling (see Table 4). While controlling for parents’ education, graduation, wealth index and recipient status, we found it to be statistically significant at a 95% confidence level that both secondary and tertiary recipients are achieving one year of schooling more than non-recipients.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Secondary</th>
<th>Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father’s Education</td>
<td>0.050</td>
<td>0.114</td>
</tr>
<tr>
<td>(0.046)</td>
<td>(0.078)</td>
<td></td>
</tr>
<tr>
<td>Mother’s Education</td>
<td>-0.011</td>
<td>-0.084</td>
</tr>
<tr>
<td>Education</td>
<td>(0.063)</td>
<td>(0.075)</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Adjusted Yearly</td>
<td>0.000**</td>
<td>0.000**</td>
</tr>
<tr>
<td>Wage</td>
<td>(0.000)</td>
<td>0.000</td>
</tr>
<tr>
<td>Wealth</td>
<td>-1.129*</td>
<td>-0.061</td>
</tr>
<tr>
<td></td>
<td>(0.574)</td>
<td>(0.232)</td>
</tr>
<tr>
<td>Recipient</td>
<td>1.025**</td>
<td>1.105**</td>
</tr>
<tr>
<td></td>
<td>(0.453)</td>
<td>(0.453)</td>
</tr>
<tr>
<td>Constant</td>
<td>9.529***</td>
<td>12.974***</td>
</tr>
<tr>
<td></td>
<td>(0.918)</td>
<td>(0.661)</td>
</tr>
<tr>
<td>Observations</td>
<td>27</td>
<td>32</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.393</td>
<td>0.456</td>
</tr>
</tbody>
</table>

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Regression model of highest grade level achieved. The recipient coefficient scores of 1.025 and 1.105 shows us that recipients are receiving 1 additional year of school because of the scholarship.

Some of the largest findings show that at both secondary and college levels, between 94%-100% of students are graduating compared to 50%-19% for non-recipients (see Figure 4). The reasoning for the secondary recipients being at 94% is because one student failed their final exams and had to retake them later that same year but was planning to graduate after that. This was a significant difference for both secondary and especially tertiary students. This shows that families see both the educational but economic benefit of schooling and are willing to keep their children in school when the cost of the schooling is covered.
Figure 4: The graduation rates of each group. The secondary recipients were at 94% because one girl failed final exams and was in the process of retaking them.

School Costs

While the scholarship did help to reduce the out-of-pocket costs for school attendance, it did not eliminate the need for “pocket money”. Pocket money, in this case, is for indirect costs for school. This included but is not limited to school uniforms, supplies, stationaries, transportation, meals and for tertiary students, lab equipment, computers etc. Students are still having to pay out of pocket expenses, and to do so, they are borrowing from neighbors and family members. Those who did not receive the scholarship were, on average, paying 26% more out of pocket for secondary school and 36% more for college (See Figure 5 and Figure 6).
Employment & Income

The study finds that recipients who attended college are employed at a higher rate than the non-recipients (close to a 12% higher). There are also quite a few non-recipients that are still in school past the time they were expected to graduate. When asked why they had to pause their schooling, most students responded that they were unable to pay.
However, for secondary students, both recipients and non-recipients, there is a higher percentage that are unemployed when compared to tertiary students. The unemployed expressed that the reason for being without employment is because they are recently out of school and are unable to find work in their rural village or they were working their parents’ land and did not consider this employment. However, there is a much larger percentage of secondary recipients that are employed, close to 11% more.

![Bar chart showing job status for college and secondary students.](image)

*Figure 7: The overall percent of former students that were unemployed, students, and employed.*

However, the quality difference of these jobs is not significant. We used the Tanzanian Standard Classification of Occupations to categorize their occupations in a hierarchical way. For example, a clerk or secretary would be ranked higher than a farmer but lower than an associate professional or technician (see Table 5).


<table>
<thead>
<tr>
<th>Job Group</th>
<th>Job Group Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Legislators, Administrators, and Managers</td>
</tr>
<tr>
<td>2</td>
<td>Professionals</td>
</tr>
<tr>
<td>3</td>
<td>Technicians and Associate Professionals</td>
</tr>
<tr>
<td>4</td>
<td>Clerks</td>
</tr>
<tr>
<td>5</td>
<td>Service Workers and Shop Sale Workers</td>
</tr>
<tr>
<td>6</td>
<td>Skilled Agricultural and Fishery Workers</td>
</tr>
<tr>
<td>7</td>
<td>Craft and Related Workers</td>
</tr>
<tr>
<td>8</td>
<td>Plant and Machine Operators and Assemblers</td>
</tr>
<tr>
<td>9</td>
<td>Elementary Occupations</td>
</tr>
</tbody>
</table>

Table 5: Hierarchy of Occupation according to the Tanzanian Standard Classification of Occupations

For both former secondary and tertiary students, being a recipient did not lead to a higher quality job. Rather than scholarship reception status, quality of jobs is strongly associated with the time since graduation (see Table 6). Also, for secondary former students their wealth index score is a significant predictor of having a higher ranked occupation.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Occupation Category - Secondary</th>
<th>Occupation Category – Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation</td>
<td>0.654*** (0.207)</td>
<td>-0.012 (0.197)</td>
</tr>
<tr>
<td>Wealth</td>
<td>-1.353*** (0.447)</td>
<td>-0.673 (0.579)</td>
</tr>
<tr>
<td>Recipient</td>
<td>-0.122 (0.630)</td>
<td>1.592 (2.023)</td>
</tr>
<tr>
<td>Constant</td>
<td>-1310.390 (417.158)</td>
<td>26.460 (395.603)</td>
</tr>
</tbody>
</table>

Observations | 26 | 24 |
Table 6: Regression model of occupation category using the Tanzania Standard Classification of Occupations. There is not a significant difference in occupations between recipients and non-recipients. For secondary time since gradation and wealth index scores are significant predictors of occupational class.

We found that time since graduation not only affects the quality of jobs, but it also affects an individual’s income. Our research also shows college recipients have higher incomes by an average of $1,040 compared to $785 for non-recipients (24.5% higher) (See Figure 8). When the amount of time since graduation was factored in, those who graduated before 2014 showed an average income 77.5% higher than college non-recipient that had graduated during the same time (See Figure 9). The college recipient’s average was $1,858 compared to $820 for non-recipients. For secondary former recipients, their income was also much higher at an average of $365.84. The average income for non-recipients of the same class was $141.48, this is a 38.7% difference.

![Income chart](image)

Figure 8: Income difference in US dollars between the four former student groups. This is the student’s personal income not their family income.
Figure 9: The average income increased for former students the longer they were out of school.

When yearly wages were adjusted for by the number of months they worked during the year and the money they said they made during the months they worked, we found a significant difference in former tertiary recipients. Our findings show that former tertiary students make a significantly higher amount at their jobs (See Table 7). However, this was not the case with secondary students, who did not make higher wages. This could be due to the fact that most secondary graduates were returning to their villages and farming again and therefore were not making more than those who did not receive the scholarship and were also working in the agricultural sector.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Adjusted Yearly Wage Secondary</th>
<th>Adjusted Yearly Wage Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father’s Education</td>
<td>-2066.696</td>
<td>-35578.720</td>
</tr>
<tr>
<td>Education</td>
<td>(4567.426)</td>
<td>(51845.982)</td>
</tr>
<tr>
<td>Mother’s Education</td>
<td>-1696.689</td>
<td>61829.364</td>
</tr>
<tr>
<td>Education</td>
<td>(6046.676)</td>
<td>(47713.725)</td>
</tr>
</tbody>
</table>
Table 7: Regression model is of adjusted yearly wage. This showed that former tertiary recipients are making more money at their jobs than former non-recipient tertiary students. However, that was not the case for secondary recipients.

While there was an income difference between recipients and non-recipients, we found it not to be statistically significant when controlling for the wealth index and time since graduation (see Table 8). This table shows that the wealth index was a significant predictor of income while graduation and being a recipient was not. However, for tertiary students, being a recipient was substantively significant with a p-value of .206.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Secondary Income(^+)</th>
<th>Tertiary Income(^+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation</td>
<td>-0.110</td>
<td>-0.056</td>
</tr>
<tr>
<td></td>
<td>(0.119)</td>
<td>(0.044)</td>
</tr>
<tr>
<td>Wealth</td>
<td>0.627(*)</td>
<td>0.558(***)</td>
</tr>
<tr>
<td></td>
<td>(0.321)</td>
<td>(0.178)</td>
</tr>
<tr>
<td>Recipient</td>
<td>0.398</td>
<td>-0.422</td>
</tr>
<tr>
<td></td>
<td>(0.397)</td>
<td>(0.338)</td>
</tr>
<tr>
<td>Constant</td>
<td>234.073</td>
<td>125.599</td>
</tr>
<tr>
<td></td>
<td>(239.669)</td>
<td>(87.978)</td>
</tr>
<tr>
<td>Observations</td>
<td>38</td>
<td>45</td>
</tr>
<tr>
<td>--------------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.235</td>
<td>0.249</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

* Natural log

Table 8: Regression model with the natural log of income, accounting for heteroskedasticity. Being a recipient was not a significant indicator of income.

We asked participants about what level of financial stability they felt they were currently at on a 5-step scale. We then asked them where they felt their neighbors and friends were. Interestingly, when asked how well-off they felt, there was no correlation between the level they felt they were at and the level they actually were at. Most saw themselves lower than their neighbors and friends from their perspective, even if they were better off than the average citizen.

Community Impact

We also found that recipients of the scholarship are having stronger impacts on the communities from where they are originally from. Many of the former recipients are funding secondary school for many of the children in their villages. 48% of former tertiary recipients are funding other children in their village, that is compared to 20% of the tertiary non-recipients. They are also spokespersons in their villages when organizations come to implement projects. We found this trend across secondary and college former recipients. Non-recipients are able to support some in their communities, but a majority are unable to do so. Non-
recipients voiced that they are unable to give back to the community due to their financial instability.

Results Summary

Our findings show that, overall, scholarship recipients are able to access boarding schools, attend school, and avoid withdrawal at higher rates than their non-recipient peers. In part, this is due to a reduction in the out-of-pocket costs associated with attending school. On average, scholarship recipients attain an additional year of schooling and graduate at a significantly higher rate than non-recipients.

Additionally, we find that former recipients are more likely to be employed and currently have higher income levels than former non-recipients of the scholarship. However, the scholarship did not produce significant effects across all outcome measures. We find no differences between recipients and non-recipients on measures of job quality and the self-reported measure of relative wealth. We believe this is due to the job market of the country as a whole. Numerous former students conveyed that there is not market for their profession, even common ones like accounting. Even though recipients of the scholarship are more likely to be employed the quality of those jobs are not significantly better than the non-recipients.

This study provides new insight on constraints to school access and completion, as well as possible solutions for supporting student persistence through school. Our findings provide evidence that scholarships for secondary and college students help break down barriers that constrain students from being
able to enroll, progress, and graduate from school. The results also highlight the necessity of education for students beyond the secondary level. We find that those secondary school graduates who fail to receive higher education and remain in agriculture-based employment are usually no better off than those who failed to complete their secondary education. Therefore, secondary-level scholarships might not directly translate to higher incomes and better livelihoods for all rural students; but, they do allow students to become stronger applicants for further education and social impact. Ultimately, financial support for students may offer even greater value by combining funding for secondary and college schooling to provide students with the skills necessary to enter the formal labor market.

**Suggestions**

After concluding this evaluation, we suggest some key ways that Educate the Children (ETC) can become more effective, efficient and impactful in helping secondary and college students in Malawi. Of our sample we found that of the 63 college recipients we interviewed only 14 were female. That is 22% of the sample group. Secondary recipients were at 46% with 22 of the 47 individuals being female. We suggest that attention is given to this finding and that potential quotas are given for the number of females accepted. While secondary recipients are close to a 50/50 split we see a much higher level of disproportion at the college level.

One of our key findings was that secondary schooling does not equate to more employment or better-quality employment for rural students. This is
because most rural students, without a college education, stay in their villages and will become farmers. Since secondary school does not teach better farming techniques, secondary education does not translate into better farmers. While their education will help in many other areas such as critical thinking, English proficiency, mathematic skills etc.; it does not always help in the economic side of agriculture. When asked why they did not continue on to school, the most common answer was they did not have the money and were unaware that ETC gave scholarships for college. Therefore, we suggest that information be given to the students about ETC and the options that they have to continue school after secondary school completion. We also suggest looking at the funding of college students. While costlier than secondary students, the rate of return of college students is far greater and the impact to their community is far more significant.

Every student, both recipient and non-recipient had out of pocket expenses. These expenses were to cover uniforms, books/stationeries, transportation, groceries, computers, etc. Of the 57 current students only 10 stated that they did not borrow money. The average cost for non-recipients was $593 for college and $41 for secondary, while the recipients were only $214 for college and $11 for secondary. This is a significant difference; however, the cost is still a lot for many families. Since giving money directly to the family or student for out of pocket expenses is difficult to track and usually not accurate, there are potential solutions. With the use of school vouchers for uniforms, stationeries, and books, the cost of schooling could be further reduced for recipients. That being said, there was still a 100% graduation rate for recipients from both secondary and
college, implying that while these out of pocket expenses do exist, families seem to be overcoming them to keep their children in school.

While this evaluation was encompassing of all levels of the program there is still potential follow-up research to be done. Since the evaluation was focused on interviewing already selected students, there is an inherent bias that we cannot control for. Without true randomization we cannot know with surety that it is the program that is the main reason for these results. It could be due to an unconscious selection of the better students for the scholarship, who might have done better in school given the scholarship or not. The only way to control for this and to know the true impact of the program is to do a randomized control trial. This will have low cost but high impact on the program. In order to implement a randomized control trial, at the selection process, instead of selecting the students to receive the scholarship on a case by case basis, you would simply state how many scholarships could be given. Then those select number of scholarships would be randomly given to students who had applied. In addition, in order to make sure those that did apply are needy, a set of eligibility criteria could be established, and then randomly select among all of those applicants who meet the eligibility criteria. After that the process would go on as normal. After completion of their first year, both those who had been randomly selected and those who had not would be interviewed. Those results could immediately begin to tell you about the impact that the program was having on current students. The study could be continued for as long as desired and stopped at any time and picked back up whenever is wanted.
Conclusion

In conclusion, scholarships for students from the Educate the Children program in rural Malawi do have positive impacts. They help students to graduate, allowing for them to be more competitive in the job market and able to secure better jobs and livelihoods. We found that those who graduated from college made more income and were having stronger impacts on their communities. However, the results also highlight the necessity of education for students beyond the secondary level. Specifically, we find that those secondary school graduates who fail to receive higher education and remain in agriculture-based employment are usually no better off economically than those who failed to complete their secondary education. Therefore, secondary-level scholarships might not directly translate to higher incomes and better livelihoods for all rural students; but, they do allow students to become stronger applicants for further education and social impact. These scholarships programs help those most in need and rural areas and provided much needed education even if it does not always equate to more economic value.
Works Cited


Sineta, Abraham. 2012. "Demand- Side Financing In Education: A Critical Examination of a Girls' Scholarship Program in Malawi- (Case Study)". Dissertations. 666.


