Adolescent Refugee Girls' Secondary Education in Ethiopia: An Empirical Analysis of Multiple Vulnerabilities in Low-Resource Displacement Settings

Shelby Carvalho

Abstract

Refugee girls are one of the most marginalized groups in the world when it comes to school participation, with girls half as likely to enroll in secondary school as their male peers (UNHCR, 2018). Gender disparities can be made worse by conflict and displacement and increase as children get older. As many low- and middle-income host countries move toward more inclusive models of refugee education, it's critical to identify barriers that may differentially limit refugee girls' inclusion. I use two unique household surveys in Ethiopia to examine household and community factors shaping participation in secondary school. My findings suggest that the magnitude and sources of disadvantage vary across groups. Domestic responsibilities at home and concerns about safety in the community are more likely to limit secondary school participation for refugee girls compared to boys and host community girls, while other factors including parental education and exposure to gender-based violence are less likely to differ between refugees and host communities. These findings have implications for policies targeting girls' education for both refugees and host communities.

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Working Paper 604
January 2022

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1. Introduction

Barriers to girls' education in low- and middle-income countries are well-documented throughout the academic and policy literatures, but substantial gaps remain in our understanding of the ways in which these barriers vary and may multiply in humanitarian contexts (Burde et al., 2017; Noble et al., 2019). The vulnerabilities associated with fragility can impact men and women differently, often resulting in heightened gender inequality and greater risks to women and girls (for example, Kirk, 2007 & 2010). Gender inequities within conflict-affected groups can be further exacerbated by displacement thus making refugee girls one of the most marginalized groups in the world when it comes to school participation (Kirk, 2007; 2010; Burde et al., 2017).

Eighty-five percent of the world's more than 70 million refugees are hosted in low- and middle-income countries. Sub-Saharan Africa hosts more than one-quarter of the world's refugee population totaling more than 18 million people (UNHCR, 2020). Many of the top hosting countries in the region have signed global agreements obligating them to offer education opportunities to refugees including the 1951 Refugee Convention, the 2016 New York Declaration for Refugees and Migrants, and the 2017 regional Djibouti Declaration. Despite these formal agreements to ensure that all refugee children have access to education, many remain out of school and UNHCR finds that refugee girls in sub-Saharan Africa are less likely to be in school than refugee boys across all levels of education. Gender disparities increase as children get older with refugee girls half as likely to enroll in secondary school as their male peers (UNHCR, 2018). In Ethiopia and Kenya, refugee girls are only 40 percent as likely to enroll in secondary school as boys (UNHCR, 2018).

As one of the largest refugee hosting countries in Africa, Ethiopia is an important context within which to examine these barriers. First, gender gaps in secondary school participation also exist in host communities suggesting that barriers to girls' education are relevant for both refugees and host communities. This allows for examination of how barriers to secondary education may differ in substance or severity for hosts and refugees as well as highlight common barriers in low-resource settings. Second, Ethiopia has hosted refugees primarily from Eritrea, Somalia, Sudan, and South Sudan for more than three decades. It offers variation along several lines including refugee country of origin, length of displacement, ethnic background among refugees and hosts, as well as in policy implementation, community safety, and quality of education across host regions. This variation allows for a unique within-country comparison of the ways in which sources of marginalization and vulnerabilities facing refugees may be more severe for girls and may differ across contexts.

To date, much of the existing quantitative literature in education highlights barriers to girls' education broadly without reflecting the ways in which challenges may differ for the most disadvantaged or those facing multiple vulnerabilities. In one of the few recent studies that does focus on girls facing multiple vulnerabilities, Sabates et al., (2020) argue that efforts and resources to improve education may need to vary across groups to ensure that the most marginalized are not left even further behind. However, to ensure the most marginalized are included in education systems, we need to investigate the ways in which these inequities manifest and vary across groups.

In this paper, I asked two questions related to secondary school participation for refugee girls. First, are gender gaps in education greater for refugee girls than host community girls? What factors shape the differences in school participation among girls from these two groups? Second, what drives gender gaps in secondary education for refugees? How does this vary across refugee groups and across camp locations? To examine these questions, I used two unique household surveys covering both camp-based refugees and the immediately surrounding host communities in Ethiopia.

Across the sample, I found that domestic responsibilities at home and concerns about safety in the community disproportionately limited secondary school participation for refugee girls. Other factors which we may expect to impact refugee girls' education based on the literature, including parental education, parental perceptions about the value of school, and exposure to gender-based violence, did not vary consistently across refugee and host community groups. This suggests that refugee and host community girls in low-resource settings face many of the same challenges in accessing secondary school but that refugee girls also face additional compounding barriers which limit secondary school participation.

Few quantitative studies to date have assessed barriers to refugee girls' education. Several studies in health and child protection quantitatively examine gender-based violence, risks, and empowerment for refugee girls (for example, Stark et al., 2017). In education, the majority of our knowledge related specifically to refugee girls comes from qualitative studies (for example, Kirk, multiple) and international policy reports. I add to this literature by using qualitative literature to develop a conceptual framework for a quantitative analysis of the barriers to refugee girls' education in Ethiopia. My findings are relevant to similar low- and middle-income host countries including Kenya, Sudan, and Uganda which each host between 500 thousand and 1.5 million refugees and face similar gender disparities in secondary school participation in host communities.

2. Conceptualizing barriers to refugee girls' education

Persistent gender inequities and barriers to girls' education stem from multiple levels including households, communities, schools, and national laws. Humanitarian situations, including displacement, can further strain pre-existing gender inequities, heighten safety concerns, and can strengthen the need for family members to contribute to household activities following loss of income (Mench & Greene, 1998; Stark et al., 2017). When barriers exist at multiple levels, they can compound each other, and girls may experience more profound disadvantages in pursuing an education. For example, girls in very poor households in communities experiencing conflict may face steeper obstacles to education than girls facing only one of these challenges. I build on existing work on girls' education and on work in conflict settings to examine factors influencing refugee girls' participation in secondary school in Ethiopia and consider the ways in which these factors interact to create multiple sources of vulnerability as well as consider which challenges may instead be common across groups and could be addressed by common interventions or integrated policies.

2.1 Household factors

2.1.1 Domestic responsibilities, opportunity costs, norms, and plans for the future

Domestic responsibilities are well documented as barriers to education for adolescent girls in poor households (for example, Glick & Sahn, 2000). In households facing tight budget constraints, the opportunity costs of going to school instead of contributing to housework can be elevated (Filmer & Schady, 2009; Garcia & Saavedra, 2017). These challenges can be exacerbated during times of crisis (Ferreira & Schady, 2009) and can disproportionately impact girls (Bjorkman-Nyqvist, 2013). In a study of resettled Sudanese refugees in Australia, Hatoss & Huijser (2010) find that even though families expressed equal value for boys' and girls' education, adolescent girls held greater responsibilities for household chores than their male counterparts even once they had been resettled to a high-income country.

These opportunity costs can be more difficult to overcome in places in which the perceived benefits of going to school do not outweigh the immediate needs of households whether due to the direct costs of schooling, a lack of clear economic opportunities following school completion, or due to norms placing lower value on girls' education and work outside the household (for example, de Janvry et al., 2006). Read-Hamilton & Marsh (2016) find that such norms can become more pronounced and prohibitive in humanitarian and displacement contexts. Furthermore, when the purposes for education and future opportunities are 'unknowable' (Dryden-Peterson, 2017) it may become more challenging to rationalize investments in education over more immediate survival needs for the poorest households. In a study of learning outcomes for refugees in Kakuma refugee camp in Kenya, Piper et al., (2020) find that refugees who believe they will return home within the next three years have higher average literacy scores than those who believe they will still be living in the camp in that time (p.93). This might suggest that a clearer picture of the future could shape school performance and participation.

2.1.2 Gender-based violence and early marriage

Globally, adolescent girls face the greatest risk of violence and exploitation of any age group (Glass et al., 2018; Stark, et al., 2018). The risks of gender-based violence and early or forced marriage for adolescent girls are heightened in humanitarian settings and can negatively impact education (Cantani et al., 2008; Stark & Wessells, 2012; Spangaro, et al., 2013; Stark et al., 2017; Bandiera et al., 2018; Glass et al., 2018; Noble et al., 2019), including increasing risks of sexual assault, harassment, and exploitation at school (Burde et al., 2017; Kirk & Winthrop, 2006; Nicolai & Triplehorn, 2003). Girls in lower positions of society often face disproportionate risks of gender-based violence (for example, Davies, 2003; Stark & Wessells, 2012). In many contexts, refugees occupy some of the lowest positions in society and thus adolescent refugee girls often face greater threats of gender-based violence and exploitation (Glass et al., 2018). Increased gender-based violence in conflict settings can also have lasting effects on both physical and mental well-being of women and girls (Velzeboer et al., 2003; Russell et al., 2016). Further illustrating this, Stark et al., (2017b) find that exposure to sexual violence prior to settling in Ethiopia had negative impacts on well-being and safety among refugee girls. Evidence from qualitative studies also suggests that frequent exposure to threats of physical abuse can negatively impact refugee girls' participation in school and can increase feelings of vulnerability and the likelihood of early marriage (Hattar-Pollara, 2019; Bartels et al., 2017; Yaman, 2020).

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2.1.3 Parental education and refugee country of origin

Parental education is linked to educational outcomes for boys and girls, with greater impacts found for girls compared to boys in some contexts (for example, Glick & Sahn, 2000; Black et al., 2005; Card et al., 2018; Iyer et al., 2020;). In a recent study of first-generation learners—defined as those whose parents have never attended school—in Ethiopia, Iyer et al. (2020) find that first-generation learner status acts as an additional layer of disadvantage which continues to widen gaps in both learning and school participation over time. In displacement settings, refugee parents' or caretakers' familiarity with local school systems and language may also play a role in shaping children's participation. In Kenya, Piper et al., (2020) find that learning outcomes among refugees vary by country of origin. They suggest that this may be due in part to differences in length of stay among refugee groups, which can result in corresponding differences in parental familiarity with the English language and local education systems (p.94). It's thus possible that first-generation learner status may have even more pronounced effects for refugee students if parents are unfamiliar or uncomfortable with local systems, languages, or face additional uncertainty about future plans.

2.2 Community factors

2.2.1 Distance to school and community safety

The distance between home and school can impact school participation for both boys and girls and can become more important as girls get older (for example, Duflo, 2001; Burde et al., 2017; Muralidharan & Prakash, 2017; J-PAL, 2017). Long distances to school can increase the costs of schooling through direct expenses associated with transportation as well as through opportunity costs stemming from long commute times. Concerns about safety of the school route and the area around the school can be heightened in humanitarian contexts and parents may be less willing to let girls travel to attend school than boys (Kirk, 2011; Shemyakina, 2011; Burde & Linden, 2013; Burde et al., 2017; UNICEF, 2018). In a qualitative study of refugee women and girls in Dadaab refugee camp in Kenya, Dahya & Dryden-Peterson (2017) find that women often experience harassment while walking alone which can make going to school more difficult (p.297). In fact, several studies have found that interventions which reduce the distance between home and school have positive impacts on school participation for girls (Burde & Linden, 2013; Kazianga et al., 2013). Distance to school could be a particularly steep barrier at the secondary level for refugee girls in Ethiopia as secondary schools are located outside of refugee camps, requiring girls to travel into host communities to attend school.

2.2.2 Host and refugee kinship ties

In low- and middle-income host countries, dominant social and political cleavages often fall along ethnic lines (for example, Posner, 2005; Lieberman & Singh, 2012). Postcolonial borders can act as dividing lines across ethnic and kin groups, meaning that refugees from neighboring countries may share ethnic, linguistic, or other background characteristics with host communities (for example, Blair et al., 2020). When refugees share an ethnic or kin background with host communities, we may expect to find that host communities are more welcoming to refugees (Alesina et al., 2004) and perhaps refugee school participation is more

likely to mirror host community participation. On the other hand, host communities may be more exclusive of refugees from outgroups when they face higher levels of competition for resources or political representation (Cammett, 2014). In a historical analysis, Ruegger (2019) found that when a co-ethnic refugee influx enlarges the size and influence of the host kin group, it can fuel clashes with other groups in the area. In this case, we might expect refugees to be more likely to attend school in a host community when they share characteristics with the host community and when the presence of refugees does not exacerbate existing tensions between co-ethnic and other hosts. As will be discussed in more detail in section 3.2.2, this is a relevant component of the political economy in Ethiopia that may impact refugee education, particularly for girls if these dynamics heighten safety concerns for girls.

2.3 School-based factors

School-based factors including having infrastructure appropriate for girls use (Birdthistle et al., 2011) and safe school grounds (Burde & Linden, 2013) become more important in humanitarian contexts and as girls get older. Classroom factors including having female teachers (Kirk & Winthrop, 2005; Guimbert et al., 2008) and learning environments free from gender-bias can also play an important role in shaping self-perceptions, aspirations, and feelings of belonging at school for girls (literature is outlined in Carlana, 2018). When faced with high opportunity costs, the quality of schools may also play a role in determining whether parents send children to school.

# 3. Background: Refugee education in Ethiopia

3.1 Overview

Over the past three decades, the Government of Ethiopia has maintained a largely open border policy for refugees with strict encampment rules. Like other large refugee hosting countries in the region, Ethiopia is a signatory to multiple global and regional agreements related to refugees beginning with the 1951 UN Convention related to the Status of Refugees and its 1967 protocol (Ethiopian Ministry of Education, 2019). In 2016, Ethiopia endorsed the New York Declaration for Refugees and Migrants and is a signatory of the 2017 regional Djibouti Declaration of Education for Refugees. Reflecting these global commitments, the Government of Ethiopia also developed a Comprehensive Refugee Response Framework in 2017. In 2019, the Government of Ethiopia announced major legal and policy shifts paving the way for broader integration beginning with the education sector. So far, concrete efforts toward integration have been slow and are likely to stall further following the development of a civil war in late 2020.

In addition to the 2019 integration law, policy shifts in the education space include the addition of refugees as a priority group in Ethiopia's flagship education reform, the General Education Quality Improvement Programme for Equity (GEQIP-E). While there are vague plans for greater physical integration in the future, refugees typically attend separate primary schools located inside camps. The comparatively small number of refugees who go on to secondary school may attend government schools in their host communities meaning that

attending secondary school requires refugees to leave camps in most cases. This is again similar to the organization of education in other host countries in the region.

Refugee camps are located primarily in remote parts of the country in which access to public services can be limited for the national population as well. Education quality and outcomes thus vary across refugee hosting regions. On average, primary education enrollment among refugees is lower than regional averages in host areas. Secondary participation among refugees is low and ranges from 0 percent for both boys and girls in Samara (Afar region) because there are no secondary schools near refugee camps, to 47 percent for boys in Jijiga (Somali region). The map in Figure 1 shows where refugee camps are located along Ethiopia's border regions.

**Figure 1. Refugee camps are primarily located in border regions**
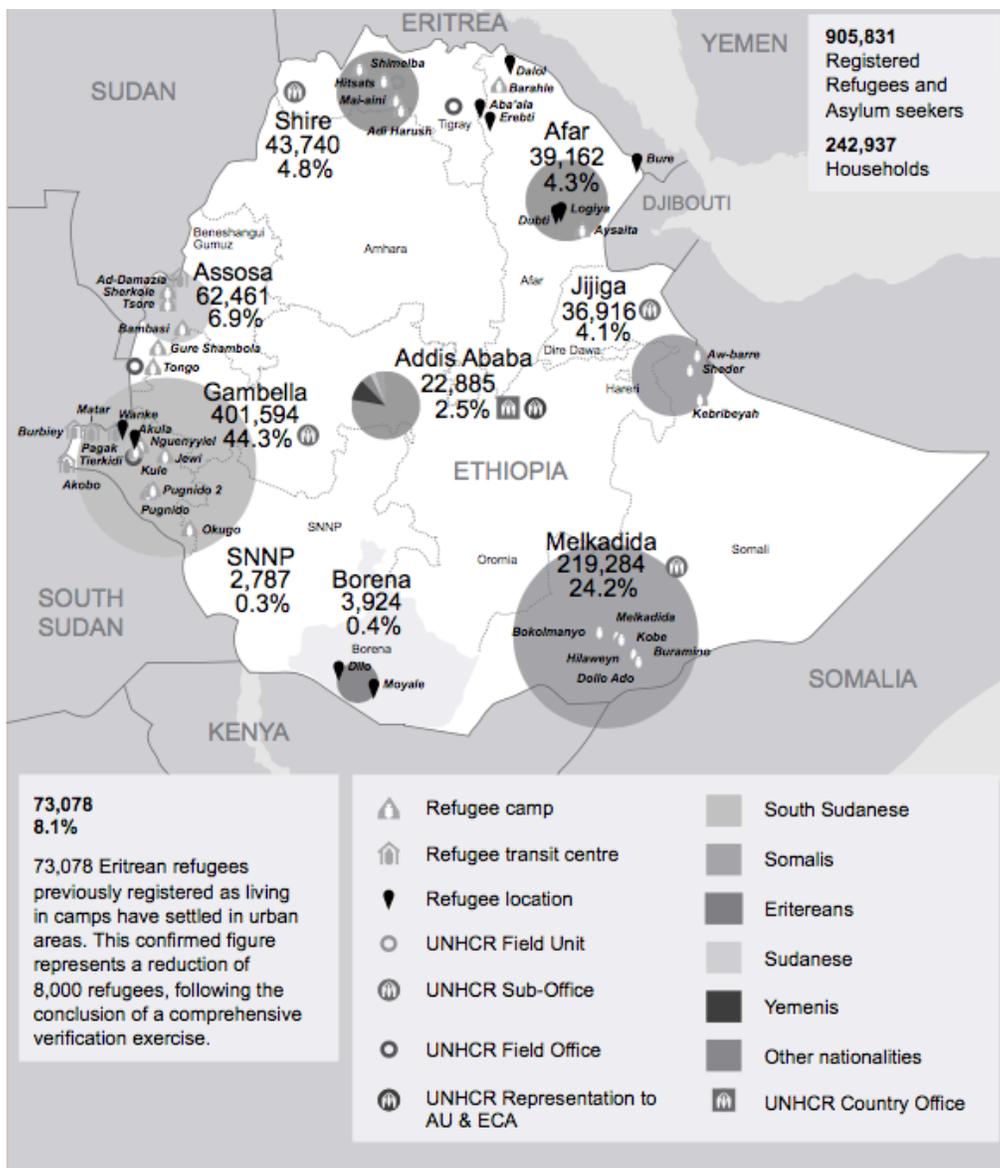
Source: UNHCR 2018 from Nigusie & Carver, 2019

3.2 Refugee households

Refugees in the sample live in camps located in remote areas managed by the Agency for Refugee and Returnee Affairs (ARRA) and UNHCR. Refugee households are typically poor and have access to few financial resources. Approximately 70 percent of refugee households in Ethiopia are female headed (Nigusie & Carver, 2019), and nearly 30 percent of those in the sample have been separated from a family member who would normally contribute to household earnings (SPS survey). Camp-based refugees do not have the right to work in Ethiopia with the exception of manufacturing jobs in industrial parks funded by the World Bank. Only about 23 percent of the refugee sample report having worked for within the past 7 days including informally or for incentive pay within the camp. About 6 percent of refugees report having received remittances from abroad within the past year, though this varies by country of origin with less than 1 percent of those from Sudan and more than 35 percent of those from Eritrea having received remittances (SPS survey). With few work opportunities, separation of household members, and limited resources coming in from elsewhere, refugees face severe poverty which can increase domestic responsibilities, heighten the opportunity costs of sending children to school, and increase the risk of early marriage for adolescent girls. Qualitative findings from a small World Bank study in Ethiopia suggest that domestic responsibilities, early marriage, and pregnancy are key barriers to refugee girls' participation in secondary school (World Bank, 2019).

Not having the right to work in formal jobs or pathways to citizenship may also lead to greater uncertainty about the future which can impact decisions about education, particularly when household resources are limited. Figure 2 shows that plans to stay in Ethiopia over the long term vary across refugee groups with those from South Sudan most likely and those from Eritrea least likely to report plans to stay under current policies. However, across all groups, refugees are more likely to report wanting to stay in Ethiopia over the long term if they were granted the right to work. Qualitative findings also suggest that a lack of certainty about future prospects may be a contributing factor to low participation in school among refugees in Ethiopia (World Bank, 2019). It's possible that improving labor market opportunities could thus also improve education outcomes for refugees.

Figure 2. Refugee preferences for onward migration vary with work opportunities
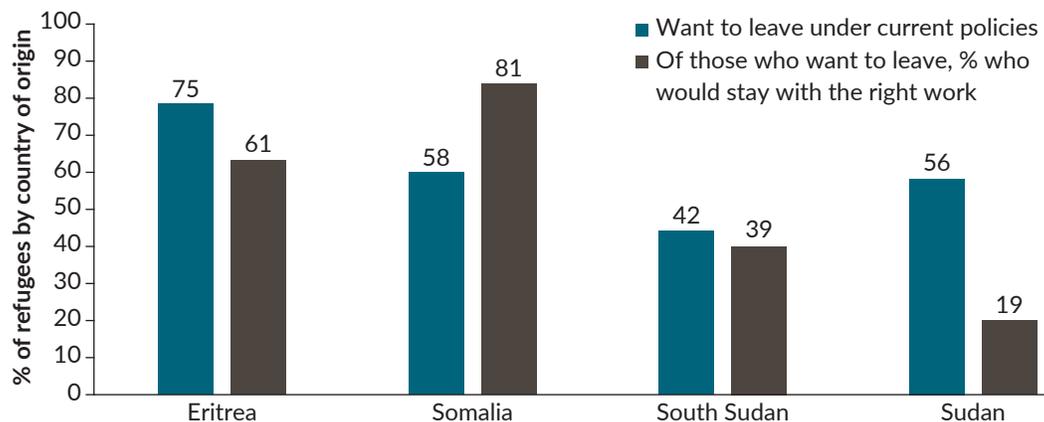
Source: Author's calculations using weighted data from the World Bank Skills Profile Survey (2017)

Table 1. Refugee and host community parents have similar years of schooling

Region	Women			Men		
	Refugee	Host	*Difference*	Refugee	Host	*Difference*
Afar	..	9	..	..	9	..
Benishangul-Gumuz	5	7	-2	7	8	-1
Gambella	7	..	..	10	..	..
Somali	4	6	-2	7	10	-3
Tigray	7	8	-1	9	8	+1
Total	6	7	-1	9	8	+1

The table header reads "Average years of education for refugee and host community adults".

Source: Data from SPS sample.

Refugee adults have completed similar years of education compared to Ethiopian nationals within their immediately surrounding host communities (Table 1). Refugees also have a comparable prevalence of first-generation learners to their host communities. In the SPS sample, 40 percent of adults in host communities and 35 percent of adults over the age of 18 have never been to school. Of refugee adults who have been to school, about 28 percent attended school in Ethiopia.

3.3 Host communities

As a federal system, Ethiopia is comprised of nine semi-autonomous regions organized largely along ethnic lines. In some regions, refugees share a common ethnic background and language with the surrounding host community—like Somalis hosted in the Somali region—while in other regions refugees have few ethnic or linguistic links with host communities—like Sudanese in Benishangul-Gumuz. The quality of education and public services for national populations varies considerably across regions.

In some regions in Ethiopia, the presence of refugees is far more contentious than it is at the national level (Nigusie & Carver, 2019). In the Gambella region, for example, instances of sporadic violence between refugees and host communities are not uncommon and sometimes target schools (UNICEF, 2018). This is connected in part to ethnic tensions in the Gambella region where many refugees are Nuer and share a common background with an ethnic minority group in the Gambella. region (Nigusie & Carver, 2019). Given the large number of Nuer refugees, the ethnic balance could shift if refugees were to gain citizenship in Ethiopia thus changing current political representation from the region. Qualitative evidence from a UNICEF study finds that this violence has prevented refugees from going to school in the region during times of heightened conflict (UNICEF, 2018, p.117).

Separately from the presence of refugees, several host regions including Benishengul-Gumuz, Gambella, and Somali are considered fragile and experience periodic violence. In recent months, Tigray has become the epicenter of a growing conflict with the national government and media reports suggest that refugee camps, hosting primarily Eritrean refugees, have been

targets of attacks (for example, BBC, 2020). Heighted tensions between refugees and host communities—or within host communities outside of refugee camps—may disproportionately impact adolescent girls who need to travel outside of camps to access secondary schools and may discourage refugees from finishing school and pursuing work or other forms of integration if local safety is a concern.

3.4 School-level

A lack of female teachers and gender bias in the classroom may contribute to gender gaps in education among refugees in Ethiopia. A recent study of teachers in refugee hosting regions in Ethiopia finds the following ratios of female to male refugee teachers: Gambella 1:26; Benishengul-Gumuz 1:13; and Tigray 1:16 (Bengtsson et al., 2020). This severe gender imbalance in teacher representation at the primary level may impact girls' persistence and learning in school. According to Ethiopian Ministry of Education data, teacher gender gaps continue at the secondary level. Refugee hosting regions had the following aggregate female to male teacher ratios at the secondary level: Afar 1:8; Benishengul-Gumuz 1:6; Gambella 1:12; Somali 1:10; and Tigray 1:4. These figures represent aggregate regional numbers and be more severe in the remote areas in which camps are located (Ministry of Education, 2020).

Qualitative evidence from Ethiopia in which girls report concerns about lagging behind boys in school also suggests that gender bias may be present in the classroom and that gender-based learning discrepancies have been internalized by refugee girls (World Bank, 2019). Future research could explore whether and how feelings of inadequacy and bias experienced in the classroom due to being female may be compounded by refugee status at the secondary level thus potentially acting as an additional source of disadvantage for refugee girls.

4. Methods

4.1 Overview

I draw on the in the literature described in section 2 to inform a quantitative empirical analysis examining whether and how gaps in secondary school enrollment vary between refugee and host community girls and between refugee girls and boys. My approach included a combination of descriptive statistical analysis and OLS regression with location fixed effects.

4.2 Data

The data for this study came from two large-scale household surveys conducted by UNICEF (N= 17,095) and the World Bank (N=27,370) implemented in refugee camps and the immediately surrounding host communities in Benishangul Gumuz, Gambella, Somali, and Tigray. My analysis is limited to households that contained school-aged children in these areas.

4.2.1 Building self-reliance program survey (BSRP)

The BSRP survey was conducted in 2018 by UNICEF as part of their 'Building Self-Reliance for Refugees and Host Communities by Improved Sustainable Basic Social Service Delivery Programme (BSRP)'. Data were collected over a six-week period in early 2018 covering 3,000 households from one refugee camp and the surrounding host community in each region including Afar, Benishangul Gumuz, Gambella, Somali, and Tigray. UNICEF defines "host communities" as "the population living in woredas [districts] where the targeted refugee camps are located" (Guyatt, 2018:19). Host communities with at least one border within a 10 km radius of the refugee camp were included as host communities. Camps were randomly selected from a list of eligible sites. Sites were deemed eligible if they were a refugee camp as opposed to a location or point of entry and were slated to receive UNICEF assistance related to water systems. The rationale for including water system assistance eligibility was to allow UNICEF to track water, sanitation, and hygiene (WASH)-related indicators through the survey. Households were randomly selected from within the chosen refugee camps and host communities, with the exclusion of recently arrived refugees. The household survey reached a total 3,000 households from 150 urban host communities, 150 rural host communities, and 300 refugee households in each region. Questionnaires were intended for the primary caregiver in the household.

4.2.2 Skills Profiling Survey (SPS)

The SPS is a household survey conducted in 2017 by the World Bank. Like the BSRP survey, the SPS was implemented in all five refugee hosting regions and targeted both refugee camps and the surrounding host communities. The SPS classifies all communities within a 5 km radius of a refugee camp as host communities. The survey does not include refugees living outside of camps and can therefore only be considered representative of camp-based refugees (World Bank, 2018). The sample design is a multi-stage stratified random sample beginning with regions as the primary stratum within which camps were divided into enumeration areas proportional to the size of the camp. Enumeration areas and households within enumeration areas were then randomly selected from each stratum resulting in a total of 5,317 households and 27,370 individuals. The sampling frame initially intended to reach 900 refugee households and 500 host community households in each region. The refugee sample fell short in Gambella (N=439), a majority South Sudanese refugee population, following to security concerns. To compensate for this, Benishangul-Gumuz was oversampled (N=1,423) because 25 percent of the refugee population in that region is South Sudanese. The security concerns in the Gambella region at the time of the survey also prevented surveyors from reaching host community households. In Afar, all respondents are classified as host community members. Both refugee and host community respondents are represented in the other three regions.

There was overlap in the refugee camps represented between the two surveys in all regions except for Afar. The BSRP focused more heavily on opinions about and barriers to education as well as on health, services, and safety conditions including sections on gender-based violence and child protection. The SPS survey focused more on skills, employment-related topics, migration history, and assets. While there was some overlap in the questionnaires, the two surveys covered different topics and could therefore be considered complementary for the purposes of this analysis.

4.3 Methodology and model

4.3.1 Descriptive analysis

I used the BSRP sample to examine whether perceptions of education quality, satisfaction with the school, and opinions about the value of girls' education varied between refugee and host community parents. This provides some insight into whether perceptions of the quality of education vary between refugee and host parents and may thus impact opportunity cost calculations differently (Table 2). With the same sample, I also examined whether exposure to gender-based violence varied between refugee and host communities to inform whether differential exposure to GBV is likely to have been a contributing factor to divergent outcomes in secondary school participation (Table 3). I used weighted t-tests for this portion of the analysis to assess whether differences are statistically significant between groups.

4.3.2 Ordinary least squares (OLS) regression with location fixed effects

To analyze barriers to girls' education, I estimated four different versions of the following weighted OLS regression with data from the SPS sample:

$$ y_{ijk} = \beta' X_{ijk} + \delta W_j + \gamma Z_k + \varepsilon_{ijk} $$

Where i represents individuals, j represents households, and k identifies the refugee camp location. The outcome γ_{ijk} represents the probability that individual i is enrolled in school, X_{ijk} is the vector of covariates, W_j is the vector of household fixed effects, Z_k is the vector of location fixed effects, and ε_{ijk} is the error term. The main outcome variables were school enrollment at the primary and secondary levels in which respondents indicated whether their children were currently enrolled in school resulting in a binary 1–0 outcome variable.[1]

In each version of the model, I included covariates at the household and community level drawn from the literature. At the household level I controlled for domestic responsibilities, first-generation learner status, perceived community safety, plans to stay in Ethiopia, and the number of school-age children in the household in most cases. In most versions of the model, I included interaction terms to test whether covariates fluctuate with refugee status and gender. At the community level, I included covariates capturing perceived.

Domestic responsibilities were measured by a binary variable indicating whether a girl child was responsible for gathering water for the household and the time it takes to get to a water source measured in five-minute increments.[2] While girls are responsible for domestic tasks other than water collection, this task has been identified as one that disproportionately limits

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[1] I prefer OLS for ease of interpretation in the main body, but also present results from logistic regression specifications in the appendix. Directions and significance of results are consistent between the two model specifications.
[2] In earlier specifications, I also included the number of younger siblings in the household as a proxy for domestic responsibility. Glick & Sahn (2000) use the number of younger siblings in the household to proxy for domestic responsibilities as this often means that older girls will need to take on greater care responsibilities. I find no statistically significant relationship between the number of younger siblings in the household and ultimately substitute this for the number of school-age children living in the household as it was a better fit for the model.

school attendance for girls (Nauges & Strand, 2015; Demie et al., 2016) and is available in my data. I measured first-generation learner status by whether either parent has ever been to school (Iyer et al., 2020). I expanded this to include any adult living in the household given the prevalence of parent separation in displacement settings. Whether the household plans to stay in Ethiopia was captured by a binary variable in which respondents reported whether they planned to settle in Ethiopia over the long-term. Perceived community safety was measured by household responses to the question "How safe do you feel walking during the day?" Responses were coded as 'safe' if the respondent indicated that they felt safe or very safe on a five-point scale, and as 'not safe' if they indicated that they feel neutral, somewhat unsafe, or very unsafe.

In all versions of the model, I included location fixed effects. Location fixed effects reflect refugee camps in the refugee specific models and reflect the matched camp-host community pair for regressions including the full sample. Including fixed effects allowed me to control for common community factors including community location, safety, and access to public services that may be constant across individuals within locations.

5. Findings

5.1 Comparing host community and refugee girls

5.1.1 Differences in school participation between refugees and host communities

In this section, I compared refugees to host communities. Refugee girls are substantially less likely to enroll in secondary school than host community girls. Table 2 reflects OLS regression results examining primary and secondary enrollment for both refugee and host communities. Refugee girls in the sample were about 23 percentage points less likely to be enrolled in school than non-refugee girls (column 3). This confirms the assertion that refugee girls—particularly those hosted in camp settings—are more disadvantaged in accessing secondary school than other groups. These gaps do not exist at the primary level suggesting that additional barriers may emerge as refugee girls transition to secondary school. This is consistent with Ministry of Education data at the regional level (Ministry of Education, 2020).

Having a at least one parent who attended school was a positive predictor of enrollment across both samples. The number of school-age children living in the household was also positively correlated with the likelihood of being enrolled in secondary school. This could be because household chores are able to be split between more people in households with more school age children or could be related to sibling effects in which having one child in school makes it more likely that others will continue to stay in school as well.

Table 2. Gender and refugee-host education gaps emerge at the secondary level and disadvantage refugee girls most

	(1) Primary (All)	(2) Primary (Refugee only)	(3) Secondary (All)	(4) Secondary (Refugee only)
Refugee	.05	..	-.14***	..
	(.04)	..	(.04)	..
Female	-.02	-.05**	.15**	-.07*
	(.06)	(.02)	(.06)	(.04)
Refugee female	-.03	..	-.23***	..
	(.06)	..	(.07)	..
In school prior to displacement	..	.12***	..	.04
	..	(.04)	..	(.06)
Adult ever in school	.08***	.08***	.09	.11**
	(.02)	(.03)	(.04)	(.06)
Adult was in school in ETH	-.08*	-.09*	-.05	-.07
	(.05)	(.05)	(.08)	(.09)
No. of school age in HH	-.00	-.00	.04***	.04***
	(.00)	(.00)	(.01)	(.01)
Includes linked location fixed effects				
R2	.05	.05	.14	.12
N	6,279	4,628	2,591	1,818

p=*<.1 <.05**<.01***

5.1.2 Perceptions about education

As I outlined in section 2.1.1, perceptions about the quality and value of education may factor into household calculations of the opportunity costs of going to school. If parents believe that their children are in quality schools that will allow them to develop useful skills, they may be more likely to send them to school. To explore this, I examined perceptions of the quality and value of schooling from the perspective of refugee and host community parents to assess whether divergent perceptions of school quality may differentially impact decisions about school participation (Table 3).

Both groups were generally satisfied with the quality of schools and teaching. Respondents in the Tigray region reported the lowest satisfaction levels. Regionally, education outcomes in Tigray are higher than other regions at the aggregate level (Ethiopian Ministry of Education, 2020). The lower perceptions of schools among the sample may be driven by the fact that refugee camps and the surrounding host communities are in the most remote areas of the Tigray region which may have lower quality services available or could be a result of parents having higher expectations for the quality of services. On average, refugee parents in Tigray have completed slightly more years of education than refugee parents in Somali or

Benishangul-Gumuz and may have higher expectations related to the quality of schooling as a result. Overall, the relatively high level of satisfaction with schools suggests that concerns about the quality of schooling are unlikely to be the primary drivers of differences in participation among refugees and host communities.

Attitudes related to the perceived value of girls' education also did not appear to drive gaps in school participation between refugees and hosts. Parents were asked how important they feel girls' education is on a scale of 1–5 and a substantial majority (99%) reported that it is important or very important (Table 3). While there is a risk that this positive response was shaped in part by social desirability bias in the survey response, it seems unlikely that this would produce a near 100 percent favorable response rate, nor would such bias vary between refugees and hosts. If parents are generally satisfied with the quality of schools and believe that education is important, it's likely that other factors outside of perceived school quality and value of education are driving decisions about education for refugee girls.

Table 3. Refugee and host community parents are generally satisfied with the quality of schooling and think girls' education is important

	(1) Quality education (% Good or very good)			(2) Quality of teacher (% Good or very good)			(3) Satisfied with school			(4) Girls' education is important		
	Refugee	Host	Difference	Refugee	Host	Difference	Refugee	Host	Difference	Refugee	Host	Difference
Afar	91	100	-9	91	100	-9	..	77	..	100	100	0
Benishangul-Gumuz	92	85	+7	93	89	+4	85	80	-5	99	100	-1
Gambella	89	91	-2	88	90	-2	84	.	..	98	100	-2
Somali	87	81	+6	93	89	+4	96	90	+6	100	96	+4
Tigray	74	81	-7	74	86	-12	72	86	-14	100	100	0
N	2,096	1,739		2,096	1,739		19,201	7,550		9,038	8,049	

Data on the perceptions of the quality of education, quality of teacher, and the importance of girls' education come from the BSRP survey. Data on the satisfaction with schools comes from the SPS survey.

5.1.3 Perceptions of refugee-host relationship and sharing education services

Both surveys asked questions about perceptions of relationships between refugees and host communities (Table 4). Host community attitudes toward refugees were most negative in Benishangul-Gumuz (columns 1 and 2). Refugees in Benishangul-Gumuz are less likely to share an ethnic background or language with the surrounding host community compared to those in other regions. Based on the literature described in section 2.2.2, this may contribute to negative feelings toward refugees as a more distinct outgroup. Conversely, we see more positive perceptions of refugees among host respondents in Somali where refugees are likely to share a common ethnic identity and language with hosts.

From refugees' perspectives, relationships with host communities were worst in Gambella and best in Somali (column 4). Gambella also had the largest gaps in secondary school participation between refugees and host communities with a difference of about 49 percentage points between the two, as well as the largest host community gender gaps in secondary school participation with a 20-percentage point difference between host community boys and girls (MoE, 2020). As noted above, Gambella also has more frequent instances of violence in the areas surrounding refugee camps which may contribute to both negative perceptions of relationships with hosts and could limit participation in school for refugee and host community girls. In Gambella, refugees share an ethnic background with the minority Nuer group which can fuel tensions between refugees and non-Nuer host community members as well as between Ethiopian Nuer and other groups as the presence of refugees threatens the status quo in social and political demographics tied to ethnicity in the region (for example, Ruegger, 2019). While these findings related to ethnicity are speculative, they suggest that understanding the specific social, cultural, and political dynamics between refugees and their immediately surrounding host communities are important to consider when designing education policies and interventions, particularly when targeting at-risk populations including adolescent girls, and are a critical area for further research.

Table 4. Refugee and host community relationships vary across locations and ethnic groups

	Refugee and host community relationships (% agree)			
	(1)	(2)	(3)	(4)
	Hosts want refugees to leave	Refugees should be able to share education services with hosts	Refugees have made it more difficult to access health or education	Refugees perceive good relationships with hosts
Afar	11	62	27	87
Benishangul-Gumuz	65	40	39	80
Gambella	..	74	..	61
Somali	17	74	10	93
Tigray	19	79	43	87

5.1.4 Gender-based violence

Women in BSRP sample were asked whether they had experienced various forms of gender-based violence within the past year. Refugee women reported slightly higher rates of GBV than host community women in all regions except for Benishangul-Gumuz and Somali where the difference in exposure to GBV between groups was not statistically significant (Table 5). While there were small differences in the prevalence of GBV (2–9 percentage points) in Afar, Gambella, and Tigray, the scale of the difference does not seem large enough to suggest that differential exposure to GBV is a primary factor shaping differences in secondary school participation between refugee and host community girls across regions. The high prevalence of GBV across both groups suggests instead that this is a critical challenge to address for women and girls generally.

Table 5. Women and girls in both refugee and host communities experience high rates of gender-based violence

Prevalence of gender-based violence among refugee and host community women						
	Experienced any GBV (%)			Experienced physical GBV (%)		
	(1)	(2)	(3)	(4)	(5)	(6)
	Refugee	Host	Difference	Refugee	Host	Difference
Afar	15*	13*	+2*	6*	1*	+5*
Benishangul-Gumuz	23	24	-1	15	16	-1
Gambella	36*	28*	+8*	26*	19*	+7*
Somali	57	54	+3	32*	29*	+3*
Tigray	51*	45*	+6*	45*	36*	+9*
N	7,492	7,259		7645	7463	

* Indicates statistically significant difference in reported GBV between refugee and host community women.

'Any GBV' reflects any form of gender-based violence including verbal and emotional abuse. Physical abuse reflects physical violence.

5.2 Gender gaps in secondary school among refugee adolescents

Next, I examined gender gaps in secondary school between refugee boys and girls. Table 6 shows results restricted to refugees to examine gender gaps in secondary school participation. Girls in the sample were about 10 percentage points less likely to be enrolled in school in households in which girl children were responsible for gathering water. This could be an indicator of relative poverty and domestic responsibilities, both of which have the potential to impact girls' participation in secondary school. The time it takes to get to a water source was also negatively related to school participation suggesting that with each additional five minutes it takes to reach a water source, girls were about 2 percentage points less likely to be enrolled in secondary school for the full sample (column 1) and when restricted to girls (column 2). Without data on time to reach secondary schools, I was unable to examine whether distance to water or general distance to services—including schools—drives this relationship. Nevertheless, this finding indicates that travel times to a necessary resource impact the likelihood that girls enroll in secondary school.

Feeling safe walking during the day was positively correlated with girls' enrollment and was not significant for boys. Girls in households which reported feeling safe walking in the community were 6 to 10 percentage points more likely to be enrolled in secondary school. This indicates that safety is potentially a more prevalent concern for girls than for boys even within displacement settings. This is consistent with findings from the literature which indicate that perceived safety of school environments disproportionately impacts girls school participation (Burde & Khan, 2016).

Table 6. Refugee girls face additional barriers in accessing secondary school compared to refugee boys

	(1) Secondary	(2) Secondary (Girls only)
Female	-.08	..
	(.06)	..
Girl responsible for water	-.10**	-.09*
	(.04)	(.05)
Time to water	-.02*	-.02*
	(.01)	(.01)
Safe walking (Male)	.07	..
	(.06)	..
Safe walking (Female)	.10***	.06**
	(.03)	(.03)
Adult ever in school	.11**	.21**
	(.06)	(.09)
Adult ever in school in ETH	-.04	-.17
	(.09)	(.10)
No. of school age in HH	.05***	.04
	(.01)	(.02)
Plan to stay in Ethiopia	.04	.04
	(.04)	(.04)
Includes camp fixed effects		
R2	0.15	0.20
N	1,769	790

p=*<.1 <.05**<.01***

Living with at least one adult who had ever attended school was positively correlated with school participation, though whether the parent attended school in Ethiopia was not significant. Whether the household planned to stay in Ethiopia for the long term was also not a significant predictor of secondary school enrollment. However, this question was asked to the main survey respondent and may not represent the plans or aspirations of the secondary school-aged person themselves.

6. Limitations

I was not able to examine school level factors in this analysis beyond parental perceptions of school quality. Future studies could further examine the role of school level factors including the number of female teachers, classroom practices, curriculum, and school social environments in shaping gender gaps in school participation.

Data on gender-based violence were not directly linked to data on secondary school participation because these data points came from different surveys. This limited my ability to examine the direct relationship between GBV and enrollment. Data on distance to secondary schools and transportation were also not available, thus limiting my ability to assess distance and cost as potential additional barriers at the secondary level. Due to violence during the time the SPS survey was administered, I was missing SPS household data for host communities in Gambella thus limiting my ability to examine whether the drivers of secondary school participation vary among girls in refugee camps and their corresponding host communities in this region. For comparisons in Gambella, I relied on the BSRP survey and regional level data from the Ministry of Education.

This analysis was conducted prior to Covid-19 and the escalation of violence in Tigray. Evidence from past health crises suggest that these figures are likely to worsen following the Covid-19 pandemic in which financial and other barriers including sexual violence, early marriage, and adolescent pregnancy may also increase (for example, Bandiera, et al., 2018). Growing violence in Tigray is likely to negatively impact education for both refugees and host communities.

7. Discussion

Findings from this analysis confirm that refugee girls are disproportionately disadvantaged in access to school compared to boys and host community girls even when comparing refugee camps to their immediately surrounding host communities. Gaps in enrollment for refugee girls emerge as children get older and do not appear to materialize to the same extent within the immediately surrounding host communities despite the fact that refugee and host community girls attend the same secondary schools.

In the descriptive analysis, I found little evidence to suggest that differences in secondary school enrollment between refugee and host community girls was driven by parental attitudes toward the value of girls' education nor perceptions of the quality of schooling available. Parents across the sample almost unanimously report that girls' education is important. While this finding could be driven in part by social desirability bias in survey responses, it suggests that at the very least there are not strong outward attitudes preventing girls from participating in school.

I also examined whether there were systematic differences between the education levels of refugee and host parents which may differentially shape the educational trajectories of their children. On average, refugee and host community parents completed similar levels of education and children were comparably likely to be first-generation learners across the two groups. First-generation learner status is a significant predictor of enrollment across the sample but does not appear to differentially impact refugees or girls. Differences in parental familiarity with the Ethiopian education system—measured by whether parents attended school in Ethiopia—is also not associated with differences in participation within the sample. This finding is somewhat surprising. Based on findings from Piper et al.'s (2020) work in

Kenya, we might expect to see differences in school participation among refugees based on parental familiarity with the local education system. However, Piper et al., (2020) were focused on learning outcomes so it's possible that parental familiarity with the local education system may not be a predictor of participation but may still be important in shaping learning outcomes once children are in school. In either case, findings from this study suggest that while parental education measured by first-generation learner status is correlated with schooling overall, it does not appear to differentially impact girls, nor does it result in differences among parents in the perceived value of education for boys versus girls.

Exposure to gender-based violence is common among both refugee and host community women and may negatively impact school participation for adolescent girls in this context. Though the prevalence of gender-based violence is slightly higher among refugee than host community women in most regions, the differences in exposure to gender-based violence are relatively small. It is thus unlikely that differential exposure to gender-based violence alone is the primary factor driving the education gaps between refugee and host community girls. It's possible, however, that exposure to gender-based violence compounds other barriers which disproportionately impact refugee girls including severe poverty which may increase domestic responsibilities, time at home, or the need to engage in risky survival strategies including transactional sex. More work is needed to disentangle whether refugee girls face greater risks of more frequent or severe exposure gender-based violence and the extent to which gender-based violence compounds other factors which disproportionately limit refugee girls' participation in school.

I also explored variation in secondary school enrollment between refugee boys and girls and found that while overall participation among refugees is low, girls are disadvantaged compared to boys. While parents report that girls' education is important, household chores still fall disproportionately to women and girls. This could be increasing the opportunity costs of sending girls to secondary school. Refugee households have limited access to work or other income generating activities which can increase household poverty and the need for children to take on domestic responsibilities. For example, in the Aysaita refugee camp in the Somali region –which has the largest gaps in secondary school participation between refugee boys and girls and between refugee and host community girls of all camps in the sample—girls report that the need to care for the home and for younger siblings is the top reason they are not enrolled in school (SPS analysis). Adolescent girls in Aysaita are responsible for gathering water in 17 percent of refugee households, while no households in the immediately surrounding host community identify this as the primary responsibility of a girl child. Refugees in Aysaita are also more likely to report wanting to stay in Ethiopia, where opportunities related to work are uncertain at best. When the future payoff of education is uncertain and current needs are acute—as they appear to be Aysaita—families face difficult choices that may be more likely to disadvantage adolescent girls in the household (for example, de Janvry et al., 2006; Read-Hamilton & Marsh, 2016). Further research could explore the role of future work opportunities for refugees in shaping family calculations of the current opportunity costs versus potential future payoffs of sending girls to school.

Community safety and the quality of relationships between refugees and their host communities are also correlated with secondary school enrollment. Perceived safety of walking during the day is associated with school participation for refugee girls but is not a significant predictor of boys' participation. This is consistent with findings from earlier studies which suggest that concerns about safety while traveling to school can be more severe for girls in humanitarian settings than for boys (Kirk, 2011; Shemyakina, 2011; Burde & Linden, 2013) and can increase as girls get older (Muralidharan & Prakash, 2017; J-PAL, 2017). Gaps in secondary school participation between refugee and host community girls are largest in Gambella where refugees are also less likely than they are in other regions to report good relationships with the surrounding host community. Relatedly, violence around refugee camps is more common in Gambella than it is in other regions potentially heightening the risks associated with traveling to and attending schools in host communities. As discussed throughout, this be related to differences in ethnic or kinship ties across communities.

By examining differences in school participation at the camp-host level, as opposed to examining regional aggregate statistics, I was able to investigate how barriers vary across groups and explore the ways in which disadvantages can be compounded to produce substantial barriers to education for refugee girls. The magnitude and drivers of these gaps vary by location suggesting that policies and interventions seeking to improve education for refugee girls should be adapted to reflect the specific barriers faced in the community. For example, in places in which distance to school and safety are the primary barriers, perhaps transportation interventions, school building, or other physical safety measures would be beneficial. In places where domestic chores and poverty are the primary concerns, perhaps targeted social assistance may be needed. In other cases, it may make sense to implement interventions which improve secondary education for all girls including hiring more female teachers and combatting gender-based violence broadly. Political economy factors including social, cultural, and political dynamics between the specific refugee and host community groups in particular locations are also important to consider in designing safe and effective policies to improve refugee girls' education opportunities. In addition, it is critical to assess the ways in which multiple barriers may interact and compound each other to ensure that efforts to improve girls' education address the full scope of the problem.

Appendix

Results of logistic regression comparing refugee and hosts (OLS version in Table 2). Significance and direction of results are consistent across OLS and logistic specifications.

	(1) Primary	(2) Secondary
Refugee girl	.73**	.11***
	(.09)	(.10)
Time to school	.88***	.
	(.03)	.
Adult ever school	1.67***	1.68*
	(.27)	(.46)
No. of school age in HH	.97	1.38***
	(.04)	(.12)
Feel safe walking (Yes)		
Male		1.28
Female		5.27***
		(2.82)
Includes linked location fixed effects		
Constant	5.95	.03
F-Statistic	11.26	6.45
F-Value	0.00	0.00
N	6,961	3,106

Results of logistic regression comparing refugee boys and girls (OLS version in Table 6). Significance and direction of results are consistent across OLS and logistic specifications.

	(1) Secondary	(2) Secondary (Girls only)
Female	-.08	..
	(.06)	..
Girl responsible for water	-.10**	-.09*
	(.04)	(.05)
Time to water	-.02*	-.02*
	(.01)	(.01)
Safe walking (Male)	.07	..
	(.06)	..
Safe walking (Female)	.10***	.06**
	(.03)	(.03)
Adult ever in school	.11**	.21**
	(.06)	(.09)
Adult ever in school in ETH	-.04	-.17
	(.09)	(.10)
No. of school age in HH	.05***	.04
	(.01)	(.02)
Plan to stay in Ethiopia	.04	.04
	(.04)	(.04)
Includes camp fixed effects		
R2	0.15	0.20
N	1,769	790

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