

# Is the Education of Local Children Influenced by Living near a Refugee Camp? Evidence from Host Communities in Rwanda

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## ABSTRACT

This article studies the extent to which educational services and schooling outcomes of local children are influenced by the presence of a refugee camp in or near their community. Investigating Congolese refugees in Rwanda and relying on a mixed-method approach, we examine schooling rates and access to school-based feeding programmes in communities closer to and further away from three refugee camps. We conduct cohort analyses to compare the schooling outcomes of Rwandans residing at different distances from each of these camps. Our results highlight that children residing closer to the camps have better schooling outcomes and that locals residing closer to the camps have mostly positive views regarding the effects of refugees on local education. These results contribute to the literature on the effects of refugees on host communities and inform policy debates on how refugees need not be a “burden” if a long-term vision shapes educational investments.

## INTRODUCTION

Due to concerns for the scale of displacement worldwide, the manner in which refugees impact host communities is a topic that has inspired fresh debate recently. For more than two decades, a range of issues has been discussed in relation to how the arrival of refugees may have immediate and diverse impacts on land, water, housing, food and medical services. Over time, the effects may encompass other issues such as employment and the provision of social services and education, among others (UNHCR, 1997). Despite the recognition of these potential effects that may impact the long-term social and economic development of a refugee-receiving country, research in the field is rather limited. In this article, we add to the literature on the impact of refugees on host communities by investigating a rather understudied domain, namely education. In particular – based on the case of host communities nearby three Congolese refugee camps in Rwanda – we focus on school infrastructure and resources on one hand and the educational outcomes of the host population students on the other.

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Rwanda is an interesting case to study the effects of refugees on host communities. The country has been at the centre of a region engrossed in years of conflict and political unrest, where populations have been displaced from one area to another for decades. Currently there are around 160,000 refugees residing in Rwanda, most of them originating from either the Democratic Republic of Congo (DRC) or Burundi (UNHCR, 2017a). Between the two groups, refugees of the DRC are predominately in a protracted situation having been displaced since the mid-1990s, although renewed fighting across the border has also led to new inflows in recent years. Considering that a large share of the Congolese refugee population is in a protracted situation, this article focuses on the effects of Congolese refugees on the education-related outcomes and resources of local populations.

The Rwandan government has adopted a relatively permissive policy for refugees, allowing for the freedom of movement and work. Moreover, the government has promoted a community-integrated approach to social services, meaning that where possible refugees and local Rwandans have access to the same services including schools. The minister for disaster management and refugee affairs (MIDIMAR), Seraphine Mukantabana has summarised this approach as follows:

“We have introduced community-integrated approach whereby programs meant to benefit refugees have to also benefit local communities and programs for citizens’ development benefit refugees.”  
(MIDIMAR, 2014)

This approach has been under development since October 2009, when UNHCR proposed a comprehensive strategy to bring to a closure the Rwandan refugee situation following the post-war period (UNHCR, 2011). It can be considered as part of the broader reintegration assistance provided for repatriated Rwandans, which has been extended to include other vulnerable groups such as foreign-born refugees (O’Connor, 2013). In relation to education, the aim of the community-integrated approach is to incorporate refugees into existing local school facilities and to strengthen these facilities by building extra classrooms or providing additional materials and teachers if necessary. The long-term goal of this approach is to stimulate the socio-economic inclusion of refugees and to reduce their dependency on humanitarian aid.

Given this community-integrated approach, it is conceivable that the presence of the refugee population has led to increased investment in services – including education – in those areas surrounding the camps, which in effect would benefit the host community members in Rwanda. In this article, we take advantage of household survey data and in-depth focus groups discussions conducted in 2016 and focus on the accessibility of schools for local Rwandans residing nearby three camps designated for Congolese refugees. We also explore education-related outcomes for local children.

This article therefore adds evidence to the growing base of knowledge on the potential benefits of hosting refugees in low-income country contexts (see e.g. Alix-Garcia et al., 2017; Alloush et al., 2017). Taking into consideration that around 85 per cent of the global refugee population is located in low- and middle-income countries (UNHCR, 2017b), our findings are relevant to many other refugee-hosting countries in the Global South. This paper illustrates how an integrated policy approach to hosting refugees has the potential to facilitate favourable outcomes for refugees and host communities alike. Such an approach is increasingly of interest for international donors who argue for more durable solutions to address the challenges of displacement.

## THE EFFECTS OF HOSTING REFUGEES ON EDUCATION AND OTHER SOCIAL SERVICE PROVISION

The effect of refugee inflows on local populations has been a topic that is rarely studied until recently. The reason for this is that the influx of refugees in neighbouring countries has been seen as a temporary emergency situation (Dryden-Peterson and Hovil, 2003; Kreibaum, 2016). The past

few decades, however, have shown that many refugees remain in a protracted situation, which has brought to the fore the idea that their presence may have crucial impacts on the economic and social lives of locals (Jacobsen, 2002; Alix-Garcia et al., 2012). Within this context, one of the critical debates concerns how social service provision, such as education, is affected by the presence of refugees.

There are several arguments as to why the social infrastructure in a community is likely to be influenced by the arrival of refugees as their presence may increase the demands for education, health and other services such as transportation, sanitation, etc. For example, Whitaker (1999) showed that in the early stages of arrival, refugees overburdened existing infrastructures and diverted development resources in Western Tanzania. Additionally, refugee presence was associated with an influx of diseases. However, in view of these negative consequences of the refugee situation for the local infrastructure, development projects in the area began to address issues related to water, health, education, natural resources and infrastructure. A social compensation approach aimed at targeting the host communities as a whole and at rehabilitating infrastructure and improving social services meant that long-neglected infrastructure problems were to a large extent solved. These included providing schools with teaching materials, training health workers and giving equipment and drugs to health centres. These efforts were perceived positively, as their expected effect was long-term. In this regard, the long-term impact of refugees depends on how a response is provided to these increased demands by various stakeholders, including the national government, international organizations and the local population.

Maystadt and Verwimp (2014) argue that in some instances infrastructure improves in host communities because international organizations invest in regions where refugees are allocated. For example, a large investment was made to improve the roads, airstrips and telecommunications infrastructure in the Kagera region (Whitaker, 1999). As a result, internal transportation became easier and cheaper in remote areas. The authors also highlight that health and sanitation services improved as a result of investments made by UNHCR and its implementing partners. These services benefitted not only the refugees but also the local populations. Beyond the role of international actors, the response of the national government matters significantly. In a first instance, this is reflected in increased expenditure in areas hosting refugees. Due to an increase in demand of services, governments are required to invest in social and infrastructure sectors. As a further response, development projects offered by international organizations tend to address the needs of both refugees and local populations (Zetter, 1995). Kreibaum (2016) has also shown that in the case of Uganda, non-governmental organizations and other private agencies helped the state cope with the additional demand for services, especially in the field of education. More specifically, the probability that there was a private primary school increased by 0.06 per cent with an increase in ten refugees over 1,000 inhabitants.

Finally, it is important to note that the macro-economic situation of the country, rural-urban interactions and intergroup relations between locals and refugees can all mitigate potential negative effects and even foster opportunities for local development (Kuhlman, 1991; UNHCR 2004). Whitaker (2002) states that if infrastructure improvements are maintained, local communities can continue to benefit from refugee presence. This is especially relevant for areas closer to refugee camps (Dryden-Peterson and Hovil, 2003; Kreibaum, 2016). Researchers accordingly highlight the need for policies that strive for joint development among refugees and the host population. It is in light of these kinds of arguments that we study the impact of refugees on local children's access to education services and schooling outcomes.

## THE STATE OF EDUCATION IN RWANDA

Rwanda's education system was devastated by the 1994 Genocide in terms of both infrastructure and human resources (Honeyman, 2017) Investing in education has been high on the political

agenda in Rwanda in the post-genocide period. In line with the government's Vision 2020 and Economic development and poverty reduction strategy (Rwandan Ministry of Education, 2015), the three main goals of the strategic plan on education include 'promoting access to education at all levels, improving the quality of education and training and strengthening the relevance of education and training to meet labour market demands' (Rwandan Ministry of Education, 2015:pp. 36–37). The ambition to transform Rwanda into a knowledge-based economy by building its own skilled workforce has been at the heart of this investment and is considered to be the application of global norms on education in the local context (Russell, 2015; Williams, 2017). The role of international organizations is found to be significant in this phase, be it through continuous dialogues and coordinated platforms, although the government has strict ownership of the national decisions. Others have also emphasized that the government has been seeking international and domestic legitimation by implementing education policies that are compatible with international donors' discourse and global expectations (Hafner-Burton and Tsutsui, 2005).

The emphasis on improving education is also reflected in financial investment in education. Public expenditure has almost doubled in Rwanda between 1980 and 2013. Along with Kenya and Burundi, Rwanda has been one of the few countries in the region that has invested more than 5 per cent of its GDP in education in 2013 (World Bank, 2017a). Within the education field, investments have been made in primary school teachers, increased school construction, teacher recruitment, capitation grants and teaching and learning materials (Rwandan Ministry of Education, 2015). Rwanda has received significant levels of aid that are pushing the country toward the required per-pupil financial level (UNESCO, 2011). It is within this context of increased investment in education that refugee children have been accommodated within the education system.

As a result of these steady investments, considerable progress has been made in educational outcomes in Rwanda. Expected years of schooling have increased from 4.9 years in 1980 to 10.3 years in 2014, even though the gross enrolment ratio in pre-primary education among preschool-age children remains low. In 2010 about 10.8 per cent of children were enrolled, compared to a relatively increased share of 13.6 per cent in 2013. The net enrolment rate in primary education has increased from 78.7 per cent in 1999 to 95.1 per cent in 2015, which remains the highest ratio in comparison to neighbouring countries such as Tanzania with a net enrolment rate in primary education of 80 per cent in 2014 (World Bank, 2017b). The gross enrolment ratio in secondary education is still low in Rwanda, despite a steady increase over the past few decades. In 1980 less than 10 per cent of the children were enrolled in secondary education compared to 40.6 per cent in 2013. This low share is not an exception for the region. For example, in Burundi and Tanzania, the gross enrolment rates in secondary education have been at 32 per cent and around 40 per cent in the DRC (World Bank, 2017b). In short, although Rwanda still faces challenges with regard to increasing completion rates, lowering grade repetition and assuring that grade level expectations on literacy and numeracy skills will be met (Williams et al., 2015; Honeyman, 2017), it has witnessed considerable progress over the years.

## CONGOLESE REFUGEES IN RWANDA

Rwanda hosts nearly 75,000 officially registered refugees from the DRC (UNHCR, 2017a). A vast majority of this population, around 90 per cent, resides in one of five camps spread throughout the country. Four of these camps host "old caseload" refugees referring to those individuals entering the country during the first or second Congo wars that took place around the turn of the century. The fifth camp, Kigeme, hosts more recently arriving Congolese refugees arriving after a new outbreak of violence along the border in the Eastern DRC.

Officially, the Rwandan government makes land available for refugee camps and – in a relatively inclusive fashion – enables refugees to move freely and access public services, the labour market and especially the educational system. This integrated community approach in essence allows refugees to be present in local communities even though they still predominately reside in the camps and provides opportunities for social and economic interaction with host populations. In practice, however, the freedom of movement and the access to employment opportunities are limited by bureaucratic procedures and costs (Easton-Calabria and Lindsay, 2013). As a result, many of the Congolese refugees remain dependent on humanitarian aid for decades (Hovil, 2011).

With respect to the community-integrated approach for social service provision, children of the Congolese refugee population are provided access to schools in the local community where appropriate. Only in the case of Kiziba, where there are no schools nearby the camp is a school located within the camp itself, which local children are able to freely access. Moreover, in order to help ease the pronounced increase in attendance due to the refugee children, those same local schools are generally provided additional classrooms, teaching material and uniforms (UN, 2012). Indeed, UNHCR (2016) reports that the inclusion of refugees in the educational system is high in Rwanda. Refugee children are either integrated into national schools or in schools located in camps that follow Rwanda's teaching curriculum. Whether such additional resources due to the refugee population have a positive educational consequence for local children, is the focus of our analysis.

## DATA

In order to explore how the proximity of the refugee camps has influenced access to educational services and schooling outcomes of locals, we rely on a mixed-methods approach and triangulate data from various primary sources collected across Rwanda in May 2016. Firstly, we make use of data originating from a household survey conducted in nearby communities at various distances to refugee camps. Secondly, a community survey conducted with a local representative helps provide broader meso-level information relevant to social service provision in the community as a whole. Thirdly, the surveys were complemented by focus group discussions (FGDs) in the same local communities at various distances to each refugee camp to provide a deeper account of social service provision and its relation to the proximity to a camp.

Of all the five Congolese refugee camps in Rwanda, we chose the three largest – Gihembe, Kigeme and Kiziba – to survey the host communities around.<sup>1</sup> These camps were chosen primarily due to their absolute and relative size taking into consideration the local population nearby (see Table 1), in order to ensure relatively comparable cases based on the conjecture that a sizeable camp has the potential to influence host communities. Important to note is that the populations of each camp have remained mostly stable over time as the initial group of refugees in each case arrived at the same time and most continue to reside there. Also, between the camps themselves, it is relevant that both Gihembe and Kigeme are located on main roads not far from other commercial hubs – Byumba and Gikongoro respectively – whereas Kiziba is the most remote location at least a few hours' drive from the nearest town, Kibuye. As such, economic activities and interaction between the refugees and the local community is abundant around Gihembe and Kigeme camps and less so in the case of Kiziba. With respect to schooling in particular, the integration of refugee students is much more advanced in Gihembe and Kigeme in comparison to Kiziba. Indeed, one local stakeholder reported that all students from the Kigeme camp are integrated into local schools whereas that percentage drops to a half for Gihembe students and zero for Kiziba.

For the household surveys conducted among locals, a random sampling strategy was applied taking into consideration the proximity of a community to one of the three Congolese refugee camps.

TABLE 1  
CAMP CHARACTERISTICS

	Year established	Total population	Relative population
Gihembe	1997	14,205	9.49%
Kigeme	2012	18,646	19.38%
Kiziba	1996	17,155	14.52%

Note: Relative population is calculated using the local population in all sectors within 10 km of each camp.  
Source: UNHCR and the Rwanda Population and Housing Census, 2012.

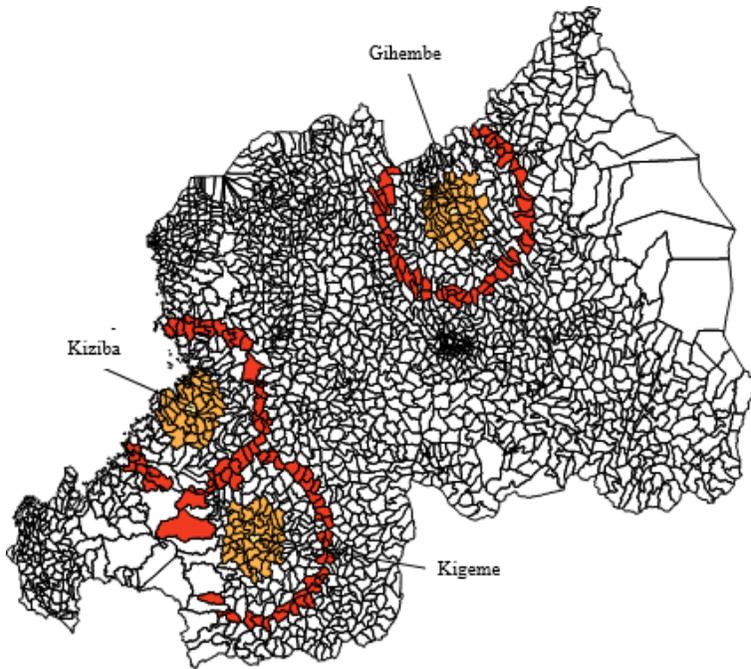
Using GIS data, Figure 1 illustrates the enumeration areas in question. For example, we randomly selected four cells (the smallest publicly available administrative unit) within 10 km of each of the three refugee camps and then randomly sampled a target of 40 households in the largest community of each of those cells. This exercise was repeated for communities outside 20 km of each camp using the same absolute number of communities as those within 10 km area of each camp. The random sampling of households within each community was completed using a master list created in discussion with a community representative, who also responded to the separate community survey. Household surveys were conducted by an adult member of the household who could provide detailed information on all members of the household as well as relevant household characteristics (e.g. housing, economic situation). In total, we collected information on 4,469 household members.

In addition, in total 12 FGDs were completed among host community members in each of the randomly selected communities both within 10 km and outside 20 km of each camp. Participants over 18 years old were randomly selected for recruitment from the same master list of households per community<sup>2</sup> and each FGD comprised six participants of a single gender to avoid gender-based bias in responses. A local moderator led the discussions along with a dedicated note-taker, following an interview guide that allowed for in-depth insight for the topics of interest.<sup>3</sup>

Given the intent to examine the influence of living near a refugee camp, the subsequent analysis relies on a comparison between the host community members residing within 10 km of a camp and those beyond 20 km. This 10 km vs. 20 km research design was decided following pre-survey site visits and extensive discussions with stakeholders on the ground in order to gauge a high vs. low potential for interaction between refugees and host communities as well as exposure to local infrastructure and services due to the camps (see also Alloush et al., 2018). The final sample relevant for our purposes here consists of 953 host community households located across 46 communities.

Taking into consideration the focus of this study, we operationalize various measures to assess the accessibility of schools and education-related outcomes for local children residing nearby one of the three refugee camps. When looking at access, we consider school attendance as well as whether the child has access to school-feeding programmes. Even though the latter is not necessarily an education-specific measure, we believe it's clear relation with attendance and implications for welfare (Jomaa et al., 2011) are of interest for a study that examines services provided around refugee camps. As for schooling outcomes, we use the total years of schooling and primary school completion as the main dependent variables in question. The following section first provides descriptive results, then presents the cohort analysis on schooling outcomes given the interest in generational differences that may capture the effect of refugee camps. Finally, evidence from the FGDs is presented to add nuance to the discussion on the effects on local children of living close to a refugee camp.

FIGURE 1  
SAMPLING STRATEGY AT THE CELL LEVEL



*Note:* Yellow cells indicate the location of each refugee camp. Orange cells are those within 10 km of each camp. Red cells are those above 20 km of each camp.

## ACCESS TO EDUCATION AND SUPPORT PROGRAMMES

At the community level, around 80 of the communities in our sample do not have a primary and 85 per cent do not have a secondary school physically located within it. Despite this drawback, a large proportion of children are registered in schools; many of them commute to school. We find that 71 per cent of all children 18 years or younger residing within 10 km of a camp regularly attend school, compared to 61 per cent of the children living further than 20 km from a camp. This 10 percent-point mean difference is statistically significant. Moreover, this difference is not driven by one camp area in particular, as school attendance across all three camp areas and the distance from the camps are comparable.

School attendance by specific age groups varies considerably (see Table 2). Regular attendance at the pre-primary level is low overall, at 29 per cent. For our purposes, it is interesting to see that there is a nearly 20 percentage-point mean difference between those children living in communities near a refugee camp and relative to those living further away: 39 per cent vs 20 per cent. At the primary and lower secondary levels, 93 per cent of all appropriately school-aged children in our sample regularly attend school. Children residing near a camp are around four and seven percentage points more likely to attend at both of the respective levels than children living further away. The overall rate of attendance drops considerably when it comes to upper secondary; only 67 per cent of the sample at that age level regularly attends school. Again, there is a nearly 20 percentage-point difference based on proximity to the nearby refugee camp, 76 per cent vs. 57 per cent.

TABLE 2  
SCHOOL ATTENDANCE BY LEVEL AND DISTANCE

	<10 km		>20 km	
	Frequency	Percent	Frequency	Percent
Pre-primary	72	39.34	32	19.51
Primary	420	95.45	397	90.64
Lower secondary	212	95.93	168	88.89
Upper secondary	136	75.56	83	56.85

Note: Frequencies and percentages are based on a sample of 1,981 school-aged children (3 and above upto 19 years of age). School attendance was asked in the survey with the question “Does this child regularly attend school?”

Although there are not significantly more schools and children may have to travel longer distances to reach school in communities closer to camps, their likelihood of attending lower secondary and upper secondary school seems to be higher than those children living further away from camps.

While school attendance in itself is essential, one of the consequences of regular attendance is also the ability to potentially benefit from a school-based feeding programme. Of the nearly 1,600 children regularly in attendance at their respective levels, about 14 per cent are nourished through a school-based feeding programme. However, there is a stark difference based on proximity to a refugee camp (see Table 3). Only about four per cent of the children within communities outside 20 km of the nearest refugee camp are provided food assistance at school compared to 23 per cent of the children located within 10 km of a camp. And as illustrated in Table 3, these differences are mostly driven by schools outside Gihembe and Kigeme camps where local integration in education is highest. While one explanation may be that students nearby Gihembe and Kigeme camps are poorer than their counterparts further away, the data indicate that households nearby the camps are in fact better off along a number of welfare measures including income and asset ownership (Loschmann et al., 2017). Therefore, we take this as evidence that school-based feeding programmes targeting refugee children integrated into local schools in these areas are spilling over to the local Rwandan children.

## SCHOOLING OUTCOMES OF RWANDANS LIVING BY A REFUGEE CAMP

In this section we further investigate the schooling outcomes of Rwandans in local communities close to and further away from the camps. For this aim, we conduct a cohort analysis, which is similar to a difference-in-difference approach. We test whether children who are of primary school age when the camps are operational have different schooling outcomes from children who are older than primary school age and thus had probably already finished their schooling before the camps were established.

We consider children residing close to the camp as “treated” (i.e. affected by the presence of the camp) and children residing further away as the “untreated” control group (i.e. unaffected by the presence of the camp). We restrict the sample here to individuals who are at least 12 years of age and younger than 60 at the moment of data collection. As primary school age in Rwanda runs from 7 to 12, individuals older than 12 were, at least in principle, able to finish their primary school. We use the cut-off age of 60 in the higher range to have a more homogeneous group in terms of educational experiences.

TABLE 3  
SCHOOL-BASED FEEDING, BY CAMP AREA AND DISTANCE

	<10 km		>20 km	
	Frequency	Per cent	Frequency	Per cent
Gihembe	39	15.23	5	2.40
Kigeme	149	45.02	7	3.45
Kiziba	16	5.30	14	4.71

Note: Frequencies and percentages are based on a sample of 1,599 children who regularly attend school at their respective levels. School-based feeding was asked in the survey with the question “Does this child benefit from a school feeding program when they attend school?”

All individuals who were older than 12 – primary school age – when the camp in their area was opened are coded with a “zero” and all individuals who are of primary school age (7–12) when the camp in their area was operational receive a “one”. An overview of the age cut-offs for each primary school age cohort is presented in Table 4. Kiziba and Gihembe both opened in December, in 1996 and 1997 respectively. As the construction of teaching facilities was probably not done immediately, we use the subsequent years as cut-off points for children to be affected (i.e. 1997 for Kiziba and 1998 for Gihembe). Kigeme was operational between 1995 and 2009 for Burundian refugees and reopened again in 2012 for a new inflow of Congolese refugees. We consider children who were of primary school age in both periods when the camp was open as part of the school age cohort. Our final sample consists of 1,205 individuals who were of school age when the camps were operational and 1,441 individuals who finished their education before the camp in their area was established.

Table 5 shows that individuals who were of primary school age when the camps in their area were operational have better schooling outcomes. These individuals show more years of schooling, on average and are more likely to complete primary school. This is the case for both distances. An exception that should be noted is that those who are of primary school age when the camp is operational and who live close to the camp (<10 km) are not more likely to have completed primary school than those who are already 12 years old when the camp opens. Those who live closer to the camps (<10 km) also score consistently higher than those residing further away, regardless of whether they are primary school age when the camp is operational or not. The differences are smaller for those who are of school age when the camp is operational, with the difference in primary school completion between school-aged children residing close and further away to the camp being statistically insignificant. Moreover, once disaggregating the results by each individual camp area as also illustrated in Table 5, we find that the results from Gihembe and to a lesser degree Kigeme

TABLE 4  
OVERVIEW OF PRIMARY SCHOOL AGE COHORTS PER CAMP

	Year camp opened	Age in 2016 to be ‘affected’
Kiziba	Dec. 1996–present	Individuals younger than 32
Gihembe	Dec. 1997–present	Individuals younger than 31
Kigeme	1995–2009 and June 2012–present	Individuals aged between 19 and 29 and Individuals younger than 17

TABLE 5  
DESCRIPTIVE STATISTICS – SCHOOLING OUTCOMES, BY COHORT AND DISTANCE

Primary school age cohort	Years of schooling ( <i>M</i> )			Primary school completion (%)		
	<10 km	>20 km	<i>t</i> -test	<10 km	>20 km	<i>t</i> -test
All camps						
No	5.55	4.64	-4.08***	0.52	0.40	-4.28***
Yes	6.55	6.00	-2.97**	0.53	0.50	-1.15
<i>t</i> -test	-4.70***	-7.10***		-0.58	-3.83***	
Gihembe						
No	6.75	4.89	-4.01***	0.66	0.46	-3.74***
Yes	6.86	6.21	-2.14**	0.65	0.64	-0.44
<i>t</i> -test	-0.28	-4.02***		0.06	-3.63***	
Kigeme						
No	5.77	5.00	-2.42**	0.54	0.43	-2.39**
Yes	6.79	6.19	-1.68*	0.45	0.46	0.08
<i>t</i> -test	-3.21***	-3.39***		1.96*	-0.47	
Kiziba						
No	4.16	3.94	-0.60	0.36	0.28	-1.58
Yes	5.90	5.69	-0.70	0.47	0.41	-1.38
<i>t</i> -test	-4.94***	-5.43***		-2.28**	-2.73***	

Note: Sample includes individuals between 12 and 60 years of age at the point of data collection in 2016. Primary school age cohort refers to whether the individual was primary school age (between 6 and 12 years of age) when the camp became operational. The *t*-test indicates a statistically significant mean difference between the <10 km and >20 km groups.

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$ .

are driving the overall differences based on distance to the camp. We interpret these differences across camp areas to be primarily due to the isolated nature of Kiziba camp in comparison to the other two and therefore the lack of concentrated local schools nearby, which might benefit from the increased investment around the camp itself.

These first results imply that children who attend primary school during times that the refugee camps are operational and children residing close to the camps have better schooling outcomes than other children. These statistics, however, do not control for any other factors. The primary school age cohort in the sample is younger, on average, than the cohort that finished education before the refugee camps were open, which may drive these results. The education system in Rwanda has improved notably since the mid-1990s and has resulted in higher schooling outcomes for younger cohorts of children. In the following models we control for changes in the educational system by including birth cohorts of individuals in the sample to make sure that our outcomes are not driven by the ages of the children. Other covariates, such as the gender of the child and various household characteristics, were added to control for potential individual and household differences that may affect the results. For example, children who come from wealthier families or who have higher educated parents may perform better in school. An overview of the main variables and control variables can be found in the Appendix.

Table 6 shows the results of the cohort model, with years of schooling and primary school completion as the dependent variables. Models 1–3 show that the effect of being in the primary school age cohort when the camp is operational is negatively related to years of schooling, but disappears after controlling for household and area characteristics. The distance to the camp is consistently and positively related to years of schooling, meaning that children closer to the camps (<10 km) attain, on average, significantly more years of schooling than children residing further away from

TABLE 6  
COHORT ANALYSIS ON SCHOOLING OUTCOMES

	Years of schooling (OLS)			Primary school completion (Logit)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Primary school age cohort	-0.46* (0.24)	-0.32 (0.28)	-0.40 (0.24)	-0.24 (0.28)	-0.21 (0.14)	-0.02 (0.17)	-0.31** (0.15)	-0.07 (0.18)
Camp distance <10 km	0.68*** (0.14)	0.82*** (0.22)	0.56*** (0.13)	0.72*** (0.20)	0.29*** (0.08)	0.48*** (0.12)	0.25*** (0.08)	0.49*** (0.12)
Cohort*camp distance		-0.26 (0.28)		-0.29 (0.27)		-0.35** (0.16)		-0.43** (0.17)
Birth year cohort (ref. = <1960)								
Birth year between 1960-1970	1.28** (0.50)	1.29** (0.50)	1.44*** (0.45)	1.44*** (0.45)	0.70** (0.30)	0.71** (0.30)	0.85*** (0.30)	0.86*** (0.30)
Birth year between 1970-1980	2.00*** (0.46)	2.00*** (0.47)	2.27*** (0.42)	2.27*** (0.42)	1.00*** (0.29)	1.01*** (0.29)	1.26*** (0.29)	1.27*** (0.29)
Birth year between 1980-1990	1.88*** (0.46)	1.87*** (0.46)	1.85*** (0.42)	1.84*** (0.42)	0.77*** (0.29)	0.77*** (0.29)	0.89*** (0.29)	0.88*** (0.29)
Birth year >1990	3.70*** (0.48)	3.69*** (0.49)	3.87*** (0.45)	3.85*** (0.46)	1.38*** (0.31)	1.37*** (0.31)	1.74*** (0.32)	1.72*** (0.32)
Female	0.10 (0.14)	0.10 (0.14)	0.13 (0.13)	0.14 (0.13)	0.08 (0.08)	0.08 (0.08)	0.11 (0.08)	0.12 (0.08)
Literacy			1.92*** (0.14)	1.91*** (0.14)			1.01*** (0.09)	1.01*** (0.09)
household head			-0.75 (0.49)	-0.75 (0.49)			-0.51* (0.31)	-0.51* (0.31)
Employment			-0.03 (0.16)	-0.03 (0.16)			-0.14 (0.10)	-0.15 (0.10)
household head			-0.27*** (0.04)	-0.27*** (0.04)			-0.14*** (0.03)	-0.14*** (0.03)
Number of children in the hh			-0.23*** (0.04)	-0.23*** (0.04)			-0.14*** (0.02)	-0.15*** (0.02)
Distance to primary school								
Close to camp (ref. = Gihembe)			-0.30* (0.17)	-0.30* (0.17)			-0.61*** (0.11)	-0.61*** (0.11)
Kigeme								

TABLE 6  
(CONTINUED)

	Years of schooling (OLS)			Primary school completion (Logit)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Kiziba			-0.71*** (0.17)	-0.71*** (0.17)			-0.72*** (0.11)	-0.73*** (0.11)
Constant	2.89*** (0.44)	2.81*** (0.44)	3.94*** (0.65)	3.86*** (0.65)	-1.20*** (0.28)	2.81*** (0.44)	-0.31 (0.43)	-0.43 (0.43)
Observations	2,646	2,646	2,639	2,639	2,646	2,646	2,639	2,639
R-squared	0.07	0.07	0.17	0.17	0.02	0.02	0.10	0.10

Note: Robust standard errors in parentheses.  
 \*\*\*p<0.01, \*\*p<0.05, \*p<0.10.

the camps (>20 km). However, to better understand the influence of the camps on schooling outcomes we are interested in the interaction between primary age cohort and camp distance, which in effect compares children of primary school age during the camp's existence to children of primary school age prior to the camp's existence. This interaction term is not statistically significant indicating no impact of the presence of the refugee camps on the years of schooling of the children who reside close to the camp *and* who are of primary school age when this camp is operational.

Regarding primary school completion, we observe that individuals who receive education when the camps are operational are less likely to have finished primary school, but this effect disappears, as expected, when we control for birth cohort. The camp distance variable, indicating that the individual resides less than 10 km from the camp, is significantly and positively related to the likelihood of an individual having finished primary school. Again, this indicates that individuals residing close to the camp have better schooling outcomes than individuals residing further away. The interaction between the primary school age cohort and distance to the camp is negatively related to primary school completion, meaning that the positive effect of residing close to the camp is lower for those who are of primary school age when the camp is operational. Compared to individuals residing close to Gihembe, the average years of schooling is lower for individuals residing close to the other two camps: Kigeme and Kiziba. As discussed before, we expect this is related to the fact that Gihembe camp and its surrounding communities are relatively close to an important commercial hub, Byumba, which may contribute to a better historical record of infrastructure and social service provision.

The control variables also yield some interesting results. Expectedly, individuals in the younger cohorts have more years of schooling than older individuals. As discussed before, this is most likely due to improvements in the educational system in Rwanda since the end of conflict in the mid-1990s. Indeed, for those individuals born between 1980 and 1990 we see a slight drop in years of schooling given this cohort experienced – at least partly – the 1994 genocide during their school age years. Additionally, individuals residing in households in which the household head is literate have significantly more years of schooling, whereas the number of children in the household as well as distance to the nearest primary school is negatively associated to years of schooling.

## PERSPECTIVE OF LOCALS ON THE INFLUENCE OF LIVING CLOSE TO A REFUGEE CAMP ON THEIR CHILDREN'S EDUCATION

In this section we focus on the insights from the FGDs to go beyond the empirical analysis from the survey data and to put our findings in context. In general, FGD participants residing further away from the camps felt that the presence of the camps was a non-issue. We consistently observed that they do not make a strong link between the presence of refugee children and the education quality in their community. For instance, participants in distant communities around Gihembe, illustrative of the views in other areas suggested that there is hardly any contact between refugee and local children. A participant from a distant community said: "How could they relate if they don't even meet? There are no relationships between them because the children from the village don't ever go to the camp; in fact they don't even know where it is." (Gihembe, female, >20 km). In this regard, the differences in perspectives of those living closer to and further away from camps are apparent. Those living closer to refugee camps have much more concrete, be it positive or negative, views on the impact of living close by a refugee camp. Consequently, in the remainder of this section, we focus solely on the views of this group.

There are both positive and negative views on how the presence of refugee camps has affected education services for local children and these views do not seem to vary significantly between

participants from different camp areas. Concerning the negative influences, participants referred primarily to overcrowding in classrooms, social tensions between the children and minor violent incidents that occurred between children. It is striking, however, that in response to some of the negative views mentioned by some participants, other participants emphasized the positive changes over time both in terms of educational resources as well as social relations within schools.

Overcrowding of classrooms is an issue mentioned by participants in all nearby villages. In a host community outside of Kigeme camp for example, a participant said:

“The big challenge that is faced by people who live nearby the refugee camp, is in education. The number of children who need to go to school from the camp and that from those villages is too high compared to the number of available schools. This causes the overcrowding of children in classes.”

(Kigeme, female, <10 km)

All participants in this group also agreed that there had been some violence and stated that some children were afraid of going to school. These are certainly issues that need to be taken seriously.

However, despite overcrowding and social tensions, participants claimed that there had been considerable progress over time. Participants recognized that some government programmes had been important to improving the situation among children, with one individual stating:

“I think there has been some progress, because before children used to fight a lot and children from the community were beaten by those from the camp, but after some training from the government, our children are no longer beaten or get their clothes ripped off by the kids from the refugee camp or complaining about their pens and notebooks being stolen by the kids from the refugee camp.”

(Kigeme, female, <10 km)

Furthermore, some participants highlighted the increasingly warm peer relations between local and refugee children. One respondent states “They even study together, and they can go home together. There is no problem.” (Gihembe, male, <10 km). For those living close to refugee camps, refugee children were also seen as good examples of resilient children who encourage the local kids to study better and value the educational opportunities they have: “The refugees’ kids inspired our children to study. They would look at the fact that they are studying hard despite their situation of being in a foreign country, and decide to attend schools.” (Kiziba, male, <10 km).

Beyond the issue of social relations, other participants argued that the arrival of refugees had a positive effect on local investment: “Initially, the number of students at school increased due to education for all policy set by Rwanda government. However it has increased more after the refugees arrived.” (Kiziba, male, <10 km). While it is important that participants recognize the link between investment in education and the arrival of refugees, some participants also pointed out that the increase in the number of schools does not necessarily mean an improvement in the quality of education. Challenges in this regard are recognized especially with examples about the overburdening of teachers. Nevertheless, beyond the recognition of these challenges, many of the participants appreciated the sole idea that more local children are enrolled in schools:

“Speaking of the quality of education, education has helped us to manage the behaviour of the kids, and the government does everything possible for them to study. However the quality of education is not at the higher level yet because of limited resources for instance, few books, the same with laptops and they are sometimes kept due to lack of access to electricity. However the quality of education is not about studying only, also the discipline that students get from schools count, they can graduate and don’t get jobs but they won’t behave like illiterates; so far, that is something that has been achieved and we are grateful for the education they get.”

(Kiziba, female, <10 km)

The evidence provided by the FGDs highlights issues with regards to availability of resources, quality of education and social relations within schools. It is interesting to see that these are issues that the country is struggling with in general as discussed earlier. That is to say, while the question of access to education has been more or less addressed in the country, the challenges regarding quality and equity in education remain. Within the scope of this article, what is even more revealing is that the participants mention these issues without “scapegoating” refugee children. Families who have more contact with refugee children do not seem to fall in the trap of accusing refugees for the problems they face. In a time where the media attention and public discourse is highly shaped by stereotypes over the effects of refugees in local populations’ lives, we find it of great importance that the locals were discussing the problems they face in education without putting the blame on the presence of refugees. Even more surprisingly, the resilience of refugee children is mentioned as an encouraging example for local children and highlights the importance of expressing the views of local populations, to have a more nuanced understanding of their perspectives.

## CONCLUSION

The level of international displacement has reached new heights in the last couple of years. In 2017, there were more than 65 million displaced individuals around the world. About one-third of these individuals reside in the African continent making it the biggest refugee-hosting region in the world (UNHCR, 2017c). In this context, it is crucial to understand how refugee inflows impact the social and economic development of host countries and how local communities are affected by the presence of sizeable refugee populations. To contribute to the expanding literature as well as the heated policy debates on the topic, in this paper we focus on the links between refugees and locals’ access to education and schooling outcomes in Rwanda.

We make use of recently collected quantitative and qualitative data in local communities surrounding Gihembe, Kiziba and Kigeme camps. The Rwanda case is interesting because the government has developed a community-integrated approach towards Congolese refugees. The community-integrated approach provides Congolese refugees with access to the national education system. Refugee children are where possible, integrated into local schools that are supported with additional assistance to ease the burden of taking in a greater number of students. Until now it is unclear how this policy may have affected the educational outcomes of local children. The unique research design of our study allows for the comparison of communities closer to (<10 km) and further away (>20 km) from three Congolese refugee camps and hence drawing a clearer picture about their impact on education and schooling.

Our results highlight that the inflow of Congolese refugees in Rwanda is overall positively associated with the education of children residing in the areas surrounding the refugee camps. Namely, school attendance is higher among children who reside within a 10 km radius of a refugee camp as compared to children residing further away. Moreover, local children who reside closer to a refugee camp that has more local integration (i.e. Gihembe and Kigeme) are significantly more likely to be part of a school-based feeding program than children who reside further away from a camp.

Our cohort analyses showed that local children living relatively closer to a refugee camp have on average, more years of schooling and were more likely to finish primary school than children residing further away. It is, however, difficult to assign this finding directly to the presence of refugee camps. We did not find an additional effect of being of school age when the camps were operational on educational attainment for individuals residing closer to the camps. These findings suggest that other factors may explain our effects of enhanced

educational outcomes nearby the camps. As discussed earlier, Rwanda has increased its investment in education over the past years and our findings may, for example, be due to the overall economic development of the country rather than a particular focus on refugee-receiving areas.

The mixed-method approach we use in this article helps us go beyond the statistical analysis and bring forward the perspective of local populations with regard to the impact of refugee camps on education. Although problems regarding the availability of resources, the quality of education, and social relations between refugee and local children were mentioned, locals living near the refugee camps had a diverse set of positive views on the effects of refugees on education and schooling outcomes. Respondents particularly emphasized the government's investments in education in areas surrounding the camp, which is in line with the community-integrated approach applied in Rwanda. Again, however, the challenge is to know whether these outcomes can be attributed to the presence of the refugee camps and the response by the Rwandan government or to other related factors.

This study not only adds to the body of literature on the effects of refugees on local populations, but also can inform policies about how the presence of refugees can contribute to better outcomes for local populations if investments in infrastructure are made in a timely manner and the voice of the locals is heard. The community-integrated approach to education pursued by the Rwandan government seems to have had a positive effect on the access to and provision of educational facilities in communities surrounding the refugee camps. This approach, in combination with increased national spending on education, has probably led to favourable educational outcomes among locals, outcomes which were not negatively affected by the presence of refugees. This approach had particularly positive impacts on the motivation of local children by setting a positive example of studying during hardship, as mentioned in the focus groups. These findings are relevant to many refugee-hosting countries that are in search of durable solutions to refugee inflows.

The extent to which our findings are generalizable to other contexts is limited to certain parts of Africa and to where refugee populations are similar in regard to ethnic composition and the language they speak. The Congolese refugee population in Rwanda is relatively small and very similar to Rwandans in terms of ethnic origin, language and cultural practices. These factors have probably facilitated the integration of the camp locations into their local surroundings. Future research should aim to disentangle the difference between the unique impact of a refugee policy and other societal changes that occur simultaneously. In addition, our outcome measures were mainly related to access to education and educational outcomes, rather than to the quality of education. More work, therefore, needs to take into consideration the quality of schooling that both refugee and local children receive. Especially insights provided by locals who live closer to refugee camps can inform innovative policy frameworks which allow for increased quality in education and constructive interactions between refugee and host communities.

## NOTES

1. Household surveys and focus group discussions were also conducted in the three selected refugee camps, however we do not make use of these data considering the aims of this paper.
2. Random selection for recruitment was based on the master list excluding those already randomly selected to take part in the household survey in order to avoid overlap in participation and excessive burden on any one household.
3. For more information on data collection, the fieldwork report is available upon request.

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## APPENDIX

APPENDIX TABLE

## SUMMARY STATISTICS OF MAIN VARIABLES

	<i>M</i>	<i>SD</i>	Min.	Max.	<i>n</i>
Dependent variables					
Years of schooling	5.75	3.71	0	21	2,646
Primary school completion (1 = yes)	0.49	0.50	0	1	2,646
Independent variables					
Primary age cohort (1 = yes)	0.54	0.50	0	1	2,646
Distance to camp					
<10 km	0.53	0.50	0	1	2,646
<20 km	0.47	0.50	0	1	2,646
Control variables					
Age	29.14	12.97	13	59	2,646
Female (1 = yes)	0.54	0.50	0	1	2,646
Literacy household head (1 = yes)	0.66	0.47	0	1	2,646
Employment household head (1 = yes)	0.98	0.14	0	1	2,639
Female household head (1 = yes)	0.24	0.43	0	1	2,646
Number of children in the hh	2.67	1.64	0	9	2,646
Distance to primary school (in km)	2.86	1.77	0	5.19	2,646
Birth year cohort					
Birth year between <1960	0.03	0.16	0	1	2,646
Birth year between 1960–1970	0.10	0.30	0	1	2,646
Birth year between 1970–1980	0.16	0.37	0	1	2,646
Birth year between 1980–1990	0.21	0.41	0	1	2,646
Birth year >1990	0.51	0.50	0	1	2,646
Close to camp					
Gihembe	0.33	0.47	0	1	2,646
Kigeme	0.34	0.47	0	1	2,646
Kiziba	0.33	0.47	0	1	2,646

Note: Summary statistics for individuals aged between 12 and 60 years of age.