

Inclusive Refugee-Hosting in Uganda Improves Local Development and Prevents Public Backlash

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Abstract

Large arrivals of refugees raise concerns about potential tensions with host communities, particularly if refugees are viewed as an out-group competing for limited material resources and crowding out public services. To address this concern, calls have increased to allocate humanitarian aid in ways that (also) benefit host communities. This study empirically tests whether the presence of refugees in Uganda (one of the largest refugee-hosting countries) has improved public service delivery, and consequently, dampened potential social conflict. The data combines

geospatial information on refugee settlements with unique longitudinal data on primary and secondary schools, road density, health clinics, and health utilization. This study reports two key findings. First, particularly after the 2014 arrival of over 1 million South Sudanese refugees, host communities with greater levels of refugee presence experienced substantial improvements in local development. Second, using public opinion data, we find no evidence that refugee presence is associated with more negative (or positive) attitudes towards migrants or migration policy.

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Inclusive Refugee-Hosting in Uganda Improves Local Development and Prevents Public Backlash[‡]

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1 Introduction

An unprecedented—and growing—number of people have been displaced from their homes, for example by conflict or climate insecurity. Roughly one-third (26 million) of the world’s 80 million forcibly displaced persons are refugees; 8 million are asylum seekers or Venezuelans displaced abroad, and 46 million are internally displaced persons (IDPs) (UNHCR, 2020).¹ Past work suggests that the arrival and settlement of large numbers of displaced people can generate a strong backlash against migrants and migration policies in host communities (Alesina and Tabellini, 2022).² However, this research has focused almost exclusively on a small number of rich democracies, and there are good theoretical reasons to assume this finding does not necessarily generalize to lower-income countries, which host the majority of displaced persons.³ Another strand of research explores the effects of refugees’ presence on economic outcomes (e.g., Verme and Schuettler (2021); Maystadt et al. (2019)). Yet, this literature has not yet explored the possible downstream effects of refugee presence on host–refugee relations. We use the case of Uganda to explore how the presence of large numbers of proximate refugees affects host communities’ welfare with a specific focus on the quality of public services. We then test whether those economic consequences can, in turn, shape mass attitudes toward migrants and migration policies in a low-income setting.

The presence of migrants has had (generally) negative effects on host citizens’ attitudes and behavior in high- and upper-middle-income countries (HMIC). Migrants’ presence has been associated with increased support for restrictive asylum policies (Hangartner et al., 2019) and extreme right parties (Dinas et al., 2019), at the expense of mainstream incumbent parties (Bedasso and Jaupart, 2020; Altındağ and Kaushal, 2020). Partly in response to such shifts in public opinion, policy makers in rich democracies have introduced restrictions on migration (Hatton, 2020; Peters,

¹We use *refugee* to refer to “someone who has been forced to flee his or her country because of persecution, war or violence.” An *internally displaced person* is “someone who has been forced to flee their home but never cross an international border.” And a *migrant* is “someone who leaves their country purely for economic reasons unrelated to the refugee definition, or to seek material improvements in their livelihood.” We recognize that there is ongoing debate over these terms, particularly with the refugee/migrant binary, because it is often unclear where the line between “forced” and “voluntary” migrants lies, and the term “forced migrant” removes agency from the people making well-informed choices to migrate (Crawley and Skleparis, 2018; Mourad and Norman, 2020; Holland and Peters, 2020; Hamlin, 2021).

²We use the terms *host (country) citizens* and *host communities* instead of *native-born citizens*, which is a common term in the immigration literature, because in countries with *jus sanguinis* citizenship such as Uganda (with some exceptions for certain ethnic groups), not all those who are born in the state are citizens. For example, children of refugees are excluded from acquiring citizenship based on birth in Uganda.

³As of 2019, developing countries hosted 85 percent of the world’s 79.5 million displaced people; 28 percent of global refugee flows receive asylum in least-developed countries.

2017). Incumbents often point to such public attitudes and (electoral) backlash to justify their refusal to admit more refugees during crises. Moreover, migrant groups in HMICs are too often the targets of hate crimes (Dancygier et al., 2020) and other forms of violence (Albarosa and Elsner, 2021), especially in times of crisis (Dipoppa, Grossman and Zonszein, 2022). This is notable given the evidence of the negative relationship between hateful behavior and migrant integration (Dancygier and Green, 2010), and the positive effects of successful integration (Hainmueller, Hangartner and Pietrantuono, 2015). In sum, whether an increase in refugees’ presence causes a mass backlash (and/or a violent response) is a timely question that has important implications for both theory and policy.

It is *ex ante* unclear whether the presence of refugees in low-income countries will result in backlashes similar to those found in HMICs. On the one hand, at least four public concerns in HMICs are less relevant in low-income countries. First, given that 73–82 percent of refugees in the Global South relocate in a contiguous neighboring country (UNHCR, 2020), cultural concerns are arguably less salient, as refugees and host communities are more likely to share ethnic, racial, religious, and cultural ties (Dawa, 2020).⁴ Second, low-income countries generally do not maintain expansive welfare systems, so there are fewer worries that migrants will strain host countries’ social benefits (Facchini and Mayda, 2009; Kros and Coenders, 2019). Third, in most developing countries, political parties do not compete based on policy differences; thus there is no clear party to mobilize votes by attacking refugees and liberal refugee policies. Fourth, refugees tend to settle in under-serviced border areas; the influx of humanitarian and development aid may improve the level and quality of local public services. Some evidence suggests that humanitarian aid that targets displacement camps and settlements can have positive externalities on host communities (Taylor et al., 2016; Bilgili et al., 2019).

On the other hand, an influx of a large number of refugees can have negative externalities on host communities in low-income countries in the form of competition on informal low-skilled jobs (Ceritoglu et al., 2017; Aksu, Erzan and Kırdar, 2018), higher prices for food and housing (Rozo and Sviatschi, 2021), disease spread (Kalipeni and Oppong, 1998), and pressure on the environment in the form of deforestation, and land degradation (Black, 2018). Humanitarian aid may also be siphoned away. The severity of such effects—and the extent to which they influence public attitudes toward refugees and migration policy—may depend on how close a community is

⁴Alesina and Tabellini (2022) discusses the primacy of cultural concerns in mass public responses to migrants’ presence in high-income countries.

to refugee settlements. In sum, whether proximity to refugees has different effects on host communities’ attitudes and behaviors in low-income contexts is an open question, which our study seeks to begin addressing.

Using the case of Uganda, we hypothesize that in low-income countries, communities with greater refugee presence will not experience a backlash against migrants and refugee policies as long as these policies (especially those related to resource allocation) ensure that said communities do not carry a disproportionate burden of hosting refugees. We examine redistributive efforts that are designed to ameliorate possible *congestion effects*.

Uganda is an important setting for exploring how refugee presence might affect host communities. Home to 1.4 million refugees (the most in Africa), it is the fourth-largest refugee-hosting country in the world and the seventh largest in the world on a per capita basis (UNHCR, 2020). Uganda has adopted relatively generous hosting policies such as maintaining an “open door” for displaced persons; allowing refugees to freely move and participate in economic activities; granting plots of land for permanent shelters and farming; and, with the help of humanitarian aid agencies, providing access to health care and education services (Ronald, 2020). Given the sheer scale of the refugee inflow and its welcoming asylum and refugee policy, our finding that Uganda has *not* experienced a backlash against refugees among those most directly affected by the country’s asylum and refugee policies offers important lessons.

To explore the effects of refugees’ presence in Uganda, we combine publicly available geocoded Afrobarometer survey data with newly constructed fine-grained georeferenced panel data on service delivery in three domains: access to (primary and secondary) education, health care access and utilization, and road density. We focus on service delivery inputs rather than outcomes since service providers—governments, humanitarian organizations, and UN agencies—can directly affect access, but linking access to outcomes (such as infant mortality) is more complex, materializes with a long lag, and depends on several factors that are outside policy makers’ control. We use ACLED data to explore possible conflict dynamics.

We report two sets of findings. First, we find no evidence that a larger refugee presence increases support for restrictive migration policies (though in some years it is associated with a somewhat heightened sense of personal insecurity). Second, using a difference-in-differences (DiD) research design, we find robust evidence that access to education, health care, and roads significantly improved for those living near refugee settlements, and that these residents recognized

these improvements. We conclude that even if living near a large number of refugees fleeing conflict can make individuals feel less safe (and may be associated with other negative externalities not captured by our study), resource allocation policies that benefit nearby communities can reduce potential backlash against refugees and improve social cohesion between host communities and refugees.

Our paper makes several contributions to the existing scholarship on the impact of refugees' presence on local communities. First, we add to the literature on social cohesion by demonstrating that, in contrast to prior findings in studies of Global North contexts, the presence of large numbers of refugees does not necessarily generally lead to a backlash within host communities; their reactions are highly dependent on the context and the level of refugee presence. Second, we advance the emerging literature that examines the local economic consequences of hosting refugees, which has generally found a mix of negative and positive effects. We highlight the importance of refugee policies—such as Uganda's integrative approach to social services—that seek to decrease the burden of hosting refugees on relatively marginalized populations that live near refugee settlements. Third, our project builds upon research that conceptualizes and operationalizes migrant exposure as geographic proximity. This literature argues that changes in social geography with respect to ethnic diversity can shape political attitudes and behaviors, such as hostility towards migrants (Enos, 2014; Ferwerda, Flynn and Horiuchi, 2017; Hangartner et al., 2019). With our data, we are not only able to operationalize exposure as geographic proximity, but we are also able to incorporate the sizes of nearby refugee populations and multiple refugee settlements for a more comprehensive measure of exposure.

2 Theoretical Motivation

Forced migration is an increasing global challenge. The number of people affected by displacement events more than doubled from 34 million in 1997 to 82 million in 2020 (UNHCR, 2020): 1 percent of the world's current population (1 in 95 people) has been forcibly displaced. Over a third of these people end up as refugees in a foreign country. Understanding the conditions under which host countries are successful (or not) at integrating those who are forced to flee their homes is a humanitarian and economic priority that has important theoretical and policy implications.

Our study builds on three relatively separate strands of research on how the presence of migrants and refugees affects host communities. The first uses public opinion data and election returns

(and in some cases, data on hate crimes) to explore how migrants' presence affects attitudes and behaviors toward migrants and migration policies. Since little public opinion and granular election data is available for developing countries, and given that policy makers in democracies are generally more attuned to their constituents' preferences, such studies have focused almost exclusively on high- and upper-middle-income countries.

With few exceptions (e.g., Vertier and Viskanic, 2020), these studies have found that migrants' presence—usually measured as the share of migrants (or refugees) in an area—substantially increases support for anti-immigration policy positions in Germany (Schaub, Gereke and Baldassarri, 2021; Otto and Steinhardt, 2014), Italy (Barone et al., 2016), Switzerland (Brunner and Kuhn, 2018), France (Edo et al., 2019), Denmark (Dustmann, Vasiljeva and Piil Damm, 2019), Austria (Halla, Wagner and Zweimüller, 2017; Steinmayr, 2021), Greece (Hangartner et al., 2019), and Colombia (Rozo and Vargas, 2021). As mentioned above, some of the factors that drive these negative effects may be less relevant in low-income countries. We contribute to this literature by exploring the effect of refugees' proximity on the migration policy preferences of host community populations in a low-income country.⁵

Focused almost exclusively on the Global South, the second strand of research explores whether the presence of refugees is associated with a greater risk of conflict (Jacobsen, 2002). Earlier studies highlighted possible tensions with local citizens that are exacerbated by resource competition or ethnic rivalry (Salehyan and Gleditsch, 2006; Rügger, 2017). Much of this scholarship recognizes that refugees are often victims of conflict (Onoma, 2013; Fisk, 2018; Böhmelt, Bove and Gleditsch, 2019; Savun and Gineste, 2019). Recent research suggests that conflict between host communities and refugees may be avoided if refugees' presence attracts aid and economic activity that benefits both (Lehmann and Masterson, 2020). We complement this literature on the refugee–conflict nexus, which thus far has relied on cross-country analysis, by exploiting—following Zhou and Shaver (2021)—within-country variation in exposure to refugee settlements.

The third strand explores the welfare consequences of refugees' presence on host communities in developing countries. However, without auxiliary data (such as survey data on policy preferences regarding refugee policies), these studies cannot tell us how the economic consequences of refugee hosting affect social cohesion (if at all). Moreover, almost all studies in this research domain strand of the literature concentrate on a single domain, such as labor market outcomes (Fallah, Krafft and

⁵See also Zhou (2018), which examines how the presence of refugees can change local citizens' opposition to citizenship inclusion in sub-Saharan Africa.

Wahba, 2019; Ceritoglu et al., 2017), housing prices (Rozo and Sviatschi, 2021) and/or commodity prices (Tumen, 2016), healthcare (Aygün, Kirdar and Tuncay, 2020; Wang Sonne and Verme, 2019), education (Tumen, 2021; Bilgili et al., 2019), or general welfare (Taylor et al., 2016). Yet focusing on a single domain raises the concern that the overall effect on host communities’ welfare may be different than the effect identified in a particular domain. Within each domain, past work on the economic consequences of refugee proximity has documented considerable variation: some studies report positive, some negative, and some null effects. Additionally, as with many factors that influence economic activity, within host communities there are winners and losers (Ruiz and Vargas-Silva, 2013; Whitaker, 2002). This suggests that the effect of refugee proximity on economic activity and the delivery of social services is contextual, and depends on a host of factors—particularly resource allocation policies.

We contribute to this body of work in three main ways. First, we explore how refugees’ presence affects three domains: health care access and utilization, primary and secondary education services, and infrastructure (roads) quality. The consistency of the findings across these domains increases our confidence in the direction of the effect of refugee presence. In a second contribution, unlike past studies, we link the economic consequences of refugees’ presence and locals’ policy preferences and behavior. Third, we use a continuous measure of refugees’ presence that integrates information on both refugee settlements’ distance from the host community and population size, and allows localities to be affected by more than one settlement.

Building on this prior research, we test whether government and humanitarian aid agencies resource allocation decisions ensure that nearby communities do not carry a disproportionate burden of hosting refugees. We first explore whether localities that are geographically *proximate* to *larger* refugee settlements (i.e., those that have greater exposure to refugees) have better access to public goods and development outcomes because they benefit from the increased aid and resources flowing into these settlements. If this is the case, we contend, a backlash against refugees and refugee policies in host communities is much less likely.

3 Context

As several of its neighbors—including South Sudan, Burundi, and the DRC—have experienced war and displacement, Uganda hosts one of the largest refugee populations in the world (see Figure 1). About 65 percent of the country’s refugee population is from South Sudan; the remainder come

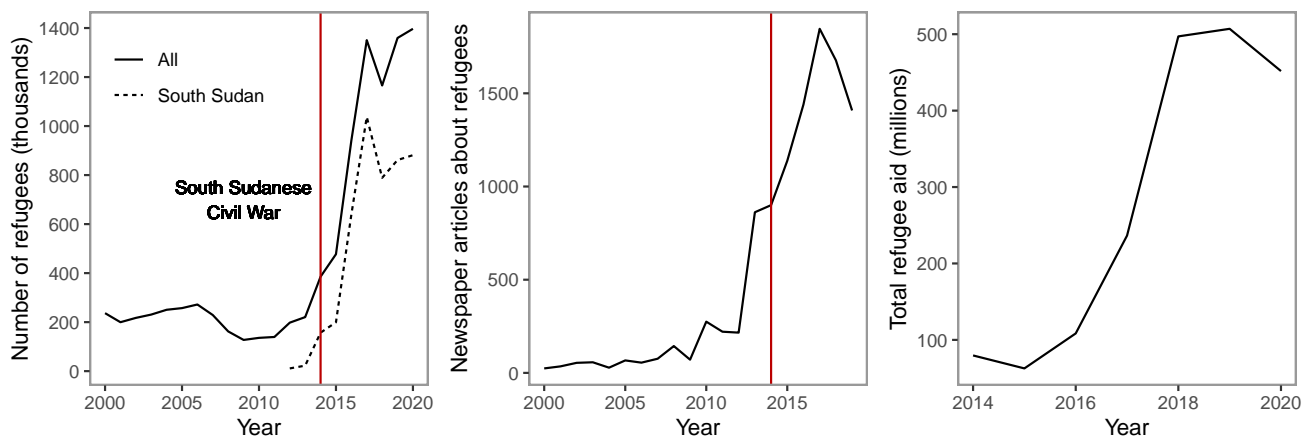


Figure 1: : Impact of the South Sudanese civil war on the number of refugees in Uganda (left), the salience of the refugee issue in Uganda (center), and refugee aid levels from international organizations (right). The red line indicates the onset of the war in December 2013. Salience of the refugee issue is measured as the number of local newspaper articles that mention refugees or migration. Data sources: UNHCR, Lexis-Nexis, Factiva.

from other East African countries, mainly the DRC (27 percent) and to a lesser extent Burundi, Somalia, Rwanda, Eritrea, and Ethiopia (World Bank, 2019).

Uganda’s liberal refugee and asylum policies—as codified in its 2006 National Refugees Act—partly explain why it attracts so many refugees (Blair, Grossman and Weinstein, 2021*b*). Based on data collected on refugee and asylum policies in a large sample of 128 developing countries, Blair, Grossman and Weinstein (2021*a*) ranked Uganda as having the second-most liberal refugee and asylum policies in their sample. It is also a party to the 1951 Convention Relating to the Status of Refugees and its 1977 protocol, and a signatory of the 1969 Organization of African Unity Convention Governing the Specific Aspects of Refugee Problems in Africa.

Policy framework for refugee hosting in Uganda

Unlike in many other countries—including neighboring Tanzania and Kenya, where refugees are forced to live in camps and have limited rights—those in Uganda can self-settle. Over 95 percent of refugees, however, choose to reside in one of 42 designated refugee settlements across 13 districts where they are provided with basic assistance such as small land plots, food, and non-food items.⁶ UNHCR manages the allocation of refugees to various settlements in close collaboration with the Office of the Prime Minister. Allocation decisions are based mainly on the settlement’s capacity, the refugees’ county of origin and ethnicity, and whether they are joining family members already

⁶Asylum seekers in Kampala and other urban centers are not provided with such assistance.

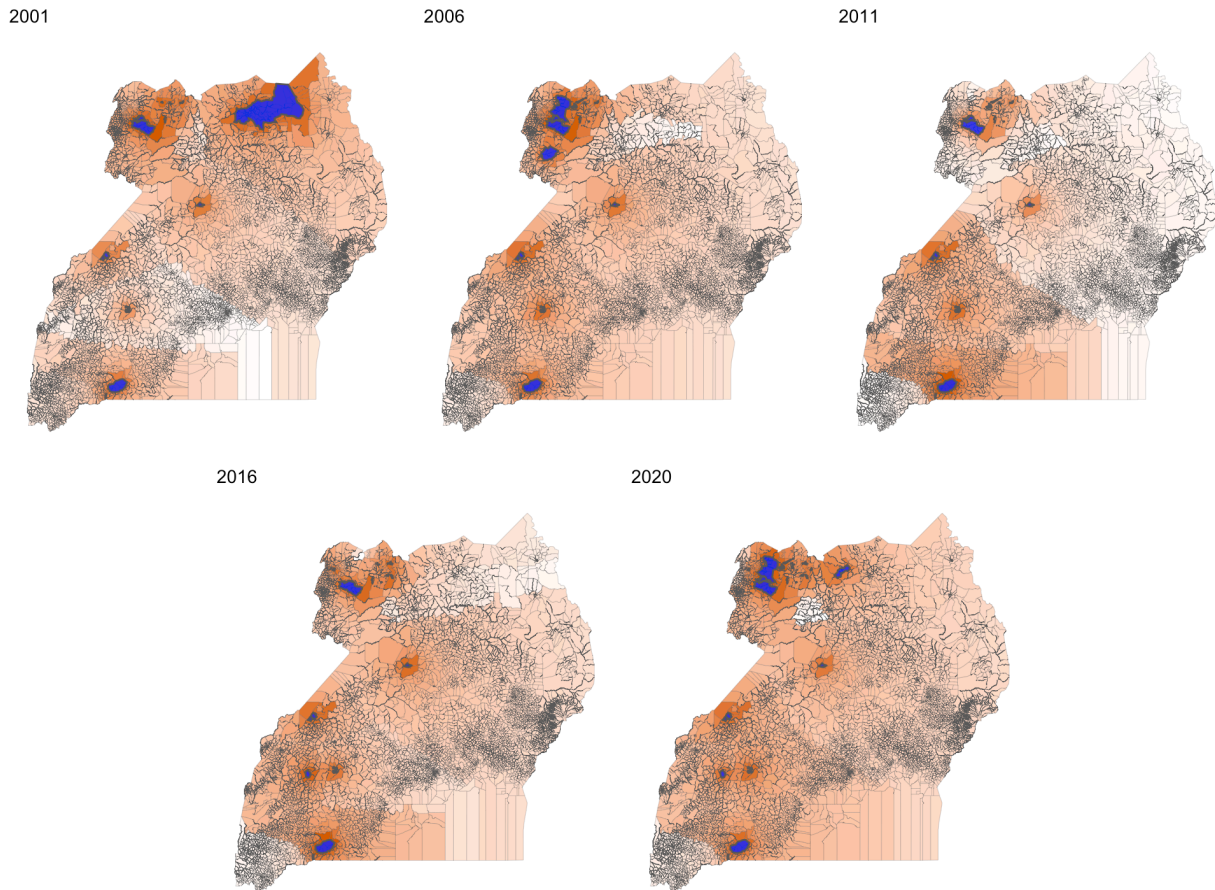


Figure 2: Locations of refugee settlements, 2001–2020. Refugee settlements indicated in blue, and parishes (our unit of analysis) in orange. Darker orange parishes denote higher level of exposure to refugees.

residing in the country (d’Errico et al., 2021). Thus with the exception of the small number of refugees who forgo assistance and reside in towns, refugees in Uganda do not self-select into specific settlements.

Two major regulatory frameworks guide the settlement of refugees in Uganda—the 2006 National Refugee Act and the 2010 Refugee Regulations introduced to operationalize it. This legal framework provides refugees with the right to documentation (e.g., identity cards, birth certificates, death certificates, etc.), the same rights as Ugandan nationals to access social services such as health, water and sanitation and education, the right to land for agricultural use and shelter, the right to start a business or seek employment, freedom of movement, the right to receive fair justice, the principle of family unity, the right to transfer assets within and outside the country, the right of association regarding non-political and non-profit associations and trade unions, and

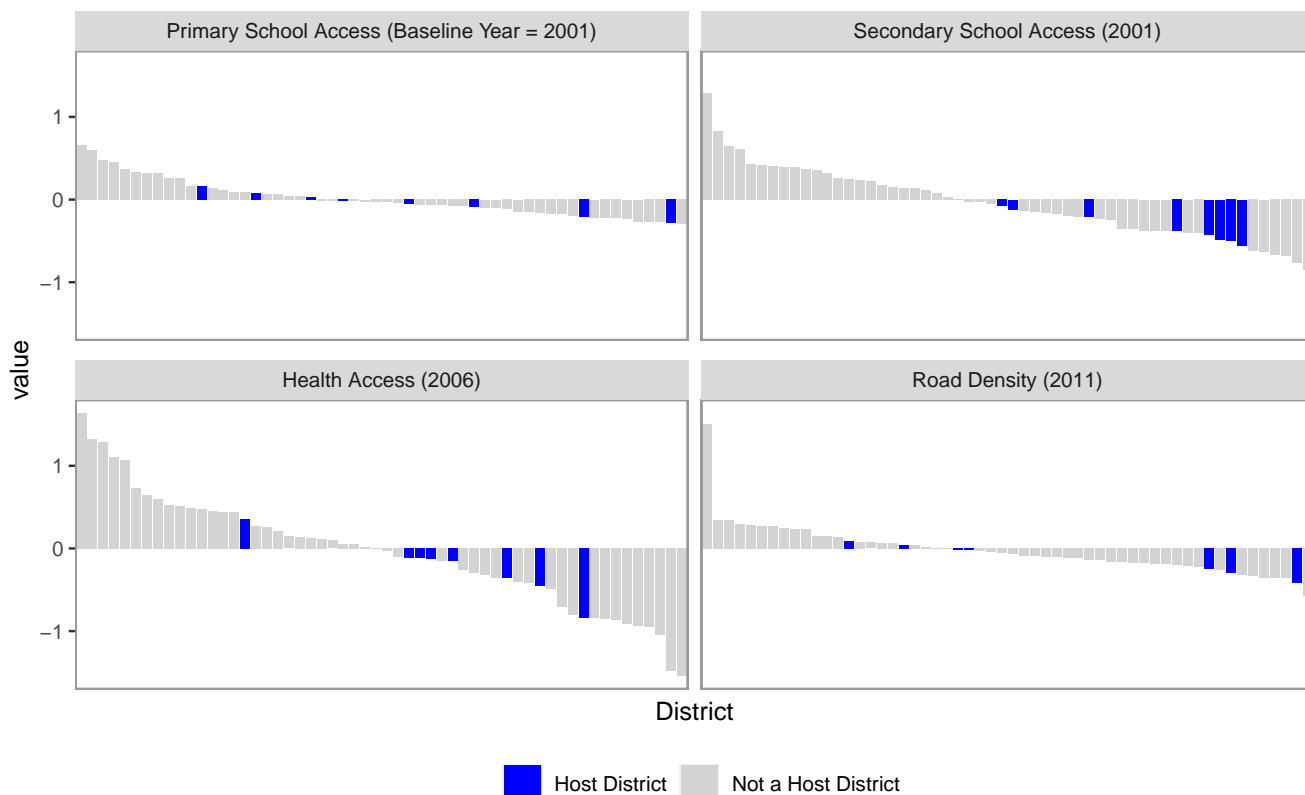


Figure 3: Districts’ baseline public goods provision ranked from best (left) to worst (right). Refugee-hosting districts (blue) typically provided lower-quality public goods than non-hosting districts (gray) at baseline.

freedom of religion (Sharpe and Namusobya, 2012).

These rights and entitlements allow refugees to establish their own livelihoods and attain a degree of self-reliance (Ronald, 2020). However, since refugee-hosting districts are among the poorest and least developed in the country, access to basic services such as health care, education, and sanitation has been a major concern (World Bank, 2019).

Figure 2 maps the refugee settlements (in blue) for our five study years. The parishes—our unit of analysis, further discussed below—are shaded in orange by the intensity of their refugee presence: in line with our measure, the darkest areas surround the settlements. These maps also show that most settlements are located in the West Nile subregion; about 70 percent of refugees live in this area. Figure 3 compares refugee-hosting districts (blue) with non-hosting districts (gray) based on the quality of their public goods provision in our baseline year 2001. Higher values correspond to better access to primary and secondary education, health, and road density.⁷ Prior to the influx of refugees after 2014, hosting districts generally had worse public goods provision

⁷All four outcomes are standardized to have a mean of 0 and SD of 1.

and infrastructure than non-hosting districts.

Uganda's Self-Reliance Strategy (SRS) integrated services for refugees and host communities (by allowing refugees free access to government health and education services) and promoted self-reliance among both communities in the long term (by allocating land to refugees). Since the arrival of large numbers of South Sudanese refugees, levels of international aid targeted at refugees in the country drastically increased from about US\$32 million in 2015 to US\$507 million in 2019 (see Figure 1).⁸ The SRS was updated in 2004 to address concerns that tensions may arise among locals if the refugees received superior services, and in recognition that refugees were likely to stay for a protracted period. The SRS was replaced by Development Assistance for Refugee Hosting Areas but kept its initial focus. The Refugee and Host Population Empowerment strategic framework updated the SRS model in 2016 (Ronald, 2020). The Comprehensive Refugee Response Framework (CRRF), which replaced the SRS model in 2017, more strongly emphasizes the development approach to hosting refugees.⁹ These plans operationalize integration by linking humanitarian and development programming and interventions; the Ministry of Health (MoH) coordinates and implements health services integration through the district health system (Garimoi Orach and De Brouwere, 2006). Aid agencies are expected to support host districts' health services rather than directly funding refugee settlements. This approach is designed to prevent host communities from carrying a disproportionate burden for hosting refugees, and to ensure that public services made available by the international humanitarian community do not disproportionately favor refugees at the expense of locals.

To descriptively confirm that aid targets refugee settlements and nearby host communities, we map out all current projects conducted by the World Bank related to refugees. These projects cover infrastructural improvements (e.g. bridges, roads, schools, health clinics), environmental improvements (forestry, agriculture, solar panels), and entrepreneurial grants. In SI Section S3, we descriptively show that they are precisely located in and near where refugee settlements are,

⁸These humanitarian aid levels are from all Refugee Response Plan funders, as reported to us by the UNHCR Uganda country office.

⁹Although the current CRRF falls outside of our study period, it emphasizes the same goal as previous frameworks—that international humanitarian and development actors and government ministries, departments, and agencies coordinate to support both refugees and host communities. For example, "in 2020, Uganda explicitly included refugees in the new National Development Plan III by calling for the integration of refugee programming in all national, sectoral and district development plans and statistics" (p.9, National Plan of Action 2021–2022 to Implement the Strategic Direction for the Global Compact on Refugees and the CRRF in Uganda, Office of the Prime Minister). See <https://opm.go.ug/comprehensive-refugee-response-framework-uganda/> for more information.

thereby also benefiting local host communities.

It is somewhat unclear how successful Uganda’s integration policy has been, because only a handful of studies has analyzed how the presence of refugees has affected welfare outcomes in host communities. With the exception of Kreibaum (2016), these studies have focused on general welfare (income and consumption) rather than service delivery. Other studies explore environmental outcomes. Based on focus group discussions in host communities near the Nakivale refugee settlement, Ronald (2020) reports that host communities are concerned about environmental degradation. Similarly, based on stakeholder interviews, IRRI (2019) also reports tensions over natural resources, especially around the allegation that refugees engage in illegal logging.¹⁰

Zhu et al. (2016) assess the impacts of World Food Program aid within a 15 km radius of two refugee settlements in Uganda. They find that the average refugee household receiving cash food assistance increases the annual real income in the local economy. Here, locals around the settlements benefited from aid provided to refugees because on average, they are in a better position to increase their supply of goods and services as the local demand rises. Kreibaum (2016) corroborate the finding that host communities near refugee settlements in Uganda have relatively higher consumption levels using data on three south-western districts, though the effect is small in magnitude. d’Errico et al. (2021) find that the presence of refugees has only modest effects on local households’ consumption levels. The authors attribute this finding *not* to an increase in demand for local produce, but to greater participation by host households in paid employment in aid agencies, and to the resulting increase in wage incomes. However, the effects they observe are small, and concentrated in areas very near refugee settlements.¹¹

Most relevant to our study, Kreibaum (2016) reports that access to private primary schools (but not public schools or health services) has increased at a greater rate as a function of refugee presence. They measure refugee presence at the district level (refugee share of the district population) and focus on the south-western districts between 2002 and 2010. Thus, by including all of Uganda at the parish-year level as well as the post-2014 influx, we extend their analysis. In sum, our study is the first to measure the effects of refugee presence on service delivery outcomes in Ugandan host communities.

¹⁰See Gianvenuti, Jalal and Kirule (2020) for more details.

¹¹Note that both Zhu et al. (2016) and d’Errico et al. (2021) use original cross-sectional surveys. Without pre-treatment data, it is harder for them to make causal claims.

4 Research Design

In this section we describe the study’s data sources, the key variables and how we construct them, and our empirical strategy. Our study relies on spatial and temporal variation of refugee settlement in Uganda from neighboring countries.

4.1 Parish-Years as Units of Analysis

Our main unit of analysis is parish-years. Parishes ($N = 5,133$) are the smallest administrative unit above the village level; they typically encompass an average of five villages. Our study period covers five years: 2001, 2006, 2011, 2016, and 2020. Since the arrival of large numbers of South Sudanese refugees began in 2014, we have several prior years to compare periods when parishes hosted moderate numbers of refugees with the much larger numbers in 2016 and 2020.

Over the past two decades, the number of parishes in Uganda has increased from 5,238 in 2002s census to 7,241 in 2014s census to over 10,000 today (2016). This administrative fragmentation means that our units are not stable over our study period. In a major contribution, we constructed an original parish dataset to facilitate research throughout this time period.¹² We use shapefiles, census data, matching techniques, and manual corrections to ensure that we have the same administrative units over time, using 2001 parish boundaries as the constant unit throughout.

We do not include all parishes in the main specification. Given that we use a continuous measure of refugee presence, it is not *a priori* clear whether a greater refugee presence matters beyond a certain radii. We therefore test the sensitivity of our findings to different sample radius cutoffs: parishes within 100km, 150km, 200km of any refugee settlement as well as all Ugandan parishes. Here we present results with the 150km cutoff as our main specification; SI Section S4 reports the results with the other cutoffs.

4.2 Main Independent Variable: Refugee Presence

For our main independent variable of interest, we create a measure of refugee presence for each parish-year. We obtained shapefiles of refugee settlements over time, and collected population data for each settlement in our study years from UNHCR reports and with the help of UNHCR Uganda country staff. Figure S4 in SI Section S1.2.1 shows which settlements are open and their population levels across the study years.

¹²For details, see Section S1.1 in the Supplementary Information (SI), <https://osf.io/sv92q/>.

We use this data to calculate a matrix of distances between each parish-year and each settlement open that year. We calculate distances from the boundaries of the parish polygons and refugee settlement polygons, as opposed to using their centroids, since some of these settlements are quite large. Along with distances to each settlement, we also know the population size of each settlement across the study years. Intuitively, our measure of exposure should be greater for parishes that are *closer to larger* settlements, particularly if they are near *multiple* settlements.

We therefore operationalize *refugee presence* in these three ways:

1. Nearest: For each parish, exposure is only based on the nearest settlement n in year t , $\log\left(\frac{\text{population}_{nt}}{\text{distance}_{nt}+1} + 1\right)$, in which distance is measured in kilometers.
2. Nearest + 20: For each parish, exposure takes into account not only the nearest settlement n in year t , but also all settlements i within 20km of the parish, $\log\left(\frac{\text{population}_{nt}}{\text{distance}_{nt}+1} + \sum_{i \in \text{rad}_{20km,-n}} \frac{\text{population}_{it}}{\text{distance}_{it}+1} + 1\right)$.
3. Nearest + 50: For each parish, takes into account the nearest settlement n in year t and all settlements i within 50km of the parish, $\log\left(\frac{\text{population}_{nt}}{\text{distance}_{nt}+1} + \sum_{i \in \text{rad}_{50km,-n}} \frac{\text{population}_{it}}{\text{distance}_{it}+1} + 1\right)$.

We take the logarithm of the quotient of settlement population and distance; otherwise, this measure would be left-skewed since most parishes have low levels of exposure to refugees. We standardize all three measures to have a mean of 0 and standard deviation (SD) of 1 for ease of interpretation. For parishes within the 150km cutoff, Figure 4 displays their raw exposure measures (jittered) by year and the mean values (blue). The figure illustrates that there is a marked increase in all measures of exposure in 2016, which we would expect given the post-2014 influx of refugees. Figures S5 and S6 in the SI also show the distribution of our exposure measures. Following Maystadt and Verwimp (2014) and Maystadt and Durantón (2019), our measures of refugee presence are continuous, consider both the size of and distance to the proximate settlements, allow a locality to be affected by multiple settlements, and are more directly related to theory.

4.3 Outcomes: Public Goods Access and Utilization, Attitudes toward Migrants, and Insecurity

The main outcomes of interest for public goods and development include newly constructed geocoded data on primary schools, secondary schools, health clinics and hospitals, health utilization, and road density. First, our primary school data on over 19,500 schools comes from the Uganda Education Management Information Systems, and is supplemented by about 2,700 additional schools manually collected by a Ugandan education consultant we hired to do manual checks. For each primary school, we have their geographic coordinates, founding year, and whether they

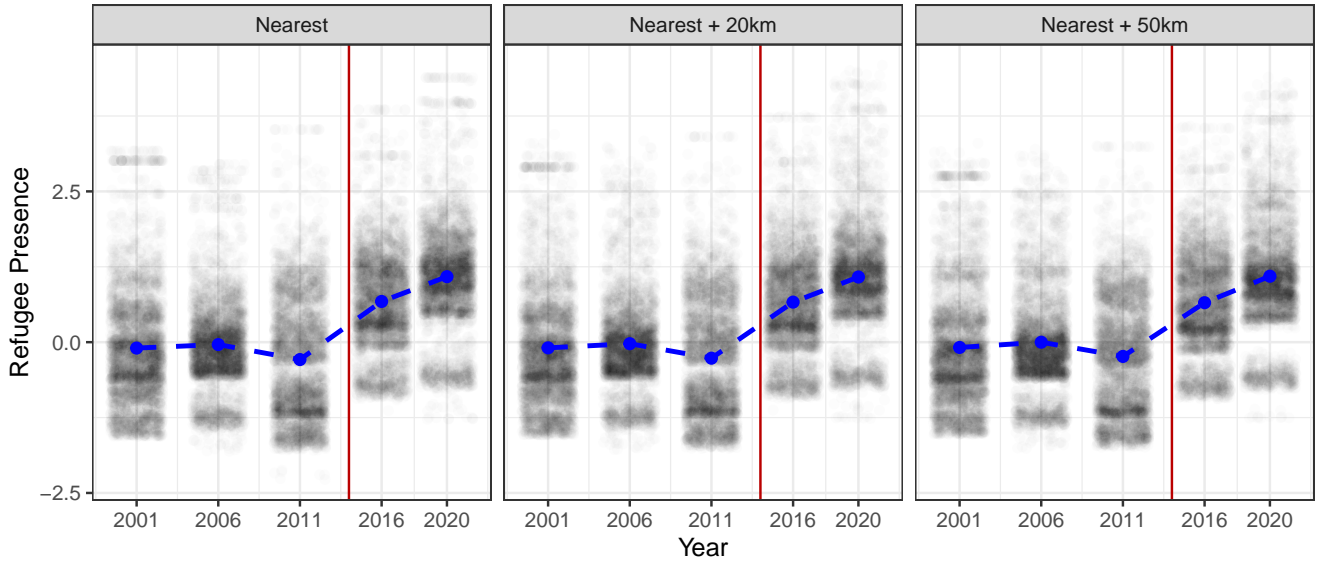


Figure 4: Levels of refugee presence, parishes within 150km. The figure shows that for parishes within 150km of any refugee settlement, our three alternative refugee presence measures all increase after the December 2013 start of the South Sudanese civil war (red line).

were government funded (public) or non-government funded (private).¹³ Intersecting these points with our baseline 2001 parish shapefile gives us the number of primary schools per parish-year (and by type). We normalize these values per 1,000 primary-school-age children for our measures of *Public Primary School Access* and *Private Primary School Access*.

Second, we use data on secondary schools provided by the Uganda Ministry of Education that was independently verified by the World Bank. For the more than 3,600 secondary schools, we have geographic coordinates, founding year, and whether the school is public or private. We similarly construct measures for *Public Secondary School Access* and *Private Secondary School Access* by normalizing the number of secondary schools (by type) per 1,000 secondary-school-age children. For more details on primary and secondary school data construction, see SI Sections S1.3 and S1.4.

Third, to measure *Health Access*, we compiled a geocoded list of approximately 6,800 health facilities in Uganda by merging the 2006 health facility list from the Uganda Bureau of Statistics and the 2012 and 2017 master facilities lists from the MoH. For this outcome we have three time periods: 2006, 2011, and 2016. Uganda has five types of health facilities, ranging from HC-I (small clinic) to HC-V (hospital). A valid health access index should be able to capture three dimensions: (a) *distance* to the nearest health facility, (b) how *crowded* the facility is based on how

¹³Note that private does not mean students are necessarily paying tuition; it simply means the school is largely funded by non-government funds.

many people it serves, and (c) the *type of facility*, since ‘higher-level’ facility types offer a wider range of health services and have more and better trained staff. The intuition is that parishes have better health access if their residents can travel shorter distances to facilities that serve fewer people and offer more (and better) services. To combine these three factors, for each parish, we calculated the distance and population served to the nearest facility of each type.¹⁴ We then rescaled and transformed these measures (since shorter distances and fewer people indicate better access), averaged across the five facility types, and standardized it.

Fourth, since health access is based only on the number of *new* facilities, it does not capture improvements to existing facilities (e.g., more providers, equipment, and medications). Although we do not have data on these improvements during our study period, we proxy for healthcare *quality* by including a measure of *Health Utilization*. Unlike the previous measures, which are constructed at the parish-year level, health utilization is an individual-level measure. It is derived from Demographic and Health Surveys (DHS) of over 30,000 Ugandan children and their households in 2006, 2011, and 2016. Our standardized utilization measure averages child health services (e.g., vaccinations, deworming, iron supplements), their mothers’ maternal health services (e.g., tetanus injections before and during pregnancy, antenatal visits, delivery by health professionals), and household measures (e.g., insecticide-treated mosquito nets). Reassuringly, *Health Utilization* is positively correlated with *Health Access*. For more details on how both variables are constructed and validated, see SI Section S1.5.

Fifth, to create a measure of *Road Density* for 2011, 2016, and 2020, we use two data sources: the Global Roads Open Access Data Set gathered by the NASA Socioeconomic Data and Applications Center from 2010, and the World Food Programmes road networks shapefile from OpenStreetMap for 2017 and 2020. For each parish polygon, we extract the total length of roads (km), weighted by the speed limit of each type of road. There are six types of roads in Uganda, ranging in speed from trail to highway. See SI Section S1.6 for more details on road density data construction.

Lastly, to assess public opinion, we use the Afrobarometer surveys Rounds 3–8, which roughly correspond to our study years. The Afrobarometer is an in-person, nationally representative survey. For Uganda, each round has roughly 2,400 adult citizen respondents, so for this analysis our units are respondent-years (as opposed to parish-years). Note that this survey data is repeated cross-sections, not panel, and not all questions are asked every round. We evaluate the following questions

¹⁴For HC-I, we use a binary indicator of whether a parish has an HC-I rather than the distance, because many parishes have one or more.

for attitudes towards migrants and migration policy:

- Migrant as Neighbors (Rounds 5 and 6):

For each of the following types of people, please tell me whether you would like having people from this group as neighbors, dislike it, or not care:
Immigrants or foreign workers. Strongly Dislike (1)... Strongly Like (5).

- Migrants can Move Freely (Round 6):

Statement 1: People living in East Africa should be able to move freely across international borders in order to trade or work in other countries.
Statement 2: Because foreign migrants take away jobs, and foreign traders sell their goods at very cheap prices, governments should protect their own citizens and limit the cross-border movement of people and goods.
Strongly Agree with Statement 1 (1)... with Statement 2 (5).

We capture possible support for restrictive migration policies by exploring preferences for more expansive or limited naturalization criteria using a two-part question: *In your opinion, which of the following people have a right to be a citizen of Uganda? A citizen would have the right to get a Ugandan passport and to vote in Ugandan elections if they are at least 18 years old:*

- Born Non-Ugandan (Round 5):

A person born in Uganda with two non-Ugandan parents?
Yes (1)/No (0).

- Able to Naturalize (Round 5):

A person who came from another country, but who has lived and worked in Uganda for many years, and wishes to make Uganda his or her home?
Yes (1)/No (0).

To assess feelings of insecurity, we use the following two questions:

- Feel Unsafe in Community (Rounds 5 and 6):

Over the past year, how often, if ever, have you or anyone in your family:
Felt unsafe walking in your neighbourhood? Never (0)... Always (4).

- Feared Crime (Rounds 3 to 6):

Over the past year, how often, if ever, have you or anyone in your family:
Feared crime in your own home? Never (0)... Always (4).

Since the possible responses to all of these questions are on different scales, we standardize all Afrobarometer measures to have a mean of 0 and SD of 1 for ease of comparison and interpretation.

To examine whether actual levels of insecurity changed as a function of refugee presence, we use ACLED data, which geocodes violent events. For each parish-year, we construct a binary variable, *Any Violent Event*, which equals 1 if any of the following events occurred: violence against civilians, riot, attack, mob violence, or violent event.

4.4 Control Variables

We (flexibly) control for the following covariates in our parish-year analyses. From the 2002 census, we include measures of each parish’s population, average age, proportion male, literacy rate, unemployment rate, agriculture share, share of the parish population that is coethnic with the president, and average household wealth (based on a composite index of household items). We also include a binary indicator from ACLED for any violent events from 2002, as well as each parish’s distance to the nearest oil well, distance to the nearest border, distance to a major road, and distance to Kampala, Uganda’s capital. To prevent post-treatment bias, we only use the 2002 measures of these variables. We interact these time-invariant variables with year to allow their effects to change over time.

For the individual-level analyses—the *Health Utilization* outcome based on the DHS and Afrobarometer survey items—we control for respondents’ gender, age, urban or rural residency, household wealth, and education attainment, and for location-based controls (distance to the nearest border, to the nearest major road, and to the capital). We further interact these demographic and location-based controls by year.

4.5 Empirical Strategy

Our main analysis uses a time-varying DiD research design. We run the following OLS model interacting refugee presence (time varying) with year, interacting time-invariant controls with year, and including parish, year, and region fixed effects, with standard errors clustered at the parish level:

$$\begin{aligned}
 y_{it} = & \eta_i + \eta_t + \eta_r + \beta_1 \text{exposure}_{it} + \beta_2 \text{exposure}_{it} \times \mathbf{1}\{\text{year}_{it} = 2006\} + \beta_3 \text{exposure}_{it} \times \mathbf{1}\{\text{year}_{it} = 2011\} \\
 & + \beta_4 \text{exposure}_{it} \times \mathbf{1}\{\text{year}_{it} = 2016\} + \beta_5 \text{exposure}_{it} \times \mathbf{1}\{\text{year}_{it} = 2020\} \\
 & + \lambda_1 \mathbf{x}_i \times \mathbf{1}\{\text{year}_{it} = 2006\} + \lambda_2 \mathbf{x}_i \times \mathbf{1}\{\text{year}_{it} = 2011\} + \lambda_3 \mathbf{x}_i \times \mathbf{1}\{\text{year}_{it} = 2016\} \\
 & + \lambda_4 \mathbf{x}_i \times \mathbf{1}\{\text{year}_{it} = 2020\} + \epsilon_{it}
 \end{aligned}$$

When we only have 1 year of observations for an outcome (certain Afrobarometer questions were only asked in a single round), we run a cross-sectional analysis with region fixed effects.

5 Results

5.1 Refugee Presence Improves Local Public Goods

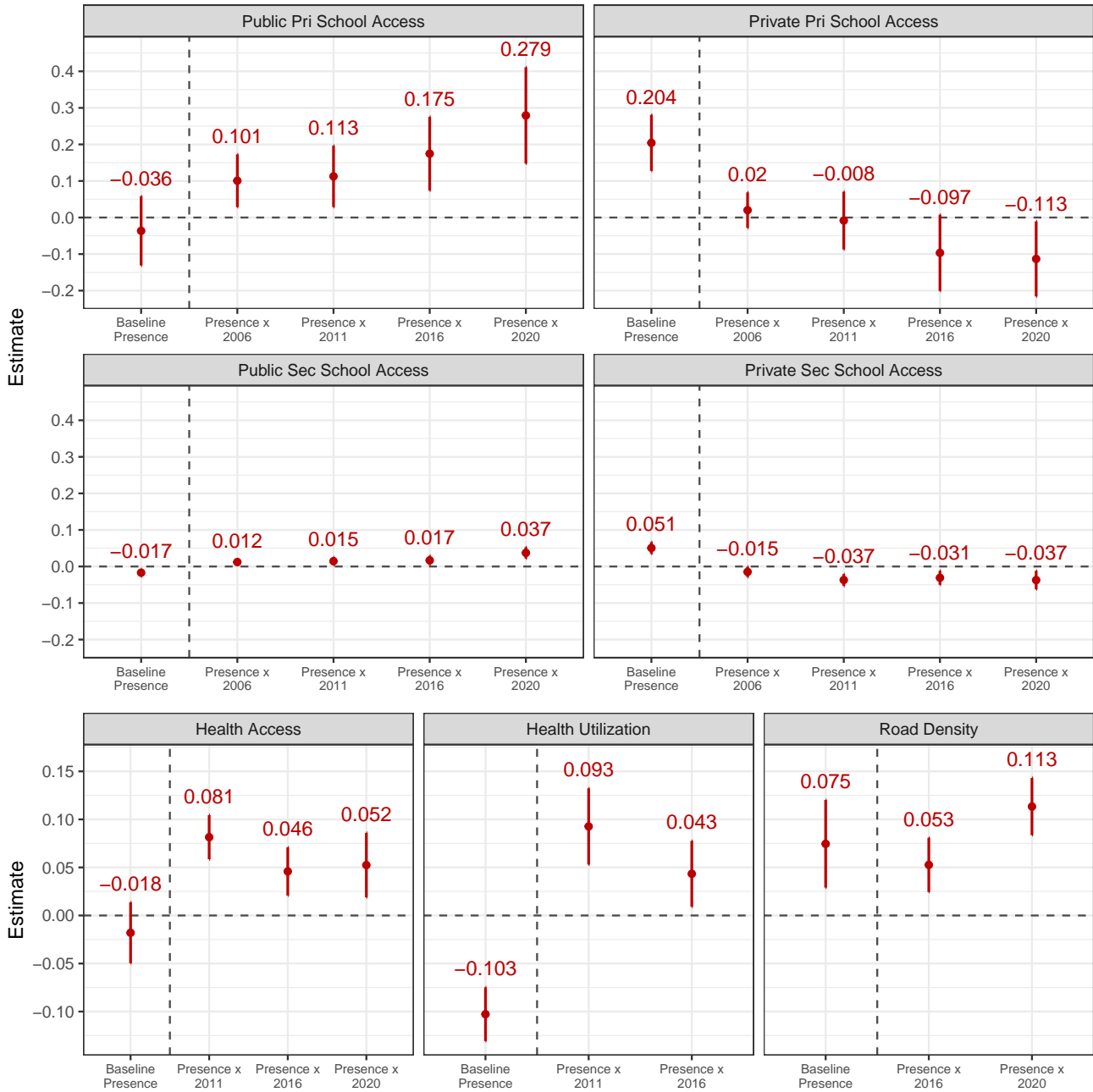


Figure 5: Effect of refugee presence on local development and public goods provision. The figure illustrates that parishes with higher levels of refugee presence experience improvements in all four development outcomes. The results are from OLS DiD models for parishes within 150km of any refuge settlement, interacting Nearest + 20km Refugee Presence (time varying) with year, interacting controls with year, including year and regional fixed effects. Standard errors are clustered at the parish level. Estimates include 95% CIs.

Overall, we find that parishes with a greater refugee presence, particularly after the recent influx, have better access to social services. Furthermore, we do not find evidence that greater levels of refugee presence provoke backlash in public opinion against migrants and migration policies. We report the results using the *Nearest + 20* refugee presence measure, along with a 150km radius cutoff. As robustness checks, SI Section S4 shows the results using all presence measures and cutoffs. Figure 5 displays positive effects across all four development outcomes. For these plots, *higher values* correspond to *greater access* and *better infrastructure*. Note that as per our DiD regression model described above, ‘Baseline presence’ (in the figures’ x-axis) refers to the multivariate association between a 1-SD increase in refugee presence and the outcome of interest. By contrast, ‘Presence \times 2006,’ ‘Presence \times 2011,’ ‘Presence \times 2016,’ and ‘Presence \times 2020’ refer to the *change* in this multivariate relationship compared to the baseline year (usually 2001).

The top row of the figure displays the results for primary and secondary school access (the number of schools normalized by school-age children). It shows that in 2001, a 1-SD increase in refugee presence was associated with less access to *public primary schools* (-0.04 schools per 1000 primary school-age kids). Parishes with a higher level of exposure to refugees begin witnessing greater access to public schooling starting in 2006 with an effect size of 0.1, and this positive effect increases in all subsequent years: 0.11 in 2011, 0.17 in 2016, and 0.28 in 2020. As expected, we observe positive effects starting in the 2000s, when Uganda’s refugee-hosting policies emphasized self-sufficiency for refugees and benefits for hosting communities. The largest effects are after 2014, when large numbers of South Sudanese refugees began to arrive (followed by an increase in humanitarian aid disbursements). For *private primary schools* on the other hand, a 1-sd increase in refugee presence at baseline was associated with higher access (0.2 schools per 1000 primary school-age kids). Yet for subsequent years, there is no change based on greater refugee presence; there are no increases in the number of non-government-funded primary schools as a function of exposure. By 2020, the effect is negative at -0.11, which suggests a substitution effect. Since there are more investments in public primary schools, there is less need for non-government-funded primary schools in these refugee-hosting areas.

Turning to secondary schools, we find a similar pattern to primary schools. In the baseline year of 2001, areas with higher levels of refugee presence had, on average, better access to *private secondary schools* (0.2 schools per 1000 secondary school-age kids) and somewhat worse access to *public secondary schools* (-0.04 schools per 1000 secondary school-age kids). There was a small

increase in access to public secondary schools and a small reduction in access to private schools in subsequent years compared to baseline. This suggests that while in the past the private sector stepped in to provide schooling in underserved peripheral areas, the significant increase in access to primary and secondary public schools that followed the mass influx of refugees gradually hollowed out private schooling in areas with greater exposure to refugee settlements.

The bottom row reports the effects for health access (proximity to health facilities, normalized by the population served, and weighted across five facility types), health utilization (averaged across utilization measures for children and their families sampled by the DHS), and road density (density within each parish-year weighted by road quality type). In 2006 (the baseline year for health outcomes), households and parishes with a higher level of refugee presence had worse health utilization and somewhat worse access. However, as with other service delivery domains, we find that compared to baseline, health access improved for more exposed parishes starting in 2011 (0.08 sd), and continued to improve in 2016 (0.05 sd) and 2020 (0.05 sd). Health utilization also improved for more exposed parishes starting in 2011 (0.09 sd) and continued in 2016 (0.04 sd).

The bottom-right graph displays the results for roads: compared to the baseline year of 2011, when refugee presence was already positively associated with road density, the changes in the effect in 2016 (0.05 sd) and 2020 (0.11 sd) are positive and significant. SI Section S4.1 confirms that these results are robust to different specifications. Since we are using a DiD specification, SI Section S2 shows the lags and leads for the development outcomes.

5.2 Refugee Presence Does Not Lead to Backlash

Our second set of outcomes proxy for a possible backlash. Figure 6 examines how refugees' presence affects public opinion and insecurity. Recall that all Afrobarometer outcomes are standardized to have a mean of 0 and an SD of 1, whereas the ACLED outcome of *any violent event* is binary (0 or 1). The top row of Figure 6 focuses on attitudes towards migrants and migration policy; *higher values* indicate being more *pro-migrant*. Plot 1 shows that, compared to 2011, Ugandan citizens with a higher level of exposure to refugees are no more or less welcoming of migrants than Ugandans living in parishes with lower levels of refugee presence after 2014.

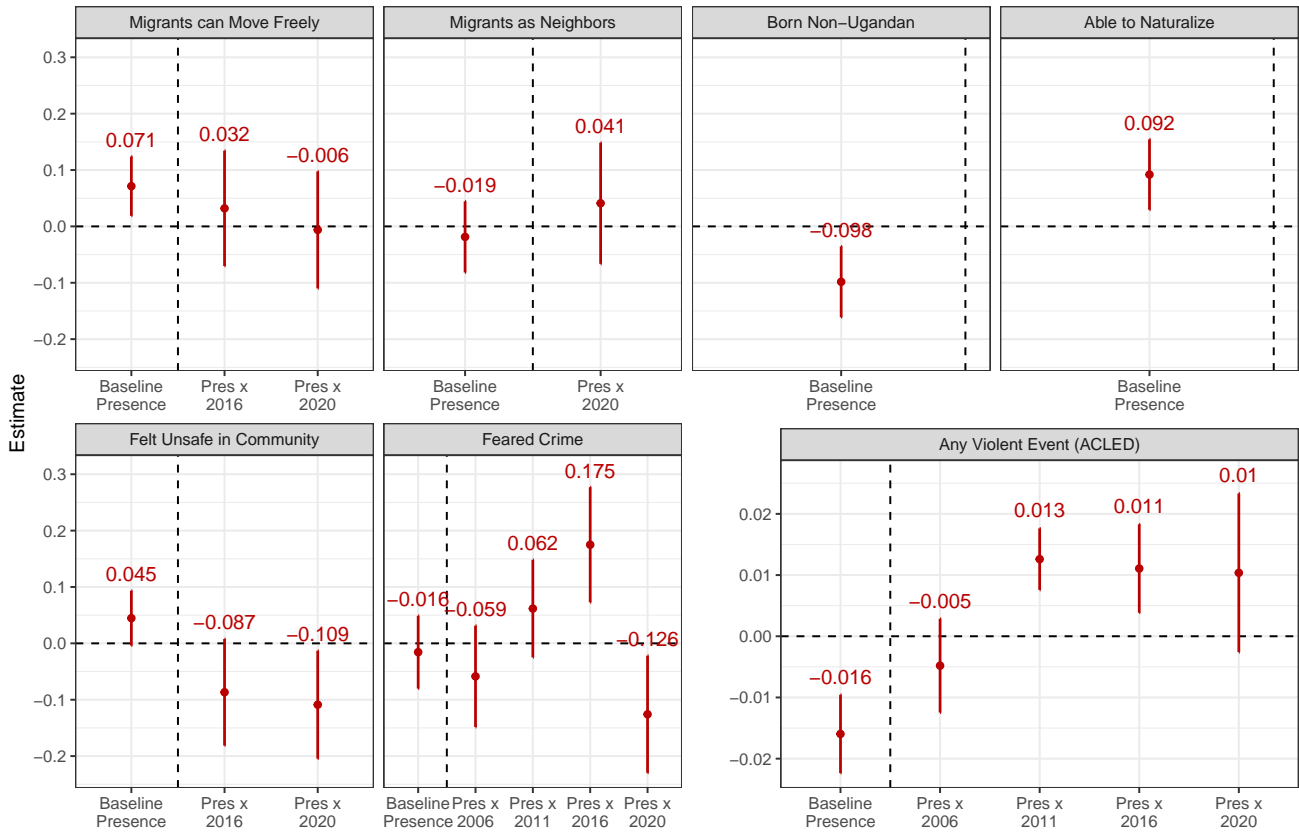


Figure 6: Effect of refugee presence on public opinion and insecurity. The figure shows that a greater refugee presence does not lead to backlash against migrants, but does increase fears of crime (Afrobarometer), and slightly more experience with violence (ACLED). OLS models for Afrobarometer respondents within 150km with Nearest + 20km exposure measure interacting demographic controls with year, and including year and regional fixed effects. For ACLED, standard errors are clustered at the parish level. Estimates include 95% CIs.

When asked in Afrobarometer Round 6 about support for migrants' free movement across borders (as opposed to restricting cross-border movement to protect own citizens), plot 2 shows that Ugandans experiencing greater presence of refugees responded no differently to those experiencing less. With respect to citizenship policy (plots 3 and 4), which was only included in Afrobarometer Round 5, citizens experiencing greater refugee presence were less supportive of granting citizenship based on birthplace alone, but more supportive of allowing migrants who have lived and worked in Uganda for many years (e.g., refugees) to be eligible for naturalization.

In the bottom row of Figure 6, *higher values* correspond to *greater feelings of insecurity* or *greater violence*. More exposed citizens did not say they felt more unsafe in their community post-2014 (plot 1). In 2020, the effect was negative at -0.11 sd, which means that more exposed citizens felt *safer* in 2020 than in 2011.

Compared to the baseline year of 2001, residents were more fearful of crime by 0.17 sd. These fears are not necessarily unfounded, as we find some weak evidence of changes in levels of violence in their parishes. Compared to 2001, a 1-SD increase in refugee presence in 2011 is associated with a 1.26 percentage point increase in likelihood of a violent event, and in 2016, a 1.11 percentage point increase. These findings are in line with our predictions for Uganda. As in Global North contexts, we recognize that out-group members can elicit fears and insecurity. It is unclear from the ACLED dataset, however, whether these violent events involve refugees. It is also possible that ACLED underreports violent incidences that are not reported by the media. Recent scholarship on the relationship between refugees and violent conflict finds that hosting generally has null effects on conflict (Zhou and Shaver, 2021); when conflicts do occur, refugees tend to be the victims (Savun and Gineste, 2019). Nevertheless, by 2020, like with Afrobarometer respondents reporting feeling more safe, these fears of crime reverse with a negative effect of -0.13 sd.

As we theorize, the positive externalities for local communities (in the form of improved service delivery), generated by Uganda’s integrative approach to hosting refugees, generally balance out these fears, which do not generate a backlash against refugees and inclusive migration policies. Improving basic services is of the utmost importance to host communities in developing contexts regardless of who is providing them (Sacks, 2012).

All the results reported here use our main specification of the Nearest + 20km exposure measure (which takes into account not only the nearest settlements, but also all settlements within 20km) and the subset of parishes that are within 150km of a settlement. In SI Section S4, we present the regression tables for all of the results shown in Figures 5 and 6, along with their robustness specifications. These tables display the effects across all three measures of exposure (Nearest, Nearest + 20km, Nearest + 50km) and across the various radius cutoffs for parishes (within 100km, 150km, 200km, and all parishes). These results demonstrate that our main results are robust across specifications. In additional robustness checks, we also conduct formal sensitivity analyses and address concerns about multiple hypothesis testing by adjusting for the false discovery rate and showing Benjamini-Hochberg-adjusted p-values in SI Sections S5 and S6.

An alternative explanation is that our results are driven by a change in the composition of host citizens. It is possible that the positive effects we observe are due to the internal migration of Ugandans: those who move to refugee settlement areas may be positively disposed toward refugees, while those who leave are more likely to be anti-migrants. While there is no data to test

this possibility directly, in SI Section S7 we use DHS survey data to demonstrate that rates of both in- and out-migration are no different in refugee-hosting districts vs. neighboring districts that do not host refugees.

6 Policy and Program Implications

In this section, we summarize the paper’s findings and discuss the implications for policies and programs. Using a DiD research design and a newly constructed geocoded panel dataset of core service provision—the locations of health centers and schools as well as the quality of roads—we find that host communities near refugee settlements in Uganda experience positive externalities. Our findings with respect to service provision are consistent across three key domains and are robust to alternative measures of proximity, and to different samples based on distance to settlements, which increases the confidence in our results.

Using individual-level surveys, we find little evidence that proximity to refugees causes a backlash within host communities against them or related policies. These results are consistent with findings from other contexts such as Jordan (Ferguson et al., 2021) and the DRC (Pham et al., 2021). While we cannot directly assess this argument, we maintain that positive spillovers in the form of service delivery improvements likely help reduce tensions between refugees and host communities, and thereby contribute to social cohesion. These findings advance an emerging literature that assesses how the arrival of forcibly displaced people affects host communities, particularly in the goods and labor markets as well as through health channels. Nevertheless, our understanding of the economic impacts of forced migrants on host communities is in its infancy and requires pushing the research agenda forward across many other, particularly low-income, contexts.

In the absence of mitigating policies, refugees may impose an economic burden by straining local social services and infrastructure, and introducing economic competition (Whitaker, 2002). The unequal provision of humanitarian aid to refugees can also provoke resentment (Jacobsen, 2005; Dryden-Peterson and Hovil, 2004). However, aid and infrastructural development targeted primarily at refugees can generate positive externalities for local host communities if access is open to all (Maystadt and Verwimp, 2014). To prevent tensions from developing, some agencies also offer assistance to local citizens, given that refugee sites are often located in marginalized areas (Sanghi, Onder and Vemuru, 2016). Refugees can also directly contribute physical, social, and human capital to local economies by creating businesses (Taylor et al., 2016), and by using aid to

purchase local goods and services (Lehmann and Masterson, 2020). Thus the effects of refugees on host communities are not uniform (Maystadt et al., 2019), but understanding the interaction between hosting policies and local contexts is integral to the study of levels of social cohesion between migrants and host communities (Betts et al., 2021; Aksoy and Ginn, 2021).

We focus here on service delivery—a policy domain for which government and aid organizations are directly responsible. Determining the broader impact of refugees’ presence on welfare would require examining additional outcomes such as land pressure, potential environmental degradation, labor and housing markets, trade, and food and other commodity prices. While most studies focus on a single sector, we provide evidence on multiple sectors—education (primary and secondary access), health (access and utilization), and road infrastructure.

Future work should explore the relative ability of host communities and refugees to cope with unexpected (economic, environmental, and health) shocks, and how the ensuing turmoil may affect social cohesion. There is evidence that the COVID-19 pandemic has increased xenophobic violence and hate crimes against migrant populations (Dipoppa, Grossman and Zonszein, 2022), partly because some governments have scapegoated migrants to deflect blame (Braithwaite et al., 2021). In Uganda, COVID-19 reduced food rations for refugees and increased economic and employment hardship, putting tremendous pressure on refugee-hosting districts (Atamanov et al., 2021). Future studies should examine the pandemic’s effects on welfare outcomes and intergroup relations.

Given the large number of refugees in Uganda and its progressive hosting framework, this research contributes to scholars’ and practitioners’ understanding of how hosting policies and development investments affect the relationship between host communities and refugees by addressing possible local grievances. Our findings ultimately support the approach recommended by UNHCR’s 2018 Global Compact on Refugees, which calls for easing the pressures of local hosting communities by meeting and supporting their needs alongside those of refugees. We go further to examine the implications for host citizens’ reception of refugees. Host governments and humanitarian agencies may be reluctant to allow refugees to self-settle and access local public goods and services for fear of conflict and public backlash. Our findings on public opinion and violence show that in this context, there are no discernible changes for hosting communities.

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