



Refugees welcome? Inter-group interaction and host community attitude formation

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ABSTRACT

Building upon the literature on attitudes to immigration, which mainly focuses on Europe and North America, this article explores the role of inter-group interaction in influencing host community attitudes towards refugees in East Africa. It draws upon first-hand quantitative ($n = 16,608$) and qualitative data collected from refugees and nearby host communities in urban and camp-like contexts in Uganda, Kenya, and Ethiopia. Focusing on the Uganda data, for which host community attitude and interaction data is available, OLS regressions reveal a small positive and significant correlation between refugee-host interaction and the perception of hosts towards refugees. This association disappears when an instrumental variable (IV) approach is used to address endogeneity issues, except when only data from the urban context is used. Combining cross-country data and qualitative data, we highlight some conditions that may shape hosts' attitudes towards refugees, including the types of interaction, ethno-linguistic proximity, and residence in urban or camp-like contexts. In all contexts, an important part of attitude formation appears to take place at the intra-group level, within households and immediate neighbourhoods, independently of individual interaction with the out-group.

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1. Introduction

The overwhelming majority of refugees reside in low- and middle-income countries (UNHCR, 2020). In such countries, refugees usually live in either camps or cities, often in close proximity to members of the host community. Their prospects for integration and their socio-economic outcomes are likely to be influenced by how well refugees and the host community get along. In this context, there is a growing policy concern to improve social cohesion between refugees and proximate host communities (De Berry & Roberts, 2018).

There is considerable literature on attitudes to immigration, but it mainly focuses on Europe and North America. Little research has been undertaken to examine host community attitude formation towards refugees in the global South (Dempster, Leach, & Hargrave, 2020). A range of accounts exist to explain host community perceptions. These include individual-level factors (e.g. ideology, education, and political attitudes) and structural factors, such as the role of economic competition, political and media influence, and neighbourhood security (Dennison et al., 2018; Hainmueller & Hopkins, 2014).

One hypothesis, within both the broader social cohesion literature and its application to immigration, is that, under certain conditions, inter-group interaction may contribute to more positive in-group attitudes towards a particular out-group. Building upon Gordon Allport's seminal work, the so-called 'contact hypothesis' has led to a large empirical literature in social psychology, political science, and economics, that seeks to examine the conditions under which contact leads to greater social cohesion, and the mediators that explain the effects of particular types of contact (Pettigrew & Tropp, 2006; Paluck, Green, & Green, 2019).

Yet, the contact hypothesis has rarely been examined in relation to refugee-host community interactions and attitudes, least of all in the regions of the global South that host the majority of the world's refugees. And there are intuitive reasons to consider that contact theory may apply differently in such contexts. For example, Allport's original work suggests that inter-group contact can reduce prejudice between majority and minority groups if four conditions are satisfied: equal status, common norms, inter-group cooperation, and support by social and institutional authorities (Allport, 1954). Yet, these conditions are rarely met in refugee contexts: refugees often face discrimination and have to compete with the host population for jobs, land, housing, and other scarce resources.

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The literature that tests the ‘contact hypothesis’ in relation to refugees and host populations is mostly limited to a few studies assessing the impact of sudden refugee flows in countries in the global North on public attitudes and support for right-wing parties. To the best of our knowledge, only two recent studies used data from the global South to test the contact hypothesis (Roza & Vargas, 2021; Barron, Harmgart, Huck, Schneider, & Sutter, 2021). The literature on the impact of inter-group contact on receiving community attitudes toward immigrants also focuses almost exclusively on Europe and North America (Paluck et al., 2019). This leaves an important gap in the literature in terms of understanding how interactions relate to inter-group attitude formation in refugee contexts across the global South.

This article addresses this gap. It explores the relationship between inter-group interaction and host community attitude formation in East Africa, addressing three main questions. First, what role does refugee-host interaction play in determining host community attitudes towards refugees? Second, what factors, other than contact, shape the attitudes of host communities towards refugees? Third, how do host communities’ perceptions of refugees vary across different domains (e.g. economy, security, culture, rights)?

These questions matter because understanding the determinants of positive host community attitudes towards refugees can enable policy-makers and practitioners to design programmes that improve the willingness of host communities to receive and integrate refugees. This is especially important within East Africa, where communal conflict has sometimes taken places between refugees and host communities and exclusionary refugee policies have sometimes been justified with recourse to public opinion. While a range of hypotheses exist relating to the determinants of ‘social cohesion’ (e.g. labour market competition hypothesis, fiscal burden hypothesis, and group threat hypothesis), contact theory offers a potential avenue for designing policies and programmes at the local level. For example, it may shed light on whether including refugees and host communities alongside one another within assistance programmes or settlement design offers a means to improve social cohesion. Furthermore, exploring the role of inter-group interaction within an East African context offers a means to examine whether and to what extent research findings within the ‘North’ apply similarly or differently within the ‘South’.

The underlying research draws upon first-hand quantitative data collected in urban and camp-like contexts in Uganda, Kenya, and Ethiopia ($n = 16,608$). All survey questionnaires included modules on host community attitudes towards refugees. The questionnaire that was used in Uganda – in the Nakivale settlement and in Kampala – also included questions on the type and frequency of inter-group interaction. Exploiting the data collected in Uganda, we explore the complex relationship between interaction and attitude formation using ordinary least squares (OLS) and instrumental variable (IV) regressions. We describe the patterns and correlates of attitudes towards refugees across all three countries, triangulating quantitative results with qualitative data.

OLS regressions identify a small positive and significant correlation between refugee-host interactions and the perceptions of hosts towards refugees. This relationship holds both in the Nakivale settlement and in Kampala. However, the results of OLS regressions could be biased by reverse causality in the relationship between attitudes and refugee-host interaction, by omitted variables, and by measurement issues. To address endogeneity issues, we instrument the measure of refugee-host interactions by (1) the share of refugees living in the locality and (2) the intensity of refugee-host interactions among other respondents in the enumeration area. Effective F-tests and Sargan–Hansen tests for over-identifying restrictions suggest that these instruments may be valid.

With IV regressions, the association between refugee-host interactions and host attitudes disappears in the Nakivale sample, suggesting that endogeneity issues significantly bias OLS regressions. The association remains positive and statistically significant when the IV analysis is restricted to Kampala, but the association remains small in magnitude. We can conclude prudently that there is no evidence suggesting that refugee-host interaction could be detrimental to social cohesion between refugee and host populations in Kampala and the Nakivale settlement. Our analysis also suggests that a significant part of attitude formation takes place at the intra-group level, within households and immediate neighbourhoods, independently of inter-group interaction.

Finally, we exploit the cross-country dataset and use descriptive statistics, correlational analysis, and qualitative evidence in order to unravel the complexity of host community attitude formation and to generate new hypotheses. In this process, the qualitative data plays a particularly important role in elucidating contradictions, puzzles, or nuances in our findings, which are often less noticeable in quantitative surveys. We identify four potentially important variables that appear to contribute to host community attitude formation. First, consistent with the results of OLS and IV regressions with the Uganda data, our data suggest that a large part of attitude formation takes place at the intra-group level, within households and communities. Second, types of interaction (e.g. business exchange or social interaction) may matter differently for different types of attitude (e.g. the economy, security, or rights), and have different impacts on different types of people (e.g. high or low socio-economic status households). Third, ethno-linguistic proximity may affect host perceptions; positive attitudes towards refugees are usually observed in contexts where both host and refugee communities are of Somali ethnic origin. Finally, hosts in urban and rural contexts have different attitudes towards refugees; while urban hosts are less tolerant of refugees than rural hosts, and often see refugees as an economic burden, they are more progressive in their attitudes towards refugee rights and feel less threatened from a security perspective by refugees’ presence.

Our paper fills a gap in, and develops, the existing literature on both contact theory and attitudes to immigration in at least two regards. First, it is one of the first studies to explore the contact hypothesis in host community attitudes towards refugees within a developing country context. We also explore differences between urban and camp-like settings. Second, we examine how attitude formation is shaped by networks, suggesting that the ‘contact effect’ may also be determined by dynamics at the intra-group level. It implies that one of the limiting factors underlying any positive impact of interaction may be the way it is mediated through neighbourhood and household level discussions. Although it is beyond the scope of the paper to examine this intra-group attitude formation process, it is something that is touched upon within the wider literature (Bénabou, 2015; Bénabou & Tirole, 2016; Levy & Razin, 2019).

Our article proceeds as follows. Section 2 situates the paper within the literature. Section 3 describes the context of the research. Section 4 describes the data and methods and Section 5 discusses the results. Finally, Section 6 discusses the findings in light of the literature and concludes.

2. Literature and Contribution

There is a growing policy concern to improve social cohesion between refugees and proximate host communities in the global South (De Berry & Roberts, 2018). ‘Social cohesion’, however, has sometimes been critiqued as being conceptually vague. Bernard (1999) describes it as a ‘quasi-concept’ and Chan and To (2006)

as a 'catchword' that is too all-encompassing to be meaningful. In response, several authors have tried to bring analytical clarity. Schiefer and Van der Noll (2017) identify three aspects of social cohesion: (1) social relations; (2) belonging; (3) orientation towards a common goal, distinguishing the concept from outcome variables such as 'wellbeing'. This in turn has given rise to the question of how to measure social cohesion (Jenson, 2010), with proxy indicators generally being based on attitudes or behaviours, relating to variables such as trust and prejudice.

One strand of this research has focused on the relationship between diversity and social cohesion. A broad body of work has posited that diversity may have a negative effect on social cohesion through mechanisms such as 'group threat', the homophily principle, feelings of anomie, and social disorganisation (Van der Meer et al., 2014). However, building upon the seminal work of Allport (1954), inter-group contact has been identified as a mechanism for increasing trust in the context of diverse groups. The contact hypothesis describes the idea that contact between members of an in-group and members of an out-group may lead to change in attitudes towards members of the out-group (Brown & Hewstone, 2005; Pettigrew, 1998; Hewstone, 2015).

Pettigrew and Tropp (2006) identify that contact is typically effective in improving inter-group relations, summarising three main mediators: (1) enhancing knowledge about the out-group; (2) reducing anxiety about intergroup contact; (3) increasing empathy. Others have added the role of friendship as an additional mediator (e.g. Finseraas & Kotsadam, 2017). The specific challenge identified within this literature has been to specify the conditions under which contact is most influential and identify the mediators of contact's effects within specific institutional settings and policy contexts (Pettigrew, 2008; Paluck et al., 2019; Paluck, Porat, Clark, & Green, 2021). The result has been a vast empirical literature, generally using either survey or experimental methods, and covering a range of populations and contexts.

The literature that tests the contact hypothesis in relation to refugees and host populations is mostly limited to a few studies assessing the impact of sudden refugee flows in global North countries on public attitudes and support for right-wing parties. Results are mixed. While most studies find that 'exposure' – usually a lower threshold of interaction than 'contact' – has negative effects on host attitudes towards refugees (Halla, Wagner, & Zweimüller, 2017; Dinas, Matakos, Xeftiris, & Hangartner, 2019; Ajzenman & Aksoy, 2020; Rozo & Urbina, 2020), some studies find no effect (e.g. Hennig, 2021) or heterogeneous effects that vary across gender (Albrecht & Smerdon, 2022), depend on the intensity of exposure (Steinmayr, 2021; Achard et al., 2022), and differ in urban versus rural contexts (Dustmann, Vasiljeva, & Piil Damm, 2019). In contrast, there is very little research on social cohesion and refugees in the global South, in which a range of factors – the different socio-economic profile of the populations or the presence of refugee camps, for example – might mean that the determinants of social cohesion and the role of inter-group contact therein are quite different. We have identified only two recent studies exploiting refugee inflows in the global South to test the contact hypothesis. First, Rozo and Vargas (2021) find that larger refugee inflows in Colombia increased voter turnout and shifted votes from left- to right-wing political ideologies. Second, Barron et al. (2021) involved Jordanian host and Syrian refugee children in a sharing experiment at school, finding no robust evidence in support of the contact hypothesis, and instead showing that family history and parental attitudes play a significant role in host community attitude formation.

There is also a burgeoning literature on the economic impacts of forced displacement on host communities, much of which focuses on the material impact on receiving communities. Verme and Schuettler (2021) survey that literature and argue that it broadly

shows that the impact on host communities' employment and wages are not significant, but that when results are significant, they are often negative on employment and positive on wages, albeit in the short run. The literature assessing the impact of refugees in low- and middle-income countries shows that refugees can stimulate host economies (Alix-Garcia, Walker, Bartlett, Onder, & Sanghi, 2018; Maystadt & Duranton, 2018; Taylor et al., 2016) but also have negative impacts, for example by undermining health (Baez, 2011; Montalvo & Reynal-Querol, 2007) and competing for scarce resources and jobs (Depetris-Chauvin & Santos, 2018; Tumen, 2016; Ruiz & Vargas-Silva, 2015). The total effect is mixed, with some benefiting and some losing from refugee presence (Fallah & Krafft, 2019; Maystadt & Verwimp, 2014; Alix-Garcia & Saah, 2009). Meanwhile, Mousa (2020) has undertaken field experiments with internally displaced persons in post-ISIS Iraq, randomly assigning Christians to all-Christian and mixed-Muslim soccer teams, finding that contact has effects on peers within the experiment but little impact on wider social cohesion.

The broader literature on the impact of inter-group contact on receiving community attitudes to immigrants also focuses almost exclusively on Europe and North America and reaches mixed conclusions (Paluck et al., 2019).¹ On the one hand, for example, Quillian (1996)'s finding of a positive relationship between inter-group interaction and white racial attitudes towards African-Americans has been widely cited across the immigration literature. On the other hand, for example, Hopkins (2010) examines panel data on US public attitudes to immigration to explore a 'politicized places hypothesis', finding that when faced with a large influx, local communities adopt negative attitudes, albeit only when the influx is combined with destabilising local demographics and salient political rhetoric at the national level.

This article's main original contribution is therefore to explore the relationship between inter-group interaction and host community attitudes towards refugees in the global South. In doing so, we move a step closer to identifying the mediators of contact's effects within a hitherto largely un-researched institutional setting. We are uniquely able to do so because of having collected first-hand survey and related qualitative data from both refugee and host communities, in camps and cities, which includes survey modules relating to both attitudes of hosts towards refugees and interactions.

3. Context

Our research focuses on Uganda, Kenya, and Ethiopia. These countries have a long history of accommodating refugees from neighbouring countries, including Somalia, South Sudan, the Democratic Republic of Congo, Eritrea, and Burundi. Yet each one has different legal and policy frameworks relating to refugees.

3.1. Uganda

Uganda has 1.4 million refugees, making it the largest refugee-hosting country in Africa. Of the three researched countries, Uganda offers the most generous regulatory environment for refugees (Betts et al., 2019). Uganda's Refugee Act of 2006 provides refugees with the right to work and a significant degree of freedom of movement. Given fewer restrictions, refugees in Uganda generally enjoy a better degree of socio-economic rights and freedom compared to Ethiopia and Kenya (UNHCR, 2015). In addition to allowing refugees to work, its settlements aim to provide refugees

¹ This literature is part of a broader literature that examines the correlates of 'native' attitudes to immigration (see Hainmueller & Hopkins, 2014 for an excellent review).

with access to plots of land to cultivate and to pursue self-reliant status. We conducted our fieldwork in Kampala and Nakivale refugee settlement, which was selected because it was the largest refugee settlement in Uganda when we embarked on our preliminary study in 2013. We focused on Congolese and Somali refugees in both sites.

The Nakivale settlement is Africa's oldest refugee camp and was founded in 1958. It hosts around 100,000 refugees. Located in the Isingiro District of Southern Uganda, the settlement is jointly managed by the Office of the Prime Minister (OPM) and UNHCR. Due to refugees' access to plots of land under the self-reliance model, a large proportion of refugees engage in agriculture. Ugandan nationals living in the surrounding areas are also largely reliant on farming, animal husbandry, and to some extent fishing. Commercial activities exist but only at a small scale. The socio-economic status of local populations is generally low. There are no clear physical boundaries between the Nakivale settlement and its surrounding communities. In fact, some Ugandan villages are located inside the settlement.

Kampala hosts around 100,000 refugees from several neighbouring countries. Across the city, different refugee populations have different settlement patterns. Most Somalis live in the Kisenyi area where a considerable number of ethnic Somali Ugandans also reside. In contrast, the majority of Congolese refugees co-reside with Ugandans in the Nsambya and Katwe areas. Refugee-concentrated areas in Kampala usually have a combination of residential and commercial parts. While there is significant variation, in general, the socio-economic conditions of the local host populations in these areas are low, with small-scale trading activities being the predominant livelihood for them.

3.2. Kenya

Kenya's regulatory framework imposes restrictions on refugees' right to work and move freely, notably through its encampment policy, which requires refugees to generally reside in either the Dadaab or Kakuma refugee camps, located in remote border regions (UNHCR, 2015). At the time of our research, Kenya hosted nearly 500,000 refugees. Our data collection covers two sites – Kakuma refugee camp and Nairobi. While Dadaab camp is the largest refugee-hosting site in Kenya, due to insecurity, we were unable to include it in our study.

Kakuma refugee camp was set up in 1992 in Turkana County in north-western Kenya, hosting some 164,000 refugees. Given its proximity to South Sudan, more than half of the population of camp residents were South Sudanese. Refugees from Somalia formed the second largest sub-population, followed by those from Democratic Republic of Congo, Ethiopia, and Burundi. We focused on the three largest refugee groups – South Sudanese, Somali, and Congolese refugees in Kakuma camp. Kakuma camp is hosted in a historically marginalised area, which is largely devoid of any major investment or development activities by the national government or private enterprises. Most of the economic activities depend at least in part on humanitarian assistance (MacPherson & Sterck, 2021; Sterck & Delius, 2020). There are constant interactions between refugees and Turkana hosts through trade and use of social facilities, such as clinics and water points inside the camp. However, there have also been reports of occasional communal violence between refugees and the Turkana host community.

Despite the country's encampment policy, Nairobi hosts more than 65,000 refugees of various nationalities. Refugees enjoy some degree of economic freedom there, thanks to de facto 'legal pluralism' within Kenya, in which official restrictions on refugees are differently enforced and implemented in different parts of the country (Betts & Omata, 2018). In Nairobi, we focused on Somali and Congolese refugees – the two largest refugee populations at

the time of our fieldwork. More than 30,000 Somali refugees reside in the neighbourhood of Eastleigh, which is widely known as a predominantly Somali section of the city. The presence of a large Somali-Kenyan population has offered Somali refugees a space for 'segmented assimilation' (Lindley, 2011).

Refugees from the Democratic Republic of Congo (DRC) trail Somali refugees in number, with nearly 20,000 living in the Kenyan capital as of 2017. Congolese are more dispersed across the city. The nature of their relationships with their Kenyan neighbours is quite different from that of Somali refugees, primarily because Congolese refugees do not have ethnic counterparts amongst Kenya's citizenry in the ways that Somali refugees do. Instead, they take advantage of their command of Swahili – Kenya's national language – to find traction in the urban economies of Nairobi.

3.3. Ethiopia

Ethiopia is known both as a destination and a transit country for refugees in East Africa. At the time of our fieldwork in 2018, the country hosted some 900,000 refugees. Our research sites included the five Dollo Ado refugee camps in the Somali region of the country and the capital city, Addis Ababa.

Similarly to Kenya, the Ethiopian government was operating an encampment policy towards refugees at the time of our research (Betts, Fryszler, Omata, & Sterck, 2019).² However, two legal exceptions to encampment have allowed refugees to live in Addis: the Out-of-Camp Policy (OCP) and the Urban Assistance Program (UAP). For historical reasons, the former is almost exclusively for Eritrean refugees who can support themselves or are supported by relatives. The latter is for refugees with medical, protection, or humanitarian concerns that camp-level facilities cannot adequately address. At the time of our research, there were approximately 17,000 Eritrean refugees with OCP status, who were dispersed across different areas in Addis Ababa. Most Eritrean refugees reside in apartment compounds where many Ethiopian host nationals also live. The vast majority of Somali refugees in Addis Ababa are on the UAP. Most of them are living in the Bole Michael area – the city's 'Little Mogadishu' – given a large presence of Somali-Ethiopians and other groups of Somali origin.

At the point of our study, the Dollo Ado refugee camps hosted around 220,000 refugees of almost exclusively Somali origin, given its proximity to the Somali border (Betts, Bradenbrink, Greenland, Omata, & Sterck, 2019; Betts & Omata, 2021). The five Dollo Ado refugee camps were created between 2009 and 2011 as a response to refugees fleeing from violence, insecurity, and a severe drought. The Dollo Ado camps are located between 23 km and 95 km from the Ethiopian-Somali border, in a semi-arid and isolated border district. The region has few natural resources and little industry. Agriculture has historically been limited by the arid climate and occasional flooding. Commercial activity exists but generally on a small-scale.

4. Research Design

Our analysis relies on quantitative and qualitative data collected in refugee camps, settlements, and cities in Uganda, Kenya, and Ethiopia. We use OLS and IV regressions to assess the extent to which interactions between refugees and hosts affect hosts' perceptions of the refugee community.

² In 2019, the Ethiopian government adopted a new Refugee Proclamation expanding refugee rights, including the right to work and to move freely, albeit one which is yet to be fully implemented in practice (Vemuru, Sarkar, & Fitri Woodhouse, 2020).

4.1. Quantitative Data

Our analysis uses first-hand data collected in Uganda, Kenya, and Ethiopia between 2016 and 2018 ($n = 16,608$). Our survey covered the three capital cities – Kampala, Nairobi, and Addis Ababa – and three groups of camps or settlements, the Nakivale settlement in Uganda, the Kakuma camps in Kenya, and the Dollo Ado camps in Ethiopia.

In each site, we surveyed representative samples of the numerically most significant refugee populations ($n = 8,996$) and the host nationals in the community living nearby ($n = 7,612$). For camp-like contexts, this means nationals of the three countries residing in towns and villages in the immediate vicinity of the camps and, in the case of Nakivale, inside the settlement. In the capital cities, we restricted the geographic scope of the research to areas with a high concentration of refugees; as such ‘hosts’ refer to host nationals living in refugee-dense neighbourhoods. For each subpopulation, we used simple random sampling or two-stage cluster sampling to obtain representative data. The sampling methodology, sample sizes, and timing of fieldwork are detailed in [Tables A.1 and A.2 in Appendix](#). This present research primarily focuses on data collected among host populations.

The questionnaires included modules on a range of themes such as demographics, economic activities, income, consumption, assets, networks, mobility, health, wellbeing, and attitudes towards the out-group. While the basis of the questionnaires remained similar in each site, the questionnaires were adapted to the different contexts and the research priorities. The questionnaires were translated into the most prevalent languages of respondents in each location. We recruited and trained enumerators from both the host and refugee communities to facilitate trust and minimise the risk of misunderstandings between them and respondents.

When studying hosts’ perceptions of refugees, we primarily focus on hosts living in Uganda because only Ugandan hosts were asked about their interactions with refugees. The social cohesion outcome measure is a standardised index of perceptions of refugees. The index is constructed by applying principal component analysis (PCA) to a series of 11 statements about refugees.³ The index is given by the first principal component (standardised).⁴ The 11 questions considered to construct the aggregate are listed with descriptive statistics in [Table 1](#).

The explanatory variable of interest is an index of interaction with refugees. The index is constructed by aggregating the variables quantifying the number of times respondents (i) shared meals, (ii) had conversations, and (iii) had business exchanges with a refugee in the past month.⁵ We winsorize the sum of the three variables to limit the influence of outliers and standardise the index to facilitate interpretation.⁶

³ For the cross-country analysis, the perception index is constructed using PCA with eight of the statements because of limited data availability.

⁴ The higher the value of the perception index, the more positive is the overall host opinion of refugees. [Table A.3](#) shows that a 1-point change in the Likert scale of any of the statements (e.g. from “Agree” to “Strongly Agree”) typically corresponds to a 0.1–0.3 standard deviation change in the index, *ceteris paribus*. As a result, a one standard deviation change in the index broadly corresponds to completely changing opinion about at least one statement, *ceteris paribus*. To illustrate, for the full sample, going from “Strongly Disagree” to “Strongly Agree” regarding whether refugees are friendly, *ceteris paribus*, will change the index by 0.9 standard deviations.

⁵ We obtain qualitatively similar results if – instead of a continuous measure of interactions with refugees – we consider a dummy variable equal to one for respondents who reported at least one interaction with refugees, and equal to zero otherwise ([Tables A.6 and A.10 in Appendix](#)).

⁶ Higher values of the index indicate more interactions with refugees. A one standard deviation change in the index corresponds to about 10–15 more direct interactions in the past month (the number varies slightly depending on the sample considered, as shown in [Table 1](#)).

Summary statistics of all variables used in the analysis are presented in [Table 1](#).

4.2. Qualitative Data

Our quantitative research is complemented by in-depth qualitative research across all research sites, with both refugee and host populations. From 2016 to 2019, we conducted more than 600 interviews across the three countries. In addition, in order to triangulate the information and obtain different perspectives, we interviewed non-refugee stakeholders including staff members of relevant UN agencies and NGOs, and local and national government officials in charge of refugee community affairs.

Qualitative data collection was systematically implemented through following sequencing. First, in order to nurture a good contextual understanding, we began our data collection by speaking with key informants, such as refugees who are in leadership positions and local host representatives who have been living in each research site for a long time. At this stage, we mainly drew upon one-to-one unstructured interviews with open-ended questions. This step enabled us to attain a broad understanding of the lives of refugees and host communities and the relationships between them in each site and also contributed to inform the designing of survey questionnaires based on local contexts. Second, we shifted to semi-structured individual interviews and focus group discussions with more specific questions on themes which had emerged during the initial interviews with key informants. This allowed us to deepen our understanding of refugee-host relationships in each of the research sites. A breakdown of participants is detailed in [Table A.4 in the Appendix](#).

4.3. Identification Strategy

Focusing on the Uganda sample (because of data availability), we explore the correlation between host community attitudes towards refugees and refugee-host interactions. We use OLS regressions of the perception index (P_i) on the interaction index (I_i) using individual level data:

$$P_i = \alpha + \beta_1 I_i + \beta_2 P_{HH} + \beta_3 P_{EA} + \gamma X_i + \mu + \varepsilon_i \quad (1)$$

Each observation is a respondent from the host community. We control for the perception index among other household members (P_{HH}) and among neighbours (P_{EA}) to account for the fact that perceptions are partly formed at the group level through discussions, gossips, and common narratives.⁷ The geographic area considered as a neighbourhood when creating P_{EA} is provided by the Enumeration Areas (EAs) of the Uganda national census by the Ugandan Bureau of Statistics (UBOS).⁸ We also control for a vector of socioeconomic and demographic variables X_i to limit the risk of omitted variable bias. We use two approaches to select the variables included in X_i . First, we selected a list of variables that could explain perceptions or interactions based on our knowledge of the literature (see [Table 1](#) for descriptive statistics). We include enumeration areas fixed effects (μ_{EA}) or household fixed effects (μ_{HH}) to control for unobserved characteristics that are constant within EAs/households. Second, we implement the double LASSO method of [Chernozhukov et al. \(2017\)](#) using the original list of potential controls augmented

⁷ P_{HH} and P_{EA} are standardised to facilitate interpretation. Before standardisation, the variable P_{HH} is set as equal to 0 (= the mean of the perception index P_i) in households with only one adult. Results are robust to excluding P_{HH} from regressions ([Tables A.5 and A.9 in Appendix](#)).

⁸ When analysing host perceptions across the three countries ([Table 5](#)), the neighbourhoods are defined by the enumeration areas from the Kenyan census for respondents in Nairobi, by villages around Kakuma, by the five main towns close to each of the Dollo Ado camps, and by sublocations within the official woredas in Addis Ababa.

Table 1
Descriptive Statistics by Host Sample.

	Cross-country			Uganda			Nakivale			Kampala		
	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs
<i>Perceptions</i>												
The presence of refugees has increased economic opportunities for host community	0.77	0.42	7497	0.60	0.49	1605	0.72	0.45	661	0.51	0.50	944
The presence of refugees has generated employment	0.73	0.44	7451	0.56	0.50	1607	0.73	0.44	661	0.44	0.50	946
Refugees are competitors	0.72	0.45	7375	0.76	0.43	1607	0.83	0.38	661	0.71	0.45	946
Refugees are creating problems of insecurity	0.41	0.49	7354	0.50	0.50	1576	0.54	0.50	662	0.47	0.50	914
Refugees are taking over our land**	0.36	0.48	5709	0.57	0.50	1575	0.65	0.48	651	0.51	0.50	924
Refugees are friendly (good people)	0.80	0.40	7372	0.52	0.50	1596	0.52	0.50	662	0.52	0.50	934
Refugees are trustworthy	0.69	0.46	7270	0.40	0.49	1577	0.47	0.50	662	0.34	0.48	915
Refugees should have the right to work	0.85	0.36	7290	0.65	0.48	1610	0.55	0.50	662	0.72	0.45	948
Refugees should have the right to live where they want	0.62	0.48	7264	0.42	0.49	1602	0.32	0.47	658	0.49	0.50	944
Refugees should access free health care***	0.91	0.29	6944	0.76	0.43	1611	0.74	0.44	662	0.77	0.42	949
Refugee children should access free primary schooling***	0.90	0.30	6932	0.73	0.44	1610	0.71	0.45	662	0.75	0.44	948
<i>Interactions****</i>												
Shared meals				1.41	4.73	1613	1.12	3.77	662	1.61	5.29	951
Personal conversations				10.99	13.58	1612	14.86	15.30	662	8.30	11.51	950
Business interactions				4.42	8.28	1612	5.07	7.74	662	3.97	8.61	950
Total interactions				14.53	14.84	1611	18.64	14.03	662	11.66	14.72	949
<i>Control variables</i>												
Age	33.26	12.15	7612	34.48	13.28	1620	37.58	14.75	666	32.31	11.67	954
Age squared	1253.82	965.17	7612	1364.86	1123.99	1620	1629.55	1306.54	666	1180.07	933.76	954
Being female	0.54	0.50	7612	0.56	0.50	1620	0.57	0.50	666	0.55	0.50	954
Being married/living w/partner	0.62	0.49	7612	0.54	0.50	1620	0.69	0.46	666	0.44	0.50	954
Living in urban context	0.45	0.50	7612	0.59	0.49	1620	0.00	0.00	666	1.00	0.00	954
Being Somali (refugees and hosts)	0.77	0.42	7612	0.70	0.46	1620	1.00	0.00	666	0.49	0.50	954
Has a job/an economic activity	0.51	0.50	7612	0.70	0.46	1620	0.69	0.46	666	0.71	0.45	954
Years of formal education	6.60	5.96	7612	7.83	4.92	1620	4.35	3.50	666	10.25	4.28	954
Has vocational training	0.14	0.35	7612	0.14	0.34	1620	0.09	0.29	666	0.17	0.37	954
Has good English skills	0.32	0.47	7612	0.40	0.49	1620	0.08	0.28	666	0.61	0.49	954
Has good local language skills	0.59	0.49	7612	0.92	0.27	1620	0.95	0.21	666	0.90	0.30	954
Health index	3.04	3.79	7612	4.21	4.41	1620	4.89	4.51	666	3.74	4.28	954
Mental health index (PHQ9)	4.02	4.31	7612	5.61	5.13	1620	5.41	5.26	666	5.76	5.03	954
Has relative(s) in same site	0.64	0.48	7612	0.63	0.48	1620	0.60	0.49	666	0.64	0.48	954
Has relative(s) in Western countries	0.04	0.21	7612	0.03	0.16	1620	0.01	0.09	666	0.04	0.19	954
Father's years of formal education	2.74	4.96	7612	3.72	4.95	1620	1.04	2.67	666	5.58	5.31	954
Mother's years of formal education	2.03	4.24	7612	2.87	4.36	1620	0.55	1.94	666	4.49	4.83	954
Household size (No. of people)	5.82	3.62	7612	4.98	2.52	1620	5.71	2.42	666	4.48	2.46	954
Dependency ratio in household	1.00	0.90	7612	1.07	1.08	1620	1.66	1.13	666	0.67	0.84	954
Female head of household	0.24	0.42	7612	0.33	0.47	1620	0.25	0.44	666	0.39	0.49	954
Asset index	0.26	1.15	7612	0.37	1.12	1620	0.17	1.11	666	0.52	1.10	954
Food insecurity index (HFIAP)	0.39	0.48	7612	0.45	0.50	1620	0.61	0.49	666	0.33	0.47	954

with fourth-degree polynomials along with all first-order interactions and the inverse hyperbolic sine transformation of continuous variables (Knaus & Lechner, 2020; Derksen, Kerwin, Reynoso, & Sterck, 2021). We also estimate specifications without control variables.

Three main methodological challenges could afflict this OLS regression – and more generally the non-experimental literature on contact theory. The first challenge is the problem of reverse causality. An association between interactions and attitudes could reflect a causal relationship from interactions to attitudes, a causal relationship from attitudes to interactions, or a simultaneous relationship between the two variables. The second challenge relates to omitted variable bias. Despite the important number of control variables and the inclusion of household fixed effects to control for unobserved characteristics at the household level, we cannot rule out that important variables are missing from our regression equation. The third challenge relates to mismeasurement. Our main outcome variable could certainly be affected by mismeasurement issues as attitudes are typically hard to measure. Mismeasurement of outcome variables is usually considered as less problematic: under classical assumptions, mismeasurement of the dependent variable reduces precision but does not lead to bias (Hausman, 2001). The main explanatory variable – refugee-host interactions

– could also be mismeasured. Yet, we have no reason to think that mismeasurement is important or correlated with the true variable or the error term. Attenuation bias is possible but unlikely to be very important.

In an attempt to address these three endogeneity issues, we use an instrumental variable (IV) approach. We consider two categories of instrumental variables predicting the degree of refugee-host interactions: (1) the proportion of refugee population living in the enumeration area, which we denote z_a , and (2) the degree of refugee-host interactions reported by other respondents living in the same enumeration area, which we denote I_{EA} .⁹

The credibility of the IV analysis crucially depends on two key assumptions.

First, the instrumental variables should be strong predictors of the endogenous variable. In Nakivale, Uganda, the proportion of refugees living in the enumeration area (z_a) is associated with

⁹ In Appendix, we show that results are robust to considering the degree of refugee-host interactions reported by other household members – which we denote I_{HH} – as a supplementary instrumental variable (Table A.11 in Appendix). The respondents' own values are excluded when calculating I_{EA} and I_{HH} . Both variables are standardised to facilitate interpretation. Before standardisation, the variable I_{HH} is set as equal to 0 in households with only one adult.

more refugee-host interactions. A 10 percentage-point increase in z_a is associated with a 0.13 standard deviation increase in the interaction index (Table 3, Column 1). The association is stronger in the Kampala subsample. With the full Uganda sample and the Kampala subsample, the effective F-statistic of the first-stage regression is larger than 10, which is the threshold usually considered in the literature on weak instruments (Andrews & Stock, 2019; Olea & Pflueger, 2013; Staiger et al., 1997). In Nakivale, the effective F-test is borderline: slightly above or below 10 depending on the list of control variables included in the regression. The degree of refugee-host interaction reported by other respondents living in the same enumeration area (I_{EA}) is a strong predictor of host respondents' own degree of interaction with refugees. With the full Uganda sample, a one standard deviation increase in I_{EA} is associated with a 0.86 standard deviation increase in the interaction index I_i (based on Table 3, Column 2); the effective F-statistic of the first-stage regression is 89. This is much higher than the threshold of 10 that is often used in the literature. We conclude that the first-stage regressions are generally strong.

The second key assumption to have a valid IV is the exclusion restriction: the instrument cannot be correlated with the error term ε_i in Eq. (1), conditionally on covariates.

We carefully represent the causal model we have in mind using a directed acyclic graph (DAG), in order to identify possible sources of endogeneity (Fig. 1). The perceptions that survey respondents have about refugees depend on three categories of factors. First, the characteristics of the respondents and their households. For example, the employment status and wealth of the respondent might directly influence the perceptions of refugees as competitors or economic contributors. Second, the perceptions that other hosts living in the area have about refugees can influence the perception of the respondent. Gossips, rumours, and discussions can certainly forge the perceptions that hosts have about refugees. Finally, whether the respondent frequently interacts with refugees may influence perceptions, in line with contact theory. This latter variable is our main explanatory variable of interest – but this variable is likely to be endogenous. The respondent's interactions with refugees also depends on three factors. First, the characteristics of the respondents and their households. For example, language skills may directly affect respondents' ability to interact with refugees. Second, the level of refugee-host interactions among kin and neighbours may influence respondents' level of interaction with refugees, either through emulation or competition. Finally, the share of refugees in the locality of the respondent should directly affect the possibility and frequency of interactions.¹⁰ The latter two variables are our chosen instruments.

The characteristics of individuals living in an EA – including the proportion of refugees – is expected to depend on the characteristics of the EA. In refugee camps and settlements, the initial placement of refugees is determined by camp authorities. The allocation process first and foremost depends on space availability, arrival date, and administrative decisions that are often quasi-random (MacPherson & Sterck, 2021; Siu & Sterck, 2021). Movements within settlements and camps are possible but not frequent. For example, our panel data for Kenya shows that in any given year around 3.2% of refugees in Kakuma relocate within the camp

(Betts, Omata, Siu, & Sterck, 2021). In cities, the process is completely different. Refugees decide where to live and often co-locate with fellow nationals. For these reasons, our presumption was that the exclusion restriction would be more likely to be satisfied in camp-like settings.

We draw two conclusions from this DAG. First, controlling for kin and neighbours' perception of refugees (P_{HH} and P_{EA}) is essential to limit omitted variable bias in OLS regressions and ensure that the exclusion restriction is satisfied in IV regressions. Depending on the specification, we control for P_{HH} and P_{EA} directly by including these variables in the regression,¹¹ or indirectly by including fixed effects.

Second, the main source of concern for the exclusion restriction is the possibility that the characteristics of the EA and the share of refugees in enumeration areas affect or are affected by some unobserved characteristics of respondents which also influence perceptions. To limit this source of endogeneity, all regressions include a long list of socio-economic and demographic covariates. The main concern for the first instrument (% of refugees, z_a) is related to the important literature showing that refugees can impact host populations by limiting access to jobs, healthcare, or education for example. In our preferred specification, we therefore control for many socio-economic variables, including a dummy identifying if the respondent has a job, the number of years of formal education, a dummy identifying if the respondent has vocational training, a health index, a mental health index (PHQ9), an asset index, and a food insecurity index (HFIAP). We take reassurance from two observations. First, in the Uganda sample, we find no robust evidence showing that these socio-economic variables are correlated with the outcomes of interest (Table 4). Second, including or excluding these controls does not affect the results much (Table 3). For the second instrument, the main risk relates to perceptions among kins and neighbours. We control for these variables in all IV regressions. We also use different combinations of instruments and control variables to assess the robustness of methods and findings. First, we use the two instruments jointly. We use the Sargan–Hansen test of over-identifying restrictions to test the joint null hypothesis that the instruments are valid.¹² Reassuringly, we cannot reject the null hypothesis at conventional thresholds, both for the Nakivale and the Kampala subsamples. This suggests that our presumption that the exclusion restriction would be more likely to be satisfied in Nakivale may not have been warranted. Second, we test a specification in which only I_{EA} is used as an instrument and z_a is used as a control variable to block the path $z_a \Rightarrow X_i \Rightarrow P_i$ and partly address concerns about the validity of the exclusion restriction. We also consider a specification in which only z_a is used as instrument for I_i . Third, we estimate reduced-form regressions using OLS and the instruments as supplementary regressors. Finally, we assess the extent to which results differ when control variables are included versus dropped from the IV regressions. This test is inspired by the literature on unobservable selection and coefficient stability (Altonji & Elder, 2005; Oster, 2019; Cinelli & Hazlett, 2020). Finding that results do not change much when observables are included is a sign that endogeneity issues may be negligible, under the assumption that observable and unobservable characteristics induce similar endogeneity problems.

¹⁰ A fourth possible factor influencing respondents' interactions with refugees is the perceptions that other hosts living around have about refugees ($P_{EA} \Rightarrow I_i$). For example, if refugees have a bad reputation, respondents may avoid contact with them to protect their own reputation. While such a link is certainly possible, it would not affect the validity of the IV specification. However, a strong link going the other way around ($I_i \Rightarrow P_{EA}$) would be more problematic. Implicitly, our empirical strategy relies on an assumption of atomicity, which posits that (1) the behaviour of each particular individual has a negligible effect on community perceptions as a whole (i.e. $I_i \Rightarrow P_{EA}$ is negligible), and (2) the perceptions of each particular individual has a negligible effect on community behaviour (i.e. $P_i \Rightarrow I_{EA}$ is negligible).

¹¹ Results are robust to excluding P_{HH} from regressions (Tables A.5 and A.9 in Appendix).

¹² The results of Sargan–Hansen tests should be interpreted cautiously, because a failure to reject the null hypothesis may either indicate that both instruments are valid or that both instruments are invalid in a similar way. This test is therefore more informative when the different instruments do not have the same rationale, which is fortunately the case in our study. Hence, while the Sargan–Hansen tests do not offer a definitive proof that the instruments satisfy the exclusion restriction, they still provide some reassurance that the exclusion restriction might be plausible, especially since our two instruments have different rationales.

Table 3
Perceptions of host populations about refugees with the Uganda sample (IV regressions).

	Dependent variable: hosts' perceptions of refugees								
	Sample = Uganda			Sample = Nakivale			Sample = Kampala		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A - Controls listed in Table 1									
Interaction index	−0.00592 (0.0278)	0.0443 (0.0310)	0.0248 (0.0216)	−0.0698 (0.0571)	0.00522 (0.0399)	−0.0150 (0.0288)	0.122** (0.0520)	0.164** (0.0765)	0.139*** (0.0477)
Effective F-Statistic	26.63	89.05	82.43	10.94	379.0	325.7	26.14	17.64	25.15
Hansen J statistic (p-value)			0.225			0.243			0.613
R-squared	0.347	0.352	0.350	0.307	0.323	0.320	0.388	0.384	0.387
Panel B - Controls selected with double Lasso									
Interaction index	−0.00872 (0.0212)	0.0253 (0.0256)	0.0141 (0.0193)	−0.142 (0.134)	−0.0445 (0.0382)	−0.0608* (0.0365)	0.0957** (0.0488)	0.110** (0.0497)	0.0667* (0.0341)
Effective F-Statistic	29.83	91.59	81.70	7.890	445.4	269.3	21.49	19.90	23.31
Hansen J statistic (p-value)			0.303			0.334			0.431
R-squared	0.336	0.341	0.342	0.282	0.302	0.303	0.339	0.359	0.339
Panel C - No controls									
Interaction index	−0.00486 (0.0174)	0.00986 (0.0191)	0.00466 (0.0143)	−0.0308 (0.0228)	−0.0319 (0.0201)	−0.0315* (0.0168)	0.0508** (0.0249)	0.0791** (0.0349)	0.0652*** (0.0228)
Effective F-Statistic	30.78	92.14	85.86	12.51	1025.3	1081.2	23.48	20.70	25.13
Hansen J statistic (p-value)			0.733			0.970			0.458
R-squared	0.330	0.332	0.332	0.295	0.295	0.295	0.358	0.359	0.359
Observations	1500	1500	1500	647	647	647	853	853	853
Instruments	% refugees	I_n	All	% refugees	I_n	All	% refugees	I_n	All

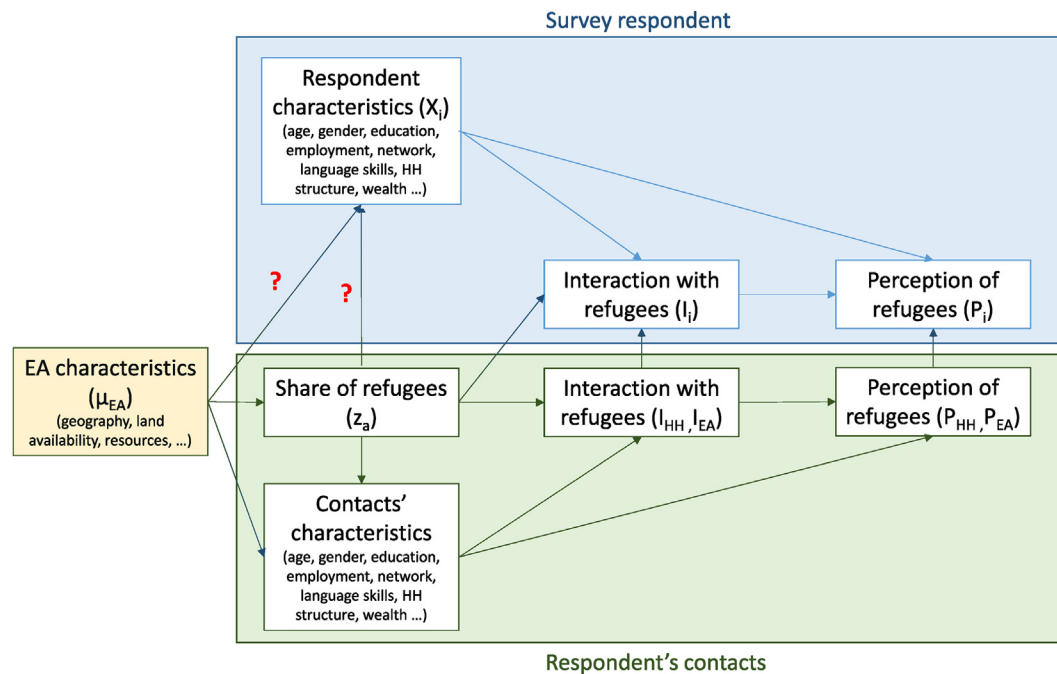


Fig. 1. Directed Acyclic Graph (DAG) of Causal Model.

As described in the results section below, all IV specifications lead to similar results. Opting for one or all instruments or dropping control variables do not seem to change any of the conclusions of IV, reduced form, and first-stage regressions. As always with non-random instrumental variables, the question of whether the exclusion restriction is (approximately) valid remains. Yet, given the substantial risks of reverse causality and omitted variables, and, to a lesser extent mismeasurement, we argue that a 2SLS estimation using a plausibly exogenous instrument is superior to a flawed OLS regression, especially since all the evidence we have suggests that the exclusion restriction might be approximately valid.

In all regressions, we cluster standard errors at the level of the enumeration areas to account for the fact that two-stage cluster sampling was used in most contexts (Abadie et al., 2017).

5. Results

We first provide a general description of our variables of interest (Table 1), before examining the results of OLS regressions (Table 2) and IV regressions (Table 3).

Our data suggests that the host population generally holds positive views about refugees. A majority of respondents from the host population reported that the presence of refugees increased eco-

Table 4
Perceptions of host populations about refugees with the Uganda sample (OLS regressions with controls)

	Dependent variable: hosts' perceptions of refugees								
	Sample = Uganda			Sample = Nakivale			Sample = Kampala		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Interaction index	0.0762*** (0.0222)	0.0919*** (0.0317)	0.100* (0.0589)	0.0875** (0.0341)	0.128** (0.0539)	0.191** (0.0872)	0.0792** (0.0292)	0.0706* (0.0389)	0.0365 (0.0677)
Perceptions within HH	0.291*** (0.0423)	0.258*** (0.0432)		0.316*** (0.0587)	0.295*** (0.0591)		0.254*** (0.0557)	0.213*** (0.0570)	
Perceptions among neighbours	0.332*** (0.0282)			0.317*** (0.0497)			0.342*** (0.0381)		
Age	−0.0120 (0.00814)	−0.0129 (0.00860)	−0.0144 (0.0163)	−0.00749 (0.00845)	−0.00792 (0.00840)	−0.00922 (0.0167)	−0.0189 (0.0141)	−0.0200 (0.0156)	−0.0310 (0.0271)
Age squared	0.0000962 (0.0000917)	0.000106 (0.0000969)	0.000133 (0.000184)	0.0000554 (0.0000967)	0.0000598 (0.0000957)	0.0000802 (0.000197)	0.000159 (0.000162)	0.000174 (0.000177)	0.000295 (0.000294)
Being female	0.0426 (0.0636)	0.0484 (0.0654)	0.0441 (0.0852)	0.0379 (0.103)	0.0426 (0.105)	0.0683 (0.121)	0.0455 (0.0764)	0.0566 (0.0757)	0.0328 (0.109)
Being married/living w/partner	0.0231 (0.0394)	0.0255 (0.0400)	0.0458 (0.128)	0.0204 (0.0662)	0.00555 (0.0740)	0.0234 (0.231)	0.0160 (0.0552)	0.0223 (0.0547)	0.0125 (0.158)
Living in urban context	0.0136 (0.0528)								
Being Somali (refugees and hosts)	0.0326 (0.0375)						0.103** (0.0437)		
Has a job/an economic activity	0.0120 (0.0418)	0.0180 (0.0467)	0.0276 (0.0830)	0.0224 (0.0498)	0.0327 (0.0585)	−0.00205 (0.0914)	0.0262 (0.0616)	0.0348 (0.0666)	0.114 (0.110)
Years of formal education	−0.000837 (0.00526)	−0.000730 (0.00539)	0.00766 (0.0131)	−0.000368 (0.00803)	0.00140 (0.00732)	0.00108 (0.0156)	−0.00135 (0.00842)	−0.00322 (0.00887)	0.00828 (0.0214)
Has vocational training	−0.0117 (0.0558)	−0.00746 (0.0576)	−0.0461 (0.124)	0.0571 (0.0994)	0.0796 (0.112)	0.0816 (0.242)	−0.0105 (0.0742)	−0.00780 (0.0755)	−0.0193 (0.153)
Has good English skills	0.136** (0.0540)	0.139** (0.0645)	0.0777 (0.123)	0.00312 (0.150)	−0.0354 (0.157)	−0.105 (0.293)	0.165*** (0.0573)	0.182** (0.0685)	0.115 (0.149)
Has good local language skills	−0.143** (0.0708)	−0.144* (0.0768)	−0.121 (0.256)	−0.0727 (0.168)	−0.0176 (0.199)	0.0780 (0.937)	−0.148* (0.0854)	−0.163* (0.0858)	−0.156 (0.226)
Health index	0.00302 (0.00468)	0.00416 (0.00590)	0.00451 (0.0107)	−0.00571 (0.00953)	−0.00297 (0.00940)	0.00788 (0.0166)	0.00991 (0.00676)	0.0101 (0.00944)	0.00112 (0.0148)
Mental health index (PHQ9)	−0.00808 (0.00647)	−0.00777 (0.00765)	−0.0172** (0.00815)	0.00462 (0.0121)	0.00491 (0.0123)	−0.0172 (0.0116)	−0.0204*** (0.00530)	−0.0219*** (0.00716)	−0.0185 (0.0122)
Has relative(s) in same site	0.0262 (0.0494)	0.0117 (0.0530)	0.0109 (0.0875)	−0.0203 (0.0786)	−0.0434 (0.0914)	−0.0618 (0.136)	0.0705 (0.0639)	0.0737 (0.0663)	0.108 (0.105)
Has relative(s) in Western countries	0.154 (0.119)	0.140 (0.126)	0.0358 (0.336)	0.241** (0.103)	0.217** (0.0892)	0.0582 (0.400)	0.106 (0.134)	0.103 (0.146)	0.0321 (0.377)
Father's years of formal education	−0.0104 (0.00692)	−0.0105 (0.00686)	−0.0116 (0.0126)	0.000704 (0.0180)	0.000991 (0.0187)	0.0107 (0.0286)	−0.0133* (0.00745)	−0.0130* (0.00739)	−0.0197 (0.0147)
Mother's years of formal education	−0.00307 (0.00744)	−0.00254 (0.00762)	0.0000339 (0.0148)	−0.0374** (0.0144)	−0.0348** (0.0152)	−0.0343 (0.0357)	0.00203 (0.00813)	0.00272 (0.00836)	0.00534 (0.0153)
Household size (No. of people)	−0.00557 (0.00854)	−0.00323 (0.0103)		0.00466 (0.0164)	0.00858 (0.0177)		−0.00819 (0.0102)	−0.00814 (0.0130)	
Dependency ratio in household	0.0218 (0.0229)	0.0176 (0.0251)		0.00607 (0.0360)	−0.00452 (0.0378)		0.0352 (0.0384)	0.0412 (0.0409)	
Female head of household	−0.0570 (0.0532)	−0.0519 (0.0588)		−0.00180 (0.0963)	0.0128 (0.107)		−0.0866 (0.0606)	−0.0863 (0.0646)	
Asset index	0.0497*** (0.0167)	0.0539*** (0.0199)		0.0788*** (0.0233)	0.0778*** (0.0237)		0.0210 (0.0226)	0.0239 (0.0290)	
Food insecurity index (HFIAP)	0.0769* (0.0429)	0.0673 (0.0534)		0.138* (0.0663)	0.107 (0.0823)		0.0225 (0.0585)	0.0368 (0.0697)	
Observations	1500	1500	1500	647	647	647	853	853	853
R ²	0.353	0.380	0.754	0.329	0.352	0.764	0.390	0.421	0.757
Fixed effects	Context	EA	HH	Context	EA	HH	Context	EA	HH

conomic opportunities and generated employment. Most respondents reported that refugees are friendly and trustworthy and should have the right to work, live where they want, and access free health care as well as free primary education for their children. While most respondents agree that refugees are economic competitors, only a minority replied that refugees create insecurity problems. However, we also observe significant differences in attitudes towards refugees between our survey sites (Figs. A.1 and A.2 in Appendix). We aim to explain some of these differences below using regression analysis and qualitative data.

Data on hosts' interactions with refugees is only available for Uganda. Our questionnaire considered three types of interactions:

sharing a meal, personal conversations, and business interactions. While relatively few hosts reported having shared a meal with a refugee, personal conversations and – to a lesser extent – business interactions are frequent. In Fig. 2, we represent the relationship between the number of interactions that host respondents have with refugees and their attitudes towards refugees. We observe a significant positive correlation between the two variables, both in Nakivale and Kampala.

Table 2 shows the results of OLS regressions of the hosts' perception index on the interaction index. While Columns 1–3 consider the full Uganda sample, Columns 4–6 are restricted to the Nakivale settlement and Columns 7–9 are

Table 2
Perceptions of host populations about refugees with the Uganda sample (OLS regressions).

	Dependent variable: hosts' perceptions of refugees								
	Sample = Uganda			Sample = Nakivale			Sample = Kampala		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A - Controls listed in Table 1									
Interaction index	0.0762*** (0.0222)	0.0919*** (0.0317)	0.100* (0.0589)	0.0875** (0.0341)	0.128** (0.0539)	0.191** (0.0872)	0.0792** (0.0292)	0.0706* (0.0389)	0.0365 (0.0677)
Perceptions within HH	0.291*** (0.0423)	0.258*** (0.0432)		0.316*** (0.0587)	0.295*** (0.0591)		0.254*** (0.0557)	0.213*** (0.0570)	
Perceptions among neighbours	0.332*** (0.0282)			0.317*** (0.0497)			0.342*** (0.0381)		
R-squared	0.353	0.380	0.754	0.329	0.352	0.764	0.390	0.421	0.757
Panel B - Controls selected with double Lasso									
Interaction index	0.0800*** (0.0210)	0.0963*** (0.0309)	0.0868 (0.0590)	0.0810** (0.0322)	0.131*** (0.0472)	0.165** (0.0799)	0.0779** (0.0330)	0.0811** (0.0411)	0.0260 (0.0691)
Panel C - No controls									
Interaction index	0.0769*** (0.0219)	0.100*** (0.0314)	0.0868 (0.0597)	0.0906** (0.0323)	0.132** (0.0487)	0.183* (0.0893)	0.0695** (0.0294)	0.0772* (0.0405)	0.0258 (0.0701)
Perceptions within HH	0.302*** (0.0414)	0.268*** (0.0431)		0.334*** (0.0640)	0.312*** (0.0653)		0.271*** (0.0523)	0.227*** (0.0542)	
Perceptions among neighbours	0.336*** (0.0268)			0.337*** (0.0417)			0.346*** (0.0355)		
R-squared	0.337	0.365	0.747	0.310	0.335	0.758	0.359	0.390	0.742
Observations	1500	1500	1500	647	647	647	853	853	853
Fixed effects	Context	EA	HH	Context	EA	HH	Context	EA	HH

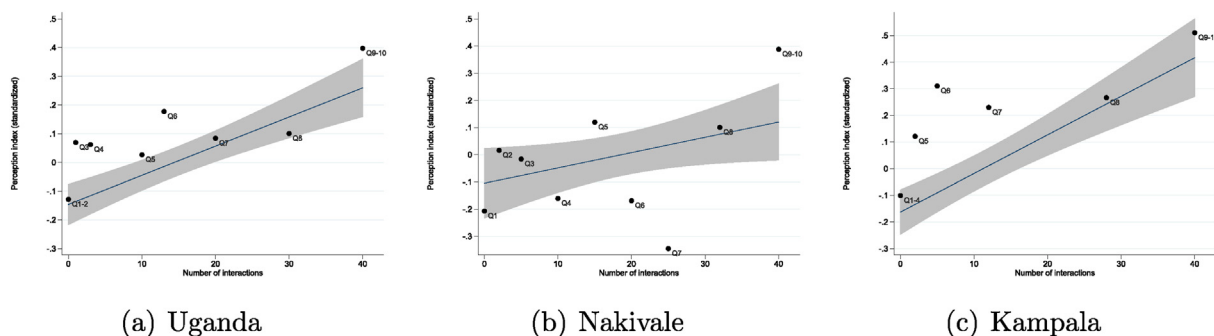


Fig. 2. Relationship between hosts' perceptions of refugees and interactions with refugees.

restricted to Kampala. We draw two conclusions from this table.

First, the correlation between the number of interactions that host respondents have with refugees is positive and statistically significant in most specifications. However, the magnitude of the association is relatively small. In the Uganda sample, a one standard deviation increase in the interaction index is associated with a 0.076 to 0.1 standard deviation increase in the perception index.¹³ The association seems slightly stronger in the Nakivale settlement, both in terms of statistical significance and magnitude. With household fixed effects, the correlation is positive but not always significant with the Kampala sample. This might indicate that omitted variables at the household level drive the positive association between interactions and perceptions in the Kampala context.

Second, there is a strong correlation between respondents' perception of refugees and the perception of other household members and neighbours. The association is statistically significant

and large.¹⁴ In the Uganda sample, a one standard deviation increase in the average perception index of other household members is associated with a 0.26 to 0.3 standard deviation increase in the perception index. A one standard deviation increase in the average perception index of respondents' neighbours is associated with a 0.33 standard deviation increase in the perception index. The significance and magnitude of these correlations is stable across contexts and robust to various specification changes, for example, excluding the measures of perception among other household members and neighbours or considering other aggregation methods to construct the perception and interaction indices.

These correlations should not be interpreted as causal because of possible endogeneity issues. We believe that omitted variable bias is unlikely to fully explain the positive correlation observed in Nakivale as regression coefficients remain very stable when going from a regression without controls to a regression with a full set of control variables and household fixed effects (Altonji & Elder, 2005; Oster, 2019). But omitted variable bias is possible in Kam-

¹³ With respect to the types of interaction, we find that sharing meals is somewhat more strongly associated with positive perceptions than simply having conversations or business exchanges, whether measured by number of meals/conversations/exchanges or through binary indicators of having participated in any of these exchanges. As the differences are small, and including the separate measures might induce multicollinearity, we keep the focus of this analysis to the overall interaction index.

¹⁴ We explored whether this intra-cluster correlation in perceptions is also notable at higher geographical levels than neighbourhoods. When considering the opinions of peers in the six research sites or the three countries, there is no longer any correlation between the individuals' and peers' opinions. As such, individual opinions seem to be strongly influenced by the immediate and local networks, and less so by the wider society.

pala, as the inclusion of household fixed effects leads to insignificant results. Most importantly, reverse causality could bias regression coefficients in all contexts. And mismeasurement problems could lead to attenuation bias.

In Table 3, we use an IV approach to address endogeneity issues. We consider two instruments: (1) the proportion of refugees living in respondents' EA (Columns 1, 4, and 7), and (2) the average interaction index among other respondents in the EA (Columns 2, 5, and 8). We also consider the two instruments together (Columns 3, 6, and 9). Results suggest that the instruments are strong and likely to be exogenous. The effective F-statistics of the first-stage regressions are generally much larger than 10, which is the threshold below which instruments tend to be considered as weak in the literature (Staiger et al., 1997; Olea & Pflueger, 2013). There is one exception – the regression shown in Column 4 Panel B, which we will interpret cautiously (F-statistic = 7.6). When the instruments are considered jointly, the first-stage regressions are strong, and the Sargan–Hansen J tests fail to reject the null hypothesis that the over-identifying restrictions are valid. While the results of these tests are reassuring, they do not guarantee that the results of IV regressions can be interpreted causally. We therefore remain prudent in our interpretations.

The IV results of Table 3 can be compared to the OLS results in Columns 1, 4, and 7 of Table 2. The IV results are very different from the OLS results. In the full Uganda sample and in the Nakivale sample, we find no statistically significant association between refugee-host interactions and the perceptions that host have about refugees. This finding contrasts with the positive correlation that we had observed in Table 2, which is probably driven by endogeneity issues.¹⁵ It might be that Ugandans who have positive views on refugees are more prone to interact with them and not the contrary.¹⁶

In Kampala, the results of IV regressions are qualitatively similar to the results of OLS regressions. Hosts' interactions with refugees are associated with more positive attitudes towards refugees. The estimated coefficient remains rather small, with standardised coefficients ranging between 0.095 and 0.12. While regression coefficients are statistically significant at conventional thresholds in all specifications, the IV estimates are not statistically different from the OLS estimates.

In conclusion, the results from OLS regressions show that there is a small positive relationship between refugee-host interactions and host population perceptions of refugees. In Nakivale, this relationship seems to be partly driven by endogeneity issues as the results of IV regressions are not statistically significant. In Kampala, however, we find some evidence of a positive – albeit relatively small – association between interactions and perceptions. In Appendix, we show that these results are robust to various specification changes.¹⁷ Given these results and the limitations of OLS

and IV regressions, our prudent conclusion is that there is no evidence suggesting that refugee-host interactions could be detrimental to social cohesion between refugee and host populations in Kampala and Nakivale.

In the remainder of this section, we use correlational analysis and qualitative evidence to explore other potential determinants of host perceptions. We study the correlates of host perceptions for Uganda in Table 4 and for the cross-country sample in Table 5. We highlight four main findings.

First, respondents' perceptions are highly correlated with the perceptions of other household members and neighbours. The regression coefficients are very large and highly significant in all specifications. These variables are by far the most important predictors of perceptions. Using the decomposition method described in Sterck (2019) and Hoeffler and Sterck (2022), we estimate that the two variables explain about 52% of the variation in respondents' perception in the cross-country OLS regression (Table 5, Column 1). In comparison, the second most important predictor – health – explains only 1.2% of the variation in respondents' perception. This result confirms our intuition that perceptions are not formed independently of the context and of other people, but shaped at household and neighbourhood levels.

For instance, the perceptions towards refugees are often shared within a host household, and even transferred across generations within households. Joan, an 18-year-old Ugandan who lives in Kampala, explained how her mother developed a relationship with a Congolese refugee family:

My mother came from a rural village to Kampala. My mother and Nelly [a refugee] lived in neighbourhood in Kampala and they went well. They taught English and Swahili each other. Nelly was buying vegetable from my mother so they came to know each other well. (Joan, Ugandan, Kampala).

Joan explained that even after her mother's death, the positive relationship with Nelly's family has maintained, which has led to her positive perceptions to refugee communities in general.

Furthermore, host perceptions may be shaped by local gossip as well as government and media narratives. Community-level attitudes towards refugees may be formed through rumours and misinformation, particularly if people lack knowledge about who refugees are. Local government officials in Kampala highlighted that most locals do not fully understand why refugees come to Uganda, sometimes regarding them to be 'economic migrants' who compete for opportunities (John, Ugandan, Kampala). Similar perspectives were expressed by host nationals in Kenya, often with an emphasis on a terrorist-related security threat, even in the absence of being able to provide clear evidence to support such claims. According to several Kenyan host community members, whenever Al-Shabaab perpetrated terrorist attacks occur, securitisation by the national government has exacerbated intolerance and hostility towards Somali communities at a local level (see also ReDSS, 2015). However, it is possible that the impact of national government campaigns on host community perceptions may be short-term.

We also observe a positive correlation between hosts' perceptions of refugees and refugee perceptions of their host population across sites, as illustrated on Fig. 3. To construct this figure, we exploited a question that was asked across both refugee and host populations and across all sites. All survey participants were asked to assess whether members of the other group (i.e. refugees for hosts and hosts for refugees) are trustworthy. We compare the average answer provided by refugees and hosts in each site. The correlation between the two variables is very high ($\rho = 0.73$), showing that perceptions are often reciprocal. The fact that very different average responses are measured across sites suggests that different equilibria are possible.

¹⁵ The lack of significance does not appear to be driven by lower statistical power resulting in larger standard errors in the IV specifications compared to OLS specifications.

¹⁶ We explored this hypothesis by inverting our main specification and regressing refugee-host interactions on perceptions: $I_i = \alpha + \beta_1 P_i + \beta_2 I_{HH} + \beta_3 I_{EA} + \gamma X_i + \mu + \epsilon_i$. Not surprisingly, β_1 is positive and statistically significant in OLS regressions. When instrumenting P_i by P_{HH} and P_{EA} , estimates of β_1 are statistically insignificant, suggesting that there is no important causal relationship between refugee-host interaction and perceptions (in either direction). However, we emphasize that the exclusion restriction of these IV regressions is unlikely to be satisfied because the perceptions of neighbours and other household members are likely to affect the degree of interaction respondents decide to have with refugees (e.g. to avoid reputation damage).

¹⁷ Results are robust to dropping P_{HH} from the list of control variables (Tables A.5 and A.9), considering an interaction dummy identifying hosts who reported at least one interaction with a refugee (Tables A.6 and 10), and using I_{HH} as an extra instrumental variable (Table A. 11). Results of reduced-form regressions are similar to the results of IV regressions (Table A. 12).

Table 5

Perceptions of host populations about refugees with the cross-country sample (OLS regressions with controls).

	Dependent variable: hosts' perceptions of refugees				
	(1)	(2)	(3)	(4)	(5)
Perceptions within HH	0.460*** (0.0197)	0.446*** (0.0208)			
Perceptions among neighbours	0.329*** (0.0179)				
Age	−0.00751* (0.00400)	−0.00783* (0.00415)	−0.00676 (0.00634)	0.00186 (0.00529)	−0.00495 (0.00466)
Age squared	0.0000758 (0.0000489)	0.0000837 (0.0000511)	0.0000958 (0.0000793)	−0.0000622 (0.0000634)	0.0000398 (0.0000571)
Being female	−0.0207 (0.0211)	−0.0159 (0.0216)	−0.00268 (0.0256)	−0.0675*** (0.0235)	−0.0239 (0.0209)
Being married/living w/partner	0.0257 (0.0209)	0.0263 (0.0217)	−0.0123 (0.0358)	0.0172 (0.0256)	0.0294 (0.0240)
Living in urban context	−0.00785 (0.0229)			−0.287*** (0.0955)	
Being Somali (refugees and hosts)	0.0462** (0.0187)			0.441*** (0.106)	
Has a job/an economic activity	−0.0237 (0.0171)	−0.0216 (0.0178)	0.00480 (0.0260)	−0.108*** (0.0275)	−0.0410** (0.0200)
Years of formal education	−0.000433 (0.00235)	−0.0000453 (0.00246)	0.00133 (0.00367)	−0.0107*** (0.00390)	−0.00291 (0.00280)
Has vocational training	−0.0276 (0.0256)	−0.0244 (0.0275)	−0.0227 (0.0441)	−0.0385 (0.0389)	−0.0281 (0.0279)
Has good English skills	0.0507** (0.0251)	0.0546* (0.0280)	0.0398 (0.0433)	0.206*** (0.0408)	0.0645** (0.0304)
Has good local language skills	−0.0409* (0.0246)	−0.0578* (0.0300)	−0.0687 (0.0518)	−0.235*** (0.0588)	−0.0407 (0.0384)
Health index	−0.0104*** (0.00252)	−0.0126*** (0.00299)	−0.00490 (0.00506)	−0.0308*** (0.00501)	−0.0197*** (0.00399)
Mental health index (PHQ9)	−0.00601** (0.00266)	−0.00826*** (0.00310)	−0.00961* (0.00513)	−0.0150*** (0.00568)	−0.00993** (0.00410)
Has relative(s) in same site	−0.000291 (0.0150)	−0.00384 (0.0159)	0.00620 (0.0290)	−0.0423 (0.0259)	−0.0107 (0.0229)
Has relative(s) in Western countries	0.00164 (0.0406)	−0.0288 (0.0446)	−0.0196 (0.0858)	0.111 (0.0695)	0.0160 (0.0521)
Father's years of formal education	−0.00733** (0.00288)	−0.00679** (0.00301)	−0.00591 (0.00548)	−0.0114*** (0.00392)	−0.00925*** (0.00330)
Mother's years of formal education	0.00649* (0.00358)	0.00767* (0.00392)	0.00624 (0.00648)	0.000249 (0.00539)	0.00851* (0.00460)
Household size (No. of people)	0.0126*** (0.00304)	0.0151*** (0.00366)		0.00299 (0.00642)	0.0128** (0.00501)
Dependency ratio in household	−0.0231** (0.00934)	−0.0306*** (0.0102)		−0.00851 (0.0169)	−0.0302** (0.0152)
Female head of household	−0.00442 (0.0201)	−0.00354 (0.0222)		0.00176 (0.0336)	0.0294 (0.0320)
Asset index	0.00428 (0.00644)	0.00473 (0.00700)		0.0172 (0.0142)	0.00562 (0.0121)
Food insecurity index (HFIAP)	0.0297** (0.0133)	0.0402*** (0.0151)		0.0381 (0.0332)	0.0486* (0.0263)
Observations	6664	6671	6671	6671	6671
R ²	0.618	0.636	0.872	0.389	0.542
Fixed effects	Country	Neighbourhood	HH	Country	Neighbourhood

Second, not all interactions are associated with more positive perceptions. Recall that the above regressions suggested that the association between interactions and perceptions seems different in Nakivale and Kampala. Our qualitative research provides evidence of how perceptions towards refugees can vary substantially among local host populations depending on the pattern of economic interaction or the position held in relation to refugees. For instance, in refugee-hosting areas in Kampala, perceptions relating to refugees differ between landlords and tenants. Ugandan landlords acknowledge the contributions made by refugee tenants and express positive views to refugees, as illustrated by the following statement of a Ugandan landlord in Kiganda area where many Somali refugees reside.

Refugees are doing well and behaving well... They contributed to local development. For instance, rent in this area went up

due to refugee influxes since refugees pay well and pay better. (Betty, Ugandan, Kampala).

On the other hand, while it is hard to prove causality between refugee influxes and rent hikes, Ugandan tenants in these suburbs with large numbers of refugees often blame the refugees for increased rents. As this example indicates, at a micro-economic level, refugees can have a redistributive effect that creates 'winners and losers' within host populations. The nature of interactions with refugees differs between 'host winners' and 'host losers', and hence interaction may reinforce either positive or negative perceptions, for example by feeding the narratives of refugees as contributors or as competitors.

Another illustration of this is how host interactions and perceptions may vary depending on the host's own position as employer or employee. At the time of our research in Kitengera, Nairobi in

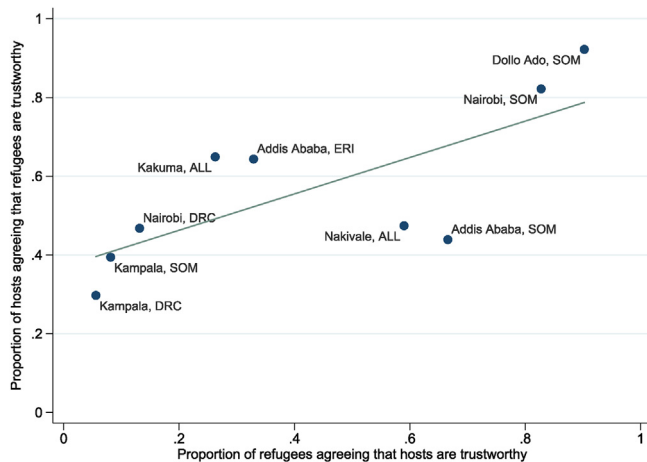


Fig. 3. Comparisons of hosts and refugees' perceptions of the out-group trustworthiness.

2017, mounting tension fed by growing economic competition between Congolese refugees and local hosts had manifested itself in a communal conflict. According to local media, a personal quarrel between a Congolese refugee and his Kenyan friend occurred at a bar in Kitengera, resulting in the Congolese injuring the Kenyan. The Congolese refugee was arrested by the police and taken to court. After this incident, some groups of Kenyan locals started organising protests against the entire Congolese refugee community in Kitengera. In an interview with a local government official, he described the nature of this conflict as the increasing frustration of Kenyan casual labourers towards refugees:

Most of these protestors were Kenyan manual workers who also engaged in lower paid jobs such as hawkers, security guards, and factory workers. They have no special skills and only limited levels of education. They claimed the number of Congolese refugees has become too big in Kitengera and were taking away our jobs. (Joseph, Kenyan, Kitengera, Nairobi).

On the other hand, Kenyan business owners in the same area, especially those who directly employ Congolese refugees, took an opposing position. For instance, Alex, a Kenyan M-Pesa and phone selling shop owner in Kitengera since 2002, strongly sided with refugees. When asked whether he thinks refugees are taking away Kenyan jobs or not, he responded:

No, Congolese refugees are not taking jobs away by force... The employers should be able to decide who to hire. This is business not charity... I definitely prefer to hire refugees. If refugees disappear from here, many of our business will be damaged. It is not only a source of employment, but they also bring other Congolese refugees as customers. They increase our sales. (Alex, Kenyan, Kitengera, Nairobi).

The comments from Kenyan hosts in Kitengera show a critical difference between employers and labourers in terms of attitude towards refugees. The literature suggests that hosts are not uniformly affected by the presence of refugees, and that the poorest or most vulnerable within a given community are usually at the highest risk of being negatively impacted (Chambers, 1986; Verme & Schuettler, 2021). Meanwhile, business owners, like those in Kitengera, may be able to benefit from cheap refugee labour, and take on positive attitudes towards the refugees with whom they interact.

We observe the same pattern with Ugandan landowners versus non-landowners around the Nakivale settlement. Rural camp contexts often observe heightened resource competition between host and refugees, and in the case of Nakivale there is tension over

access to land. The provision of land by the Ugandan government to refugee households is a central underpinning of its self-reliance strategy. Refugees have traditionally been given access to a plot of land upon arrival, which can be used for both consumption and commerce. However, the more than 60% increase in refugee numbers in Nakivale in the years preceding our survey had left the settlement overwhelmed, as the size of the settlement remained the same. As OPM became unable to provide adequate size of land for new arrivals, they instead started locating refugees at the border of the settlement, leading to local demonstrations against refugees in Nakivale. In our interviews in 2018, villagers living around the settlement expressed concerns about growing tension relating to land access sparked by the influx of refugees. The Ugandan vice chairperson of a church located adjacent to the settlement shared his feeling about the increasing tension over land:

Refugees are good people. As long as refugees stay inside the settlement area, we have no problem. But when they come to our land, it is a problem. (Samson, Kazya church EA, Nakivale).

Since most Ugandan villagers living around Nakivale settlement are engaged in farming and animal husbandry that rely upon access to land, the increased occupation of land by refugees has posed a threat to their livelihoods and consequently made the relationship with refugees strained. Our survey data shows differences in opinions between the 70% of Ugandans around Nakivale who own land and the 30% who do not. Whilst across both groups about 8 out of 10 believe refugees are competitors, the landowners are significantly more likely to think of refugees also as economic contributors – 76% agree they are, as opposed to only 63% among hosts without land (t-test p-value = 0.0003). This is perhaps explained by the fact that Ugandan landowners interact with refugees not only as competitors, but also as customers and employees.

Third, correlational analysis suggests that ethno-linguistic proximity matters in forming perceptions. We observe generally positive opinions on refugees in contexts where both host and refugee communities are of Somali ethnic origin. Indeed, living in these areas, all else equal, is associated with more positive perceptions overall (Table 5, Columns 1 and 4), as well as with specific opinions on refugees' economic contribution and character traits, and more progressive beliefs about refugee rights (Table 6, Panels A, C, and D). The Somali Ethiopians living near the Dollo Ado camps and the Somali Kenyans in Eastleigh (Nairobi) are noticeably more positive to refugees than hosts in the other research sites. Moreover, within each of the three capital cities, hosts in Somali neighbourhoods are significantly more positive towards refugees than those in areas hosting Congolese or Eritreans.

Somali ethnic bonds are particularly strong and crucial for shaping the relationship and perceptions between refugees and hosts in the Dollo Ado camps close to the Somali-Ethiopia border area. According to local elders living near the camps, "We are all Somali. We have common language, religion, and culture. They are our brothers and sisters. There are no differences between refugees and hosts" (FGD 2, Melkadida). Around Dollo Ado, the positive perception of hosts towards refugees seems to stem not only from shared language, culture, and beliefs, but also from the Somali Ethiopian hosts' understanding of the camps as part of a Greater Somalia, and respect for common authorities. A regional Somali king – King Abdille – plays a critical role in making cohesive relationship between refugees and indigenous people. According to Somali Ethiopian village leaders living close to the camps:

Abdille made the order to us to treat refugees well. He said 'refugees are our Somali people, don't disturb them'. He prohibited discrimination and exclusion of refugees in this zone. His order is one of the major reasons why refugees and hosts are

Table 6

Perceptions of host populations about refugees with the cross-country sample (OLS regressions with controls as per Table 5)

	(1)	(2)	(3)	(4)	(5)
Panel A - Dependent variable: Economic Index					
Perceptions within HH	0.292*** (0.0266)	0.265*** (0.0271)			
Perceptions among neighbours	0.426*** (0.0231)				
Living in urban context	−0.0591** (0.0239)			−0.585*** (0.0861)	
Being Somali (refugees and hosts)	0.0803*** (0.0195)			0.590*** (0.0972)	
Observations	7417	7426	7426	7426	7426
R-squared	0.557	0.579	0.820	0.413	0.549
Panel B - Dependent variable: Threat Index					
Perceptions within HH	0.411*** (0.0216)	0.391*** (0.0225)			
Perceptions among neighbours	0.260*** (0.0156)				
Living in urban context	0.0532* (0.0273)			0.395*** (0.0895)	
Being Somali (refugees and hosts)	−0.0152 (0.0159)			0.0847 (0.101)	
Observations	7204	7211	7211	7211	7211
R-squared	0.376	0.394	0.750	0.094	0.289
Panel C - Dependent variable: Character Index					
Perceptions within HH	0.414*** (0.0224)	0.391*** (0.0235)			
Perceptions among neighbours	0.315*** (0.0183)				
Living in urban context	−0.00250 (0.0236)			−0.275*** (0.104)	
Being Somali (refugees and hosts)	0.0156 (0.0155)			0.203** (0.0962)	
Observations	7165	7173	7173	7173	7173
R-squared	0.514	0.533	0.814	0.298	0.451
Panel D - Dependent variable: Rights Index					
Perceptions within HH	0.452*** (0.0202)	0.433*** (0.0211)			
Perceptions among neighbours	0.246*** (0.0141)				
Living in urban context	0.0614** (0.0251)			0.315*** (0.0801)	
Being Somali (refugees and hosts)	0.0296* (0.0171)			0.238** (0.0994)	
Observations	7237	7246	7246	7246	7246
R-squared	0.433	0.452	0.785	0.171	0.326
Fixed effects	Country	Neighbourhood	HH	Country	Neighbourhood

living peacefully and well here. He also provided land to host refugees. (Village leaders, Host, Dollo Ado).

According to both refugees and hosts, being accustomed to the same 'Somali systems', with shared principles and governing structures, has facilitated both groups to foster peaceful and cohesive relationships. In the Dollo Ado area, most residents are Muslim and follow Islamic laws and court systems, which enabled Somali refugees to use the similar systems used in Somalia. In the Dollo Ado camps, local conflict resolution committees consist of an equal number of elders from host and refugee communities, who have equal power. While both refugees and Ethiopian host members have access to Ethiopian law and court systems, many family and communal issues, such as engagements, marriage, divorce, and domestic violence are usually handled by the local committees or Islamic courts.

The importance of shared values and structures in shaping relationships is also highlighted by Somali Kenyans and Somali refugees living in Eastleigh, Nairobi – often portrayed as 'Little Mogadishu' (Carrier, 2017) due to a dominant Somali presence. There, Somali refugees live together with Somali Kenyan hosts and regularly meet them through madrassa schools, mosques, and volunteer and social activities. As they live in the same loca-

tions, refugees and hosts often face common problems. In Eastleigh, local Kenyans and refugees work together in community-based organisations (CBOs) to solve common issues such as poverty, school dropout, alcohol among youth, and their beneficiaries include both groups. In one focus group discussion with seven Somali Kenyan hosts living in Eastleigh, all participants supported the following view of Somali refugees, highlighting the bond across the groups:

For us, we feel much closer to Somali refugees than other tribes of Kenya. We are from different countries but we are psychologically closer. We share the same clan system. We speak the same language, and have similar religion, food, and culture. (FGD 2, host, Eastleigh, Nairobi).

In Eastleigh, it is common for refugees and hosts to build partnerships and set up joint-businesses, and Somali Kenyan business partners expressed positive views of their refugee counterparts. Zamzam, a female Somali Kenyan, co-owns a wholesale clothing shop with a Somali refugee in Eastleigh. She explained their partnership as follows:

We are not relatives but we have been living in the neighbourhood...It is good to do business together with Somali refugees.

They are trustworthy. We have many things in common – language, culture, religion so it is easy to work together. (Zamzam, Somali Kenyan, Eastleigh, Nairobi).

Fourth, there seems to be distinct differences in how refugees are perceived by urban and rural nationals. All else equal, being an urban host is associated with about a 0.3 standard deviation reduction in the perception index (Table 5, Column 4). However, the use of an aggregated perception index masks stark differences between urban and rural hosts in the different types of opinions the index consists of. In Table 6 and Fig. 4, we disaggregate the overall host perception index into four components. We distinguish between how they perceive refugees in relation to (a) the economy, (b) threats, (c) personal characteristics, and (d) rights. As is evident from the table and figure, the nature of host community attitudes towards refugees differs between camps and cities. The next paragraphs explore the four dimensions further.

Perhaps most strikingly, urban hosts hold much lower regards about refugees' economic role in their community than rural hosts. All else equal, living in the capitals versus rural contexts is associated with a 0.56 decrease in the index on refugees' economic contribution (Table 6, Panel A). Hosts in Addis are particularly negative, where only 44% agree that refugees have increased economic opportunities for the host community and only 36% agree that refugees have generated employment. This is understandable as the number of refugees who are working in Addis Ababa is small, due to the strict restrictions on refugees' right to work there. Ayan, a female Somali Ethiopian living in Bole Michael, confirmed this observation:

I have many Somali refugee friends... Many of them face economic issues... Compared to hosts, they are much poorer... I don't think refugees are making contributions [to hosts]. Many of them are in hardship and they don't have room to contribute. (Ayan, Somali national, Bole Michael).

Meanwhile, residents around camps acknowledge how refugees' presence contributes to the local economy, with more than 9 in 10 agreeing that refugees have generated employment and created economic opportunities for the host nationals. These communities are and have historically been more disadvantaged than their urban counterparts and hence appreciate the economic opportunities that arise from proximity to a camp economy. As is widely recognised, the influxes of refugees and aid organisations can dramatically change the socio-economic landscape of hosting areas, in part due to investments made by humanitarian and development actors. For example, the impacts of the five Dollo Ado camps on the region have been significant. Since the camps are relatively new, most of the current host populations have witnessed and experienced these impacts on their own lives. During a focus group discussion, the host community elders living near one of the camps described these changes:

After the camp was established, there was serious environmental degradation and depletion due to the large refugee population... But on the other hand, we received new forms of international assistance. Job opportunities emerged. Many educational and health facilities were set up. Water points were drilled. (Elders, Host, Dollo Ado).

However, we also find that urban hosts feel less threatened than rural hosts by refugee presence (Table 6, Panel B). This reflects how urban hosts in the three countries feel less threatened by competition from refugees than the rural hosts do. It is also driven by a large disagreement about insecurity issues among Kenyan hosts in Nairobi and Kakuma. Similar to hosts in most of our research sites, the hosts in Nairobi tend to disagree that refugees create issues of insecurity. In contrast, 79% of indigenous Turkana villagers around

Kakuma believe refugees cause insecurity issues. In this context, tensions over livelihoods and resources are common, and more than 9 in 10 Turkana also consider refugees competitors. Violent clashes between the groups emerge especially when refugees engage in activities that Turkana people have claimed for themselves, such as collecting firewood or rearing livestock. In addition, while the number is modest, some Turkana hosts raised concerns about the presence of guns inside the camp. While many Turkana interviewees acknowledged economic benefits brought by refugees, they concurrently suggested that the presence of the camp has downsides.

Furthermore, urban hosts are less likely to consider refugees friendly or trustworthy (Table 6, Panel C). In this aspect, there is also large variation between the three countries. Whilst 91% of Ethiopians and 82% of Kenyans agree that refugees are friendly or "good people", only 52% of Ugandans think so, and the same pattern applies to perceived trustworthiness. Dollo Ado stands out as a site where nearly all hosts consider refugees friendly and trustworthy, illustrating both the "camp effect" and the "ethno-linguistic effect" of the Somali bond.

Finally, urban hosts hold more 'progressive' attitudes concerning which rights refugees should be granted (Table 6, Panel D). Hosts across all sites generally portray progressive views about refugees from a rights perspective. For example, an overwhelming 90% agree that refugees should access free health care and that refugee children should access school.¹⁸ Moreover, 85% think that refugees should have the right to work, with only a marginal difference between rural and urban hosts. However, rural hosts are more reluctant than urban hosts to provide refugees with the right to live where they want (57% agree as opposed to 70% of urban hosts).

In summary, our empirical findings highlight the significant variability and complexity of host perceptions. Opinions are heterogeneous both across and within the research sites. Within any given context, seemingly ambivalent views may exist. For example, in urban areas, tolerance levels are generally lower and refugees are more likely to be perceived as an economic burden, and yet hosts are more likely to hold progressive (cosmopolitan) attitudes to refugee rights. The Turkana hosts around Kakuma see refugees as a security threat while generally regarding them as friendly and valuing their economic contribution. Ugandan landowners in Nakivale view refugees as both competitors and contributors. These 'mixed' sentiments – positive and negative – are not mutually exclusive, but rather co-existent in host societies. However, we also observe some clear patterns across contexts. For example, the role of ethno-linguistic proximity (notably revealed through the so-called 'Somali bond') plays a role in shaping attitudes, the importance of neighbourhood and household-level attitude formation, and the role of a household's own socio-economic position in relation to refugees (landlord or tenant, employer or employee, landowner or non-landowner) are important themes across context. Furthermore, a clear theme is the distinction between urban and rural contexts: through our Uganda data there is evidence that direct interactions may play a causal role in shaping attitudes in cities, but not in camp-like settings. Further, we find evidence across the countries that attitudes in camp-like settings are more positive than in cities, and that the attitudes in the two context types are shaped by different sets of factors, with, for example, concerns about economic contribution being strikingly greater in urban areas and security concerns greater in camp-like contexts.

¹⁸ These two statements were asked to hosts in all sites except the Kakuma Camps in Kenya.

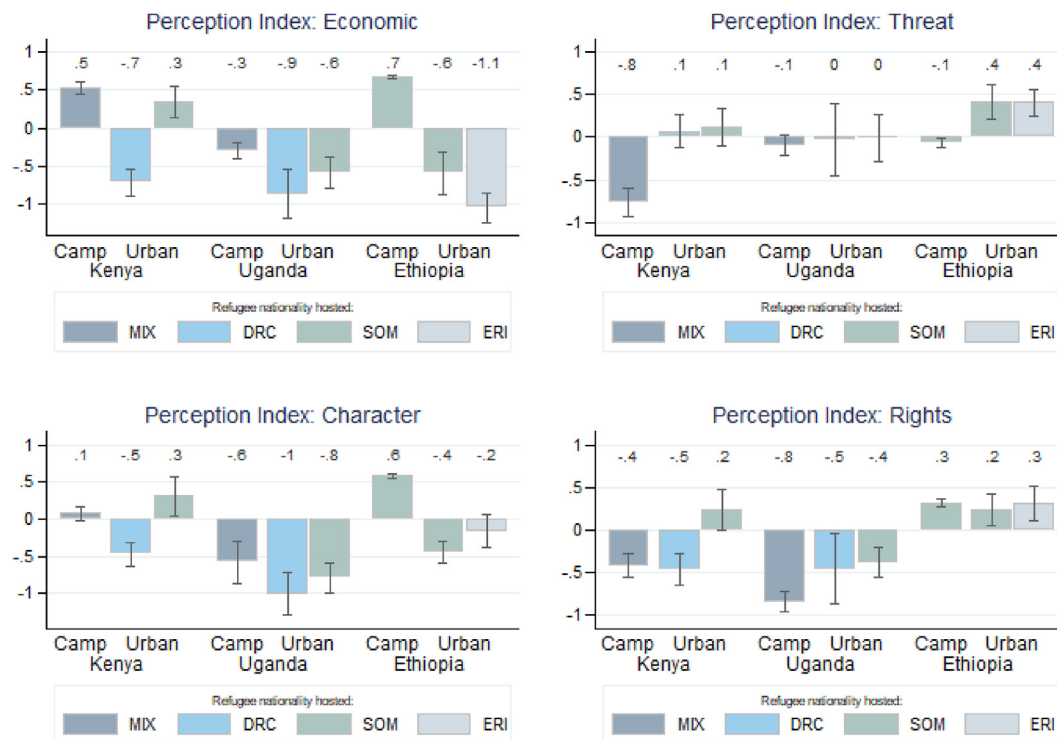


Fig. 4. Host perceptions of refugees with respect to specific domains.

6. Conclusion

Our article is among the very first to explore the ‘contact hypothesis’ for refugee-host community interaction in a developing country context. Until now, nearly all of the research examining the impact of refugee-host interaction on host community attitudes towards refugees has focused on Europe (Rozo & Vargas (2021) and Barron et al. (2021) are recent exceptions, exploiting data from Colombia and Jordan respectively). Consequently, it is particularly interesting to explore how our findings diverge from the existing, predominantly high income-country literature on contact and ‘native’ attitudes. What is similar and what is different?

While the European literature focuses on both contact (as sustained interaction) and exposure (as short-term interaction during transit), our focus is very much on the former (Ajzenman & Aksoy, 2020; Steinmayr, 2021). Our OLS regression analysis findings are consistent with the contact hypothesis (Allport, 1954), revealing a small positive and statistically significant correlation between interaction and positive perceptions. We have sought to address issues of endogeneity issues – reverse causality in particular – by using an IV approach. The introduction of the IV leads to the disappearance of the positive correlation between contact and attitudes when considering the full Uganda sample or the Nakivale sample. In Kampala, we find some evidence of a positive – albeit small – association between interactions and perceptions. We find no evidence suggesting that refugee-host interactions could be detrimental to social cohesion between refugee and host communities. The finding that the association between refugee-host interactions and perceptions is more salient in urban contexts resonates with the work of Dustmann et al. (2019) who, using data from Denmark, find that refugee presence is associated with lower vote shares for anti-immigration parties in large urban municipalities, while the opposite is true in rural municipalities. Interestingly, this suggests that some of the mechanisms and findings

relating to the impact of contact on social cohesion in the ‘North’ may also be applicable in the ‘South’.

Another robust finding of our analysis is that respondents’ attitudes are closely correlated with other household members and immediate neighbours, which highlights the importance of intra-group attitude formation processes alongside inter-group contact as closely related mechanisms for attitude formation. While Hopkins (2010), for example, looks at the inter-relationships between contact and national-level processes of attitude formation, our research highlights the need to examine the inter-relationship between contact and local-level (neighbourhood or household) processes of attitude formation. This suggests the need for further research to explore how exactly neighbourhood and household-level processes of intra-group attitude formation interact with members’ experiences of inter-group contact.

Our results further suggest that ethnic and linguistic ties between refugees and hosts matter for perceptions and attitudes. ‘Group threat hypothesis’ predicts that diversity leads to opposition (Quillian, 1996; Hjerm, 2007; Stephan & Stephan, 2017). Steele and Abdelaaty (2019) find that greater ethnic diversity is associated with decreased support for refugees; however, this relationship is not consistent across all measures of diversity. We find suggestive evidence that proximity in terms of ethnicity and language between refugees and host communities correlates with more positive mutual attitudes of hosts towards refugees.

Our qualitative research complements these insights, but also speaks to some of the other theoretical explanations for variation in attitudes to immigration within the literature, such as the labour market competition and fiscal burden hypotheses. Overall, though, we interpret both the quantitative and qualitative findings as rejecting the ‘any contact’ version of contact theory, but we confirm the importance of understanding the enabling conditions through which interaction leads to more positive host community attitudes (Pettigrew & Tropp, 2006). To be effective in promoting refugee-host social cohesion, contact may be most effective in

the context of (a) shared norms (e.g. ethno-linguistic proximity), (b) mutually beneficial socio-economic opportunity, and (c) within-group community structures that amplify positive perceptions. The identification of these mechanisms is, however, preliminary and requires further research, including through intervention-based studies.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.worlddev.2022.106088>.

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