

The impact of private hosting on the integration of Ukrainian refugees in Germany

In the format provided by the
authors and unedited

Supplemental Materials

**The Impact of Private Hosting
on the Integration of Ukrainian Refugees**

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1 Background on Registration

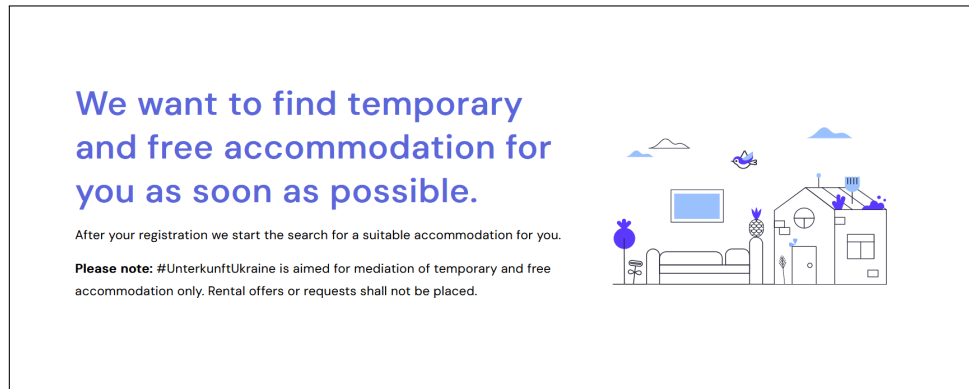
In this section we provide additional information about the registration of refugees and hosts by the non-profit organization #UnterkunftUkraine (UU). The registration process for hosts and refugees on the platform involved providing essential information that was then used by UU to match refugees to hosts.

1.1 Refugees Registration

In total, more than 117,000 Ukrainian refugees registered on the platform provided by UU. A small share of refugees (less than 2%) got registered through other organizations.

In order to register, refugees had to provide several pieces of information, including their name, gender, date of birth, family size, the total number of beds required, languages spoken, intended date and place of arrival in Germany, and their preferred municipality of residence.

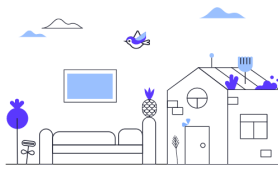
As of November 2023, the registration forms are no longer online. Figures 1-5 document them as screenshots.



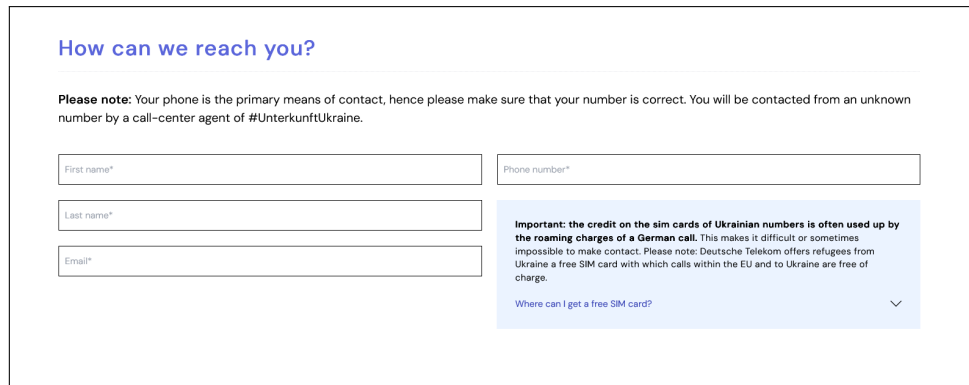
We want to find temporary and free accommodation for you as soon as possible.

After your registration we start the search for a suitable accommodation for you.

Please note: #UnterkunftUkraine is aimed for mediation of temporary and free accommodation only. Rental offers or requests shall not be placed.



Supplementary Figure 1: Registration Form for Refugees, Screenshot 1.



How can we reach you?

Please note: Your phone is the primary means of contact, hence please make sure that your number is correct. You will be contacted from an unknown number by a call-center agent of #UnterkunftUkraine.

First name*

Last name*

Email*

Phone number*

Important: the credit on the sim cards of Ukrainian numbers is often used up by the roaming charges of a German call. This makes it difficult or sometimes impossible to make contact. Please note: Deutsche Telekom offers refugees from Ukraine a free SIM card with which calls within the EU and to Ukraine are free of charge.

Where can I get a free SIM card? 

Supplementary Figure 2: Registration Form for Refugees, Screenshot 2.

Who needs accommodation?

In order to find a suitable accommodation, we need to know a bit about you: Are you traveling alone, with friends or your family? Please enter the details for each member of your group

Group members*

You (or the main person you are filling out this form for)

Gender*

☒ Female
 ☐ Diverse
 ☐ Male

Birthdate*

TT . MM . JJJJ

+ Add group member

Total number of beds needed *

1

Supplementary Figure 3: Registration Form for Refugees, Screenshot 3.

Which languages do we share?

Please indicate only the languages you will be able to verbally communicate.

☐ Ukranian
 ☐ Russian
 ☐ German
 ☐ English
 ☐ Polish
 ☐ French
 ☐ Spanish

Where are you / Where do you want to go?

Please tell us where you currently are and where you would like to go - we will try to find a suitable accommodation.

Please note: If you are already registered in Germany you might not be allowed to change your place of living due to Wohnsitzauflage. If you are planning to move to a different county than the one you are registered in, please make sure that you are allowed to do so. Please make also sure, that your preferred city accepts further registrations of refugees.

Arrival date

16 . 10 . 2023

Estimated stay (weeks) *

4

City you will arrive/have arrived in*

In which city would you prefer to stay*

Supplementary Figure 4: Registration Form for Refugees, Screenshot 4.

Should we know anything else about you?

Here you can share any extra information that could be important for you and your hosts.

Message

☐ I consent to the processing of my personal data by #UnterkunftUkraine (gut.org gAG) within the platform and the mediation of accommodation.

☐ I would like to stay informed about the developments at #UnterkunftUkraine and would like to receive the newsletter. Unsubscribing is possible at any time.

[SEND REQUEST](#) Our [terms of use](#) and [privacy policy](#) apply.

Supplementary Figure 5: Registration Form for Refugees, Screenshot 5.

1.2 Hosts Registration

In total, more than 150,000 individuals signed up to host on the platform provided by UU.

During the registration, host had to provide details such as the location of their accommodation, the type of accommodation (e.g., shared room, shared house), the number of available beds, the presence of other family members at the accommodation, languages spoken, and the periods during which the accommodation was available.

As of November 2023, the registration forms are no longer online. Figures 6-9 document them as screenshots.

Offer accommodation and become a host

Only a few more clicks until you are an official #UnterkunftUkraine host.

Please note: #UnterkunftUkraine is aimed for mediation of temporary and free accommodation only. Rental offers or requests shall not be placed.



Supplementary Figure 6: Registration Form for Hosts, Screenshot 1.

How can we reach you?

Please note: As soon as we receive a suitable request for your offer, we will contact you by phone. Hence please make sure that your number is correct. You will be contacted from an unknown number by a call-center agent of #UnterkunftUkraine.

First name*
 Phone number*

Last name*

Email*

Please note that your phone is a primary mean of contact, hence make sure that it is correct. You will be contacted from the unknown number by the call-center agent of Unterkunft-Ukraine.

Supplementary Figure 7: Registration Form for Hosts, Screenshot 2.

Your accommodation:

Please capture the address and some information about the place you want to offer. #UnterkunftUkraine is aimed for mediation of temporary and free accommodation only. Rental offers or requests shall not be placed.

Country
 Street*
 ZIP code*
 City*

Type of accommodation: Shared room

 Number of beds *: 1

 For large contingents of beds, please contact us via hilfe@unterkunft-ukraine.de

☐ Barrier free
 ☐ Pets are welcome

Family members

Who else lives in the household that would accommodate refugees?

Female 0

Male 0

Other 0

Children 0

Supplementary Figure 8: Registration Form for Hosts, Screenshot 3.

Availability & communication

How long does your offer last?

Earliest starting date: 16.10.2023

Weeks *: 4

What languages are you able to communicate in?

☐ Ukrainian
 ☐ Russian
 ☐ German
 ☐ English
 ☐ Polish
 ☐ French
 ☐ Spanish

Anything else we should know about you?

Let us know any additional details that are important - like barrier free entry, pets, etc.

Supplementary Figure 9: Registration Form for Hosts, Screenshot 4.

1.3 Matching Hosts with Refugees

The matching process was conducted by a professional call center contracted by UU. The number of call center agents hired by UU fluctuated between 100 in the initial months and 40 in the later months. Call center agents were responsible for two main tasks: vetting potential hosts and matching refugees with hosts.

Before a host could be matched with a refugee, they had to provide evidence that the information on their ID matched the self-registration data. Hosts could use a third-party service called “Postident”¹ or confirm their identity through a video call with the call center. In the latter case, call center agents followed procedures similar to the “Postident” service, requesting hosts to present their ID in a video call and hold it at different angles for the agent to verify holograms and other security features.

The matching process was partially automated. When a call center agent initiated the matching process, the UU software randomly assigned them a refugee registered on the platform and prevented other agents from working on that refugee’s case. The agent then contacted the refugee to confirm if they still required accommodation. If so, the software proposed hosts who matched the refugee’s requirements in terms of the number of beds, desired duration of stay, location preferences, and the availability of at least one common language. If there was a potential match, the agent contacted the host to confirm their availability as specified in the registration form. Upon confirmation, the agent shared the refugee’s contact details with the host and informed the refugee that a host would soon contact them. For safety reasons, UU had a policy of exclusively considering women or heterosexual couples as hosts for female refugees. The registration data is described in section 2.3.

1.4 Additional Information About Hosts

We lack systematic information on the characteristics of hosts beyond the data provided in the registration data (see section 2.3). However, in June and July 2022, an independent research project surveyed 3,251 individuals who had registered as hosts with UU (Haller et al., 2022). Among the respondents, 80% had privately hosted refugees at least once. More than two-thirds of the surveyed primary hosts (those who registered with UU and maintained contact) were women. The majority of primary hosts were of working age (25-64 years old) with a median age of 50. Among the respondents, 69% of the surveyed primary hosts were employed, and 10% were retired. Additionally, aside from German, 7.7% of the respondents spoke Russian as a first or second language, and 0.34% spoke Ukrainian. Among the respondents, 37% lived in two-person households with a household income substantially higher than the national median household income. Furthermore, 61% of the surveyed hosts lived in urban areas.

2 Materials and Methods

2.1 IRB and Ethics

The survey and the project received IRB approval from ETH Zurich (EK-2023-N-122), the German Center for Integration and Migration Research (DeZIM, EK06/2023), and Stanford University (72870).

Throughout our cooperation with UU, we prioritized the protection of sensitive data and obtained informed consent from respondents before sharing their data with us. To ensure this, we took the following steps:

- We prepared the survey and shared it with UU. UU then uploaded the survey to their own Qualtrics account.
- UU invited refugees registered with them to the survey. Therefore, there was no need for them to share names or email addresses with us.

¹Postident is a service offered by the German postal service that provides identity verification for various business and legal purposes. It involves checking a person’s identity in person at a postal office or digitally, using an official identity document. It is commonly used for processes like opening bank accounts.

- At the beginning of the survey, all invited participants were asked for their consent to participate in the research, to allow us to use the shared data in accordance with data protection regulations, and for UU to link their survey data with their registration data. If a participant refused to consent, the survey ended immediately.
- UU never shared all registration data of the consenting survey participants. Data on the respondent's name, email address, phone number, and the address of the accommodation was not shared. The open text messages that respondents were able to add to the registration data were manually checked for identifiable information and censored before being shared with us.
- UU allowed us to compute aggregate summary statistics on a device in their facilities and under the oversight of an UU employee.
- The data we used to compute the summary statistics did not include any names, email addresses, phone numbers, or addresses.
- The survey data was stored on a secure server, accessible only to the members of the research team.

To obtain their consent, UU presented all participants with this consent form:

Welcome to the survey of #UnterkunftUkraine!

What the survey is about: We want to better understand the experience of the people registered with #UnterkunftUkraine and improve our work based on your feedback. For this purpose we invite you to take the survey.

The survey will take about 15 minutes and is voluntary. For completing the survey, we will donate 5 Euros on your behalf to an organization that helps Ukrainians. You can choose the respective charity yourself.

For this survey we work with researchers from ETH Zurich and the German Centre for Integration and Migration Research (DeZIM).

This is how we protect your data: To find out, how you used the services of #UnterkunftUkraine, we ask you to consent that we can connect your answers with the data that we already store at #UnterkunftUkraine. Before the researchers see your data, we will delete personal information like your name or email address. The researchers will only know your answers but not your identity. Your data will not be accessed by third parties.

Maybe you change your mind after the survey and want that we delete your answers. This is always possible. You can also always stop the survey and you can skip some of the questions. If you have any questions, please write to us under this email: hilfe@unterkunft-ukraine.de

After the project ends, your data will be deleted.

Responsible person for the project at #UnterkunftUkraine: Dmytro Pysmennyi

Responsible person for the project at ETH Zürich: Prof. Dr. Dominik Hangartner

Responsible person for the project at DeZIM: Dr. Niklas Harder

Show details

You want to participate and consent that we connect your data with the data already stored by #UnterkunftUkraine? Please click on participate and start the survey.

If a participant chose to see more details, we presented this additional legal information:

Information on the processing of personal data in this project.

Name and contact of the responsible person

Name: Dmytro Pysmennyi

#UnterkunftUkraine

Address: Schlesische Str. 26, 10997 Berlin

Tel.: +49 30 568 38659

Email: dmitry.pismenniy@unterkunft-ukraine.de

Contact data of the data protection officer (Datenschutzbeauftragter).

Die gut.org gemeinnützige Aktiengesellschaft

Schlesische Straße 26

D-10997 Berlin

You can reach the data protection officer of gut.org additionally to the address mentioned above under the email datenschutz@unterkunft-ukraine.de

General information The foundational laws for the processing of personal data are in particular the Datenschutz-Grundverordnung (DSGVO) and the Bundesdatenschutzgesetz (BDSG).

Purpose of data processing The surveyed data will only be stored and processed in the project to be connected with data of a possible follow-up survey. The consent for a follow up survey will be obtained separately. The analysis of the survey is only made for scientific purposes. The results of will only be presented and possibly published in an anonymized way. This means that personal reference or identification of participants of the online survey is impossible.

Categories of personal data, that is processed Capture of technical data during use of the online survey tool None Capture of personal data during the use of the survey None Capture of personal data for the data connection Email address Capture of personal data for a possible follow-up survey Email address

Legal base According to article 6 paragraph 1 letter a DSGVO and article 9 paragraph 2 letter a the legal base for the processing of personal data is the consent of affected person (in this case: Person participating in the online survey)

Duration of data storage of the personal data Personal data that was collected for the purpose of data connection will be deleted after the end of the project. Personal data that was collected for a possible follow-up survey will be deleted after two years or earlier.

Rights of affected people Affected people have the following rights towards the processing of their personal data: Right of information (Art. 15 DSGVO) Right of correction (Art. 16 DSGVO) Right of deletion (Art. 17 DSGVO) Right to limit data processing (Art. 18 DSGVO) Right of data portability (Art. 20 DSGVO) Additionally, there is a right to complaint at a supervisory authority for data protection. The authority responsible for gut.org is the Berlin data protection officer (Berliner Beauftragte für Datenschutz und Informationsfreiheit), Friedrichstraße 219, 10969 Berlin. You can also contact the authority that is responsible at your place of residence.

2.2 Survey of Refugees

Our analysis draws on two main data sources: the registration data from UU and an original survey of refugees who registered with UU.

2.2.1 Sampling

Our core analysis sample is based on an original survey we conducted with the help of UU in June 2023. UU handled the survey invitations and hosted the survey through a Qualtrics account. UU invited all

refugees who had registered with the UU platform, provided valid contact information, and whom UU was legally able to contact.² In total UU was able to invite 49,380 refugees.

On June 1st, 2023 a total of 41,237 refugees were contactable by UU through their MailChimp email system (contact rate: 83.5%).³ The invitation said that UU was partnering with IPL and DeZIM researchers to evaluate and improve the service of UU. Each invitation contained a personalized link. The invitation also announced that 5 euros will be donated to a charity working in Ukraine for completing the survey. The median survey time to complete the survey was 14.8 minutes (among respondents who answered all questions).

In total 2,905 individuals participated in the survey. We define participation as someone who consented to the terms of the survey. We screen out 94 respondents who were ineligible to participate. This leaves a total of 2,811 complete and partial responses. 1,870 respondents answered all survey questions.

Assuming that the proportion of ineligible non-respondents is the same as in the proportion of ineligible respondents (94/2905), the cumulative response rate as defined by the American Association for Public Opinion Research is 6.1% (RR2) and 3.9% (RR3).

2.2.2 Questionnaire

The questionnaire was composed of four main sections. After an introductory message and the request to consent to the data collection and data linkage with the UU registration data, it collected basic information about the respondents' migration experience since 2022 (i.e., if and when they came to Germany and if and when they left Germany again). The respondents remaining in Germany were then asked the main outcome questions measuring integration outcomes using the Immigration Policy Lab Integration Index (Harder et al., 2018) (described in more detail below). Respondents who were not in Germany at the time of the survey were not asked these questions since the questions presuppose residence in Germany. In the next section, we asked respondents who were in Germany at some point since February 2022 about their living arrangements—whether they had been matched by UU, moved into the matched accommodation, or which other accommodation they moved into. Then we asked for details regarding the accommodation the respondents moved into. This section included questions about cohabitants and the size of the accommodation, contact with and support from the host, overall satisfaction with the host and accommodation as well as the possible termination of the accommodation arrangement. In the last section of the survey, we collected additional information about the respondents including current living situation, public and non-governmental support, demographic information, as well as their childcare situation.

A key interest of the survey was to learn more about the accommodations that were brokered by UU as well as accommodations used by respondents who were not matched by UU. For this, we had to clearly define which accommodation a respondent should provide information about. To do so, we asked respondents who lived in a UU accommodation to answer questions with respect to the accommodation they got matched into by UU. If they lived in multiple UU accommodations, we asked them to consider their first UU accommodation. Respondents who did not move into a UU accommodation were asked to answer for the first accommodation they lived in two months after their registration with UU. We use two months as a reference period, since we estimated based on various data sources that this is about the time most matched respondents would have moved into a UU accommodation. This estimate proved correct, as the survey data indicates that about 77% of those that moved into a UU accommodation lived in such an accommodation two months after registration.

The survey questionnaire was developed in English, then translated into Ukrainian and Russian by a professional translation service and into German by the authors. The Ukrainian and Russian translations were reviewed by the authors and colleagues, who are native speakers, to ensure conceptual homogeneity.

²To comply with the EU General Data Protection Regulation (GDPR), UU deletes all contact information that was submitted or last changed more than a year ago every month. Furthermore, UU deletes the contact information of refugees who explicitly opted out from all further communications.

³The survey was tested in two pilots in May 2023. The data from these pilots are not included in the analysis.

Supplementary Table 1 describes the relevant survey items with question wordings and answer options.

Supplementary Table 1: Relevant survey items in the order of the survey

Variable	Question texts	Answer options
Birth year	What year were you born?	Later than 2006; 2005; ...; 1921; 1920 or earlier
Arrived in Germany	Did you come to Germany in or after January 2022?	Yes; No
Date of first arrival in Germany	When did you first arrive in Germany?	January 2022; ...; June 2023; Not answered; Not applicable
Remaining in Germany	Are you still living in Germany?	Yes; No
Date of leaving Germany	When did you leave Germany?	January 2022; ...; June 2023; Not answered; Not applicable
IPL-12: Connection to host country	How connected do you feel with Germany?	I feel an extremely close connection.; I feel a very close connection.; I feel a moderately close connection.; I feel a weak connection.; I do not feel a connection at all.
IPL-12: Feeling like an outsider	How often do you feel like an outsider in Germany?	Never; Rarely; Sometimes; Often; Always
IPL-12: See doctor	In this country, how difficult or easy would it be for you to see a doctor?	Very difficult; Somewhat difficult; Neither difficult, nor easy; Somewhat easy; Very easy
IPL-12: Find jobs	In this country, how difficult or easy would it be for you to search for a job (find the proper listings)?	Very difficult; Somewhat difficult; Neither difficult, nor easy; Somewhat easy; Very easy
IPL-12: Household size	How many people, including yourself, live in your household? Your household includes everyone with whom you share an apartment or house and with whom you are also related by birth, marriage, partnership, or adoption.	1; ...; 14; more than 15
IPL-12: Household income	”What is your household’s net monthly income (after taxes and deductions) from all sources? Please take the average over the last three months. If you don’t know the exact figure, please give an estimate. If your income was not in Euros, please try to calculate it. Your household includes everyone with whom you share an apartment or house and with whom you are also related by birth, marriage, partnership, or adoption.”	Under 300€; 301 to 500€; 501 to 750€; 751 to 1000€; 1001 to 1500€; 1501 to 2000€; 2001 to 2500€; 2501 to 3000€; 3001 to 3500€; 3501 to 4000€; 4001 to 4500€; 4501 to 5000€; 5001€ or above; Prefer not to say
IPL-12: Employment status	Which of these descriptions best applies to what you have been doing for the last four weeks? Please select only one.	In paid work, even if away temporarily (employee, self-employed, working for your family business); In school, even if on vacation; In language school or job training; Unemployed and actively looking for a job; Unemployed and not actively looking for a job; Permanently sick or disabled; Retired; In military service; In community service; Doing unpaid housework, looking after children or other persons (full-time); Other (please specify) [free text input]
IPL-12: Dinners with locals	In the last 12 months, how often did you eat dinner with Germans who are not part of your family?	Never; Once a year; Once a month; Once a week; Almost every day
IPL-12: Social contacts in messenger app	Please think about the Germans in your address book or your phone contacts. With how many of them did you have a conversation - either by phone, messenger chat, or text exchange - in the last 4 weeks?	0; 1 to 2; 3 to 6; 7 to 14; 15 or more

Continued on next page

Supplementary Table 1: Relevant survey items in the order of the survey (Continued)

Variable	Question texts	Answer options
IPL-12: Reading level	Please evaluate your own skills in German. How well can you do the following when reading German? I can read and understand the main points in simple newspaper articles on familiar subjects.	Very well; Well; Moderately well; Not well; Not well at all
IPL-12: Speaking level	Please evaluate your own skills in German. How well can you do the following when speaking German? In a conversation, I can speak about familiar topics and express personal opinions.	Very well; Well; Moderately well; Not well; Not well at all
IPL-12: Subjective knowledge	How well do you understand the important political issues facing Germany?	Very well; Well; Moderately well; Not well; Not well at all
IPL-12: Political discussions	In the last 12 months, how often did you typically discuss major political issues facing Germany with others?	Never; Once a year; Once a month; Once a week; Almost every day
Month of request	When have you submitted your [first] request at #UnterkunftUkraine?	February 2022; ...; February 2023; Don't know
Accommodation offer	Have you been offered an accommodation by #UnterkunftUkraine [at least once]?	Yes; No; Don't know
Moving into offered accommodation	Have you moved into [the/an] accommodation offered by #UnterkunftUkraine?	Yes; No
Type of accommodation during reference period	In what kind of accommodation did you live in [during reference period]? If you changed accommodation during that month, please think about the accommodation you lived in first.	Refugee shelter in Germany; Other public refugee housing in Germany; Private accommodation (unpaid) in Germany; A flat or a house I or my family rented in Germany; A hotel room I or my family rented in Germany; I didn't have a regular place to stay in Germany; In another country; Other (please specify) [free text input]
Month of moving into accommodation	When did you move into this accommodation? We are talking about the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period].	February 2022; ...; April 2023; May 2023 and later; Don't know
Postal code of accommodation during reference period	What was the postal code (Postleitzahl) of the accommodation you lived in [during reference period]?	[Numeric text input]
City of accommodation	What was the city name of the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period]?	[Free text input]
Still living in the accommodation	At the moment, are you still living in the accommodation [you found through #UnterkunftUkraine / you lived in during reference period]?	Yes; No
Number of family members in accommodation	How many members of your family, including yourself, [were living / live] in the accommodation? We are talking about the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period].	1; ...; 20; more than 20
Number of children in accommodation	How many of them [were / are] children? We are talking about the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period].	0; ...; 20; more than 20
Other people in accommodation	[Have people other than you and your family been living / Do people other than you and your family live] in this accommodation permanently? We are talking about the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period]. Please check all that apply.	Yes, the host / the host family; Yes, friends, roommates or (sub-)tenants of the host / the host family; Yes, my friends who came to Germany with me; Yes, refugees (other than me and my family or my friends); Yes, others (please specify) [free text input]; No [Exclusive]

Continued on next page

Supplementary Table 1: Relevant survey items in the order of the survey (Continued)

Variable	Question texts	Answer options
Joint activities	[Did / Do] you participate in any of these activities with or for the host and/or their family? We are talking about the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period]. Please check all that apply.	Shared meals; Leisure and recreational activities; Routine housekeeping; Major housekeeping; Short term babysitting; Long term childcare (nanny); Care for elderly persons; Garden work; Dog walking and other animal care; Other (please specify) [free text input]; I did not participate in any of these activities [Exclusive]; Don't know [Exclusive]
Payment for the accommodation	[Did / Do] you give any money [to the host / the host family] as payment for the accommodation? We are talking about the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period].	Yes; No; Don't know
Total amount paid for accommodation	Please estimate the approximate total amount of the money you gave as payment for the accommodation. Please calculate the total amount that you gave during your stay in the accommodation and not a monthly or weekly amount. We are talking about the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period].	Below 100 Euro; €100-200; ...; €1901-2000; €2001-2500; ...; €9501-10000; More than 10000 Euro; Don't know
Satisfaction with accommodation	How would you rate your experience with the accommodation? 1 (very bad) - 10 (very good) We are talking about the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period].	1 (very bad); 2; ...; 9; 10 (very good)
Satisfaction with host	How would you rate your experience with the host / the host family? 1 (very bad) - 10 (very good) We are talking about the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period].	1 (very bad); 2; ...; 9; 10 (very good)
Number of other people in accommodation	What was the largest number of people other than you and your family living with you in the accommodation at one point in time? We are talking about the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period].	1; ...; 20; More than 20; Don't know
Frequency of communication with host	How often [did / do] you communicate with the host of the accommodation or their family [when you lived there]? We are talking about the host / the host family from the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period].	Daily; Nearly daily; At least once a week; At least monthly; Less than monthly; Never; Don't know
Support from host	Have you received support for any of the following items from the host of the accommodation or their family? We are talking about the host / the host family from the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period]. Please check all that apply.	Access to medical services; Access to psychological support; General legal advice; Translations; Learning German; Financial support; Childcare; Education (e.g. help with homework); Application for residency ("Aufenthaltstitel"); Application for school/childcare; Application for social benefits; Search or application for a job; Search for a new accommodation; Other (please specify) [free text input]; No [exclusive]
Month of leaving accommodation	You said that you do not live in the accommodation anymore. When did you leave the accommodation? We are talking about the [first] accommodation [you found through #UnterkunftUkraine / you lived in during reference period].	February 2022; ...; June 2023; Don't know
Gender	What is your gender?	Female; Male; Non-binary; Prefer not to say

Continued on next page

Supplementary Table 1: Relevant survey items in the order of the survey (Continued)

Variable	Question texts	Answer options
LGBTQ+	The experience of LGBTQ+ refugees can be different than the experience of other refugees. Do you think of yourself as lesbian, gay, bisexual, asexual, transgender, non-binary, intersex, agender or in any other way queer?	Yes; No; Prefer not to say
Education	What is your highest level of education?	Primary education; School education; Vocational education; Undergraduate education; Bachelor's degree; Specialist degree; Master's degree; Postgraduate education; Prefer not to say
Relationship status	What is your current relationship status?	Have a partner (without official marriage); Legally married; Widowed; Single / divorced; Prefer not to say
Having children	Do you have children?	Yes, one child; Yes, two children; ...; Yes, six children or more; No, I don't have children; Prefer not to say; Not answered; Not applicable
Age of children	How old is your youngest and your oldest child?	Less than 1 year old; 1-5 years old; 6-12 years old; 13-17 years old; 18 years old or older; Not answered; Not applicable
Citizenship	What citizenship or citizenships do you have? Please check all that apply.	Ukrainian; Russian; Polish; Hungarian; Romanian; Other country or countries (please specify); Don't have citizenship, stateless
Region of Ukraine before 2022	In which region of Ukraine did you live before February 24, 2022, or, if you left Ukraine before February 24th, in which region did you live last?	Kharkiv Oblast; Kherson Oblast; Khmelnytskyi Oblast; Dnipropetrovsk Oblast; Donetsk Oblast; Ivano-Frankivsk; City Kyiv; Kyiv Oblast; Kirovohrad Oblast; Autonomous Republic of Crimea; Lviv Oblast; Luhansk Oblast; Mykolayiv Oblast; Odessa Oblast; Poltava Oblast; Rivne Oblast; Zaporizhzhya Oblast; Zhytomyr Oblast; City Sevastopol; Sumy Oblast; Ternopil Oblast; Transcarpathia Oblast; Cherkassy Oblast; Chernihiv Oblast; Chernivtsi Oblast; Volyn Oblast; Vinnytsia Oblast; Don't know
Employment status in Ukraine before 2022	Which of these descriptions best applies to what you have been doing before February 24, 2022?	In paid work, even if away temporarily (employee, self-employed, working for your family business); In school, even if on vacation; In language school or job training; Unemployed and actively looking for a job; Unemployed and not actively looking for a job; Permanently sick or disabled; Retired; In military service; In community service; Doing unpaid housework, looking after children or other persons (full-time); Other (please specify) [free text input]
Average household's net monthly income in 2021	What was your average household's net monthly income (after taxes and deductions) from all sources in 2021 in hryvnias? If you don't know the exact figure, please give an estimate. If your income was not in hryvnias, please try to calculate it. Your household includes everyone with whom you shared an apartment or house and with whom you are also related by birth, marriage, partnership, or adoption.	Below 3 000₴; 3001 to 4000₴; 4001 to 6000₴; ...; 20001 to 22000₴; 22001 to 30000₴; 30001 to 45000₴; 45001 or above; Prefer not to say
Household size in 2021	How many people, including yourself, have lived in your household at that time? Your household includes everyone with whom you shared an apartment or house and with whom you are also related by birth, marriage, partnership, or adoption.	1; ...; 15; More than 15

2.2.3 Measuring Refugee Integration

Following [Harder et al. \(2018\)](#), we define integration as “immigrants’ ability to build a successful and fulfilling life in the host society.” This encompasses knowledge (such as language fluency and understanding of the labor market, political, and social systems) and capacity (mental, social, and economic resources). Integration is conceptually distinct from assimilation as it emphasizes that immigrants can thrive without abandoning their cultural heritage.

The Immigration Policy Lab (IPL) Integration Index is a survey-based measure of immigrant integration that strikes a balance between construct validity, usability, and applicability ([Harder et al., 2018](#)). The survey instruments measure immigrant integration across six dimensions: psychological, economic, political, social, linguistic, and navigational (see Supplementary Table 2).

We utilize the short-form IPL-12, which comprises 12 questions, with two questions for each integration dimension. Each question allows respondents to score between 1 and 5 points. Summing the questions for each dimension provides a subindex, and aggregating all six subindexes yields the IPL-12 index. Following [Harder et al. \(2018\)](#), we rescale the indices to a range from 0 to 1, where higher values indicate a higher level of integration.

While more questions per integration dimension (such as the IPL-24 long form, which relies on 4+ questions per dimension) would have been desirable, fielding a longer questionnaire would have lowered survey completion rate. Fortunately, [Harder et al. \(2018\)](#) show that the IPL-12 short form achieves good levels of survey validity and reliability while being significantly shorter to administer compared to the IPL-24 long form. In particular, they show that the short form IPL-12 is highly correlated (0.962) with the more extensive IPL-24 measure. They also demonstrate that the IPL-12 is highly correlated with integration proxies such as years of residency, permanent residency, or naturalization.

Arguably because the IPL integration index successfully navigates the trade-off between survey time, reliability and validity, it was recently adopted by a range of research teams as well as international organizations working in the immigration and refugee space, including the IOM ([International Organization for Migration, 2023](#)) and UNHCR ([Casalis et al., 2024](#)) for surveys conducted in a diverse set of contexts. Research teams from a variety of disciplines, including Economics, Political Science, Psychology, Public Health, and Sociology have also successfully applied this measure (see e.g., [Alrababah et al., 2023](#); [Harris et al., 2021](#); [Knefel et al., 2020](#); [Miller et al., 2020](#); [Teng et al., 2023](#); [Tyrberg, 2024](#)) or recoded secondary data to closely match the IPL-12 index (see e.g., [Aksoy et al., 2023](#); [Spies et al., 2023](#)).

Supplementary Table 2 describes the relevant items in the IPL-12 Index.

Supplementary Table 2: Items in the IPL-12 Index

Dimension	IPL-12
Psychological	Connection to host country Feeling like an outsider
Social	Dinners with locals Social contacts in messenger app
Linguistic	Reading level Speaking level
Navigational	See doctor Find jobs
Economic	Household income Employment status
Political	Subjective knowledge Political discussions

2.2.4 Measuring Location

In some of our analyses, we compare the locations of matched and unmatched refugees. In the survey, we ask respondents about their postal code of the accommodation facilitated by UU (or the accommodation they lived in during the reference period). Respondents who indicate not knowing their postal code are asked to report the name of the city. Using the spatial centroid of the postal code polygon, we assign all respondents that provide either their postal code or the name of the city (25% of all respondents) to one of Germany’s more than 11,000 municipalities.

We use the municipality identifier to match the survey data with the most recent available, official data about the municipalities. In particular, we measure the vote share of Germany’s far-right party “Alternative for Germany” (AfD) in the federal election of 2017; turnout in the same election; the number of unemployed persons per working-age capita in 2021, the average income tax in 1000 Euro paid per tax payer in 2019 (a measure of average income given fixed income tax rates across municipalities); the average rent in Euros paid by renters per m^2 (from the 2022 census data); the average age in a municipality (also from the 2022 census); the population density in 2021 (1000 persons per km^2), as well as the share of the population not born in Germany (also from the census 2022). We also code if the municipality is classified as a city and if it is located in East Germany.

In addition to this official data, we measure the number of hate crimes per 1000 capita during 2015/2016 when a large number of refugees from Syria and elsewhere arrived in Germany. The hate crime event data comes from the civil society project “Mut Gegen Rechte Gewalt” and was compiled by [Benček and Strasheim \(2016\)](#). We count all hate crimes classified as arson, assaults and/or attacks.

Summary statistics of all location outcomes appear in Supplementary Table 3.

2.3 Registration Data

We utilize anonymized registration records for all 117,254 refugees registered with UU. This data is employed for non-response analysis and to control for the characteristics that influenced the matching of refugees to hosts in our effect estimation.

The following variables were made available by UU to the authors:

- `adult_male_count` Number of adult males in group (number)
- `adult_female_count` Number of adult female in group (number)
- `adult_diverse_count` Number of adult diverse in group (number)
- `children_count` Number of children in group (number)
- `beds` Number of beds requested (number)
- `languages` Languages spoken by the refugee (list)
- `from_date` Arrival date in Germany (date)
- `weeks` Estimated stay in weeks (number)
- `place_of_arrival` Place of arrival (free text)
- `final_destination` Destination preference (free text)
- `message` Registration includes free-text message (binary indicator)

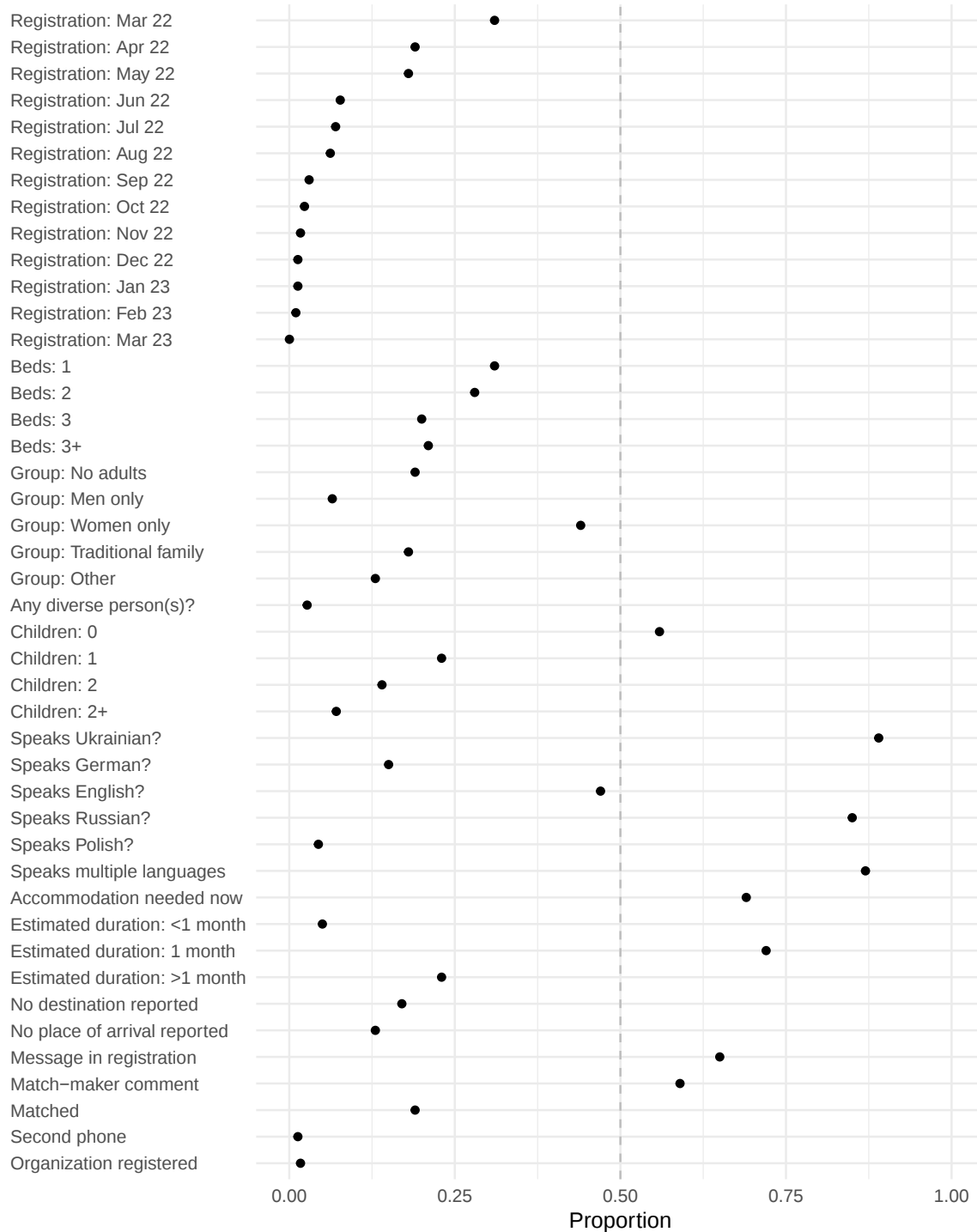
In addition, the authors had access to the following process-based variables:

- `created` Timestamp of registration (timestamp)
- `comments_count` Number of comments entered by match-maker (number)

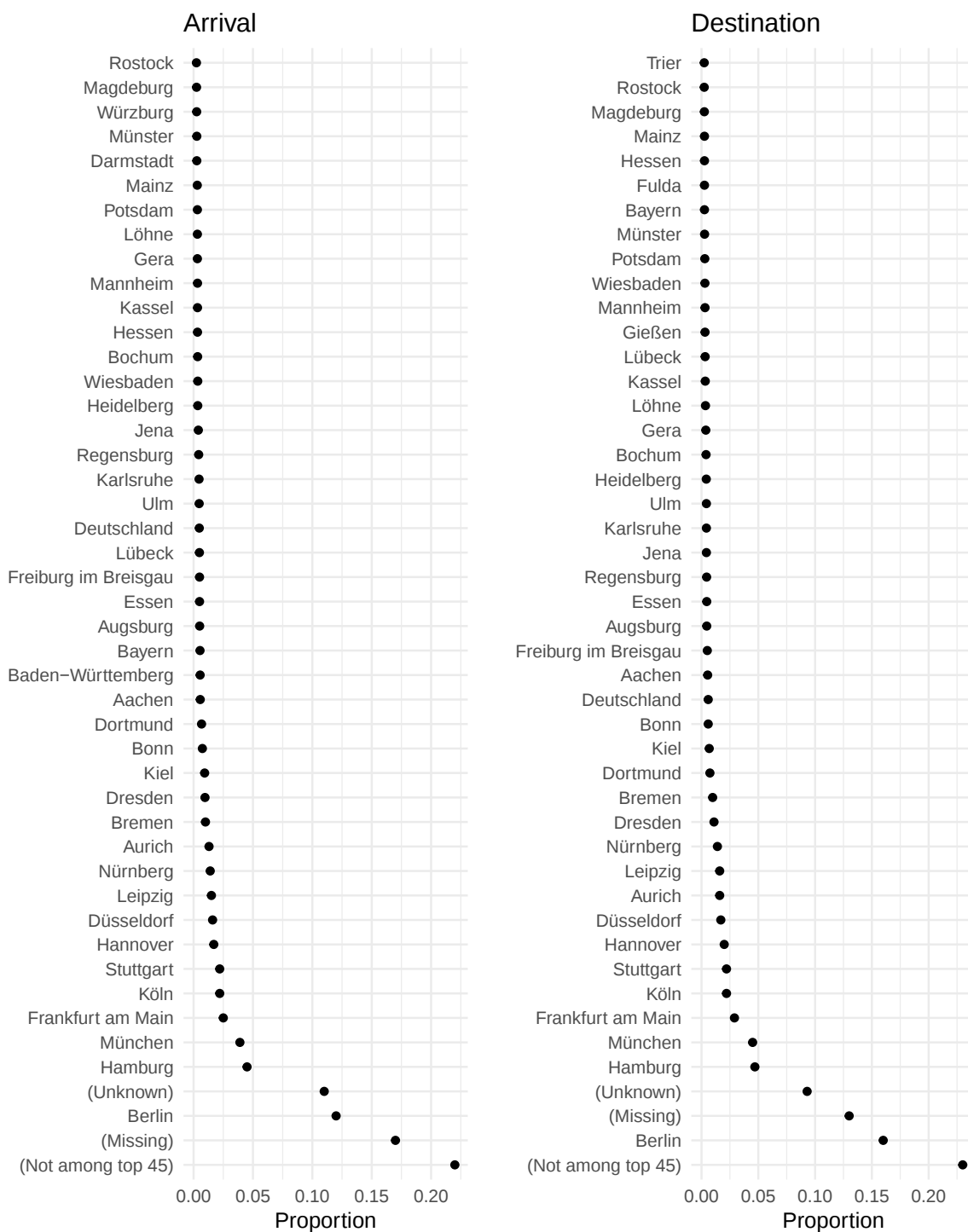
- `Match.created` Timestamp of match creation (timestamp)
- `phone_alt` Registration includes second phone number (binary indicator)
- `organization_id` Registration was done by an organization (binary indicator)

We constructed a series of binary indicator variables based on the raw data. To limit the effect of outliers, variables counting the number of adults by gender and the number of children were winsorized at the value 10 and the variable counting the estimated stay in weeks was winsorized at 48. Figure 10 reports means for each of the binary indicator variables.

Refugees' place of arrival and destination preferences were entered into a free-text field. To encode these places, the authors created a dictionary containing names of all German municipalities, the federal states as well as their Anglicized equivalents and Ukrainian and Russian transliterations. For the 300 largest cities and all federal states, the names were translated and transliterated manually. The remaining municipalities were transliterated via the service "DeepL". The places of arrival and destination preferences in the register data were then matched with the entries in the dictionary. For places for which no match was found, partial or approximate places were searched. If the refugees had entered multiple possible arrival places or multiple destination preferences, their entries were assigned to the place with the highest population. Figure 11 summarizes the top 45 places of arrival and destination preferences as encoded based on the author's dictionary.



Supplementary Figure 10: Characteristics of All Refugees Registered on the UU Platform (N=117,254)

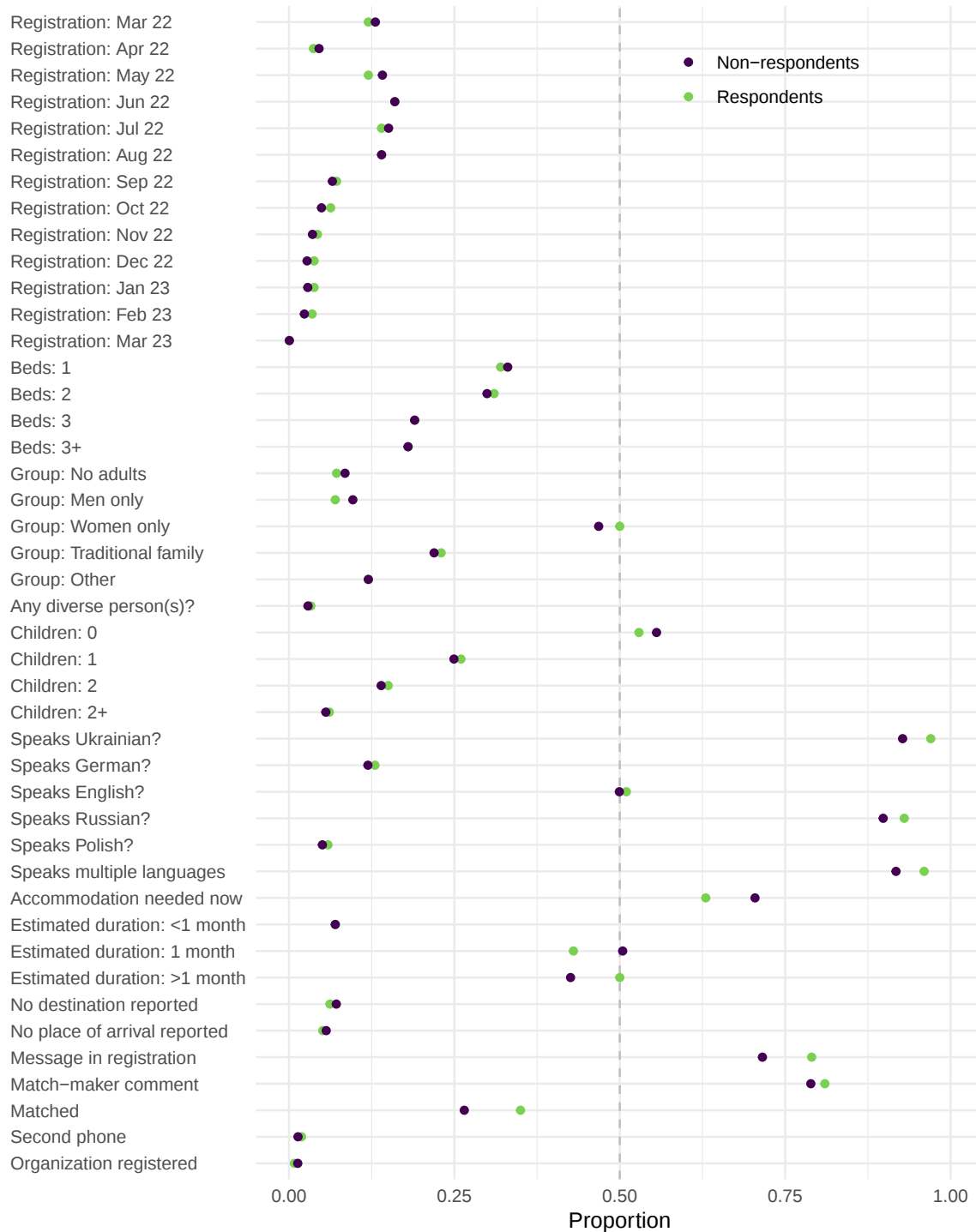


Supplementary Figure 11: Top 45 places of arrival and destination among registered refugees on the UU platform. The category “Unknown” includes all places not part of the dictionary created by the authors. The category “Missing” are registrations without an entry in the respective field of the form. (N=117,254)

2.4 Survey Non-Response Weighting

Figure 12 uses the registration data (merged with the survey data) to compare respondents who received an invitation and decided to participate in the survey (respondents) with those who received an invitation but decided not to participate in the survey (non-respondents).

While respondents and non-respondents are broadly similar across all characteristics, we construct non-response weights to adjust for remaining differences. To construct these weights, we use entropy balancing (Hainmueller, 2012), which adjusts the weights of the sample units so that the weighted sample moments match population target moments. These weights are constructed based on all variables shown in Figure 12 as long as the proportion is larger than 0.02. This restriction removes the indicator for arrivals in March 2023, an indicator for a second phone number, and an indicator for an organization registering the refugee. We then winsorize weights larger than the 0.99 percentile.



Supplementary Figure 12: Non-Response Analysis: Differences Between Respondents and Non-Respondents as Observed in the Registration Data (N=52,300)

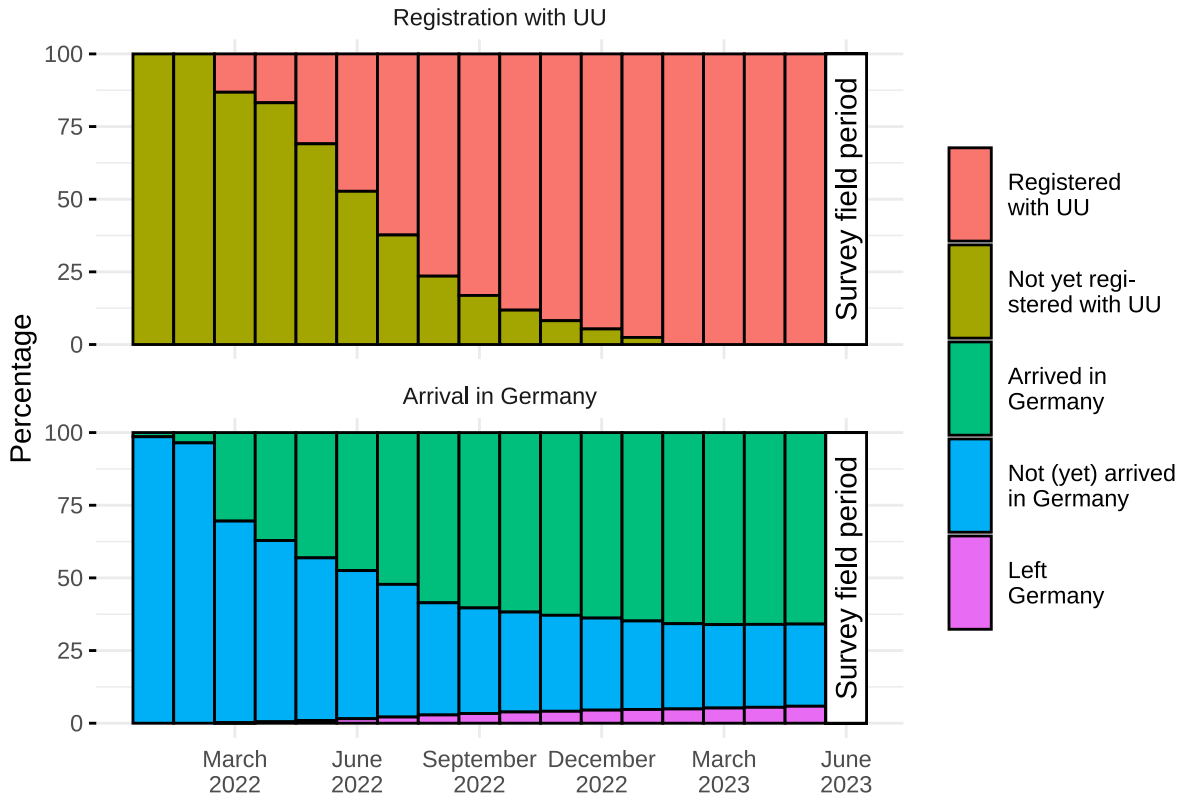
2.5 Timeline of Relevant Events

The full-scale Russian invasion of Ukraine began on February 24, 2022. Our survey was conducted in June 2023, approximately 16 months after the invasion began.

2.5.1 Full Survey Sample

Figure 13 depicts when the refugees in our full survey sample registered with UU and when they arrived in Germany. The upper panel displays the timing of registration with UU. The first refugees in our survey sample registered with UU in March 2022, with registrations steadily increasing until January 2023. The median registration month for the full sample is July 2022, with the 25th percentile in May 2022 and the 75th percentile in August 2022. By the time of our survey, all refugees in our sample had registered with UU, as only those who registered were eligible to receive an invitation to participate in the survey.

The lower panel shows the timing of arrivals in Germany. The first arrivals occurred in January and February 2022, followed by a sharp increase in March 2022 and a steady rise until July 2023, after which only a few new arrivals were recorded. By the time our survey was conducted in June 2023, 72% of the full survey sample had arrived in Germany. The remaining 28% of refugees had not yet arrived in Germany at the time of the survey. Additionally, 6% had arrived but had left Germany again by the time of the survey. Note that the majority of refugees (50%) in our full survey sample arrived in Germany at least one month before registering with UU.



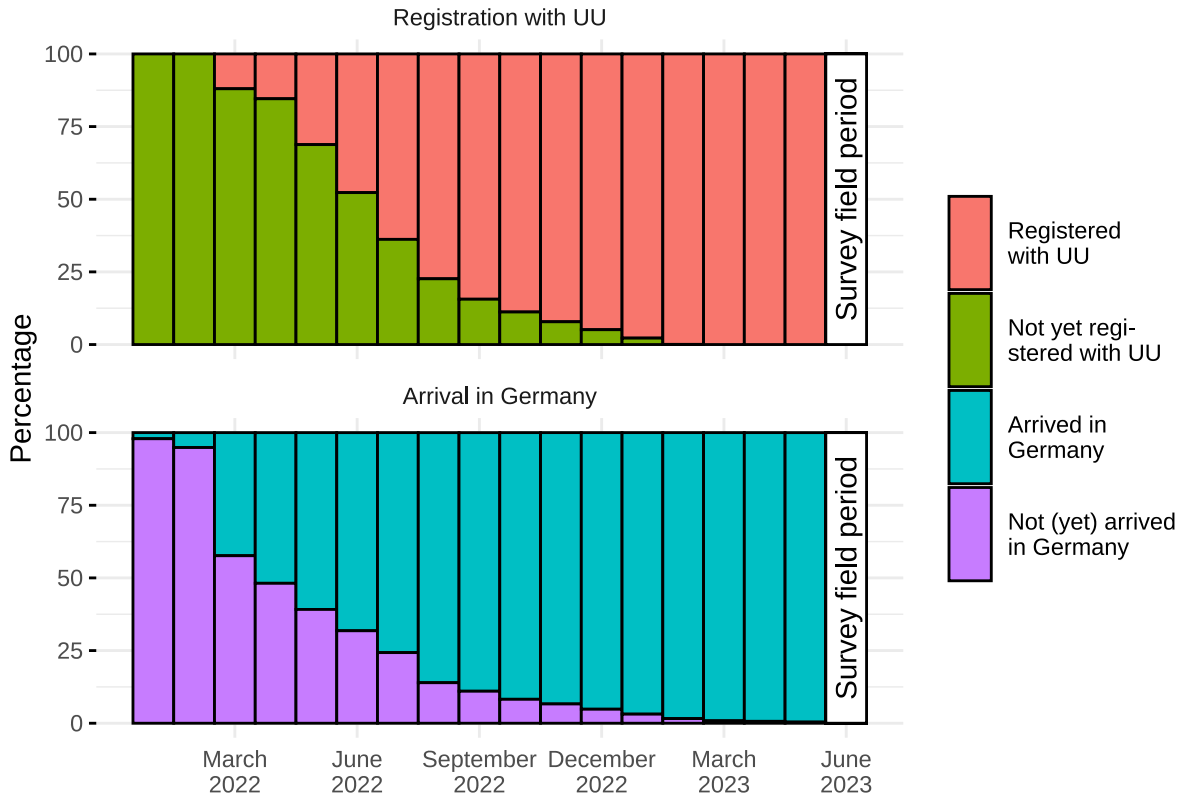
Supplementary Figure 13: Month-wise distribution of states of arrival and registration for the full sample (Weighted Data, N = 2733)

2.5.2 Estimation Sample

Since our outcome of interest is refugee integration success in Germany, we exclude from the analyses those respondents who were not living in Germany at the time of the survey. Specifically, our main estimation sample includes individuals who arrived in Germany in or after January 2022 and remained in Germany up until the survey date (N=1,700).

We demonstrate below that being matched with a host by UU had no effect on the likelihood of living outside Germany at the time of the survey, suggesting that this sample restriction is unlikely to introduce bias into our estimates of the effects of private hosting on integration outcomes (see Section 2.9).

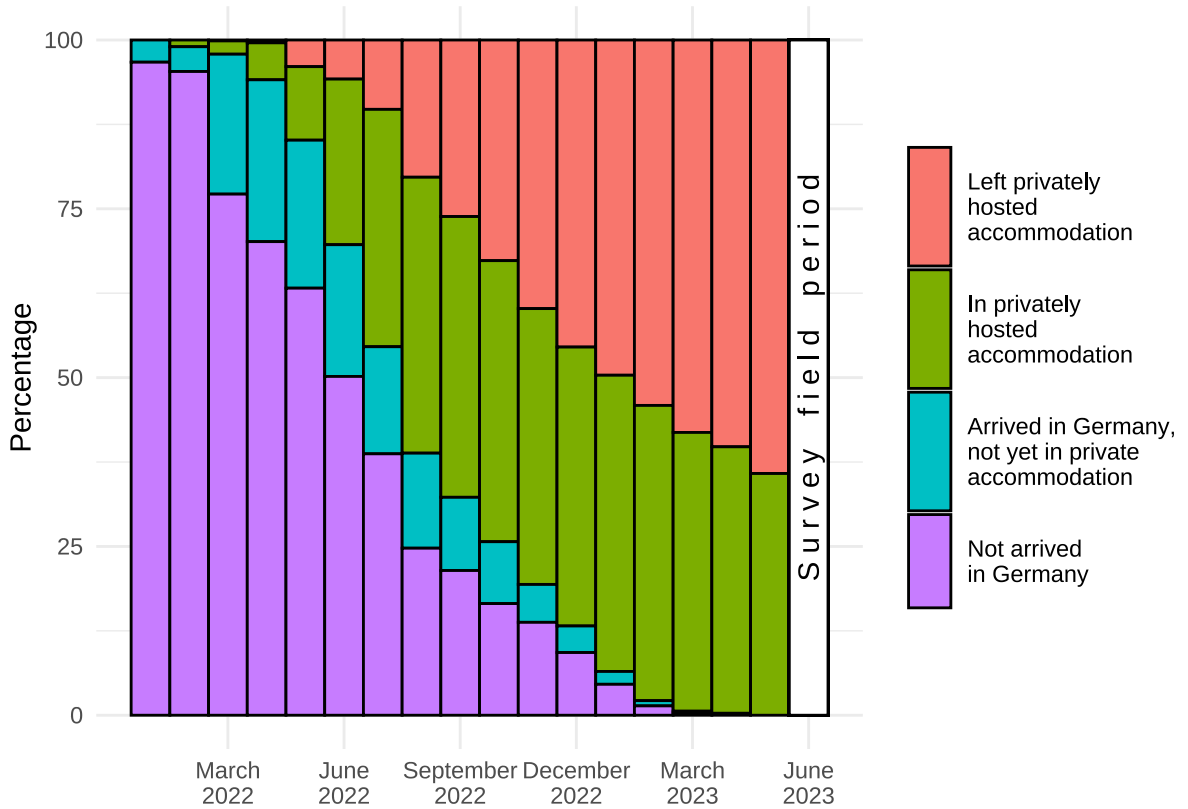
Figure 14 shows the timing of when the refugees in our estimation sample arrived in Germany and registered with UU to be matched with a host. The median registration time was July 2022, with the 25th percentile in May 2022 and the 75th percentile in August 2022. The median month of arrival in Germany was April 2022, with the 25th percentile in March 2022 and the 75th percentile in July 2022. Given that our survey was conducted in June 2023, this indicates that, for most respondents, the survey measures integration outcomes approximately one year after their arrival in Germany. The median residency duration in Germany at the time of the survey was 14 months, with the 25th percentile at 11 months and the 75th percentile at 15 months. The median number of months between arrival in Germany and registration with UU was one month with a 25th percentile of zero month (meaning they arrived and registered in the same month) and a 75th percentile of two month.



Supplementary Figure 14: Month-wise distribution of states of arrival and registration for the sub-sample that lived in Germany at the time of the survey (Weighted Data, N = 1700)

2.5.3 Sample of Privately Hosted

Figure 15 focuses on the subset of refugees in our estimation sample who were matched by UU to a private host and moved into the accommodation. In this subsample, the large majority of refugees were matched to a host within the same month that they registered with UU. The median month of being matched with a host by UU was July 22, with a 25th percentile of June 2022 and a 75h percentile of September 2022. The median month of moving in with the matched private host was August 2022, with the 25th percentile in June 2022 and the 75th percentile in November 2022. Accordingly, in this sample the large majority of refugees moved in with their host within one month of being matched. The median month of moving out from the private host was January 2023. Consequently, the median duration of stay with the private host was six months, with the 25th percentile at three months and the 75th percentile at ten months. The median time between moving out and taking the survey was four months. 65% of the respondents who were matched and moved into the accommodation had left the privately hosted accommodation at the time of our survey.



Supplementary Figure 15: Month-wise distribution of states of arrival and accommodation for the analysis sub-sample of refugees who were matched by UU to a private host and moved into the accommodation (Weighted Data, N = 373)

2.6 Identification Strategy

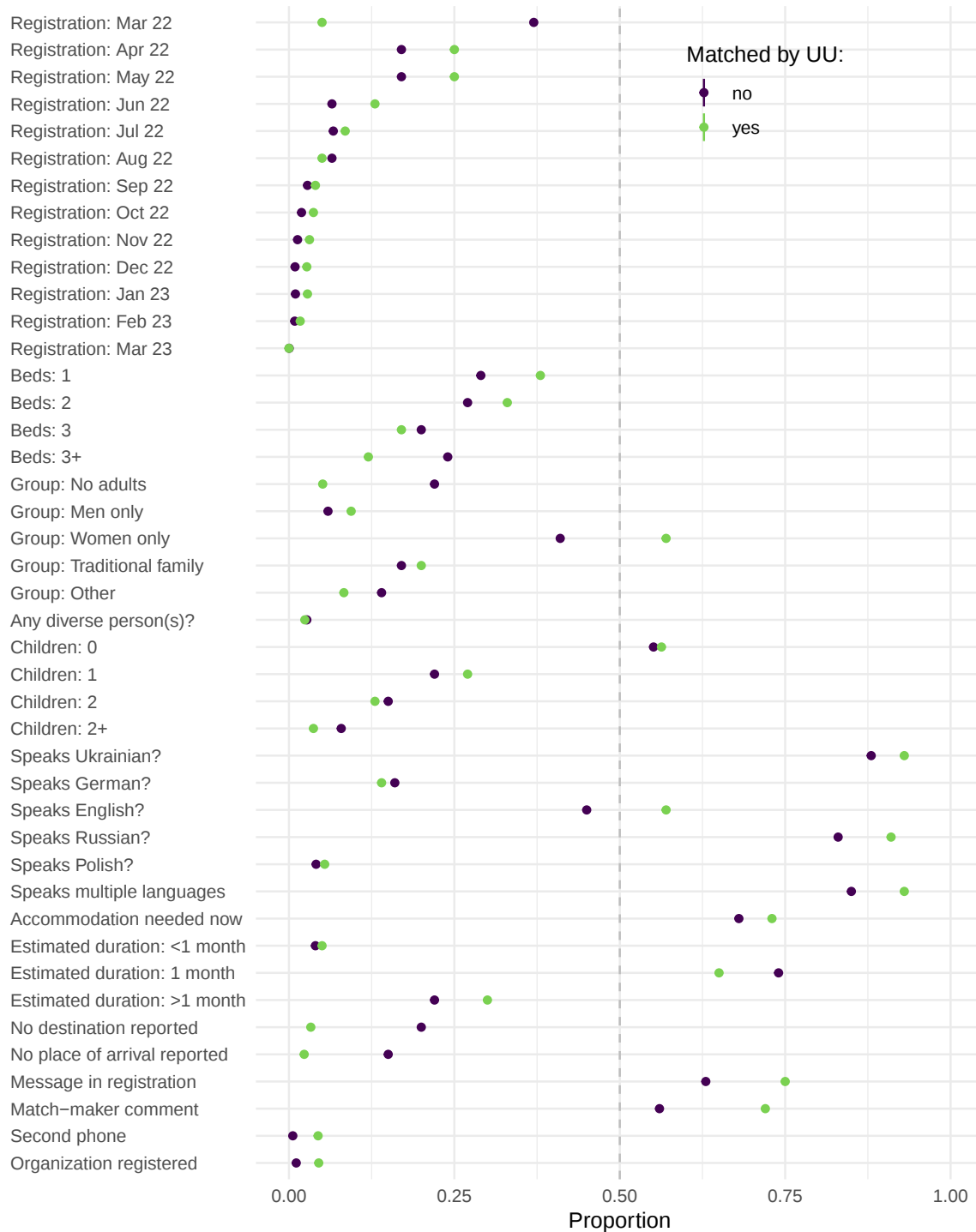
Our identification strategy relies on the assumption of selection-on-observable characteristics (Imbens and Rubin, 2015). It compares refugees who were successfully matched with a host by UU with observably similar refugees who registered with UU but were not matched with a host due to host unavailability at the time. We leverage the fact that the matching process performed by UU was based on the same refugee characteristics observed in the registration data. Therefore, controlling for these covariates, we

expect that the integration potential and other unobserved characteristics of refugees who were matched do not differ systematically from those who were not matched.

Note that the goal of the calls by the call center agents with the refugee and host was to confirm that the information provided in the registration form is still up-to-date. Therefore, call center agents had no incentive and no instructions to solicit additional information that was not captured in the registration form and would therefore be unobserved to us researchers before finalizing a match. Interviews with UU staff who supervised the calls corroborate that call center agents rarely, if at all, solicited additional information to inform their match-making.

To further examine this assumption in section 2.11, we leverage additional demographic information about refugees from our survey not contained in the registration form, covering citizenship, education, employment, income, relationship status, self-identification as LGBTQ+, and region of origin. When conducting a balance test between matched and non-matched refugees, we find little evidence for differences in any of these demographic attributes once we account for the variables contained in the registration form. This supports the assumption that the matching was not driven by unobservables. In addition, in section 3.4 we also conduct a formal sensitivity analysis that probes the robustness of our results to potential hidden bias from unobserved confounders. The analysis reveals that an unobserved confounder would have to be more than six times stronger than the most predictive observed covariates (refugee speaks German or English) to overturn our main results. Together, these results corroborate the identification assumption and suggest that any remaining unobserved confounder is unlikely to change the main findings.

Figure 16 compares 22,124 matched and 95,130 unmatched registered refugees on the UU platform. The figure illustrates that matched and unmatched refugees are generally similar across the characteristics they provided during the registration process. The main difference observed is that refugees who registered very early in March 2022 were less likely to be matched, primarily due to the challenge of finding a sufficient number of suitable hosts in the initial weeks after the platform’s launch.



Supplementary Figure 16: Comparison of Characteristics Between Matched and Unmatched Registered Accommodation Seekers (Source: Register data from UU, see Section 2.3).

2.7 Statistical Models

We use ordinary least square (OLS) regression to estimate the ITT as described in the main text. Our main specification takes the following form:

$$y_i = \beta_0 + \beta_1 Z_i + \gamma \mathbf{X}_i + \epsilon_i, \quad (1)$$

where y_i measures an integration outcome for respondent i , Z_i the binary matching indicator, $\mathbf{X}_i$ a vector of covariates, and ϵ_i the error term. We use heteroskedasticity robust standard errors (HC1).

The matching indicator measures if a respondent was successfully matched by a call center agent or not. A successful match is formed after the agent verified the information from both the host and the refugee and independent of actions by the refugee or the host after the call with the agent. See Section 1.3 for details on the matching process.

In our preferred specification we include all binary indicators from the UU registration data and available to the call center agent. This includes: Indicators for the number of beds needed (2, 3, 3+), estimated duration (4 weeks, 4+ weeks), month of registration (13 indicators), indicator for accommodation needed now, indicators for no destination or place of arrival reported, indicators for men- or women-only groups, if the group includes any diverse persons, if the group includes only minors or if it is a traditional family, indicators for the number of children (1, 2, 2+), indicators for language ability (Ukrainian, German, Polish, English, Russian) and multilingual ability, if the registration includes a free-text message, and if it includes a match-maker comment. We refer to these covariates as *main covariates* when discussing the results below.

In additional specifications, we add demographic and pre-flight covariates. The set of *additional covariates* includes: respondents' age, gender, education, the Ukrainian region of residence before respondents' left, their labor market status and income before leaving as well as the size of their household before leaving. Other than the household size, all of these additional covariates are categorical. To deal with missing values in these additional covariates, we use the missing data indicator method. We win-sorize a small number of covariate values and collapsed some sparsely populated categories. In further analysis using machine learning methods, we further broaden the set of covariates included, see section 3.5.

To estimate the LATE, we use a two-stage least square (2SLS) regression. The main specification takes the same form as the OLS specification except that we regress a treatment indicator (if a respondent moved into the matched accommodation) on the integration outcome and we instrument this treatment indicator with the matching indicator. As in the OLS case, we use heteroskedasticity robust standard errors (HC1).

2.8 Summary Statistics

Summary statistics for all variables appear in Supplementary Tables 3, 5, and 4. The main estimation sample includes everyone who participated in the survey, arrived in Germany in or after January 2022, and remained in Germany up until the survey day (N=1,700).

Supplementary Table 3: Summary statistics: main variables (N=1,700)

	Mean	SD	Min	P25	P75	Max	Missing (in %)
Matched	0.37	0.48	0	0	1	1	0
Moved in	0.25	0.43	0	0	1	1	11
Contact frequency	1.3	1.8	0	0	4	4	11
Integration Outcomes							
IPL-12	0.38	0.14	0	0.29	0.48	0.83	12
IPL-12 (ex. Social)	0.4	0.14	0	0.3	0.5	0.85	12
IPL-12 (ex. Economic)	0.38	0.15	0	0.28	0.47	0.88	10
Social	0.29	0.22	0	0.12	0.5	1	7.2
Psychological	0.5	0.24	0	0.38	0.62	1	1.5
Navigational	0.39	0.2	0	0.25	0.5	1	3.2
Linguistic	0.36	0.29	0	0.12	0.5	1	7.5
Economic	0.37	0.22	0	0.25	0.5	1	8.3
Political	0.35	0.24	0	0.12	0.5	1	8.4
Accommodation Outcomes							
Living with host	0.42	0.49	0	0	1	1	20
Living with refugees	0.21	0.41	0	0	0	1	20
Total rent (in 1k Euro)	0.57	1.7	0	0	0	10	25
Monthly rent (in Euro)	76	222	0	0	0	3750	29
Number of months	6.5	4.2	1	3	10	16	24
Private rental	0.16	0.37	0	0	0	1	11
Public housing	0.3	0.46	0	0	1	1	11
Location Outcomes							
Vote share AfD '17	8.2	2.7	2.1	6.2	9	23	25
Turnout '17	75	5.5	47	74	78	88	25
Hate crimes p.c.	0.58	0.81	0	0.17	0.92	8.5	25
Unemployment	5.7	2.2	1.3	3.9	7.9	13	25
Population density	1.8	1.5	0.019	0.41	2.7	4.8	25
East Germany	0.098	0.3	0	0	0	1	25
City	0.85	0.36	0	1	1	1	25
Average age	44	2.1	38	42	45	52	25
Average rent	7.6	2	2.4	6.3	9	13	25
Average income tax	7.6	2	2.4	6.3	9	13	25
Share foreign-born	22	7.4	1.9	16	26	42	25

Supplementary Table 4: Summary Statistics: Additional Covariates (N=1,700)

	Mean	SD	Min	P25	P75	Max	Missing
Source: Registration							
Counts: Beds	2.4	1.5	1	1	3	10	0
Beds: 2	0.3	0.46	0	0	1	1	0
Beds: 3	0.19	0.39	0	0	0	1	0
Beds: 3+	0.17	0.38	0	0	0	1	0
Counts: Estimated duration (weeks)	13	15	1	4	12	48	0
Estimated duration: 4 weeks	0.45	0.5	0	0	1	1	0
Estimated duration: +4 weeks	0.49	0.5	0	0	1	1	0
Accommodation needed now	0.62	0.49	0	0	1	1	0
No destination reported	0.055	0.23	0	0	0	1	0
No place of arrival reported	0.046	0.21	0	0	0	1	0
Count: Males	0.46	0.61	0	0	1	5	0
Count: Females	1.1	0.8	0	1	1	10	0
Count: Diverse	0.034	0.21	0	0	0	3	0
Group: No adults	0.078	0.27	0	0	0	1	0
Group: Men only	0.075	0.26	0	0	0	1	0
Group: Women only	0.5	0.5	0	0	1	1	0
Group: Traditional family	0.24	0.43	0	0	0	1	0
Group: Other	0.11	0.31	0	0	0	1	0
Any diverse person(s)?	0.028	0.17	0	0	0	1	0
Count: Children	0.76	1	0	0	1	10	0
Children: 1	0.25	0.43	0	0	0	1	0
Children: 2	0.15	0.36	0	0	0	1	0
Children: 2+	0.056	0.23	0	0	0	1	0
Count: Languages	2.7	0.8	1	2	3	5	0
Speaks Ukrainian	0.97	0.17	0	1	1	1	0
Speaks German	0.15	0.36	0	0	0	1	0
Speaks English	0.061	0.24	0	0	0	1	0
Speaks Polish	0.54	0.5	0	0	1	1	0
Speaks Russian	0.94	0.23	0	1	1	1	0
Speaks multiple languages	0.96	0.19	0	1	1	1	0
Has message	0.8	0.4	0	1	1	1	0
Message: length	235	322	0	28	310	3195	0
Message: has name	0.18	0.38	0	0	0	1	0
Message: has phone num.	0.039	0.19	0	0	0	1	0
Message: has address	0.025	0.16	0	0	0	1	0
Message: has email	0.012	0.11	0	0	0	1	0
Message: has birthday	0.0024	0.048	0	0	0	1	0
Message: has link	0.0059	0.076	0	0	0	1	0
Message: has personal info.	0.26	0.6	0	0	0	4	0
Count: Match-maker comment	2.1	2.1	0	1	3	19	0
Match-maker comment	0.81	0.39	0	1	1	1	0
Source: Survey							
Age	36	11	16	28	43	89	0
Household size	2.7	1.8	1	2	3	16	0
Household size: Imputed	0.045	0.21	0	0	0	1	0

Supplementary Table 5: Summary Statistics: Additional Covariates (N=1,700)

		Percent	N
Source: Registration			
Registration	2022 April	3.8	65
	2022 August	13	228
	2022 December	3.8	64
	2022 July	15	254
	2022 June	16	274
	2022 March	11	183
	2022 May	13	226
	2022 November	3.9	67
	2022 October	5.8	99
	2022 September	7.3	124
	2023 February	3.3	56
	2023 January	3.5	59
	2023 March	0.059	1
Source: Survey			
Gender	Female	61	1038
	Male	17	288
	Non-binary	0.76	13
Education	(Missing)	21	361
	School education	6.4	108
	Vocational education	8.7	148
	Undergraduate education	5.3	90
	Bachelor's degree	12	199
	Specialist degree	24	407
	Master's degree	20	337
	Postgraduate education	2.6	45
	(Missing)	22	366
Labour market	Paid work	55	938
	Education	6.6	113
	Unemployed	2.4	41
	Retired/Disabled	2.9	50
	In community/military service	1	17
	Houseperson	5.9	100
	Other	4.1	70
	(Missing)	22	371
Income	<3000 hrn.	3.9	67
	3001-4000 hrn.	3	51
	4001-6000 hrn.	4.5	77
	6001-8000 hrn.	4.2	72
	8001-10000 hrn.	4.8	82
	10001-12000 hrn.	5.2	88
	12001-14000 hrn.	4	68
	14001-16000 hrn.	3.2	55
	16001-18000 hrn.	2.8	48
	18001-20000 hrn.	5.7	97
	20001-22000 hrn.	3.7	63
	22001-30000 hrn.	8.1	138
	30001-45000 hrn.	6.2	105
	>45001 hrn.	6.2	105
	(Missing)	34	584
Relationship	In relationship	14	237
	Married	33	569
	Widowed	2.2	37
	Single / divorced	26	443
	(Missing)	24	414

2.9 Attrition and Item Non-Response

It could be that our effect estimates are contaminated by selection bias, if matching status increases the probability to arrive in or leave Germany. Supplementary Table 6 provides evidence that this is unlikely to be an empirical concern as the rate of arrival and departure is not discernibly different between matched and unmatched refugees.

Another concern might be that not all respondents complete the survey and/or decide to not respond to some of the survey items. While only 1.5% of the respondents have not answered the question related to psychological integration, the share is slightly higher when it comes to economic and political integration (8.3% and 8.4%), see Supplementary Table 3. However, as shown in Supplementary Table 7, when we regress indicators of non-response for each of the six indicators of integration, we find no evidence of differential response propensities between matched and unmatched refugees.

Supplementary Table 6: OLS Regression Estimates with Robust Standard Errors (Intent-to-Treat Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Arrived in Germany</i>						
(Intercept)	0.71 [0.69, 0.73] p = 0.000	0.82 [0.63, 1.02] p = 0.000	1.01 [0.85, 1.17] p = 0.000	0.71 [0.69, 0.73] p = 0.000	0.82 [0.60, 1.03] p = 0.000	1.03 [0.86, 1.20] p = 0.000
Matched	0.05 [0.01, 0.08] p = 0.006	0.03 [-0.01, 0.07] p = 0.091	0.01 [-0.02, 0.04] p = 0.431	0.05 [0.01, 0.09] p = 0.009	0.03 [-0.01, 0.07] p = 0.126	0.00 [-0.02, 0.03] p = 0.856
Num.Obs.	2764	2764	2764	2764	2764	2764
<i>Remained in Germany</i>						
(Intercept)	0.86 [0.84, 0.88] p = 0.000	0.79 [0.60, 0.98] p = 0.000	0.96 [0.85, 1.08] p = 0.000	0.86 [0.84, 0.88] p = 0.000	0.78 [0.59, 0.97] p = 0.000	0.95 [0.82, 1.08] p = 0.000
Matched	0.01 [-0.02, 0.04] p = 0.632	-0.00 [-0.04, 0.03] p = 0.869	-0.01 [-0.03, 0.01] p = 0.335	0.02 [-0.02, 0.05] p = 0.351	0.01 [-0.03, 0.04] p = 0.646	-0.01 [-0.03, 0.01] p = 0.333
Num.Obs.	1970	1970	1970	1970	1970	1970
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 7: OLS Regression Estimates with Robust Standard Errors (Intent-to-Treat Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Missing value: Social Integration</i>						
(Intercept)	0.08 [0.06, 0.09] p = 0.000	0.00 [-0.12, 0.12] p = 0.955	-0.08 [-0.21, 0.05] p = 0.235	0.08 [0.06, 0.09] p = 0.000	-0.02 [-0.13, 0.08] p = 0.678	-0.09 [-0.23, 0.04] p = 0.177
Matched	-0.01 [-0.03, 0.02] p = 0.481	-0.01 [-0.04, 0.02] p = 0.475	0.02 [-0.00, 0.04] p = 0.102	-0.01 [-0.04, 0.01] p = 0.341	-0.02 [-0.05, 0.01] p = 0.319	0.01 [-0.01, 0.04] p = 0.269
Num.Obs.	1700	1700	1700	1700	1700	1700
<i>Missing value: Psychological Integration</i>						
(Intercept)	0.02 [0.01, 0.02] p = 0.000	0.02 [-0.04, 0.07] p = 0.590	0.01 [-0.05, 0.07] p = 0.822	0.01 [0.01, 0.02] p = 0.000	0.01 [-0.04, 0.06] p = 0.579	0.01 [-0.05, 0.07] p = 0.710
Matched	-0.01 [-0.02, 0.01] p = 0.320	-0.01 [-0.02, 0.01] p = 0.344	0.00 [-0.01, 0.01] p = 0.839	-0.00 [-0.01, 0.01] p = 0.617	-0.00 [-0.02, 0.01] p = 0.550	0.00 [-0.01, 0.02] p = 0.514
Num.Obs.	1700	1700	1700	1700	1700	1700
<i>Missing value: Navigational Integration</i>						
(Intercept)	0.03 [0.02, 0.04] p = 0.000	0.03 [-0.05, 0.11] p = 0.446	0.02 [-0.09, 0.12] p = 0.766	0.03 [0.02, 0.04] p = 0.000	0.01 [-0.07, 0.08] p = 0.866	0.02 [-0.10, 0.13] p = 0.788
Matched	-0.00 [-0.02, 0.02] p = 0.997	-0.00 [-0.02, 0.02] p = 0.727	0.01 [-0.01, 0.03] p = 0.435	0.00 [-0.02, 0.02] p = 0.863	-0.00 [-0.02, 0.02] p = 0.893	0.01 [-0.01, 0.03] p = 0.323
Num.Obs.	1700	1700	1700	1700	1700	1700
<i>Missing value: Linguistic Integration</i>						
(Intercept)	0.08 [0.07, 0.10] p = 0.000	0.02 [-0.10, 0.14] p = 0.773	-0.08 [-0.21, 0.04] p = 0.176	0.08 [0.06, 0.10] p = 0.000	0.01 [-0.11, 0.14] p = 0.843	-0.08 [-0.22, 0.05] p = 0.234
Matched	-0.02 [-0.04, 0.01] p = 0.145	-0.02 [-0.05, 0.01] p = 0.153	0.01 [-0.01, 0.03] p = 0.412	-0.02 [-0.05, 0.01] p = 0.125	-0.02 [-0.06, 0.01] p = 0.122	0.01 [-0.02, 0.03] p = 0.609
Num.Obs.	1700	1700	1700	1700	1700	1700
<i>Missing value: Economic Integration</i>						
(Intercept)	0.09 [0.07, 0.10] p = 0.000	0.09 [-0.04, 0.23] p = 0.156	-0.02 [-0.16, 0.12] p = 0.813	0.09 [0.07, 0.11] p = 0.000	0.04 [-0.08, 0.15] p = 0.525	-0.04 [-0.18, 0.11] p = 0.603
Matched	-0.01 [-0.04, 0.02] p = 0.432	-0.02 [-0.05, 0.01] p = 0.255	0.01 [-0.02, 0.04] p = 0.408	-0.02 [-0.04, 0.01] p = 0.263	-0.03 [-0.06, 0.01] p = 0.129	0.00 [-0.03, 0.03] p = 0.880
Num.Obs.	1700	1700	1700	1700	1700	1700
<i>Missing value: Political Integration</i>						
(Intercept)	0.09 [0.07, 0.10] p = 0.000	-0.00 [-0.13, 0.13] p = 0.984	-0.08 [-0.22, 0.07] p = 0.299	0.09 [0.07, 0.11] p = 0.000	0.01 [-0.12, 0.15] p = 0.880	-0.05 [-0.22, 0.11] p = 0.530
Matched	-0.01 [-0.04, 0.02] p = 0.394	-0.02 [-0.05, 0.01] p = 0.312	0.02 [-0.01, 0.04] p = 0.147	-0.02 [-0.05, 0.01] p = 0.285	-0.02 [-0.06, 0.01] p = 0.154	0.01 [-0.02, 0.04] p = 0.466
Num.Obs.	1700	1700	1700	1700	1700	1700
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

2.10 Generalizability

To assess the generalizability, we compare our survey sample to two sources of data on Ukrainian refugees in Germany. The first source is a survey sample of Ukrainian refugees from a survey conducted by researchers from the Institute for Employment Research (IAB), the Federal Institute for Population Research (BiB), the Research Center of the Federal Office for Migration and Refugees (BAMF-FZ), and the German Institute for Economic Research (DIW) (Brücker et al., 2023). We refer to this as the IAB-BiB/FReDA-BAMF-SOEP sample. This survey covered Ukrainians aged 18-70 who fled to Germany between February 24, 2022, and early June 2022 and who were officially registered at the time of the survey. The second data source is the population register of all foreigners in Germany, the German Central Register of Foreign Nationals (AZR). Brücker et al. (2023) published the distribution of basic demographic characteristics in the full population of Ukrainian refugees as registered in the AZR.

To make the comparison more informative, we compare the two sources of data to our full sample and also a restricted version of our sample that is trimmed to those refugees who would likely have been part of the population covered by the AZR data and the population that was used to draw the IAB-BiB/FReDA-BAMF-SOEP sample. This restricted version of our data excludes respondents who did not come to Germany until June 2022 or left before August 2022, respondents who are not Ukrainian nationals, and respondents who were younger than 18 or older than 70 years.

The results are presented in Supplementary Tables 8 and 9. Overall, both our restricted and full sample show high similarity to the population of Ukrainian refugees in Germany across the characteristics measured in both datasets, including gender, age, education, state, employment, marital status, parenthood, and region in Ukraine. Our sample is slightly younger and somewhat more urban than the overall population of Ukrainian refugees in Germany, but even these differences are fairly minor overall. This suggests that the types of refugees who registered for UU are fairly similar to the general population of Ukrainian refugees who arrived at that time.

Supplementary Table 8: Comparing Basic Demographic Distributions: UU Survey Sample vs. IAB-BiB/FReDA-BAMF-SOEP survey sample and German Central Register of Foreign Nationals (AZR)

	Full sample		Restricted to target population		AZR population data	IAB-BiB/FReDA-BAMF-SOEP survey sample
	percent of valid answers (weighted)	absolute count	percent of valid answers (weighted)	absolute count	percent	percent (weighted)
Gender						
Female	77.0	1673	81.7	722	79.8	78.4
Male	22.4	428	17.4	137	20.2	21.6
Non-binary	0.6	14	0.9	9	-	-
Age						
17 and younger	0.3	8	-	-	-	-
18-29	24.4	667	26.3	289	22.4	21.2
30-39	34.4	961	34.5	367	29.3	28.2
40-49	28.1	815	27.6	319	23.1	22.8
50-59	8.9	258	8.4	100	12.0	12.1
60-70	3.1	81	3.2	33	13.1	12.7
71 and over	0.8	21	-	-	-	-
unknwon	-	-	-	-	-	3.1
Federal state						
Baden-Württemberg	14.5	214	11.4	94	12.5	12.2
Bavaria	16.8	241	21.3	175	16.9	16.2
Berlin	15.4	212	16.0	133	5.4	3.0
Brandenburg	2.3	39	2.3	22	3.3	3.1
Bremen	1.2	19	1.5	12	0.9	0.6
Hamburg	7.9	107	7.4	59	2.6	2.8
Hesse	6.6	93	6.1	51	8.1	8.2
Lower Saxony	5.7	94	5.0	45	9.6	10.1
Mecklenburg- Vorpommern	0.9	12	1.1	8	2.5	2.5
North Rhine-Westphalia	16.4	241	16.2	132	19.5	22.0
Rhineland-Palatinate	3.0	41	3.0	23	4.8	4.8
Saarland	1.0	16	0.8	6	0.9	1.0
Saxony	2.6	42	3.0	28	5.3	5.6
Saxony-Anhalt	2.0	30	1.6	12	2.9	3.0
Schleswig-Holstein	2.4	39	2.0	17	2.7	2.6
Thuringa	1.4	18	1.3	9	2.0	2.3
N	2811	-	1108	-	448679	11763

Supplementary Table 9: Comparing Additional Demographic Distributions: UU Survey Sample and the IAB-BiB/FReDA-BAMF-SOEP Sample

	Full sample		Restricted to target population		IAB-BiB/FReDA-BAMF-SOEP survey sample
	percent of valid answers (weighted)	absolute count	percent of valid answers (weighted)	absolute count	percent (weighted)
Education					
Primary or secondary	9.1	187	8.8	77	18.0
Tertiary	78.5	1672	80.0	696	72.0
Vocational	-	-	-	-	11.0
Vocational education	12.4	247	11.2	92	-
Employment among those aged 18 - 64					
Employed	14.6	237	16.4	163	17.0
Not employed	85.4	1291	83.6	775	83.0
Marital status					
Married	44.7	934	42.6	357	54.0
Not married or divorced	52.6	1043	54.5	451	42.0
Widowed	2.7	55	2.9	23	5.0
Parenthood					
Has underaged children	80.5	1111	79.3	429	72.5
Has underaged no children	19.5	271	20.7	113	27.5
Region in Ukraine*					
Central	12.3	257	11.0	100	12.6
City of Kyiv	20.2	431	24.6	216	19.0
East	35.4	718	31.6	263	32.0
North (excl. City of Kyiv)	10.4	228	10.9	96	12.5
South (incl. Crimea)	16.4	333	16.7	138	14.5
West	5.2	112	5.3	48	9.4
N	2811	-	1108	-	11763

* Regional categorization: Central = Khmelnytskyi Oblast, Dnipropetrovsk Oblast, Kirovohrad Oblast, Cherkassy Oblast and Vinnytsia Oblast. City of Kyiv = City of Kyiv. East = Kharkiv Oblast, Donetsk Oblast, Luhansk Oblast, Poltava Oblast and Zaporizhzhya Oblast. North = Kyiv Oblast, Zhytomyr Oblast, Sumy Oblast and Chernihiv Oblast. South = Kherson Oblast, Autonomous Republic of Crimea, Mykolayiv Oblast, Odessa Oblast and City of Sevastopol. West = Ivano-Frankivsk, Lviv Oblast, Rivne Oblast, Ternopil Oblast, Transcarpathia Oblast, Chernivtsi Oblast and Volyn Oblast.

2.11 Placebo Balance Checks for Identification

To examine the validity of our identification approach, we conducted a series of placebo balance assessments using a set of refugee traits assessed in our survey, which were not captured in the registration data utilized by UU for their matching process. These traits include nationality, educational background, earnings in Ukraine, self-identification as LGBTQ+, employment status in Ukraine, region of origin within Ukraine, and marital status. We then conducted regressions where these refugee characteristics were regressed on the indicator for whether refugees were matched or not, while controlling for the registration characteristics employed by UU for matching purposes. If our assumption of selection based on observable factors holds, we would expect that conditional on the registration characteristics employed by UU for matching purposes, matched and unmatched refugees should not systematically differ in terms of the refugee traits that were unobserved by UU but measured in our survey.

The results, presented in Supplementary Table 10, support this assumption. Our analysis reveals that, given the characteristics utilized by UU for matching, there is no discernible association between being matched and the refugee traits not observed by UU. Out of twenty-two balance assessments, only one covariate (Self-identification as LGBTQ+: No) exhibited a statistically significant imbalance, albeit negligible in substance (a 3.8 percentage point difference). This reinforces our assumption of selection based on observable factors.

Supplementary Table 10: Balance of Demographic Attributes Between Matched and Unmatched Respondents

	Distributions in subsamples percent of valid answers (weighted)		Regression results†		
	Matched in register	Not matched in register	Estimated effect of being matched on probability of group membership	Robust SE	p-value
Citizenship					
Not Ukrainian	5.1	4.3	0.003	0.010	0.788
Ukrainian	94.9	95.7	-0.003	0.010	0.788
Education					
Primary or secondary	8.8	9.2	-0.006	0.016	0.680
Tertiary	79.1	78.3	-0.004	0.021	0.860
Vocational education	12.1	12.5	0.010	0.017	0.547
Income in Ukraine					
10000 hryvnia or less	35.7	35.0	-0.001	0.027	0.964
10001 to 20000 hryvnia	29.8	30.5	0.010	0.026	0.706
20001 hryvnia or more	34.4	34.5	-0.008	0.027	0.755
LGBTQ					
Yes	7.9	4.6	0.019	0.013	0.145
No	87.0	91.1	-0.035	0.017	0.039
Prefer not to say	5.2	4.3	0.016	0.012	0.180
Labour market activity in Ukraine					
Employed	69.8	66.9	0.031	0.024	0.205
Not employed	30.2	33.1	-0.031	0.024	0.205
Region in Ukraine‡					
East	34.2	35.9	-0.024	0.025	0.345
South (incl. Crimea)	13.7	17.5	-0.030	0.019	0.112
Central	12.8	12.1	0.014	0.018	0.448
West	5.5	5.1	0.011	0.012	0.370
City of Kyiv	22.8	19.2	0.027	0.021	0.196
North (excl. City of Kyiv)	11.0	10.2	0.002	0.017	0.914
Relationship status					
In relationship	21.0	16.5	0.022	0.021	0.289
Married	42.3	45.7	0.017	0.024	0.463
Not in a relationship	36.8	37.8	-0.040	0.025	0.108

† OLS models with robust standard errors, non-response weights and controlling for all main covariates. Displayed coefficients represent the effect of being matched on the probability of belonging to the indicated group.

‡ Regional categorization: Central = Khmelnytskyi Oblast, Dnipropetrovsk Oblast, Kirovohrad Oblast, Cherkassy Oblast and Vinnytsia Oblast. City of Kyiv = City of Kyiv. East = Kharkiv Oblast, Donetsk Oblast, Luhansk Oblast, Poltava Oblast and Zaporizhzhya Oblast. North = Kyiv Oblast, Zhytomyr Oblast, Sumy Oblast and Chernihiv Oblast. South = Kherson Oblast, Autonomous Republic of Crimea, Mykolayiv Oblast, Odessa Oblast and City of Sevastopol. West = Ivano-Frankivsk, Lviv Oblast, Rivne Oblast, Ternopil Oblast, Transcarpathia Oblast, Chernivtsi Oblast and Volyn Oblast.

3 Detailed Results

Below we report detailed regression results.

- *Main Effects and First Stage*: Supplementary Table 11 reports the ITT from an OLS regression, the LATE from a 2SLS regression, and the corresponding first-stage regressions.
- *Excluding Social Integration*: Supplementary Tables 12-14 report similar results for integration indices that remove the economic integration subindex, the social integration subindex, or the social and psychological integration subindexes.
- *Subindexes of Integration*: Supplementary Tables 15-17 report the corresponding estimates for all subindexes separately.
- *Effect Heterogeneity*: Supplementary Table 18 reports OLS regressions where we interact the matching indicator with indicators for various demographic subgroups. In these specifications we keep observations with missing values in the demographic groups and assign them to the base category. Supplementary Table 18b reports OLS regressions where we subset the data by demographic groups as in the main text.
- *Accommodation Outcomes*: Supplementary Table 19 reports a series of regression demonstrating differences in accommodation outcomes between matched and unmatched refugees.
- *Location Outcomes*: Supplementary Tables 20 and 21 reports differences in location outcomes between matched and unmatched refugees.
- *Additional Specifications*: Supplementary Table 22 reports the impact of host country frequency on integration while Supplementary Tables 23-24 report the impact of hosting on integration in the subset of program participants and non-participants that either are living public housing on in private rentals.
- *Sensitivity Analysis*: In section 3.4 we report formal sensitivity analysis to examine the sensitivity of our results to potential hidden bias from unobserved confounders. Results are summarized in Figure 17.
- *Double/Debiased Machine Learning Analysis*: In section 3.5 we report the ITT and LATE results from double/debiased machine learning models in Supplementary Table 25.
- *Negative Experiences Among Refugees in Private Hosting Settings*: In section 3.6 we report additional results about ratings of hosts and accommodations by survey respondents living in UU matched accommodations in Figure 18.
- *Controlling for Mechanisms*: In section 3.7 we report additional results requested by a reviewer where we re-estimate the models controlling for the intermediate outcome variables (location and contact).

Notes: Sample sizes across the regressions differ because of non-response to survey questions for each of the regression outcomes. In addition, the samples for ITT analysis and LATE analysis differ because the treatment indicator is missing for survey respondents who decided to not answer the survey question asking if they moved into an accommodation offered by UU. Supplementary Table 20 sample sizes are lower because some respondents choose to not provide information on their current place of residence.

Across all tables, the main covariates (label "Main covs." in the tables) include all binary indicators from the UU registration data as long as their mean is larger than 0.02. The additional covariates (label "Add. covs." in the tables) include additional demographic and pre-flight covariates from the survey. For details and the list of covariates see SM section 2.7.

3.1 Main Outcomes

Supplementary Table 11: Impact of Private Hosting on Overall Integration (IPL-12)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>OLS</i>						
(Intercept)	0.37 [0.36, 0.38] p = 0.000	0.32 [0.25, 0.39] p = 0.000	0.28 [0.20, 0.37] p = 0.000	0.36 [0.35, 0.37] p = 0.000	0.30 [0.23, 0.37] p = 0.000	0.29 [0.19, 0.38] p = 0.000
Matched	0.03 [0.02, 0.05] p = 0.000	0.03 [0.02, 0.04] p = 0.000	0.03 [0.02, 0.04] p = 0.000	0.03 [0.02, 0.05] p = 0.000	0.03 [0.02, 0.05] p = 0.000	0.03 [0.02, 0.05] p = 0.000
Num.Obs.	1501	1501	1501	1501	1501	1501
<i>2SLS</i>						
(Intercept)	0.36 [0.35, 0.37] p = 0.000	0.32 [0.25, 0.39] p = 0.000	0.29 [0.20, 0.37] p = 0.000	0.36 [0.35, 0.37] p = 0.000	0.30 [0.22, 0.37] p = 0.000	0.28 [0.19, 0.38] p = 0.000
Moved in	0.06 [0.03, 0.09] p = 0.000	0.06 [0.03, 0.09] p = 0.000	0.07 [0.03, 0.10] p = 0.000	0.06 [0.03, 0.09] p = 0.000	0.07 [0.03, 0.10] p = 0.000	0.07 [0.04, 0.11] p = 0.000
Num.Obs.	1461	1461	1461	1461	1461	1461
<i>First-stage</i>						
(Intercept)	0.06 [0.05, 0.08] p = 0.000	-0.01 [-0.22, 0.20] p = 0.923	0.03 [-0.24, 0.30] p = 0.851	0.06 [0.05, 0.08] p = 0.000	0.02 [-0.19, 0.23] p = 0.881	0.05 [-0.22, 0.32] p = 0.712
Matched	0.49 [0.44, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.45 [0.40, 0.49] p = 0.000	0.48 [0.43, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.44 [0.39, 0.49] p = 0.000
Num.Obs.	1461	1461	1461	1461	1461	1461
Cragg-Donald F	623	471	459	623	471	459
Kleibergen-Paap F	464	342	326	446	331	314
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 12: Impact of Private Hosting on Overall Integration (Excluding Social Integration from IPL-12)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>OLS</i>						
(Intercept)	0.39 [0.38, 0.40] p = 0.000	0.34 [0.27, 0.41] p = 0.000	0.30 [0.21, 0.39] p = 0.000	0.39 [0.38, 0.39] p = 0.000	0.32 [0.24, 0.39] p = 0.000	0.30 [0.21, 0.39] p = 0.000
Matched	0.02 [0.01, 0.04] p = 0.002	0.02 [0.01, 0.04] p = 0.002	0.02 [0.01, 0.04] p = 0.002	0.02 [0.01, 0.04] p = 0.003	0.03 [0.01, 0.04] p = 0.001	0.03 [0.01, 0.04] p = 0.001
Num.Obs.	1503	1503	1503	1503	1503	1503
<i>2SLS</i>						
(Intercept)	0.39 [0.38, 0.40] p = 0.000	0.34 [0.27, 0.41] p = 0.000	0.30 [0.21, 0.39] p = 0.000	0.38 [0.37, 0.39] p = 0.000	0.32 [0.24, 0.40] p = 0.000	0.30 [0.20, 0.40] p = 0.000
Moved in	0.05 [0.02, 0.08] p = 0.003	0.05 [0.02, 0.08] p = 0.003	0.05 [0.02, 0.09] p = 0.003	0.05 [0.01, 0.08] p = 0.005	0.06 [0.02, 0.09] p = 0.002	0.06 [0.02, 0.10] p = 0.001
Num.Obs.	1463	1463	1463	1463	1463	1463
<i>First-stage</i>						
(Intercept)	0.06 [0.05, 0.08] p = 0.000	-0.01 [-0.22, 0.20] p = 0.953	0.04 [-0.23, 0.31] p = 0.792	0.06 [0.05, 0.08] p = 0.000	0.02 [-0.19, 0.23] p = 0.864	0.06 [-0.21, 0.33] p = 0.666
Matched	0.49 [0.44, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.45 [0.40, 0.49] p = 0.000	0.48 [0.43, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.44 [0.39, 0.49] p = 0.000
Num.Obs.	1463	1463	1463	1463	1463	1463
Cragg-Donald F	623	471	459	623	471	459
Kleibergen-Paap F	465	343	327	448	332	314
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 13: Impact of Private Hosting on Overall Integration (Excluding Social and Psychological Integration from IPL-12)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>OLS</i>						
(Intercept)	0.36 [0.36, 0.37] p = 0.000	0.31 [0.24, 0.39] p = 0.000	0.27 [0.18, 0.36] p = 0.000	0.36 [0.35, 0.37] p = 0.000	0.30 [0.22, 0.38] p = 0.000	0.27 [0.18, 0.37] p = 0.000
Matched	0.02 [0.00, 0.03] p = 0.026	0.02 [0.00, 0.03] p = 0.020	0.02 [0.00, 0.03] p = 0.020	0.02 [0.00, 0.03] p = 0.032	0.02 [0.00, 0.04] p = 0.017	0.02 [0.01, 0.04] p = 0.005
Num.Obs.	1503	1503	1503	1503	1503	1503
<i>2SLS</i>						
(Intercept)	0.36 [0.35, 0.37] p = 0.000	0.31 [0.24, 0.39] p = 0.000	0.27 [0.18, 0.36] p = 0.000	0.36 [0.35, 0.37] p = 0.000	0.30 [0.22, 0.38] p = 0.000	0.27 [0.18, 0.37] p = 0.000
Moved in	0.03 [0.00, 0.06] p = 0.042	0.04 [0.00, 0.07] p = 0.029	0.04 [0.00, 0.07] p = 0.035	0.03 [0.00, 0.07] p = 0.046	0.04 [0.01, 0.08] p = 0.020	0.05 [0.01, 0.09] p = 0.008
Num.Obs.	1463	1463	1463	1463	1463	1463
<i>First-stage</i>						
(Intercept)	0.06 [0.05, 0.08] p = 0.000	-0.01 [-0.22, 0.20] p = 0.953	0.04 [-0.23, 0.31] p = 0.792	0.06 [0.05, 0.08] p = 0.000	0.02 [-0.19, 0.23] p = 0.864	0.06 [-0.21, 0.33] p = 0.666
Matched	0.49 [0.44, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.45 [0.40, 0.49] p = 0.000	0.48 [0.43, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.44 [0.39, 0.49] p = 0.000
Num.Obs.	1463	1463	1463	1463	1463	1463
Cragg-Donald F	623	471	459	623	471	459
Kleibergen-Paap F	465	343	327	448	332	314
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 14: Impact of Private Hosting on Overall Integration (Excluding Economic Integration from IPL-12)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>OLS</i>						
(Intercept)	0.37 [0.36, 0.38] p = 0.000	0.31 [0.24, 0.39] p = 0.000	0.27 [0.17, 0.37] p = 0.000	0.36 [0.35, 0.37] p = 0.000	0.29 [0.21, 0.37] p = 0.000	0.27 [0.17, 0.37] p = 0.000
Matched	0.04 [0.02, 0.05] p = 0.000	0.03 [0.02, 0.05] p = 0.000	0.03 [0.02, 0.05] p = 0.000	0.03 [0.02, 0.05] p = 0.000	0.03 [0.02, 0.05] p = 0.000	0.04 [0.02, 0.05] p = 0.000
Num.Obs.	1525	1525	1525	1525	1525	1525
<i>2SLS</i>						
(Intercept)	0.36 [0.35, 0.38] p = 0.000	0.32 [0.24, 0.39] p = 0.000	0.27 [0.17, 0.37] p = 0.000	0.36 [0.35, 0.37] p = 0.000	0.29 [0.21, 0.37] p = 0.000	0.27 [0.16, 0.37] p = 0.000
Moved in	0.07 [0.04, 0.10] p = 0.000	0.07 [0.03, 0.10] p = 0.000	0.07 [0.03, 0.11] p = 0.000	0.07 [0.03, 0.10] p = 0.000	0.07 [0.03, 0.11] p = 0.000	0.08 [0.04, 0.11] p = 0.000
Num.Obs.	1482	1482	1482	1482	1482	1482
<i>First-stage</i>						
(Intercept)	0.07 [0.05, 0.08] p = 0.000	0.01 [-0.20, 0.22] p = 0.919	0.07 [-0.20, 0.34] p = 0.607	0.07 [0.05, 0.09] p = 0.000	0.03 [-0.18, 0.23] p = 0.813	0.09 [-0.19, 0.36] p = 0.531
Matched	0.49 [0.45, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.48 [0.43, 0.53] p = 0.000	0.44 [0.39, 0.49] p = 0.000	0.44 [0.39, 0.49] p = 0.000
Num.Obs.	1482	1482	1482	1482	1482	1482
Cragg-Donald F	628	473	461	628	473	461
Kleibergen-Paap F	472	346	329	448	327	308
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 15: Impact of Private Hosting on Subindexes of Integration. OLS Regression Estimates with Robust Standard Errors (Intention-to-Treat Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Social Integration</i>						
(Intercept)	0.26 [0.25, 0.27] p = 0.000	0.23 [0.11, 0.35] p = 0.000	0.24 [0.09, 0.38] p = 0.002	0.26 [0.24, 0.27] p = 0.000	0.23 [0.10, 0.35] p = 0.000	0.25 [0.10, 0.40] p = 0.001
Matched	0.08 [0.06, 0.10] p = 0.000	0.07 [0.04, 0.09] p = 0.000	0.06 [0.04, 0.09] p = 0.000	0.07 [0.04, 0.09] p = 0.000	0.06 [0.04, 0.09] p = 0.000	0.06 [0.04, 0.09] p = 0.000
Num.Obs.	1577	1577	1577	1577	1577	1577
<i>Psychological Integration</i>						
(Intercept)	0.49 [0.48, 0.51] p = 0.000	0.46 [0.34, 0.58] p = 0.000	0.43 [0.27, 0.60] p = 0.000	0.49 [0.47, 0.51] p = 0.000	0.41 [0.28, 0.55] p = 0.000	0.42 [0.25, 0.59] p = 0.000
Matched	0.04 [0.01, 0.06] p = 0.001	0.04 [0.01, 0.06] p = 0.005	0.04 [0.01, 0.07] p = 0.003	0.04 [0.01, 0.06] p = 0.004	0.04 [0.01, 0.07] p = 0.006	0.04 [0.01, 0.07] p = 0.007
Num.Obs.	1675	1675	1675	1675	1675	1675
<i>Navigational Integration</i>						
(Intercept)	0.39 [0.38, 0.40] p = 0.000	0.32 [0.21, 0.43] p = 0.000	0.27 [0.13, 0.40] p = 0.000	0.38 [0.37, 0.40] p = 0.000	0.30 [0.18, 0.42] p = 0.000	0.26 [0.11, 0.40] p = 0.001
Matched	0.01 [-0.01, 0.03] p = 0.276	0.02 [-0.00, 0.04] p = 0.132	0.01 [-0.01, 0.03] p = 0.251	0.02 [-0.01, 0.04] p = 0.154	0.02 [0.00, 0.05] p = 0.035	0.02 [-0.00, 0.04] p = 0.084
Num.Obs.	1646	1646	1646	1646	1646	1646
<i>Linguistic Integration</i>						
(Intercept)	0.35 [0.33, 0.36] p = 0.000	0.26 [0.13, 0.39] p = 0.000	0.35 [0.18, 0.51] p = 0.000	0.34 [0.32, 0.36] p = 0.000	0.24 [0.10, 0.37] p = 0.001	0.34 [0.17, 0.51] p = 0.000
Matched	0.03 [0.00, 0.06] p = 0.050	0.02 [-0.01, 0.05] p = 0.126	0.02 [-0.01, 0.05] p = 0.236	0.03 [-0.00, 0.06] p = 0.066	0.02 [-0.01, 0.06] p = 0.144	0.02 [-0.01, 0.06] p = 0.127
Num.Obs.	1572	1572	1572	1572	1572	1572
<i>Economic Integration</i>						
(Intercept)	0.37 [0.35, 0.38] p = 0.000	0.33 [0.21, 0.45] p = 0.000	0.32 [0.18, 0.46] p = 0.000	0.36 [0.35, 0.38] p = 0.000	0.36 [0.23, 0.48] p = 0.000	0.35 [0.20, 0.50] p = 0.000
Matched	0.01 [-0.02, 0.03] p = 0.631	0.01 [-0.01, 0.03] p = 0.423	0.01 [-0.02, 0.03] p = 0.564	0.01 [-0.02, 0.03] p = 0.533	0.01 [-0.02, 0.04] p = 0.379	0.02 [-0.01, 0.04] p = 0.250
Num.Obs.	1559	1559	1559	1559	1559	1559
<i>Political Integration</i>						
(Intercept)	0.35 [0.33, 0.36] p = 0.000	0.33 [0.21, 0.44] p = 0.000	0.14 [-0.02, 0.29] p = 0.079	0.34 [0.33, 0.36] p = 0.000	0.31 [0.19, 0.43] p = 0.000	0.16 [0.01, 0.32] p = 0.043
Matched	0.01 [-0.01, 0.04] p = 0.285	0.01 [-0.01, 0.04] p = 0.381	0.02 [-0.01, 0.04] p = 0.166	0.02 [-0.01, 0.04] p = 0.254	0.02 [-0.01, 0.04] p = 0.250	0.02 [-0.00, 0.05] p = 0.102
Num.Obs.	1558	1558	1558	1558	1558	1558
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 16: Impact of Private Hosting on Subindexes of Integration. First-Stage Regression Estimates with Robust Standard Errors

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Social Integration</i>						
(Intercept)	0.07 [0.05, 0.08] p = 0.000	0.01 [-0.19, 0.22] p = 0.905	0.10 [-0.17, 0.38] p = 0.456	0.07 [0.05, 0.08] p = 0.000	0.03 [-0.17, 0.24] p = 0.746	0.13 [-0.15, 0.40] p = 0.364
Matched	0.49 [0.44, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.45 [0.40, 0.49] p = 0.000	0.47 [0.43, 0.52] p = 0.000	0.44 [0.39, 0.49] p = 0.000	0.44 [0.39, 0.49] p = 0.000
Num.Obs.	1516	1516	1516	1516	1516	1516
<i>Psychological Integration</i>						
(Intercept)	0.07 [0.05, 0.08] p = 0.000	0.02 [-0.19, 0.22] p = 0.859	0.11 [-0.16, 0.39] p = 0.414	0.07 [0.05, 0.08] p = 0.000	0.04 [-0.17, 0.24] p = 0.724	0.13 [-0.14, 0.41] p = 0.340
Matched	0.49 [0.44, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.44 [0.40, 0.49] p = 0.000	0.48 [0.43, 0.52] p = 0.000	0.44 [0.39, 0.49] p = 0.000	0.44 [0.39, 0.49] p = 0.000
Num.Obs.	1517	1517	1517	1517	1517	1517
<i>Navigational Integration</i>						
(Intercept)	0.07 [0.05, 0.08] p = 0.000	0.02 [-0.18, 0.23] p = 0.838	0.12 [-0.16, 0.39] p = 0.399	0.07 [0.05, 0.09] p = 0.000	0.04 [-0.17, 0.24] p = 0.741	0.13 [-0.14, 0.41] p = 0.343
Matched	0.49 [0.44, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.45 [0.40, 0.49] p = 0.000	0.48 [0.43, 0.52] p = 0.000	0.44 [0.39, 0.49] p = 0.000	0.44 [0.38, 0.49] p = 0.000
Num.Obs.	1493	1493	1493	1493	1493	1493
<i>Linguistic Integration</i>						
(Intercept)	0.07 [0.05, 0.08] p = 0.000	0.02 [-0.19, 0.22] p = 0.864	0.11 [-0.16, 0.39] p = 0.417	0.07 [0.05, 0.08] p = 0.000	0.04 [-0.17, 0.24] p = 0.729	0.13 [-0.14, 0.41] p = 0.343
Matched	0.49 [0.44, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.45 [0.40, 0.49] p = 0.000	0.48 [0.43, 0.52] p = 0.000	0.44 [0.39, 0.49] p = 0.000	0.44 [0.39, 0.49] p = 0.000
Num.Obs.	1518	1518	1518	1518	1518	1518
<i>Economic Integration</i>						
(Intercept)	0.06 [0.05, 0.08] p = 0.000	-0.01 [-0.21, 0.20] p = 0.958	0.07 [-0.20, 0.34] p = 0.621	0.06 [0.05, 0.08] p = 0.000	0.03 [-0.18, 0.23] p = 0.814	0.10 [-0.17, 0.37] p = 0.474
Matched	0.49 [0.44, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.44 [0.40, 0.49] p = 0.000	0.48 [0.43, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.44 [0.39, 0.49] p = 0.000
Num.Obs.	1497	1497	1497	1497	1497	1497
<i>Political Integration</i>						
(Intercept)	0.07 [0.05, 0.08] p = 0.000	0.01 [-0.20, 0.21] p = 0.934	0.07 [-0.20, 0.34] p = 0.597	0.07 [0.05, 0.08] p = 0.000	0.03 [-0.18, 0.23] p = 0.805	0.09 [-0.18, 0.36] p = 0.509
Matched	0.49 [0.45, 0.53] p = 0.000	0.45 [0.41, 0.50] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.48 [0.43, 0.53] p = 0.000	0.45 [0.40, 0.50] p = 0.000	0.44 [0.39, 0.49] p = 0.000
Num.Obs.	1513	1513	1513	1513	1513	1513
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 17: Impact of Private Hosting on Subindexes of Integration. Two-Stage Least Squares Regression Estimates with Robust Standard Errors (Local Average Treatment Effect Analysis).

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Social Integration</i>						
(Intercept)	0.25 [0.24, 0.27] p = 0.000	0.20 [0.09, 0.32] p = 0.001	0.19 [0.05, 0.34] p = 0.009	0.25 [0.23, 0.27] p = 0.000	0.19 [0.07, 0.32] p = 0.003	0.19 [0.04, 0.34] p = 0.014
Moved in	0.15 [0.11, 0.20] p = 0.000	0.14 [0.09, 0.19] p = 0.000	0.14 [0.09, 0.20] p = 0.000	0.14 [0.09, 0.19] p = 0.000	0.14 [0.08, 0.20] p = 0.000	0.14 [0.08, 0.20] p = 0.000
Num.Obs.	1516	1516	1516	1516	1516	1516
Cragg-Donald F	634	481	467	634	481	467
Kleibergen-Paap F	476	353	333	454	337	315
<i>Psychological Integration</i>						
(Intercept)	0.48 [0.46, 0.50] p = 0.000	0.45 [0.32, 0.57] p = 0.000	0.42 [0.25, 0.59] p = 0.000	0.48 [0.46, 0.50] p = 0.000	0.40 [0.27, 0.54] p = 0.000	0.42 [0.24, 0.59] p = 0.000
Moved in	0.08 [0.03, 0.13] p = 0.001	0.09 [0.03, 0.15] p = 0.005	0.09 [0.03, 0.15] p = 0.003	0.08 [0.02, 0.13] p = 0.005	0.09 [0.02, 0.15] p = 0.010	0.08 [0.02, 0.15] p = 0.015
Num.Obs.	1517	1517	1517	1517	1517	1517
Cragg-Donald F	634	480	467	634	480	467
Kleibergen-Paap F	479	354	334	457	338	316
<i>Navigational Integration</i>						
(Intercept)	0.39 [0.38, 0.41] p = 0.000	0.33 [0.22, 0.45] p = 0.000	0.28 [0.14, 0.42] p = 0.000	0.39 [0.37, 0.40] p = 0.000	0.32 [0.19, 0.44] p = 0.000	0.28 [0.12, 0.43] p = 0.000
Moved in	0.02 [-0.02, 0.06] p = 0.307	0.04 [-0.01, 0.08] p = 0.142	0.03 [-0.02, 0.08] p = 0.199	0.03 [-0.02, 0.07] p = 0.226	0.05 [-0.00, 0.11] p = 0.056	0.05 [-0.01, 0.10] p = 0.096
Num.Obs.	1493	1493	1493	1493	1493	1493
Cragg-Donald F	625	469	458	625	469	458
Kleibergen-Paap F	471	343	327	449	326	307
<i>Linguistic Integration</i>						
(Intercept)	0.35 [0.32, 0.37] p = 0.000	0.26 [0.13, 0.40] p = 0.000	0.35 [0.18, 0.52] p = 0.000	0.34 [0.32, 0.36] p = 0.000	0.24 [0.11, 0.38] p = 0.000	0.34 [0.16, 0.51] p = 0.000
Moved in	0.06 [-0.01, 0.12] p = 0.085	0.05 [-0.02, 0.11] p = 0.165	0.03 [-0.03, 0.10] p = 0.307	0.05 [-0.01, 0.12] p = 0.119	0.05 [-0.02, 0.12] p = 0.191	0.05 [-0.02, 0.12] p = 0.177
Num.Obs.	1518	1518	1518	1518	1518	1518
Cragg-Donald F	635	481	467	635	481	467
Kleibergen-Paap F	479	354	334	457	338	316
<i>Economic Integration</i>						
(Intercept)	0.36 [0.35, 0.38] p = 0.000	0.32 [0.20, 0.44] p = 0.000	0.31 [0.17, 0.45] p = 0.000	0.36 [0.34, 0.38] p = 0.000	0.34 [0.21, 0.46] p = 0.000	0.33 [0.18, 0.47] p = 0.000
Moved in	0.02 [-0.03, 0.07] p = 0.456	0.03 [-0.02, 0.09] p = 0.258	0.02 [-0.03, 0.08] p = 0.385	0.02 [-0.03, 0.08] p = 0.375	0.04 [-0.02, 0.10] p = 0.211	0.04 [-0.02, 0.10] p = 0.144
Num.Obs.	1497	1497	1497	1497	1497	1497
Cragg-Donald F	631	478	465	631	478	465
Kleibergen-Paap F	471	349	331	456	340	321
<i>Political Integration</i>						
(Intercept)	0.35 [0.33, 0.37] p = 0.000	0.32 [0.20, 0.44] p = 0.000	0.13 [-0.02, 0.29] p = 0.094	0.34 [0.33, 0.36] p = 0.000	0.30 [0.18, 0.42] p = 0.000	0.15 [-0.01, 0.31] p = 0.071
Moved in	0.02 [-0.03, 0.07] p = 0.348	0.02 [-0.03, 0.08] p = 0.433	0.04 [-0.02, 0.10] p = 0.195	0.03 [-0.03, 0.08] p = 0.319	0.03 [-0.03, 0.10] p = 0.288	0.05 [-0.01, 0.12] p = 0.116
Num.Obs.	1513	1513	1513	1513	1513	1513
Cragg-Donald F	645	491	476	645	491	476
Kleibergen-Paap F	484	359	338	461	343	320
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 18: Heterogeneous Impact of Private Hosting. OLS Regression Estimates with Robust Standard Errors (Intent-to-Treat Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>IPL-12</i>						
(Intercept)	0.37 [0.35, 0.38] p = 0.000	0.31 [0.24, 0.39] p = 0.000	0.20 [0.10, 0.30] p = 0.000	0.37 [0.35, 0.38] p = 0.000	0.30 [0.22, 0.37] p = 0.000	0.21 [0.10, 0.32] p = 0.000
Matched	0.04 [0.02, 0.07] p = 0.000	0.04 [0.02, 0.07] p = 0.000	0.04 [0.02, 0.07] p = 0.000	0.04 [0.02, 0.07] p = 0.001	0.04 [0.02, 0.07] p = 0.001	0.05 [0.02, 0.07] p = 0.000
Female x Matched	-0.02 [-0.05, 0.01] p = 0.222	-0.02 [-0.05, 0.01] p = 0.166	-0.02 [-0.05, 0.01] p = 0.170	-0.02 [-0.05, 0.01] p = 0.250	-0.02 [-0.05, 0.01] p = 0.193	-0.02 [-0.05, 0.01] p = 0.198
Num.Obs.	1501	1501	1501	1501	1501	1501
<i>IPL-12</i>						
(Intercept)	0.37 [0.36, 0.38] p = 0.000	0.32 [0.25, 0.39] p = 0.000	0.29 [0.20, 0.38] p = 0.000	0.37 [0.35, 0.38] p = 0.000	0.30 [0.22, 0.37] p = 0.000	0.30 [0.20, 0.39] p = 0.000
Matched	0.04 [0.02, 0.06] p = 0.000	0.03 [0.02, 0.05] p = 0.000	0.03 [0.02, 0.05] p = 0.000	0.04 [0.02, 0.06] p = 0.000	0.04 [0.02, 0.06] p = 0.000	0.04 [0.02, 0.06] p = 0.000
Age>35 x Matched	-0.02 [-0.04, 0.01] p = 0.242	-0.01 [-0.03, 0.02] p = 0.562	-0.01 [-0.04, 0.02] p = 0.494	-0.02 [-0.05, 0.01] p = 0.211	-0.01 [-0.04, 0.02] p = 0.476	-0.01 [-0.04, 0.01] p = 0.344
Num.Obs.	1501	1501	1501	1501	1501	1501
<i>IPL-12</i>						
(Intercept)	0.36 [0.35, 0.38] p = 0.000	0.32 [0.25, 0.39] p = 0.000	0.28 [0.20, 0.37] p = 0.000	0.36 [0.35, 0.38] p = 0.000	0.30 [0.23, 0.37] p = 0.000	0.28 [0.19, 0.38] p = 0.000
Matched	0.03 [0.01, 0.06] p = 0.007	0.03 [0.01, 0.05] p = 0.007	0.03 [0.01, 0.05] p = 0.007	0.03 [0.01, 0.06] p = 0.014	0.03 [0.01, 0.06] p = 0.013	0.03 [0.01, 0.06] p = 0.008
Uni x Matched	-0.00 [-0.03, 0.03] p = 0.883	-0.00 [-0.03, 0.03] p = 0.891	-0.00 [-0.03, 0.03] p = 0.895	-0.00 [-0.03, 0.03] p = 0.832	-0.00 [-0.03, 0.03] p = 0.930	-0.00 [-0.03, 0.03] p = 0.920
Num.Obs.	1501	1501	1501	1501	1501	1501
<i>IPL-12</i>						
(Intercept)	0.36 [0.35, 0.37] p = 0.000	0.31 [0.24, 0.38] p = 0.000	0.28 [0.19, 0.36] p = 0.000	0.36 [0.35, 0.37] p = 0.000	0.30 [0.22, 0.37] p = 0.000	0.28 [0.19, 0.37] p = 0.000
Matched	0.04 [0.02, 0.05] p = 0.000	0.03 [0.02, 0.05] p = 0.000	0.04 [0.02, 0.05] p = 0.000	0.03 [0.02, 0.05] p = 0.000	0.03 [0.02, 0.05] p = 0.000	0.04 [0.02, 0.06] p = 0.000
Single x Matched	-0.01 [-0.04, 0.02] p = 0.331	-0.01 [-0.04, 0.01] p = 0.333	-0.02 [-0.05, 0.01] p = 0.141	-0.01 [-0.04, 0.02] p = 0.543	-0.01 [-0.04, 0.02] p = 0.524	-0.02 [-0.05, 0.01] p = 0.282
Num.Obs.	1501	1501	1501	1501	1501	1501
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 18b: Heterogeneous Impact of Private Hosting (Subset Regressions). OLS Regression Estimates with Robust Standard Errors (Intent-to-Treat Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>IPL-12, Sample: Male</i>						
Matched	0.04 [0.01, 0.07] p = 0.015	0.03 [-0.00, 0.06] p = 0.060	0.03 [-0.01, 0.07] p = 0.123	0.03 [0.00, 0.07] p = 0.034	0.03 [-0.01, 0.06] p = 0.131	0.03 [-0.00, 0.07] p = 0.074
Num.Obs.	273	273	273	273	273	273
<i>IPL-12, Sample: Female</i>						
Matched	0.03 [0.01, 0.04] p = 0.003	0.02 [0.01, 0.04] p = 0.004	0.02 [0.00, 0.04] p = 0.013	0.02 [0.01, 0.04] p = 0.007	0.03 [0.01, 0.04] p = 0.007	0.03 [0.01, 0.04] p = 0.007
Num.Obs.	1005	1005	1005	1005	1005	1005
<i>IPL-12, Sample: Age < 35</i>						
Matched	0.04 [0.02, 0.06] p = 0.000	0.04 [0.02, 0.06] p = 0.000	0.04 [0.02, 0.06] p = 0.000	0.04 [0.02, 0.06] p = 0.000	0.04 [0.02, 0.06] p = 0.000	0.04 [0.02, 0.06] p = 0.000
Num.Obs.	712	712	712	712	712	712
<i>IPL-12, Sample: Age > 35</i>						
Matched	0.02 [0.00, 0.04] p = 0.018	0.03 [0.01, 0.05] p = 0.014	0.02 [0.00, 0.04] p = 0.046	0.02 [-0.00, 0.04] p = 0.053	0.03 [0.01, 0.05] p = 0.014	0.02 [0.00, 0.04] p = 0.035
Num.Obs.	789	789	789	789	789	789
<i>IPL-12, Sample: No university degree</i>						
Matched	0.01 [-0.02, 0.04] p = 0.369	0.01 [-0.02, 0.04] p = 0.415	0.01 [-0.02, 0.04] p = 0.549	0.01 [-0.02, 0.04] p = 0.397	0.01 [-0.02, 0.05] p = 0.404	0.01 [-0.03, 0.04] p = 0.749
Num.Obs.	326	326	326	326	326	326
<i>IPL-12, Sample: University degree</i>						
Matched	0.03 [0.01, 0.05] p = 0.000	0.03 [0.01, 0.05] p = 0.001	0.03 [0.01, 0.05] p = 0.001	0.03 [0.01, 0.05] p = 0.001	0.03 [0.01, 0.05] p = 0.001	0.03 [0.01, 0.05] p = 0.001
Num.Obs.	959	959	959	959	959	959
<i>IPL-12, Sample: In Relationship or married</i>						
Matched	0.03 [0.01, 0.05] p = 0.001	0.03 [0.01, 0.05] p = 0.009	0.03 [0.01, 0.05] p = 0.006	0.03 [0.01, 0.05] p = 0.004	0.02 [0.00, 0.05] p = 0.019	0.03 [0.01, 0.05] p = 0.009
Num.Obs.	779	779	779	779	779	779
<i>IPL-12, Sample: Single, divorced or widowed</i>						
Matched	0.02 [-0.00, 0.05] p = 0.091	0.03 [0.00, 0.06] p = 0.027	0.02 [-0.00, 0.05] p = 0.100	0.02 [-0.00, 0.05] p = 0.063	0.03 [0.00, 0.06] p = 0.044	0.03 [-0.00, 0.06] p = 0.057
Num.Obs.	462	462	462	462	462	462
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

3.2 Intermediate Outcomes

Supplementary Table 19: Impact of Private Hosting on Accommodation Outcomes. OLS Regression Estimates with Robust Standard Errors (Intent-to-Treat Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Living with host</i>						
(Intercept)	0.29 [0.26, 0.32] p = 0.000	0.09 [-0.19, 0.37] p = 0.526	0.50 [0.15, 0.85] p = 0.005	0.28 [0.25, 0.32] p = 0.000	0.12 [-0.17, 0.41] p = 0.403	0.55 [0.18, 0.91] p = 0.003
Matched	0.33 [0.28, 0.38] p = 0.000	0.28 [0.22, 0.33] p = 0.000	0.28 [0.22, 0.34] p = 0.000	0.34 [0.28, 0.39] p = 0.000	0.28 [0.22, 0.34] p = 0.000	0.28 [0.22, 0.34] p = 0.000
Num.Obs.	1360	1360	1360	1360	1360	1360
<i>Living with refugees</i>						
(Intercept)	0.27 [0.24, 0.30] p = 0.000	0.24 [0.00, 0.48] p = 0.046	0.09 [-0.22, 0.39] p = 0.577	0.27 [0.24, 0.30] p = 0.000	0.24 [-0.02, 0.50] p = 0.069	0.11 [-0.21, 0.43] p = 0.503
Matched	-0.16 [-0.20, -0.12] p = 0.000	-0.15 [-0.19, -0.10] p = 0.000	-0.14 [-0.19, -0.10] p = 0.000	-0.16 [-0.20, -0.11] p = 0.000	-0.15 [-0.20, -0.10] p = 0.000	-0.15 [-0.20, -0.10] p = 0.000
Num.Obs.	1360	1360	1360	1360	1360	1360
<i>Total rent</i>						
(Intercept)	0.69 [0.56, 0.83] p = 0.000	0.79 [-0.12, 1.70] p = 0.088	0.46 [-0.63, 1.55] p = 0.409	0.65 [0.51, 0.78] p = 0.000	1.16 [0.14, 2.19] p = 0.026	0.74 [-0.46, 1.94] p = 0.228
Matched	-0.32 [-0.49, -0.14] p = 0.000	-0.27 [-0.46, -0.08] p = 0.007	-0.29 [-0.49, -0.08] p = 0.006	-0.29 [-0.46, -0.11] p = 0.001	-0.26 [-0.45, -0.06] p = 0.012	-0.25 [-0.46, -0.05] p = 0.016
Num.Obs.	1281	1281	1281	1281	1281	1281
<i>Monthly rent</i>						
(Intercept)	87.65 [71.99, 103.32] p = 0.000	63.61 [-80.73, 207.95] p = 0.387	27.09 [-110.60, 164.78] p = 0.700	84.23 [67.55, 100.91] p = 0.000	124.54 [-20.51, 269.59] p = 0.092	42.43 [-107.17, 192.04] p = 0.578
Matched	-30.63 [-56.54, -4.72] p = 0.021	-25.08 [-54.53, 4.36] p = 0.095	-28.49 [-54.25, -2.73] p = 0.030	-30.92 [-55.03, -6.80] p = 0.012	-26.37 [-54.65, 1.91] p = 0.068	-25.25 [-52.52, 2.03] p = 0.070
Num.Obs.	1214	1214	1214	1214	1214	1214
<i>Private rental</i>						
(Intercept)	0.20 [0.18, 0.23] p = 0.000	0.30 [0.11, 0.50] p = 0.002	0.18 [-0.06, 0.42] p = 0.145	0.20 [0.17, 0.22] p = 0.000	0.29 [0.09, 0.50] p = 0.004	0.14 [-0.11, 0.39] p = 0.285
Matched	-0.11 [-0.15, -0.08] p = 0.000	-0.10 [-0.14, -0.06] p = 0.000	-0.10 [-0.14, -0.06] p = 0.000	-0.10 [-0.14, -0.06] p = 0.000	-0.10 [-0.14, -0.05] p = 0.000	-0.09 [-0.14, -0.05] p = 0.000
Num.Obs.	1506	1506	1506	1506	1506	1506
<i>Public housing</i>						
(Intercept)	0.38 [0.35, 0.41] p = 0.000	0.36 [0.13, 0.60] p = 0.002	0.23 [-0.06, 0.52] p = 0.125	0.38 [0.34, 0.41] p = 0.000	0.36 [0.11, 0.61] p = 0.004	0.22 [-0.09, 0.53] p = 0.172
Matched	-0.21 [-0.25, -0.17] p = 0.000	-0.19 [-0.24, -0.14] p = 0.000	-0.19 [-0.24, -0.14] p = 0.000	-0.21 [-0.25, -0.16] p = 0.000	-0.18 [-0.23, -0.13] p = 0.000	-0.18 [-0.23, -0.13] p = 0.000
Num.Obs.	1506	1506	1506	1506	1506	1506
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 20: Impact of Private Hosting on Location Outcomes I. OLS Regression Estimates with Robust Standard Errors (Intent-to-Treat Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>AfD vote share</i>						
(Intercept)	-0.01 [-0.08, 0.06] p = 0.754	0.48 [-0.11, 1.07] p = 0.111	0.50 [-0.28, 1.28] p = 0.205	-0.02 [-0.09, 0.05] p = 0.604	0.34 [-0.26, 0.94] p = 0.266	0.59 [-0.24, 1.41] p = 0.165
Matched	0.03 [-0.09, 0.14] p = 0.644	0.06 [-0.06, 0.18] p = 0.335	0.08 [-0.04, 0.20] p = 0.187	0.03 [-0.09, 0.15] p = 0.574	0.06 [-0.07, 0.19] p = 0.346	0.09 [-0.04, 0.21] p = 0.179
Num.Obs.	1281	1281	1281	1281	1281	1281
<i>Hate crimes p.c</i>						
(Intercept)	0.01 [-0.07, 0.08] p = 0.881	0.17 [-0.43, 0.78] p = 0.572	0.07 [-0.70, 0.84] p = 0.859	0.00 [-0.07, 0.07] p = 0.990	0.18 [-0.40, 0.77] p = 0.540	0.10 [-0.72, 0.93] p = 0.808
Matched	-0.01 [-0.12, 0.10] p = 0.804	-0.02 [-0.14, 0.10] p = 0.772	-0.03 [-0.15, 0.09] p = 0.598	0.02 [-0.10, 0.13] p = 0.789	0.00 [-0.11, 0.12] p = 0.934	-0.00 [-0.12, 0.11] p = 0.941
Num.Obs.	1281	1281	1281	1281	1281	1281
<i>Turnout</i>						
(Intercept)	0.04 [-0.04, 0.11] p = 0.325	0.33 [-0.23, 0.89] p = 0.248	0.35 [-0.36, 1.06] p = 0.338	0.03 [-0.05, 0.10] p = 0.476	0.30 [-0.27, 0.86] p = 0.301	0.17 [-0.57, 0.91] p = 0.647
Matched	-0.09 [-0.20, 0.02] p = 0.114	-0.10 [-0.22, 0.02] p = 0.101	-0.12 [-0.25, 0.01] p = 0.060	-0.08 [-0.19, 0.04] p = 0.186	-0.08 [-0.20, 0.05] p = 0.226	-0.10 [-0.23, 0.03] p = 0.118
Num.Obs.	1281	1281	1281	1281	1281	1281
<i>Population density</i>						
(Intercept)	0.03 [-0.05, 0.10] p = 0.479	0.84 [0.22, 1.47] p = 0.008	0.84 [0.05, 1.63] p = 0.037	0.04 [-0.03, 0.12] p = 0.259	1.04 [0.40, 1.68] p = 0.001	0.90 [0.12, 1.67] p = 0.023
Matched	-0.07 [-0.18, 0.05] p = 0.246	-0.11 [-0.22, 0.01] p = 0.071	-0.12 [-0.24, -0.00] p = 0.042	-0.07 [-0.19, 0.05] p = 0.270	-0.12 [-0.25, -0.00] p = 0.050	-0.13 [-0.26, -0.01] p = 0.039
Num.Obs.	1281	1281	1281	1281	1281	1281
<i>East Germany</i>						
(Intercept)	0.09 [0.07, 0.10] p = 0.000	0.16 [-0.03, 0.34] p = 0.093	0.08 [-0.15, 0.31] p = 0.505	0.08 [0.06, 0.10] p = 0.000	0.14 [-0.04, 0.32] p = 0.133	0.08 [-0.15, 0.32] p = 0.488
Matched	0.03 [-0.00, 0.07] p = 0.075	0.04 [-0.00, 0.08] p = 0.051	0.05 [0.01, 0.08] p = 0.014	0.03 [-0.01, 0.07] p = 0.100	0.03 [-0.00, 0.07] p = 0.082	0.05 [0.01, 0.08] p = 0.018
Num.Obs.	1281	1281	1281	1281	1281	1281
<i>City</i>						
(Intercept)	0.85 [0.83, 0.88] p = 0.000	0.95 [0.74, 1.16] p = 0.000	0.95 [0.67, 1.22] p = 0.000	0.86 [0.84, 0.89] p = 0.000	1.00 [0.80, 1.20] p = 0.000	0.98 [0.70, 1.26] p = 0.000
Matched	-0.01 [-0.05, 0.03] p = 0.632	-0.03 [-0.08, 0.01] p = 0.138	-0.03 [-0.08, 0.01] p = 0.167	-0.01 [-0.05, 0.03] p = 0.543	-0.04 [-0.09, 0.00] p = 0.064	-0.04 [-0.08, 0.01] p = 0.085
Num.Obs.	1281	1281	1281	1281	1281	1281
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 21: Impact of Private Hosting on Location Outcomes II. OLS Regression Estimates with Robust Standard Errors (Intent-to-Treat Analysis)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Share foreign-born</i>						
(Intercept)	0.06 [-0.01, 0.13] p = 0.100	0.06 [-0.52, 0.65] p = 0.835	0.40 [-0.38, 1.18] p = 0.316	0.06 [-0.01, 0.13] p = 0.074	0.19 [-0.41, 0.79] p = 0.532	0.45 [-0.34, 1.24] p = 0.263
Matched	-0.15 [-0.26, -0.03] p = 0.011	-0.18 [-0.30, -0.06] p = 0.004	-0.20 [-0.32, -0.07] p = 0.002	-0.15 [-0.26, -0.04] p = 0.010	-0.20 [-0.33, -0.08] p = 0.001	-0.23 [-0.35, -0.10] p = 0.000
Num.Obs.	1281	1281	1281	1281	1281	1281
<i>Average age</i>						
(Intercept)	-0.03 [-0.10, 0.04] p = 0.347	-0.53 [-1.11, 0.05] p = 0.075	-0.83 [-1.60, -0.05] p = 0.036	-0.05 [-0.12, 0.02] p = 0.166	-0.66 [-1.25, -0.07] p = 0.029	-0.73 [-1.53, 0.06] p = 0.072
Matched	0.08 [-0.03, 0.20] p = 0.161	0.15 [0.03, 0.27] p = 0.018	0.19 [0.07, 0.32] p = 0.002	0.11 [-0.02, 0.23] p = 0.088	0.19 [0.06, 0.31] p = 0.005	0.23 [0.10, 0.36] p = 0.001
Num.Obs.	1281	1281	1281	1281	1281	1281
<i>Average rent</i>						
(Intercept)	0.06 [-0.01, 0.14] p = 0.091	0.17 [-0.43, 0.77] p = 0.576	0.28 [-0.48, 1.04] p = 0.473	0.07 [-0.01, 0.14] p = 0.085	0.21 [-0.38, 0.79] p = 0.487	0.15 [-0.60, 0.90] p = 0.702
Matched	-0.16 [-0.27, -0.05] p = 0.005	-0.20 [-0.31, -0.08] p = 0.001	-0.22 [-0.34, -0.10] p = 0.000	-0.18 [-0.29, -0.07] p = 0.002	-0.23 [-0.35, -0.11] p = 0.000	-0.26 [-0.38, -0.13] p = 0.000
Num.Obs.	1281	1281	1281	1281	1281	1281
<i>Average income</i>						
(Intercept)	0.06 [-0.01, 0.13] p = 0.106	-0.01 [-0.59, 0.57] p = 0.978	-0.08 [-0.81, 0.65] p = 0.826	0.05 [-0.03, 0.12] p = 0.209	-0.05 [-0.62, 0.52] p = 0.860	-0.28 [-1.00, 0.44] p = 0.451
Matched	-0.15 [-0.26, -0.04] p = 0.007	-0.17 [-0.29, -0.05] p = 0.005	-0.18 [-0.30, -0.05] p = 0.005	-0.15 [-0.27, -0.04] p = 0.008	-0.17 [-0.29, -0.04] p = 0.009	-0.18 [-0.31, -0.06] p = 0.005
Num.Obs.	1281	1281	1281	1281	1281	1281
<i>Unemployment rate</i>						
(Intercept)	-0.05 [-0.12, 0.03] p = 0.209	0.68 [0.05, 1.31] p = 0.036	0.85 [0.07, 1.64] p = 0.034	-0.02 [-0.09, 0.06] p = 0.660	0.90 [0.24, 1.55] p = 0.008	1.09 [0.27, 1.90] p = 0.009
Matched	0.12 [0.00, 0.23] p = 0.042	0.08 [-0.04, 0.20] p = 0.209	0.07 [-0.05, 0.19] p = 0.276	0.11 [-0.01, 0.23] p = 0.063	0.05 [-0.07, 0.18] p = 0.413	0.06 [-0.07, 0.19] p = 0.391
Num.Obs.	1281	1281	1281	1281	1281	1281
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

3.3 Additional Specifications

Supplementary Table 22: Impact of Host Contact Frequency. Two-Stage Least Squares Regression Estimates with Robust Standard Errors.

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Overall Integration: IPL-12</i>						
(Intercept)	0.35 [0.34, 0.37] p = 0.000	0.32 [0.24, 0.39] p = 0.000	0.27 [0.18, 0.36] p = 0.000	0.35 [0.33, 0.37] p = 0.000	0.30 [0.22, 0.37] p = 0.000	0.27 [0.18, 0.36] p = 0.000
Contact frequency	0.02 [0.01, 0.03] p = 0.000	0.02 [0.01, 0.03] p = 0.000	0.02 [0.01, 0.03] p = 0.000	0.02 [0.01, 0.03] p = 0.000	0.02 [0.01, 0.03] p = 0.000	0.02 [0.01, 0.04] p = 0.000
Num.Obs.	1461	1461	1461	1461	1461	1461
Cragg-Donald F	270	208	196	270	208	196
Kleibergen-Paap F	244	182	165	227	174	158
<i>Overall Integration: IPL-12 excl. Social Integration</i>						
(Intercept)	0.38 [0.36, 0.39] p = 0.000	0.34 [0.26, 0.41] p = 0.000	0.29 [0.20, 0.38] p = 0.000	0.37 [0.36, 0.39] p = 0.000	0.32 [0.24, 0.40] p = 0.000	0.29 [0.19, 0.39] p = 0.000
Contact frequency	0.01 [0.00, 0.02] p = 0.003	0.02 [0.01, 0.03] p = 0.003	0.02 [0.01, 0.03] p = 0.003	0.02 [0.00, 0.03] p = 0.006	0.02 [0.01, 0.03] p = 0.002	0.02 [0.01, 0.03] p = 0.001
Num.Obs.	1463	1463	1463	1463	1463	1463
Cragg-Donald F	270	208	197	270	208	197
Kleibergen-Paap F	244	182	166	228	174	159
<i>Social Integration</i>						
(Intercept)	0.22 [0.20, 0.25] p = 0.000	0.20 [0.08, 0.32] p = 0.001	0.16 [0.02, 0.31] p = 0.029	0.23 [0.20, 0.25] p = 0.000	0.20 [0.07, 0.32] p = 0.002	0.17 [0.02, 0.32] p = 0.027
Contact frequency	0.05 [0.04, 0.06] p = 0.000	0.05 [0.03, 0.06] p = 0.000	0.05 [0.03, 0.07] p = 0.000	0.05 [0.03, 0.06] p = 0.000	0.05 [0.03, 0.06] p = 0.000	0.05 [0.03, 0.07] p = 0.000
Num.Obs.	1516	1516	1516	1516	1516	1516
Cragg-Donald F	279	215	203	279	215	203
Kleibergen-Paap F	252	189	171	233	178	161
<i>Psychological Integration</i>						
(Intercept)	0.47 [0.44, 0.49] p = 0.000	0.44 [0.32, 0.57] p = 0.000	0.40 [0.23, 0.57] p = 0.000	0.47 [0.44, 0.50] p = 0.000	0.40 [0.27, 0.54] p = 0.000	0.41 [0.23, 0.58] p = 0.000
Contact frequency	0.03 [0.01, 0.04] p = 0.001	0.03 [0.01, 0.05] p = 0.005	0.03 [0.01, 0.05] p = 0.003	0.03 [0.01, 0.04] p = 0.005	0.03 [0.01, 0.05] p = 0.009	0.03 [0.01, 0.05] p = 0.015
Num.Obs.	1517	1517	1517	1517	1517	1517
Cragg-Donald F	279	215	203	279	215	203
Kleibergen-Paap F	252	188	171	234	178	163
<i>Navigational Integration</i>						
(Intercept)	0.39 [0.37, 0.41] p = 0.000	0.33 [0.22, 0.45] p = 0.000	0.27 [0.13, 0.41] p = 0.000	0.38 [0.36, 0.40] p = 0.000	0.32 [0.19, 0.45] p = 0.000	0.27 [0.11, 0.42] p = 0.001
Contact frequency	0.01 [-0.01, 0.02] p = 0.307	0.01 [-0.00, 0.03] p = 0.143	0.01 [-0.01, 0.03] p = 0.199	0.01 [-0.01, 0.02] p = 0.227	0.02 [-0.00, 0.03] p = 0.058	0.02 [-0.00, 0.03] p = 0.097
Num.Obs.	1493	1493	1493	1493	1493	1493
Cragg-Donald F	277	212	202	277	212	202
Kleibergen-Paap F	251	185	170	232	174	160
<i>Linguistic Integration</i>						
(Intercept)	0.33 [0.30, 0.37] p = 0.000	0.26 [0.13, 0.40] p = 0.000	0.34 [0.17, 0.51] p = 0.000	0.33 [0.30, 0.36] p = 0.000	0.25 [0.11, 0.38] p = 0.000	0.33 [0.16, 0.50] p = 0.000
Contact frequency	0.02 [-0.00, 0.04] p = 0.085	0.01 [-0.01, 0.04] p = 0.165	0.01 [-0.01, 0.03] p = 0.306	0.02 [-0.00, 0.04] p = 0.120	0.02 [-0.01, 0.04] p = 0.191	0.02 [-0.01, 0.04] p = 0.178
Num.Obs.	1518	1518	1518	1518	1518	1518
Cragg-Donald F	280	215	204	280	215	204
Kleibergen-Paap F	253	189	172	235	178	164
<i>Economic Integration</i>						
(Intercept)	0.36 [0.34, 0.38] p = 0.000	0.32 [0.19, 0.44] p = 0.000	0.30 [0.16, 0.45] p = 0.000	0.36 [0.33, 0.38] p = 0.000	0.34 [0.21, 0.46] p = 0.000	0.32 [0.17, 0.47] p = 0.000
Contact frequency	0.01 [-0.01, 0.02] p = 0.456	0.01 [-0.01, 0.03] p = 0.259	0.01 [-0.01, 0.03] p = 0.387	0.01 [-0.01, 0.03] p = 0.378	0.01 [-0.01, 0.03] p = 0.216	0.02 [-0.01, 0.04] p = 0.149
Num.Obs.	1497	1497	1497	1497	1497	1497
Cragg-Donald F	272	210	198	272	210	198
Kleibergen-Paap F	246	183	166	231	177	161
<i>Political Integration</i>						
(Intercept)	0.34 [0.32, 0.37] p = 0.000	0.32 [0.20, 0.44] p = 0.000	0.12 [-0.03, 0.28] p = 0.121	0.34 [0.31, 0.37] p = 0.000	0.30 [0.18, 0.42] p = 0.000	0.14 [-0.02, 0.30] p = 0.092
Contact frequency	0.01 [-0.01, 0.02] p = 0.348	0.01 [-0.01, 0.03] p = 0.433	0.01 [-0.01, 0.03] p = 0.195	0.01 [-0.01, 0.03] p = 0.320	0.01 [-0.01, 0.03] p = 0.290	0.02 [-0.00, 0.04] p = 0.117
Num.Obs.	1513	1513	1513	1513	1513	1513
Cragg-Donald F	282	218	206	282	218	206
Kleibergen-Paap F	255	191	173	235	180	163
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 23: Impact of Private Hosting on Integration in Subset of Program Participants and Non-participants Living in Public Housing. Two-Stage Least Squares Regression Estimates with Robust Standard Errors.

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Overall Integration: IPL-12</i>						
(Intercept)	0.34 [0.32, 0.35] p = 0.000	0.29 [0.20, 0.37] p = 0.000	0.24 [0.13, 0.35] p = 0.000	0.33 [0.32, 0.35] p = 0.000	0.25 [0.16, 0.34] p = 0.000	0.24 [0.13, 0.36] p = 0.000
Moved in	0.08 [0.05, 0.11] p = 0.000	0.07 [0.04, 0.11] p = 0.000	0.07 [0.03, 0.11] p = 0.000	0.08 [0.05, 0.11] p = 0.000	0.08 [0.05, 0.12] p = 0.000	0.08 [0.04, 0.12] p = 0.000
Num.Obs.	801	801	801	801	801	801
Cragg-Donald F	487	339	323	487	339	323
Kleibergen-Paap F	489	271	235	491	268	230
<i>Overall Integration: IPL-12 excl. Social Integration</i>						
(Intercept)	0.36 [0.35, 0.38] p = 0.000	0.31 [0.21, 0.41] p = 0.000	0.26 [0.14, 0.38] p = 0.000	0.36 [0.34, 0.38] p = 0.000	0.27 [0.17, 0.36] p = 0.000	0.26 [0.14, 0.39] p = 0.000
Moved in	0.06 [0.03, 0.09] p = 0.000	0.06 [0.02, 0.09] p = 0.002	0.05 [0.01, 0.09] p = 0.009	0.07 [0.03, 0.10] p = 0.000	0.07 [0.03, 0.11] p = 0.001	0.06 [0.02, 0.10] p = 0.002
Num.Obs.	802	802	802	802	802	802
Cragg-Donald F	489	340	324	489	340	324
Kleibergen-Paap F	491	272	235	494	269	230
<i>Social Integration</i>						
(Intercept)	0.21 [0.18, 0.23] p = 0.000	0.14 [-0.00, 0.27] p = 0.053	0.13 [-0.05, 0.32] p = 0.164	0.20 [0.18, 0.23] p = 0.000	0.13 [-0.01, 0.27] p = 0.077	0.14 [-0.04, 0.33] p = 0.133
Moved in	0.18 [0.13, 0.22] p = 0.000	0.16 [0.11, 0.22] p = 0.000	0.15 [0.09, 0.20] p = 0.000	0.17 [0.12, 0.21] p = 0.000	0.16 [0.10, 0.22] p = 0.000	0.15 [0.09, 0.21] p = 0.000
Num.Obs.	834	834	834	834	834	834
Cragg-Donald F	503	353	341	503	353	341
Kleibergen-Paap F	504	285	251	496	274	238
<i>Psychological Integration</i>						
(Intercept)	0.48 [0.44, 0.51] p = 0.000	0.39 [0.21, 0.57] p = 0.000	0.34 [0.11, 0.57] p = 0.004	0.47 [0.44, 0.51] p = 0.000	0.32 [0.13, 0.51] p = 0.001	0.34 [0.10, 0.57] p = 0.005
Moved in	0.08 [0.03, 0.13] p = 0.003	0.07 [0.01, 0.14] p = 0.030	0.07 [0.00, 0.14] p = 0.042	0.07 [0.02, 0.13] p = 0.010	0.08 [0.01, 0.15] p = 0.034	0.06 [-0.01, 0.14] p = 0.087
Num.Obs.	834	834	834	834	834	834
Cragg-Donald F	503	354	341	503	354	341
Kleibergen-Paap F	505	286	252	497	275	239
<i>Navigational Integration</i>						
(Intercept)	0.38 [0.35, 0.40] p = 0.000	0.33 [0.18, 0.48] p = 0.000	0.24 [0.05, 0.43] p = 0.012	0.37 [0.35, 0.40] p = 0.000	0.29 [0.13, 0.45] p = 0.000	0.24 [0.05, 0.44] p = 0.013
Moved in	0.05 [0.00, 0.09] p = 0.035	0.05 [-0.00, 0.10] p = 0.053	0.04 [-0.02, 0.10] p = 0.177	0.04 [-0.00, 0.09] p = 0.054	0.06 [0.00, 0.12] p = 0.036	0.05 [-0.01, 0.11] p = 0.131
Num.Obs.	823	823	823	823	823	823
Cragg-Donald F	495	342	331	495	342	331
Kleibergen-Paap F	496	276	242	488	263	228
<i>Linguistic Integration</i>						
(Intercept)	0.29 [0.26, 0.33] p = 0.000	0.08 [-0.11, 0.27] p = 0.413	0.21 [-0.04, 0.46] p = 0.106	0.28 [0.24, 0.31] p = 0.000	0.06 [-0.13, 0.24] p = 0.558	0.18 [-0.07, 0.42] p = 0.159
Moved in	0.10 [0.04, 0.17] p = 0.001	0.07 [0.00, 0.14] p = 0.045	0.07 [-0.01, 0.14] p = 0.074	0.11 [0.05, 0.18] p = 0.001	0.09 [0.02, 0.16] p = 0.018	0.09 [0.02, 0.17] p = 0.016
Num.Obs.	833	833	833	833	833	833
Cragg-Donald F	501	351	340	501	351	340
Kleibergen-Paap F	503	284	251	496	273	238
<i>Economic Integration</i>						
(Intercept)	0.35 [0.32, 0.37] p = 0.000	0.43 [0.25, 0.61] p = 0.000	0.39 [0.19, 0.59] p = 0.000	0.34 [0.32, 0.37] p = 0.000	0.41 [0.22, 0.60] p = 0.000	0.42 [0.21, 0.62] p = 0.000
Moved in	0.03 [-0.02, 0.08] p = 0.232	0.04 [-0.02, 0.10] p = 0.168	0.02 [-0.04, 0.08] p = 0.538	0.04 [-0.02, 0.09] p = 0.157	0.05 [-0.01, 0.12] p = 0.125	0.04 [-0.02, 0.10] p = 0.228
Num.Obs.	818	818	818	818	818	818
Cragg-Donald F	500	348	334	500	348	334
Kleibergen-Paap F	501	280	246	505	277	240
<i>Political Integration</i>						
(Intercept)	0.33 [0.30, 0.36] p = 0.000	0.31 [0.13, 0.48] p = 0.001	0.15 [-0.07, 0.37] p = 0.192	0.32 [0.29, 0.36] p = 0.000	0.28 [0.10, 0.46] p = 0.003	0.17 [-0.06, 0.40] p = 0.147
Moved in	0.03 [-0.02, 0.09] p = 0.216	0.02 [-0.04, 0.09] p = 0.499	0.02 [-0.04, 0.09] p = 0.510	0.04 [-0.01, 0.10] p = 0.144	0.04 [-0.03, 0.11] p = 0.295	0.04 [-0.03, 0.12] p = 0.268
Num.Obs.	833	833	833	833	833	833
Cragg-Donald F	508	358	346	508	358	346
Kleibergen-Paap F	509	289	253	502	277	240
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

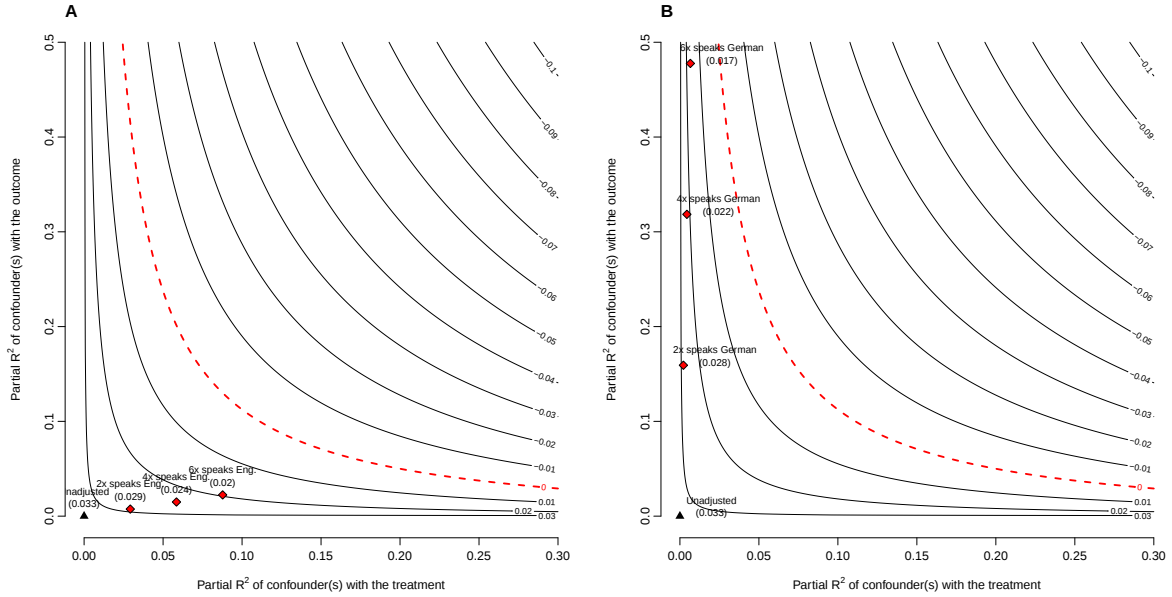
Supplementary Table 24: Impact of Private Hosting on Integration in Subset of Program Participants and Non-participants Living in Rented Flats or Houses. Two-Stage Least Squares Regression Estimates with Robust Standard Errors.

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Overall Integration: IPL-12</i>						
(Intercept)	0.38 [0.36, 0.41] p = 0.000	0.37 [0.25, 0.48] p = 0.000	0.33 [0.17, 0.48] p = 0.000	0.37 [0.35, 0.40] p = 0.000	0.35 [0.23, 0.47] p = 0.000	0.31 [0.14, 0.47] p = 0.000
Moved in	0.03 [-0.00, 0.07] p = 0.086	0.03 [-0.01, 0.07] p = 0.164	0.02 [-0.02, 0.07] p = 0.235	0.04 [-0.00, 0.08] p = 0.052	0.04 [0.00, 0.08] p = 0.049	0.04 [-0.00, 0.08] p = 0.081
Num.Obs.	602	602	602	602	602	602
Cragg-Donald F	374	260	251	374	260	251
Kleibergen-Paap F	348	198	175	339	197	171
<i>Overall Integration: IPL-12 excl. Social Integration</i>						
(Intercept)	0.41 [0.38, 0.43] p = 0.000	0.40 [0.28, 0.52] p = 0.000	0.33 [0.17, 0.50] p = 0.000	0.40 [0.37, 0.43] p = 0.000	0.39 [0.26, 0.52] p = 0.000	0.31 [0.13, 0.48] p = 0.001
Moved in	0.01 [-0.03, 0.05] p = 0.518	0.02 [-0.03, 0.06] p = 0.473	0.01 [-0.03, 0.06] p = 0.531	0.02 [-0.02, 0.06] p = 0.354	0.03 [-0.02, 0.07] p = 0.238	0.03 [-0.02, 0.07] p = 0.241
Num.Obs.	603	603	603	603	603	603
Cragg-Donald F	375	261	252	375	261	252
Kleibergen-Paap F	349	198	175	340	197	171
<i>Social Integration</i>						
(Intercept)	0.25 [0.22, 0.29] p = 0.000	0.17 [-0.03, 0.36] p = 0.090	0.26 [0.01, 0.51] p = 0.041	0.24 [0.20, 0.28] p = 0.000	0.12 [-0.08, 0.32] p = 0.228	0.26 [0.02, 0.50] p = 0.036
Moved in	0.13 [0.08, 0.19] p = 0.000	0.10 [0.03, 0.16] p = 0.005	0.09 [0.02, 0.15] p = 0.016	0.14 [0.08, 0.20] p = 0.000	0.12 [0.05, 0.20] p = 0.001	0.10 [0.03, 0.17] p = 0.008
Num.Obs.	626	626	626	626	626	626
Cragg-Donald F	369	260	252	369	260	252
Kleibergen-Paap F	342	199	177	327	193	167
<i>Psychological Integration</i>						
(Intercept)	0.48 [0.43, 0.52] p = 0.000	0.56 [0.35, 0.78] p = 0.000	0.44 [0.14, 0.74] p = 0.004	0.47 [0.42, 0.52] p = 0.000	0.55 [0.31, 0.78] p = 0.000	0.43 [0.11, 0.75] p = 0.009
Moved in	0.08 [0.01, 0.14] p = 0.016	0.09 [0.01, 0.16] p = 0.028	0.08 [0.00, 0.16] p = 0.041	0.08 [0.01, 0.15] p = 0.019	0.09 [0.00, 0.18] p = 0.039	0.09 [-0.00, 0.18] p = 0.057
Num.Obs.	627	627	627	627	627	627
Cragg-Donald F	369	258	250	369	258	250
Kleibergen-Paap F	341	197	174	327	191	166
<i>Navigational Integration</i>						
(Intercept)	0.40 [0.37, 0.44] p = 0.000	0.38 [0.21, 0.55] p = 0.000	0.21 [-0.03, 0.44] p = 0.083	0.40 [0.36, 0.44] p = 0.000	0.34 [0.16, 0.52] p = 0.000	0.18 [-0.07, 0.43] p = 0.151
Moved in	0.00 [-0.05, 0.05] p = 0.946	0.02 [-0.05, 0.08] p = 0.611	0.01 [-0.06, 0.07] p = 0.791	0.00 [-0.05, 0.06] p = 0.905	0.02 [-0.05, 0.09] p = 0.551	0.01 [-0.06, 0.08] p = 0.785
Num.Obs.	618	618	618	618	618	618
Cragg-Donald F	367	257	250	367	257	250
Kleibergen-Paap F	339	197	177	324	190	168
<i>Linguistic Integration</i>						
(Intercept)	0.38 [0.33, 0.44] p = 0.000	0.28 [0.05, 0.50] p = 0.015	0.37 [0.05, 0.68] p = 0.024	0.36 [0.30, 0.42] p = 0.000	0.23 [0.00, 0.47] p = 0.047	0.31 [-0.01, 0.63] p = 0.060
Moved in	0.01 [-0.07, 0.09] p = 0.834	0.00 [-0.08, 0.09] p = 0.948	0.00 [-0.09, 0.09] p = 0.982	0.03 [-0.06, 0.11] p = 0.546	0.03 [-0.06, 0.13] p = 0.467	0.03 [-0.07, 0.12] p = 0.546
Num.Obs.	628	628	628	628	628	628
Cragg-Donald F	372	262	253	372	262	253
Kleibergen-Paap F	344	200	177	329	193	168
<i>Economic Integration</i>						
(Intercept)	0.41 [0.36, 0.45] p = 0.000	0.33 [0.11, 0.56] p = 0.003	0.37 [0.10, 0.65] p = 0.008	0.40 [0.35, 0.44] p = 0.000	0.39 [0.16, 0.62] p = 0.001	0.41 [0.12, 0.69] p = 0.005
Moved in	-0.03 [-0.09, 0.04] p = 0.426	-0.03 [-0.10, 0.04] p = 0.412	-0.04 [-0.11, 0.03] p = 0.279	-0.01 [-0.08, 0.06] p = 0.794	-0.01 [-0.10, 0.07] p = 0.759	-0.01 [-0.09, 0.07] p = 0.743
Num.Obs.	616	616	616	616	616	616
Cragg-Donald F	372	260	252	372	260	252
Kleibergen-Paap F	347	199	175	339	198	172
<i>Political Integration</i>						
(Intercept)	0.37 [0.33, 0.41] p = 0.000	0.38 [0.18, 0.58] p = 0.000	0.22 [-0.05, 0.50] p = 0.112	0.36 [0.32, 0.41] p = 0.000	0.40 [0.21, 0.59] p = 0.000	0.21 [-0.07, 0.49] p = 0.148
Moved in	-0.02 [-0.08, 0.04] p = 0.453	-0.04 [-0.11, 0.03] p = 0.308	-0.02 [-0.10, 0.06] p = 0.609	-0.02 [-0.09, 0.05] p = 0.560	-0.03 [-0.10, 0.05] p = 0.517	-0.01 [-0.09, 0.07] p = 0.812
Num.Obs.	625	625	625	625	625	625
Cragg-Donald F	380	267	256	380	267	256
Kleibergen-Paap F	351	202	176	335	195	167
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

3.4 Sensitivity Analysis

We conduct a formal sensitivity analysis following Cinelli and Hazlett (2020) to examine the sensitivity of our results to potential hidden bias from unobserved confounders. Essentially, this analysis asks how powerful an unobserved confounder would have to be, conditional on the observed covariates, in order to explain the effects. We focus on the ITT and the main model in which we regress the overall integration (IPL-12) on all covariates and include weights (reported in the last column of Supplementary Table 11). The calculations of Cinelli and Hazlett (2020) use the iid. standard errors. The analysis reveals that an unobserved confounder would have to be unusually potent, conditional on our covariates, to explain the results we find. Only an unobserved confounder that explains more than 10.6% of the residual variance of both the treatment and the outcome in our regression would be strong enough to bring the point estimate to 0 ($RV = 10.6\%$). About half of the residual variation would be sufficient to bring the estimate to a range where it is no longer statistically different from 0 ($RV_{\alpha=0.05} = 5.7\%$).

Benchmarking against the observed main confounders, Figure 17 demonstrates that an unobserved confounder would have to be more than six times stronger than the strongest observed selection covariates (refugee reports speaking English or German). Taken together, these results suggest that our results are fairly robust to potential hidden bias. Given that we control for the covariates used by UU in the matching, it seems unreasonable that matched and unmatched refugees would still differ on such a powerful unobserved confounder needed to overturn our results.



Supplementary Figure 17: Sensitivity analysis to unobserved confounders following Cinelli and Hazlett (2020). Each contour line shows the departure effect we would have obtained in a regression that includes an unobserved confounder with a hypothetical strength. The strength of a confounder is a function of the residual variation of the outcome (x-axis) and the residual variation of the treatment (y-axis) explained by the hypothetical confounder. The adjusted estimates (in red) are based on adding a confounder that is 2, 4, or 6 times as strong as the covariates measuring reported language ability (Panel A: speaking English, Panel B: speaking German).

3.5 Double/Debiased Machine Learning Analysis

One concern with our analysis might be that our estimators rely on linear functional form assumptions which could introduce bias even if our identifying assumption holds. To assess the robustness of the main estimates to a more flexible modeling approach, we use double/debiased machine learning models (DDML) (Chernozhukov et al., 2018) in combination with stacking regression (Wolpert, 1992).

In particular, we estimate the ITT and the LATE using interactive models that allow for interactions between the covariates and the treatment and instrumental variable. The interactive model takes the following form:

$$Y = g_0(Z, \mathbf{X}) + U, \quad (2)$$

where Y is the outcome measuring integration, Z is the binary matching indicator, $\mathbf{X}$ is matrix of covariates and U are unobservables. The ITT is defined as

$$ITT = E[g_0(1, \mathbf{X}) - g_0(0, \mathbf{X})]. \quad (3)$$

To estimate the LATE, we replace the matching indicator with the realized treatment indicator (D) in equation 2 and estimate:

$$LATE = E[g_0(1, \mathbf{X}) - g_0(0, \mathbf{X}) | p_0(1, \mathbf{X}) > p_0(0, \mathbf{X})], \quad (4)$$

where $p_0(Z, \mathbf{X}) = P(D|\mathbf{X}, Z)$.

DDML estimates the ITT and LATE by learning a series of conditional expectations using machine learning methods and cross-fitting. For details, refer to Chernozhukov et al. (2018).

Instead of selecting one particular machine learning method, we combine predictions from regularized linear regression and random forest using stacking regressions. Stacking regression involves combining a set of base learners using a final learner, taking a weighted average across the predictions of the base learners with weights learned from the data.

Our base learners include lasso and ridge regression (with penalty chosen by cross-validation), as well as random forest (using defaults). To combine the predictions, we use constrained least squares, forcing the stacking weights to be non-negative and sum to one.

The base learners encompass the main covariates (from the registration), additional covariates (from the survey), additional continuous covariates from the registration (such as number of beds, estimated duration in weeks, number of adult males, females, children, and diverse persons, number of languages spoken, number of match-maker counts), and features of the open-ended text messages (message length, indicators for inclusion of names, phone numbers, addresses, emails, birthdays, links, and personal information). Summary statistics for these variables are provided in Supplementary Table 4.

We utilize the Stata ado “ddml” (Ahrens et al., 2023) and “pystacked” (Ahrens et al., 2022) for the estimation, with the latter relying on the “scikit-learn” Python library (Pedregosa et al., 2011). We use 5 folds and 5 re-samples for the cross-fitting.

The estimates for the ITT and the LATE (with heteroskedasticity robust standard errors) are displayed in Supplementary Table 25. The coefficient pattern is identical to that observed using simple OLS and 2SLS estimators. However, the magnitude of the estimates is slightly different, and the standard errors tend to be larger. For example, the ITT for the IPL-12 is 0.02 using DDML compared to 0.03 using OLS. However, the estimates for the LATE for the IPL-12 are elevated (0.08 using DDML and 0.07 using 2SLS). One notable finding is that the ITT for psychological integration is statistically insignificant, but the point is similar to the ITT based on OLS. However, the LATE for psychological integration retains statistical significance in the DDML models.

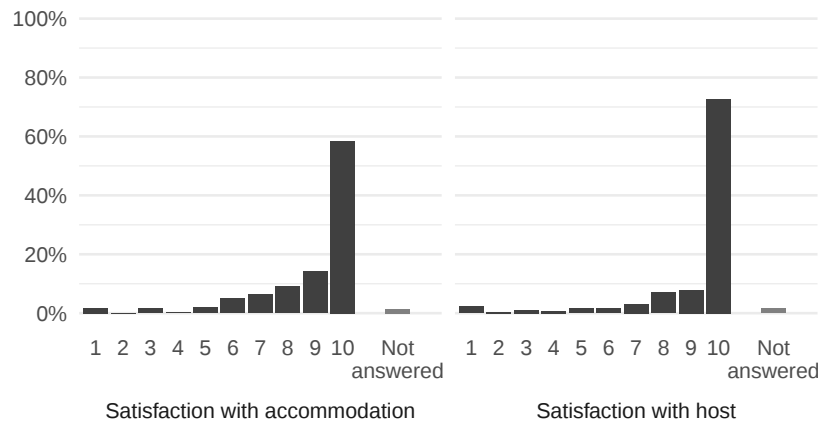
Supplementary Table 25: Interactive Linear Double Debiased Machine Learning estimates with robust standard errors.

	(1) IPL-12	(2) IPL-12 ex. Soc.	(3) Soc.	(4) Psy.	(5) Nav.	(6) Lin.	(7) Eco.	(8) Pol.
<i>ITT</i>								
Mached	0.02 [0.005,0.039] p=0.010	0.02 [0.002,0.041] p=0.031	0.06 [0.031,0.083] p=0.000	0.03 [-0.001,0.065] p=0.055	0.00 [-0.037,0.038] p=0.977	0.01 [-0.026,0.052] p=0.527	0.00 [-0.022,0.030] p=0.767	0.01 [-0.037,0.061] p=0.635
Num. obs	1501	1503	1577	1675	1646	1572	1559	1558
<i>LATE</i>								
Mached	0.08 [0.045,0.117] p=0.000	0.06 [0.020,0.096] p=0.003	0.22 [0.162,0.276] p=0.000	0.13 [0.035,0.219] p=0.007	0.05 [-0.010,0.104] p=0.105	0.02 [-0.048,0.086] p=0.575	0.06 [-0.004,0.126] p=0.067	-0.03 [-0.091,0.024] p=0.255
Num. obs	1461	1463	1516	1517	1493	1518	1497	1513

3.6 Negative Experiences Among Privately Hosted Refugees

The survey asked respondents to rate their experience in the private hosting accommodation and, if applicable, with their host on a scale from one (“very bad”) to ten (“very good”). Only 11 of the 423 respondents who lived in a UU matched accommodation and answered these questions rated either the experience with their hosts or with their accommodation as a one, and only 12 additional respondents gave a rating worse than five. This positive picture is not driven by non-response bias, as only seven respondents did not answer at least one of these questions.

The survey also offered respondents the opportunity to use a free-text field to provide further information on their experiences. While we find six mentions of negative experiences like coercion into housework, accusations of theft, or disagreements over rent, these mentions are rare, and none of the messages indicate experiences of violence or similar by the host. While these data provide a favorable depiction of most refugees’ experiences with their hosts, it remains a crucial question for further research how best to regulate hosting programs and protect refugees and hosts alike.



Supplementary Figure 18: Ratings of Hosts and Accommodations by Survey Respondents Living in Privately Hosted Accommodations Matched by UU (Weighted Data, N = 430)

3.7 Controlling for Intermediate Outcome Variables

As requested by one of the reviewers, we report results from an complimentary test of the location and contact mechanisms. Specifically, we replicate the baseline models to examine the impacts of being matched on integration, controlling for the standard covariates. In these models, we additionally include the intermediate outcome variables (contact or location) as predictors. The objective is to determine whether including these intermediate outcome variables diminishes the effect of being matched, which would suggest that the effect of being matched may operate through the respective mechanism pathway. Under a particularly stringent set of additional assumptions, these regression estimates can be interpreted as a form of linear mediation analysis (Pearl, 2001; Imai et al., 2010). However, we caution against overinterpreting these results, as these regressions control for post-treatment variables, and the mediation assumptions are strong.

Supplementary Table 26 presents the results of the models where we control for host contact frequency. We find that the inclusion of this intermediate outcome reduces the effect of being matched, which is consistent with the interpretation that the effect of private hosting operates, at least in part, through the frequency of contact with the host.

Supplementary Table 27 presents the results of the models where we control for characteristics of the locations in which refugees live. We find that the inclusion of these intermediate location outcomes leaves the effect of being matched unaffected, which supports the interpretation that the effect of private hosting is not primarily transmitted via location. Consistent with this, location characteristics also show no significant correlation with integration success. Taken together, the results from this test are consistent with those reported in the main text, highlighting the relative importance of contact and the low importance of location as a mechanism in explaining the effects of hosting.

Supplementary Table 26: Correlation of being hosted with overall integration controlling for host contact frequency.

	IPL-12	IPL-12	IPL-12	IPL-12	IPL-12	IPL-12
(Intercept)	0.36	0.32	0.28	0.36	0.30	0.28
	[0.35, 0.37]	[0.25, 0.39]	[0.19, 0.37]	[0.35, 0.37]	[0.23, 0.37]	[0.19, 0.37]
	p = 0.000	p = 0.000	p = 0.000	p = 0.000	p = 0.000	p = 0.000
Matched	0.01	0.01	0.02	0.01	0.02	0.02
	[-0.00, 0.03]	[-0.00, 0.03]	[0.00, 0.03]	[-0.00, 0.03]	[0.00, 0.03]	[0.00, 0.03]
	p = 0.114	p = 0.054	p = 0.045	p = 0.120	p = 0.045	p = 0.023
Contact Freq.	0.01	0.01	0.01	0.01	0.01	0.01
	[0.01, 0.02]	[0.01, 0.01]	[0.01, 0.01]	[0.01, 0.02]	[0.01, 0.01]	[0.01, 0.01]
	p = 0.000	p = 0.000	p = 0.000	p = 0.000	p = 0.000	p = 0.000
Num.Obs.	1461	1461	1461	1461	1461	1461
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

Supplementary Table 27: Correlation of being hosted with overall integration controlling for location outcomes.

	IPL-12	IPL-12	IPL-12	IPL-12	IPL-12	IPL-12
(Intercept)	0.38	0.29	0.28	0.37	0.26	0.27
	[0.35, 0.40]	[0.20, 0.37]	[0.18, 0.38]	[0.34, 0.40]	[0.18, 0.35]	[0.17, 0.37]
	p = 0.000	p = 0.000	p = 0.000	p = 0.000	p = 0.000	p = 0.000
Matched	0.03	0.03	0.03	0.03	0.03	0.03
	[0.02, 0.05]	[0.01, 0.04]	[0.01, 0.04]	[0.01, 0.05]	[0.01, 0.05]	[0.02, 0.05]
	p = 0.000	p = 0.000	p = 0.000	p = 0.000	p = 0.000	p = 0.000
AfD vote share	-0.01	-0.01	-0.00	-0.01	-0.01	-0.01
	[-0.02, 0.00]	[-0.02, 0.00]	[-0.02, 0.01]	[-0.03, 0.00]	[-0.02, 0.00]	[-0.02, 0.01]
	p = 0.223	p = 0.230	p = 0.454	p = 0.120	p = 0.161	p = 0.373
Hate crimes p.c	0.01	0.01	0.01	0.01	0.01	0.01
	[-0.00, 0.02]	[-0.00, 0.02]	[-0.00, 0.02]	[-0.00, 0.02]	[-0.00, 0.02]	[-0.00, 0.02]
	p = 0.066	p = 0.130	p = 0.082	p = 0.061	p = 0.110	p = 0.075
Turnout	0.01	0.00	0.00	0.01	0.00	0.00
	[-0.00, 0.02]	[-0.01, 0.01]	[-0.01, 0.01]	[-0.00, 0.02]	[-0.01, 0.01]	[-0.01, 0.01]
	p = 0.189	p = 0.367	p = 0.527	p = 0.236	p = 0.453	p = 0.631
Population density	0.00	0.00	0.00	0.01	0.01	0.00
	[-0.01, 0.02]	[-0.01, 0.02]	[-0.01, 0.01]	[-0.01, 0.02]	[-0.01, 0.02]	[-0.01, 0.02]
	p = 0.612	p = 0.618	p = 0.980	p = 0.375	p = 0.273	p = 0.564
East Germany	0.04	0.03	0.01	0.05	0.03	0.01
	[-0.01, 0.09]	[-0.02, 0.07]	[-0.03, 0.06]	[-0.01, 0.10]	[-0.03, 0.08]	[-0.04, 0.07]
	p = 0.097	p = 0.273	p = 0.568	p = 0.107	p = 0.303	p = 0.614
City	-0.01	-0.00	-0.01	-0.01	-0.01	-0.01
	[-0.04, 0.02]	[-0.03, 0.02]	[-0.03, 0.02]	[-0.05, 0.02]	[-0.04, 0.02]	[-0.04, 0.02]
	p = 0.423	p = 0.738	p = 0.687	p = 0.427	p = 0.707	p = 0.585
Share foreign-born	0.01	0.01	0.01	0.02	0.01	0.00
	[-0.00, 0.03]	[-0.01, 0.02]	[-0.01, 0.02]	[-0.00, 0.03]	[-0.01, 0.02]	[-0.01, 0.02]
	p = 0.079	p = 0.394	p = 0.486	p = 0.099	p = 0.500	p = 0.665
Average age	0.00	0.00	0.00	0.01	0.00	0.00
	[-0.01, 0.02]	[-0.01, 0.02]	[-0.01, 0.01]	[-0.01, 0.02]	[-0.01, 0.02]	[-0.01, 0.02]
	p = 0.584	p = 0.628	p = 0.666	p = 0.315	p = 0.571	p = 0.577
Average rent	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	[-0.03, 0.01]	[-0.02, 0.01]	[-0.02, 0.01]	[-0.03, 0.01]	[-0.03, 0.01]	[-0.03, 0.01]
	p = 0.553	p = 0.420	p = 0.521	p = 0.362	p = 0.174	p = 0.322
Average income	0.01	0.00	0.00	0.01	0.01	0.01
	[-0.01, 0.02]	[-0.01, 0.02]	[-0.01, 0.02]	[-0.01, 0.03]	[-0.01, 0.02]	[-0.00, 0.02]
	p = 0.415	p = 0.629	p = 0.454	p = 0.276	p = 0.232	p = 0.144
Unemployment rate	0.00	0.00	0.00	0.00	0.00	0.00
	[-0.01, 0.01]	[-0.01, 0.01]	[-0.01, 0.01]	[-0.01, 0.01]	[-0.01, 0.01]	[-0.01, 0.01]
	p = 0.882	p = 0.836	p = 0.801	p = 0.994	p = 0.841	p = 0.753
Num.Obs.	1234	1234	1234	1234	1234	1234
Main covs.	No	Yes	Yes	No	Yes	Yes
Add. covs.	No	No	Yes	No	No	Yes
Weights	No	No	No	Yes	Yes	Yes

References

- Ahrens, A., C. B. Hansen, and M. E. Schaffer (2022). Pystacked: Stacking Generalization and Machine learning in Stata. arXiv preprint arXiv:2208.10896.
- Ahrens, A., C. B. Hansen, M. E. Schaffer, and T. Wiemann (2023). ddml: Double/debiased Machine Learning in Stata. arXiv preprint arXiv:2301.09397.
- Aksoy, C. G., P. Poutvaara, and F. Schikora (2023). First Time Around: Local Conditions and Multi-dimensional Integration of Refugees. *Journal of Urban Economics* 137, 103588.
- Alrababah, A., D. Masterson, M. Casalis, D. Hangartner, and J. Weinstein (2023). The dynamics of refugee return: Syrian refugees and their migration intentions. *British Journal of Political Science* 53(4), 1108–1131.
- Benček, D. and J. Strasheim (2016). Refugees Welcome? A Dataset on Anti-refugee Violence in Germany. *Research & Politics* 3(4), 2053168016679590.
- Brücker, H., A. Ette, M. M. Grabka, Y. Kosyakova, W. Niehues, N. Rother, C. K. Spieß, S. Zinn, M. Bujard, A. Cardozo, J. P. Décieux, A. Maddox, N. Milewski, R. Naderi, L. Sauer, S. Schmitz, S. Schwanhäuser, M. Siegert, K. Tanis, and H. W. Steinhauer (2023). Geflüchtete aus der Ukraine in Deutschland: Ergebnisse der ersten Welle der IAB-BiB/ FReDA-BAMF-SOEP-Befragung; Forschungsbericht 41 des Forschungszentrums des Bundesamtes.
- Casalis, M., D. Hangartner, and Hartman, Alexandra, Sánchez, Rodrigo (2024). *Home for Good? Obstacles and Opportunities for Refugees and Asylum Seekers in Greece*. United Nations High Commissioner for Refugees (UNHCR).
- Chernozhukov, V., D. Chetverikov, M. Demirer, E. Duflo, C. Hansen, W. Newey, and J. Robins (2018). Double/debiased Machine Learning for Treatment and Structural Parameters. *The Econometrics Journal* 21(1), C1–C68.
- Cinelli, C. and C. Hazlett (2020). Making Sense of Sensitivity: Extending Omitted Variable Bias. *Journal of the Royal Statistical Society. Series B* 82(1), 39–67.
- Hainmueller, J. (2012). Entropy Balancing for Causal Effects: A Multivariate Reweighting Method to Produce Balanced Samples in Observational Studies. *Political Analysis* 20(1), 25–46.
- Haller, L., T. Uhr, S. E. Frederiksen, R. Rischke, Z. Yanasmayan, and S. Zajak (2022). New Platforms for Engagement: Private Accommodation of Forced Migrants from Ukraine. Working Paper 5, Deutsches Zentrum für Integrations- und Migrationsforschung (DeZIM).
- Harder, N., L. Figueroa, R. M. Gillum, D. Hangartner, D. D. Laitin, and J. Hainmueller (2018). Multidimensional Measure of Immigrant Integration. *Proceedings of the National Academy of Sciences* 115(45), 11483–11488.
- Harris, S. M., G. M. Sandal, H. H. Bye, L. A. Palinkas, and P.-E. Binder (2021). Integration is correlated with mental health help-seeking from the general practitioner: Syrian refugees’ preferences and perceived barriers. *Frontiers in public health* 9, 777582.
- Imai, K., L. Keele, and D. Tingley (2010). A general approach to causal mediation analysis. *Psychological Methods* 15(4), 309.
- Imbens, G. W. and D. B. Rubin (2015). *Causal Inference in Statistics, Social, and Biomedical Sciences*. Cambridge University Press.
- International Organization for Migration (2023). *Multidimensional Integration Measurement Toolkit: Offering A Multidimensional Approach to Measure Migrant Integration Outcomes*. IOM Geneva.

- Knefel, M., V. Kantor, A. A. Nicholson, J. Schiess-Jokanovic, D. Weindl, I. Schäfer, and B. Lueger-Schuster (2020). A brief transdiagnostic psychological intervention for afghan asylum seekers and refugees in austria: a randomized controlled trial. *Trials* 21(1), 57.
- Miller, R., K. I. C. Ong, S. Choi, A. Shibamura, and M. Jimba (2020). Seeking connection: a mixed methods study of mental well-being and community volunteerism among international migrants in japan. *BMC public health* 20(1), 1272.
- Pearl, J. (2001). Direct and indirect effects. In *Proceedings of the Seventeenth Conference on Uncertainty in Artificial Intelligence*, pp. 411–420. Morgan Kaufmann Publishers Inc. Section 3.
- Pedregosa, F., G. Varoquaux, A. Gramfort, V. Michel, B. Thirion, O. Grisel, M. Blondel, P. Prettenhofer, R. Weiss, V. Dubourg, et al. (2011). Scikit-learn: Machine learning in Python. *Journal of Machine Learning Research* 12, 2825–2830.
- Spies, D. C., S. J. Mayer, J. Elis, and A. Goerres (2023). Why do immigrants support an anti-immigrant party? russian-germans and the alternative for germany. *West European Politics* 46(2), 275–299.
- Teng, Y., T. Hanibuchi, and T. Nakaya (2023). Does the integration of migrants in the host society raise covid-19 vaccine acceptance? evidence from a nationwide survey in japan. *Journal of immigrant and minority health* 25(2), 255–265.
- Tyrberg, M. (2024). The Impact of Discrimination and Support on Immigrant Trust and Belonging. *European Political Science Review* 16(1), 18–34.
- Wolpert, D. H. (1992). Stacked Generalization. *Neural networks* 5(2), 241–259.