

How reception centers affect the integration of asylum seekers and recognized refugees

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Abstract

After arrival, asylum seekers are often housed in reception centers. The type, quality and duration of stay in such centers varies considerably across or within countries. In the context of the so-called “EU refugee crisis” in 2014-2016, reports emerged that some asylum seekers and refugees remained in reception centers for several years due to limited capacity of municipalities, lengthy asylum procedures and tight housing markets. It is often argued that reception centers have a detrimental effect on integration processes of asylum seekers and refugees, yet empirical, inferential evidence is still lacking. This paper estimates the medium-run effect of duration of residence in reception centers on language skills, contacts to the host population, and employment status. We use high-quality panel data on asylum seekers and refugees living in Germany and apply inverse-probability-weighting (IPW). The results suggest that a comparatively quick transition from reception centers into private housing modestly increases interactions with the host population and their language proficiency. We find no effects on labor market participation. Furthermore, we find that moving into private housing is often associated with a shift to more precarious neighborhoods, potentially hindering a stronger realization of the benefits linked to independent living in general.

1. Introduction

In many countries, asylum seekers are initially housed in reception centers after arriving in the country of destination and launching their claim for international protection. Housing for asylum seekers and

refugees is a policy decision and, while common, reception centers are not the only model. There is large variation in how countries provide housing to asylum seekers and refugees both internationally and across regions within countries. The Netherlands, for example, prioritizes large, centralized reception centers, Denmark disperses asylum seekers to smaller, local reception centers, and Canada adopts an open system of locating asylum seekers with families (Bevelander *et al.* 2019). For the German case, we document substantial regional variation in the housing situation of nearly one million asylum seekers at the end of 2015, based on administrative records. The probability of placement in reception centers shows greater variation across state borders than across district borders, highlighting the potential influence of state-level policies.

More broadly, the influx of approximately two million asylum seekers to the European Union in 2014-2016 sparked a debate on housing as a social policy with potential long-term effects of various housing solutions on integration outcomes, including employment, language acquisition, education, social contacts, and mental health. This discourse gained renewed significance with the arrival of six to eight million Ukrainian asylum seekers in European countries between 2022-2023, reigniting discussions on the necessity for appropriate housing solutions tailored to the unique needs of asylum seekers and refugees.

There appears to be a tentative consensus among many observers that reception centers have negative effects on asylum seekers and refugees. Studies argue that reception centers increase security, health and unemployment risks in addition to social segregation from the host society (Foroutan *et al.* 2017; Gliemann and Szypulski 2018; Vroome and van Tubergen 2010; Bevelander *et al.* 2019). As a result, a fast transition into the private housing market appears desirable from a social and policy perspective.

The mechanisms and assumptions surrounding potential negative effects are often not clearly specified (Bevelander *et al.* 2019). In addition, various doubts about the negative effect claim have been brought forward. Some scholars argue that the advantages of individual apartments over reception centers are not obvious as asylum seekers may lose access to support programs, services and contact to mentors or volunteers upon moving (Eichholz *et al.* 2021; Eichholz and Spellerberg 2019; BBSR 2017). Given

contrasting views on the overall effect of reception centers, it is important to further investigate the potential implications of housing policy on mid- to long-term integration trajectories of asylum seekers and refugees.

In this study, we aim to provide causal evidence of the effects of reception centers on the integration of asylum seekers and refugees for the case of Germany. As one of the largest recipients of asylum seekers globally, Germany's use of reception centers is similar to that of many other high-income destination countries, especially within the European Union. Due to the national allocation-policy, individuals are exposed to very different local housing strategies, depending on the region they were allocated to. We aim to isolate this variation by using inverse-probability weighting, comparing individuals that stayed for a comparatively long duration in reception centers with those who moved into private housing comparatively quickly. We measure integration in the form of employment, language acquisition and social contacts to native speakers. In highly decentralized countries like Germany, housing policy, along with numerous other aspects of local governance, exhibits significant variation across regions (Tjaden and Spörlein 2023). In this regard, we underpin our inferential results with geographically fine-grained descriptive results on neighborhood characteristics before and after moving.

In the following, we continue to refer to “*asylum seekers and refugees*” as our population of interest, consistent with the sample definition of our primary survey data source that includes both groups.¹ When the term “*asylum seekers*” is used on its own, we specifically refer to the subgroup of individuals who have applied for international protection and are still awaiting a decision.²

¹ The IAB-BAMF-SOEP Survey of Refugees covers individuals that entered Germany between January 2013 and June 2019 and applied for asylum, regardless of the outcome of their claim later on. Thus, all results based on this data include both asylum seekers (before status determination) and refugees (who were granted refugee status) because individuals immigrated at different times and are at different stages of the process. In the analysis, we adjust for the legal status which may vary across persons and person-years. More than 70% of the cases involve individuals with recognized refugee status at the time of the interview (see section 4.1 and Table A1 in the Supplemental Materials).

² The only instance where the empirical analysis focuses solely on asylum seekers is in Figure 1, section 2, which is based on administrative records. This figure provides a descriptive account of where individuals are initially housed after applying for asylum. Additionally, we use the term “asylum seekers” in contexts that describe

2. German context

After being registered for the first time, asylum seekers in Germany are quasi-randomly allocated to one of the 16 federal states following a quota-based distribution system (Bundesamt für Migration und Flüchtlinge 2022).³ There they are first accommodated in large initial reception centers (Erstaufnahmeeinrichtungen) in which they also receive basic medical care, food and cloths. Initial reception facilities usually accommodate many asylum seekers at the same time, whereby often only a small degree of privacy can be ensured as many people may have to live in the same rooms. After a few months - but sometimes after just a few days or weeks - they are further assigned to districts within each state and are housed in municipal reception centers (UNHCR 2024). These centers are typically smaller than initial centers but still vary in size, provider, and quality. The defined minimum standards for accommodation vary depending on the federal state. For example, Baden-Württemberg has mandated at least seven square meters of living space per person since 2016, and 4.5 square meters has been considered sufficient since 2022 (Kühn and Schlicht 2023). Bavaria recommends a minimum of seven square meters per person and a maximum of four people per room and in the most populous federal state of North Rhine-Westphalia, there are no binding minimum standards for the accommodation of asylum seekers or refugees (ibid.). However, numerous deviations even from these minimum standards can be observed, especially in the wake of particularly high arrival numbers. Thus, in 2015 and 2016, municipalities turned school gyms and retired military barracks into make-shift reception centers.

Asylum seekers are legally obliged to stay in reception centers for up to six weeks, but for no longer than six months or at most until they are granted protection status (Baier and Siegert 2018). However, federal states have the option of mandating asylum seekers to live in reception centers for up to 24

situations occurring shortly after arrival, as individuals typically do not yet have a recognized protection status at this stage.

³ The number allocated of asylum seekers per state depends on a state's tax revenue and population size, reflecting politically decided quotas aiming at fair regional distribution (The "Königstein-Key"). However, individual characteristics generally do *not* play a role in the allocation into federal states Bundesamt für Migration und Flüchtlinge (2022). This quasi-natural experiment mitigates the risk of individual self-sorting bias. If certain types of asylum seekers (e.g. younger or more educated) self-selected into states and municipalities with a particular type of housing model, the effect of housing on integration outcomes may be biased. As a result of Germany's allocation policy, asylum seekers and refugees are similar across locations based on observable individual-characteristics (see Aksoy *et al.* (2023)).

months until a decision has been made on the asylum application or until their (forced) return (Baier and Siegert 2018). Thus, some regions focus on moving asylum seekers and refugees quickly to individual housing, while in other federal states, asylum seekers and refugees may live in reception centers as long as possible (Baier and Siegert 2018). In 2016, 83% of asylum seekers whose status has not yet been decided lived in reception centers in Berlin compared to just 21% in Saarland (Baier 2016). In case of rejected asylum applications, a move into private housing becomes more difficult as the federal law does not stipulate an entitlement for this group to move out from reception centers (Bundeszentrale für politische Bildung 2021). However, also this regulation is handled differently by the municipalities, which results in a wide variety of housing situations for this group as well (ibid.).

The right to work is directly linked to an individual's legal status. Individuals who are still in the asylum process or who have been rejected but deportation has been suspended (*Geduldete*) may, in principle, apply for a job after three months of residence in Germany (Bundesagentur für Arbeit 2024). However, a priority check had been applied until 2019, according to which German and EU citizens had to be prioritized over asylum seekers when allocating jobs (Mediendienst Integration 2024). Furthermore, the Federal Employment Agency and the local immigration office (*Ausländerbehörde*) must authorize working permits (Bundesagentur für Arbeit 2024). Once, protection is granted, individuals can work immediately without restriction (ibid.). Therefore, both the asylum-decision and the waiting time for it play a central role in access to the labor market.

Once individuals successfully complete the asylum procedure, they are asked to find their own housing solutions in the private housing market. This may include renting single apartments or sharing apartments with others. However, especially in places where the housing market is tight, only very few are actually able to secure housing (Kühn and Schlicht 2023). Thus, some municipalities assist asylum seekers on finding housing, especially when communities have available public housing projects. If recognized refugees are unemployed, they are eligible for housing subsidies, just like citizens.

The high number of entries to Germany in 2014-2016 has led to deviations from the law and common practices (Aumüller *et al.* 2015). In some locations, asylum seekers were housed in private apartments

before their application has been decided due to limited space in reception centers and available housing stock on the housing market. In other locations, refugees who have been granted international protection and were eligible to move out of reception centers were often forced to stay due to inability to find housing (BBSR 2017; Worbs *et al.* 2016). In 2016, 33% of residents in reception centers in Germany were recognized refugees (Baier and Siegert 2018). Survey data suggests that the time that asylum seekers and refugees stay in the first reception center varies from 3-18 months across regions (Tanis 2022).

Figure 1 presents probabilities (0-1) on the county (*Kreise*) level for being accommodated in reception centers in 2015, the year in which the largest number of asylum seekers were registered for the time being.⁴ The figure supports previous studies in showing that federal states play a central role in the type of housing. Asylum seekers living in contiguous districts of different federal states often show extreme differences in the probability of being accommodated in reception centers, as the examples of Baden-Württemberg (south-west) and Bavaria (south-east) illustrate very well. For example, asylum seekers in the district of Schwäbisch-Hall had a probability of 97.0% of being accommodated in reception centers by the end of 2015, while asylum seekers in neighboring county Ansbach had a probability of 12.1%. The same applies for Main-Tauber-Kreis (84.9%) vs. Würzburg-Kreis (2.6 %) or Ravensburg (92.6%) vs. Oberallgäu (1.4%). Furthermore, additional regional factors like population density, GDP per capita, unemployment or municipal debt can only marginally explain the observed regional differences.⁵ This may suggest that regionally observed differences do, in fact, primarily reflect local political strategies of housing. The fact that housing is subject to policy making independent of context factors underpins the crucial socio-political relevance for our research question because any effects of

⁴ The data come from official statistics on benefits for asylum seekers and were accessed by onsite-visits at the research security center in Berlin Forschungsdatenzentren der Statistischen Ämter des Bundes und der Länder (2018). Although the data is limited by not including persons who have already been granted asylum, it still provides the possibility to capture small-scale regional differences in housing for this group since there is information on housing for each of the nearly one million asylum seekers at the time. To the best of our knowledge, such small-scale regional distributions based on full census administrative micro-data have not been presented yet in federal or scientific reports.

⁵ We ran simple OLS-models in which the mentioned factors explain 12.6 % of the observed variance in probabilities across counties. Adding an indicator-variable for the 16 federal states increases R^2 to 46.5 %.

housing on integration of asylum seekers and refugees appear malleable. Thus, in the following sections, we assess how the varying duration in reception centers may affect three central integration outcomes: contact to Germans, language-proficiency and labor-market participation.

[Figure 1]

3. Theory & Previous Evidence

Immigrant integration is commonly defined as a dynamic, two-way process of mutual accommodation by immigrants themselves and residents of the host-society (Huddleston *et al.* 2013). While the term “integration” remains an academically contested and elusive term (Spencer and Charsley 2021; Gallie 1955), recent empirical social science approaches like the one of Harder *et al.* (2018) understand integration as “the degree to which immigrants have the knowledge and capacity to build a successful, fulfilling life in the host society” (p.11484) and try to construct measurable dimensions (psychological, economic, political, social, linguistic and navigational) of integration that are valid across regional contexts, time and immigrant groups (*ibid.*). A similar approach that emphasizes the multi-dimensional nature of the construct is done by Ager and Strang (2008) who adopt an inductive approach and specify a total of ten domains within four wider spheres that include employment, housing, education and health. In our study, we will consider employment, language, and social contacts as three key dimensions of integration that represent parts of the wider conceptional frameworks of integration mentioned above. In the following, we will briefly outline the available theoretical thinking on how reception centers may affect these integration outcomes and summarize the literature that exists.

In the existing body of literature, a commonly held view is that individual housing facilitates integration, whereas reception centers tend to hinder the integration process (Gliemann and Szypulski 2018; Gesemann and Roth 2017; Foroutan *et al.* 2017; Eichholz *et al.* 2021). In Germany, the often-cited ‘Leverkusen model’ – a city-level cooperative approach to allocate asylum seekers in private housing as quickly after arrival as possible – is branded a best practice example (Auslender 2021). As a result, longer duration in reception centers is seen as a problem and research focusses on obstacles to

transitioning out of reception centers such as competitive housing markers (Adam *et al.* 2021) and discrimination by landlords (Weidinger and Kordel 2020).

3.1. Stress, security and privacy

One potential mechanism by which accommodation types could affect asylum seekers and refugees is psychological, such as stress. First, scholars emphasize the lack of autonomy, privacy and security in reception centers, especially for women (Foroutan *et al.* 2017). Such environments may negatively affect mental health and life satisfaction, and hence, possibly, the ability to successfully participate in employment, education and language opportunities (Fossati and Liechti 2020). Furthermore, residents are often provided with only limited living space. The legally mandated minimum square meters per asylum seeker in Germany varies across regions from only 4.5 to 6 m² (Müller 2013). Evidence indicates that little space negatively impacts mental health and hinders asylum seekers and refugees' capacity to learn and recover from trauma (Foye 2017). A small living area may signal poverty to many people, leading to a feeling of dissonance due to the discrepancy between the desired and actual living situation (ibid.). Limited space and concentration of young males from various ethnic groups – often traumatized from their journey – has been linked to reports of inter-ethnic, inter-religious and sexual violence (Oliveira *et al.* 2019; Keygnaert *et al.* 2015), hampering security perception among all residents. Ultimately, we expect the stress induced by such contexts to decrease the capacity of residents to invest into language acquisition, contacts and employment opportunities (Bonoli 2020). In fact, Baier *et al.* (2020) observe that residents in reception centers have on average lower language skills compared to asylum seekers in private housing. Bevelander *et al.* (2019) report lower employment probability for residents in reception centers in Sweden, and Vroome and van Tubergen (2010) and Bakker *et al.* (2014) for the Netherlands.

3.2. Exposure to host population

Furthermore, since asylum seekers and refugees are surrounded by other others in similar circumstances, they may have less opportunities or incentives to interact with host population individuals which is considered to be an advantage for language acquisition and finding employment

opportunities (Khalil *et al.* 2022). Siegert (2021) finds that residents in reception centers have fewer contacts to the host population – net of age, gender, and family status. The overall size of the facility also plays a central role with regards to intergroup contacts with locals, i.e. asylum seekers and refugees living in small centers with fewer than 20 inhabitants are as often in contact with non-refugee locals in the neighborhoods as those in private accommodations while those in larger facilities are much less often in contact with them. It is argued that if the appearance of the building is of an inferior standard than the surrounding, this may lead to a devaluation and stigmatization by local inhabitants and further stigmatization (Aumüller *et al.* 2015; Siegert 2021).⁶ Given these previous studies, we expect a negative effect of a longer stay in reception centers on contacts with Germans.

3.3. Disadvantaged locations

A common argument is that reception centers are often located at the outskirts of towns and cities with lower access to public transport. This may make it more difficult for residents to access language courses or childcare, or attend appointments with administrative offices. A lack of access to local language courses can have far-reaching consequences for the further integration process. Kanas and Kosyakova (2022) show that the regional availability of language courses has a long-lasting (albeit small) effect on both asylum seekers and refugees' language skills and the likelihood of employment. According to Baier and Siegert (2018), one in four reception centers in Germany were located in industrial areas while only 1 in 100 individuals within the native population lived in industrial areas. In the UK, a recent review has highlighted negative impacts of locating refugees in “areas that had little experience accommodating diversity, were already deprived, where the refugees supporting infrastructure was missing or embryonic and where the available housing was of poor quality” (Brown *et al.* 2022, p. 26). In summary, we assume that the poorer accessibility of central locations and the limited access to German-speaking individuals, contribute to negative effects of longer stays in

⁶ Nevertheless, a recent study suggests that the proximity to refugee accommodations does not affect local's attitudes towards refugees Schmidt *et al.* (2023).

reception centers on all three outcomes (language skills, contact to host population, and employment status).

3.4. Support infrastructure

Albeit rare, some scholars challenge the negative view of reception centers in various ways (Eichholz and Spellerberg 2019). Depending on the quality of the establishment, reception centers may offer better support to asylum seekers in terms of immediate access to social workers, counsellors, on-site language courses and regular access to mentoring programs (BBSR 2017). Such services may be harder to access once residents move out to individual housing. Reception centers may attract support from neighborhoods. One study finds that people that live closer to a reception center are more likely to actively support refugees (Gesemann and Roth 2017). Thus, these studies represent a counter-thesis to the rest of the literature and assume a positive effect of a longer stay in reception centers on all outcomes under consideration.

3.5. Co-ethnic networks

A large body of research assesses the effects of co-ethnic networks (often referred to as ethnic capital) on integration such as employment and wages (Andersson 2021; Damm 2009; Martén *et al.* 2019; Klaesson *et al.* 2021; Xie and Gough 2011). Co-ethnic networks are usually measured via the size of co-ethnic group members in the location where newcomers are first assigned to. The overall evidence remains mixed; however, several studies show that co-ethnic networks increase employment rates through the facilitation of information (e.g. Martén *et al.* 2019; Andersson 2021). Residents in reception centers are placed in contexts with a high share of co-ethnics, especially when a large number of asylum seekers originate from the same countries. In Germany, this was the case in 2015 with Syrians. It is plausible to assume that longer duration in reception centers facilitates contacts with persons who speak the same language, arrived earlier and thus can share helpful information on how to navigate the German system, find a job, take advantage of language courses, or meet Germans. From this perspective, longer duration in reception centers may have a positive effect on employment, language and contacts with

Germans. In contrast, large co-ethnic networks may disincentivize contacts with Germans and language acquisition (Gërkhani and Kosyakova 2022; Battisti *et al.* 2022).

In summary, the available qualitative and empirical evidence largely highlights negative effects of reception centers on integration outcomes. However, the evidence is associational in nature or based largely on a few case studies. Endogeneity is an important concern. It is possible that other factors such as motivation, ability or wealth, which are mostly unobserved in surveys, drive asylum seekers to leave reception centers while also increasing the likelihood of successful integration outcomes. In addition, it is possible that counties that predominantly house asylum seekers in reception facilities are regions with fewer employment opportunities, fewer language courses and a less welcoming population. As such, the available literature suffers from potential endogeneity issues. In this study, we aim to provide causal estimates to address validity concerns in previous studies and assess claims regarding potential positive effects of reception centers.

4. Data & Methods

4.1. Data sources

Our first main data source is the IAB-BAMF-SOEP Survey of Refugees (Liebig *et al.* 2021; Brücker *et al.* 2017). The target population comprises individuals that entered Germany between January 2013 and June 2019 and applied for asylum (*ibid.*), regardless of the eventual outcome of their asylum claim. The study design is a panel in which participants are interviewed annually on various topics, e.g. schooling, trainings, housing, their family situation and further personal circumstances, their legal situation, aspirations and feelings (*ibid.*). At the time of analysis, interview years ranged from 2016 to 2021, i.e. an individual is observed five times at most. The survey is conducted in multiple languages, based on the respondents' preferences (Arabic, Kurmanji, Farsi, Urdu, Pashto, German or English). The baseline sample includes 23,668 person-years from 8,672 individuals.

Second, we combine the survey-data with administrative data on the county (Kreise) level to isolate variation in housing from associated regional factors. The data are retrieved from INKAR, a tool that

freely offers official data from various ministries and federal agencies in Germany on multiple regional levels (Federal Institute for Research on Building, Urban Affairs and Spatial Development 2023).

Finally, we use fine-grained neighborhood data for descriptive purposes which can be merged with the refugee-survey on the household-level and accessed via onsite visits at the secure data research center of the SOEP in Berlin. This neighborhood information comes from Microm, a private micro-marketing company and includes for example, information on the type of neighborhood, purchasing power, socio-structural information, consumer behavior, and predominant social milieus represented in the area (Goebel *et al.* 2014; Microm 2023). The data allows us to assess the extent to which neighborhood structures change in the course of moving out of reception centers. Different regional-levels are offered, we use the so-called “PLZ8” areas, representing neighborhoods of approximately 500 households (Microm 2023). Thus, the data offer the key advantage of being able to capture small-scale structural differences in housing even within given cities or counties.

4.2. Dependent Variable, Treatment & Sample-restriction

We consider three dependent variables (DV) as outcomes. First, we code a dummy-variable “working” that takes the value 1 if a person reports any kind of paid labor and 0 otherwise. Second, we code a dichotomous variable for weekly social contact with Germans.⁷ Third, we code a dichotomous variable for German speaking skills, originating from the survey question “*How well can you speak German?*” with five answer categories (1) Very well, (2) well, (3) Averagely, (4) Not very well, (5) Not at all and recoded to 1 (very well, well) and 0 (otherwise).

The information on the months spent in reception centers serve as our main treatment variable, and can be thought of as exposure intensity measurement of reception centers. We construct this measure in a first step for every individual, originating from multiple variables. Primarily, the type of housing is

⁷ The variable originates from the survey question “*How often do you spend time with German people?*” with six answer answer-categories (1) Every day, (2) Several times per week, (3) Every week, (4) Every month, (5) Less often, (6) Never Brücker *et al.* (2017). We recode the variable to a range of 0-1 in which the variable takes the value 1 for answer-categories 1-3, i.e. representing at least weekly contact-frequencies with Germans and 0 otherwise.

available for every observed interview by asking “In what type of accommodation does the interviewee live?”, contrasting “shared accommodation” and “private apartment, private house” (SOEP Group 2019, p. 4) which makes it possible to capture moves from reception centers (measured as shared accommodation) into private housing across waves. In case individuals already live in private housing at the time of their first interview, retrospective questions on the date of move are used instead. Combined with information on the date of arrival, the duration in reception centers can be identified. We recode this metric variable into three treatment variables: First, a dichotomous variable differentiating ≤ 12 to ≥ 19 months (main specification); second, a dichotomous variable differentiating ≤ 12 to ≥ 25 months and third, a categorical variable differentiating 1-6, 7-12, 13-18 and 19-24 to ≥ 25 months.

Treatment-information are appended to individuals as constants across observed person-years. To allow sufficient time for potential treatment exposure, we exclude person-years observed within 24 months after arrival. Altogether, the sample is reduced to 11,975 observations for the main treatment-setting (see Table A1 in the Supplemental Material for summary statistics and more details).

Additional case-restrictions are implemented for sub-analyses that use our main-treatment specification by the duration of stay in Germany. In doing so, we aim to assess whether initial effects of reception centers may fade over time, stay constant or even reinforce in later years. Thus, outcomes are separately measured for interview years representing 24-35, 36-48 or 49 and more months after arrival. Finally, we also add sub-analyses that capture individuals’ last interview-year only.

4.3. Identification & Weighting Factors

To estimate the causal effect of the duration in reception centers, we rely on inverse-probability weighting (IPW) using STATA’s `teffects` command. In our case, IPW uses the propensity score to balance between characteristics of asylum seekers and refugees who stayed for either a long (defined as control) or short period (defined as treatment) in reception centers by weighting each individual by the inverse-probability of receiving treatment (StataCorp 2023; Hernan and Robins 2023; Leite 2016). Similar to other propensity-score approaches, IPW tackles confounding factors by creating a “pseudo-

population” in which treatment-assignment is independent of all observed confounders (Kurz 2022). Thus, observations are weighted by the inverse-probability of being treated, given all observed predictors. As compared to propensity-score-matching, IPW mitigates conservative sample size requirements (Hernan and Robins 2023, 157ff). A continuation of this discussion, including the core assumptions of the IPW approach and a graphical illustration of our weighting strategy in the form of a Directed Acyclic Graph (DAG), is provided in the Supplemental Material (Figure A1).

We include weighting-factors if they represent, in our understanding, *true confounders* which are both associated with the duration individuals stayed in reception centers (x) and our outcomes (y) or if they represent *direct outcome predictors* (following the recommendation by Kohler *et al.* 2023; Leite 2016; Brookhart *et al.* 2006; Caliendo and Kopeinig 2008). Thus, mere treatment predictors or mediators between treatment and outcome are explicitly not considered as weighting factors. With regards to confounders, both individual- and context-level characteristics may play a role. Although it is unlikely that asylum seekers and refugees were able to sort into specific housing facilities due to the allocation policies at the time, it is plausible that individuals’ characteristics and living conditions did affect the duration of stay in a given facility. Most often, those individual factors are also plausible predictors of our outcomes of interest and therefore represent true confounders. Therefore, we consider (1) the months since immigration (metric) and (2) country of birth (Syria, Iraq, Afghanistan, Eritrea, other. Asylum seekers from different countries of origin may have varying degrees of education and work experience, and perceived cultural differences with the host population which may expose them to varying experiences of discrimination. We add an indicator on the (3) gender (male, female) as the likelihood and time to move out from reception centers may be prioritized based on gender in some cases. We also include information on the (4) status of the asylum or refugee claim (pending, declined, recognized, other) as this status is reported to play a role in the permission to move out from reception centers in some regions (see discussion in section 2). Further we consider (5) the first observed educational-level (low = primary education or less, medium = lower or upper secondary education, high = post-secondary education and more) to adjust for resources and skills useful for finding private

accommodation as well as ability to learn the language and find a job.⁸ Further, we consider (6) the presence of children in a given household (yes, no). Families may receive priority when supporting the search for private accommodation relative to singles or pairs to promote child welfare. Conversely, children may condition parents' ability to work, seek contexts to meet Germans and find time to learn the language. Lastly, we consider (7) age (<25, 25-34, >=35). Older or younger (i.e. minors) individuals may also receive priority when supporting the search for private accommodation. At the same time, age is an important factor for language acquisition, contacts and employability.

With regards to *direct outcome-predictors* we focus on regional opportunity structures. Thus, for the years of outcome measurement, we include (1) counties' unemployment rates (lower tercile, medium tercile, upper tercile) to proxy local labor market demand, (2) counties' share of asylum seekers and refugees (Schutzsuchende) in general (lower tercile, medium tercile and upper tercile) to capture labor supply and exposure to inter-ethnic groups⁹ and (3) counties' election results for the pro-migration center-left green party in federal elections 2013 as proxy for the openness towards migrants in the population.¹⁰ Also here, we do not consider the share of asylum seekers and refugees and unemployment rates as important predictors for the outcome of contact with Germans. A tabular overview of all included covariates can be also found in the Supplemental Material (Table A2).

4.4. Diagnostics and Robustness checks

In the Supplemental Material, we report and discuss covariate balance and common support for the IPW (see Figure A2 and Figure A3). We conclude that both balance and common support are sufficiently met to implement regression-models based on IPW.

⁸ We do not consider education in models estimating effects on the outcome of contacts with Germans as education is argued to do not represent a confounder in this relation.

⁹ Unemployment-rates and share of asylum seekers and refugees are merged based on county-years. Due to missing data for the most recent survey year 2020 at the time of the onsite-analysis, shares of 2019 are used here instead. As counties' relative positions (terciles) do usually not vary substantially from year-to-year, we believe that this approach is valid here.

¹⁰ The anti-immigration orientated AfD which may seem the best proxy at a first glance, contested for federal election for the first time in 2017 which is already part of our observation-period and therefore not chosen to avoid reverse-causality.

Furthermore, we test for sensitivity of our results depending on the selected balancing algorithm. We compare the performance of Nearest Neighbor Matching (Abadie and Imbens 2011; Abadie and Imbens 2006), 1:1 Propensity-Score Matching (Abadie and Imbens; Thoemmes and Kim 2011, 104ff) and Coarsened-Exact-Matching (Iacus *et al.* 2012) as alternatives to Inverse-Probability Matching in Figure A4.

As alternative identification strategy, we focused on observed moves from reception centers to private housing across individual panel-waves in a staggered difference-in-difference setting, measuring the outcome differences between movers' pre-move periods relative to the control group of non-movers. A short explanation of the advantages and disadvantages of this approach, together with its results and diagnostics are also presented in the Supplemental Material (Figure A5 and Table A5). We find very similar substantive results. However, we decided to center our analysis on IPW given possible violations of DID assumptions and sample size restrictions.

Finally, one challenge in isolating the effect of the length of stay in reception centers is the difficulty to separate it from the prospect of successful asylum status (e.g. due to the practices of local officials). Regions which have long waiting times for moving into private housing might also have long for asylum procedures. Therefore, we verify our main results based on a restricted sample on recognized refugees that adds the waiting time for the protection status decision as a factor to the IPW model in order to allow only the residual variation in the treatment estimation (see page 15 in the Supplemental materials).

5. Results

5.1. Treatment Effect Estimation

Figure 2 illustrates the results from regression-models that are adjusted with inverse-probability-weighting, representing Average-Treatment-Effects.

The first row represents our main treatment specification. The coefficients imply that staying 12 months or shorter in reception centers increases respondent's likelihood of frequent contact with Germans by 4.0 percentage points ($p < 0.05$) – relative to respondents who stayed 19 months or longer in reception

centers – and the likelihood of evaluating one’s language-skills as good or very good by 5.7 percentage points ($p < 0.001$). There are no effects observable with regards to labor market participation.

Using the narrower treatment specification that uses a more extreme comparison group with 25 months or more in reception centers, the effect on contact with Germans is larger with an increased probability by 5.2 percentage points ($p < 0.001$) and 7.2 percentage points in language-skill evaluation ($p < 0.001$), respectively.

[Figure 2]

When disaggregating the duration of stay by 6-month intervals, we see that positive effects of short stays are primarily driven by moderately short stays in reception centers like 7-12 months and 13-18 months, but not by very short stays of 1-6 months. This may imply that especially extreme long durations of 25 months and more led to disadvantageous outcomes in language-skills and contacts with Germans and that moderate durations are associated with slightly improved outcomes as compared to very short durations.

We also present models that use our main-treatment specification but are sub-sampled by the time since arrival, which represents, in many cases, the time that has elapsed since moving into private housing.¹¹ We see that short durations in reception centers translate into improved integration outcomes especially soon after individuals moved into private housing. For respondents observed in later periods after arrival, effects-sizes decrease and eventually become insignificant. This speaks against the assumption that early differences in outcomes would necessarily increase over time, rather they appear to converge, based on the observations at hand. When restricting the sample to the latest observed person-year only, we see similar effect sizes of short stays on contacts with Germans (+5.0 pp., $p < 0.05$) and language-skills (+5.6 pp., $p < 0.001$) compared to the main model that includes all time periods, which also speaks against reinforcing effects over time.

¹¹ We exclude all observations that are observed prior to 24 months after arrival for outcome estimation but do not exclude observation which are still in shared housing after that time.

5.2. Robustness Checks & Alternative Identification

By using alternative matching algorithms for the main treatment-specification, standard-errors and effect-strengths vary marginally, effect-directions are identical, indicating that our findings are robust towards the chosen balancing algorithm (see in Figure A4 in the Supplemental Material). With regards to an alternative difference-in-difference approach, we find similar effect directions. Standard-errors are larger due to the treatment group being restricted to individuals that are observed to move into private housing across waves. Overall, DiD-results imply moderate positive effects of moving on all three outcomes contact with Germans ($p < 0.10$), German speaking ($p < 0.05$) and working ($p < 0.10$). For more details see Figure A5 and Table A5 in the Supplemental Material. The sub-analysis, using a restricted sample of already recognized refugees, shows that while there is a weak positive correlation between time in reception centers and waiting time for decisions (see Figure A7 in the Supplemental materials), the results remain robust even after adjusting for these factors, indicating no changes in effect directions or sizes compared to main models (see Figure A8 and Figure A9 in the Supplemental materials).

5.3. Neighborhood context

In this section, we explore one potential explanation for the modest size of long duration in reception centers on integration outcomes. One assumption of large negative effects of reception centers is that buildings are located in disadvantaged areas offering fewer integration opportunities (see section 3.3). This assumption remains largely untested. By combining the SOEP data with Microm-neighborhood data, we are able to observe changes in granular neighborhood-characteristics before and after a move out of reception centers on a very small regional-level (i.e. approximately 500 surrounding households). Figure 3 displays a selection of available neighborhood information for asylum seekers and refugees which are observed before and after moving from reception centers into private housing. Since Microm information are stored on various metric scales, we present respondents' percentages in decile-categories which were calculated based on the weighted overall SOEP sample, thus enabling relative comparisons to the overall population distribution in Germany (for more details see notes below the

figure). While Figure 3 presents group shares in top-3 decile-categories, we provide graphical and tabular presentation of all single deciles in the Supplemental Material (see Table A4 and Figure A6).

Looking at shares in population weighted top-3 deciles *prior* to moves, observed asylum seekers and refugees appear relatively well-integrated into the general neighborhood context: they live slightly less-often in neighborhoods with exceptionally high unemployment (-2.7 pp.), slightly more often in neighborhood with high purchasing power (+3.1 pp.) and are only somewhat overrepresented in neighborhoods with many residents from Non-European Islamic states (+3.9 pp.), many Turkish residents (+5.9 pp.) or many migrant households in general (+3.6 pp.). With regards to neighborhoods with exceptionally high shares of Germans, asylum seekers and refugees are underrepresented (-8.6 pp.) and overrepresented with regards to neighborhoods with comparatively few Germans (+6.8 pp.).¹² When considering neighborhoods with exceptionally large privileged milieus like liberal intellectuals, academics or conservative established, asylum seekers and refugees are relatively evenly represented. Summarized, although there are some notable segregating tendencies observable, these numbers do not support – in the case of the observed group at least – the widespread public perception that community shelters are typically located in disadvantaged areas.

[Figure 3]

Against expectations in the literature, asylum seekers and refugees, on average, move to more disadvantaged neighborhoods *after* moving into private housing. As compared to the overall population, they are more likely living in neighborhoods with exceptionally high unemployment (+11.8 pp.) or exceptionally low purchasing power (+12.9 pp.). They become heavily underrepresented in neighborhoods with many home-ownerships (-18.4 pp.) and overrepresented in areas with high shares of tenants (+14.7 pp.) which may be an indicator for moves to metropolitan areas, as the rental share is usually higher there (Krieger *et al.* 2021). Asylum seekers and refugees are more likely to live in neighborhoods with large Turkish communities (+18.7 pp.) or migrant households in general (+12.6 pp.). After moving to private housing, the share living in areas with large privileged milieus drops by -

¹² Relating to the share within Bottom-3 deciles (see Figure A6 and Table A4).

6.4 pp. (Academics) and -9.4 pp. (Conservative established). Overall, a picture of segregation tendencies emerges in the course of the move from reception centers into private housing.

6. Discussion

The number of people fleeing their home countries in search of refuge is increasing globally (UNHCR 2022). While most displaced persons are residing in low-and-medium income countries, millions have applied for asylum in high income countries. Between 2013-2022, approx. 7.5 million migrants have sought asylum in the European Union, including 2.7 million in Germany (Eurostat 2023). These numbers exclude 6-8 million Ukrainians who have fled to the EU since 2021. In many EU countries, asylum seekers are first accommodated in reception centers, in many cases large reception centers. The duration of stay in reception centers may vary extensively across countries, regions, and municipalities.

Housing for asylum seekers and refugees is a critical aspect of governmental social policies, influencing long-term outcomes in employment, social integration, and language acquisition. Given that many European countries spend several billion Euros or Pounds¹³ for refugee housing, the question of how to organize refugee housing to foster integration is pivotal to enable asylum seekers and refugees to increase their capacity to build a fulfilling life in the host society (Harder *et al.* 2018).

Reports highlight bad conditions in reception centers and, as a result, policy makers attempt to reduce the duration of stay in reception centers and assist asylum seekers and refugees in moving to private housing as soon as possible. Among other adverse effects, reception centers are thought to harm medium- to long-term integration of asylum seekers and refugees in society, such as learning the language, meeting members of the host population, and employment. In contrast, a few observers have claimed that reception centers offer advantages such as immediate access to social workers, language

¹³ The German Federal Ministry of Finance lists 1.4 billion € expenditures that were dedicated for refugee registration and housing of asylum-applicants in 2016, and another 2.6 billion € that were transferred to federal states to organize the housing of allocated recognized refugees between 2016 and 2018 Bundesministerium der Finanzen (2017). In 2022, the United Kingdom spent around 1.9 billion £ on initial accommodation of mainly Ukrainian refugees Loft et al. (2023: 7).

courses, health support etc. The available evidence is limited and largely relies on qualitative case studies or correlational survey-based studies. In this study, we took an inferential approach to provide causal of the total causal effect of duration in reception centers on language, contacts and employment based on high-quality panel data from Germany.

Overall, we find modest positive effects of quick transitions from reception centers into private housing on language and contacts, and no effects on employment, on average, 3-4 years after arrival in Germany. The effects are independent, among a wide range of factors, from effects of the legal status, the country of origin or the time since arrival in Germany. Further analyses suggested that effects become smaller over time.

This finding contrasts the previous literature which emphasizes large negative impacts of reception centers. One explanation for the absence of strong negative effects is the housing situation after leaving the reception center. We provide descriptive evidence suggesting that asylum seekers and refugees move to relatively more disadvantaged neighborhoods after leaving reception centers. Asylum seekers and refugees compete on tight housing markets with limited resources and often instable residence permits. They rely on inter-ethnic networks to find housing and face discrimination by landlords (Auspurg et al., 2015; Dräger, 2020). As a result, they are more likely to move into disadvantaged neighborhoods, potentially offering fewer language, host population network and employment opportunities.

Overall, our findings suggest that the question of where asylum seekers and refugees move after they leave reception centers is more important than the question of how quickly they move out. As such, the results support a shift of attention from narrow discussions of asylum accommodation to broader issues of residual segregation.

We acknowledge several potential limitations of this work. First, due to sample size restrictions and model requirements, we use a broad distinction between reception centers vs private housing which does not capture large heterogeneity in both. Some reception centers are small and offer more space for

residents, other maybe large and overcrowded. Private housing can mean sufficient space or that several families share one room. Our modest treatment effects may be a result of counter-balancing (or averaging out) effects of “good” reception centers and “bad” reception centers. In addition to reception centers and private apartments, other informal housing options for asylum seekers and refugees exist and are practiced in some countries. Bassoli and Luccioni (2023) review the accommodation of refugees in private homes, promoted in many European cities, especially after the influx from the war in Ukraine. Herpell *et al.* (2024) investigate the effects of private hosting on Ukrainian refugee integration in Germany and find that social, psychological and navigational integration is significantly improved compared to refugees in other forms of housing. Thus, these informal accommodations may help refugees to integrate more quickly into local social networks and also to reduce mutual prejudices through direct contact (Khalil and Naumann 2022). Second, we were not able to formally test for explanatory mechanisms of our treatment effects. Providing further descriptive analysis provides suggestive evidence of potential mechanisms, however, future research should aim to test mechanisms more directly. Finally, some results of our sub-analyses are not entirely consistent with the theoretical expectations of a linear relationship between length of stay in reception centers and integration outcomes. Thus, very short stays in reception centers do not show stronger advantageous effects compared to moderate durations (7-18 months). Further research is required to verify and explain this pattern. For instance, it may be the case that some advantageous effects of reception centers, like the eased access to social workers and consultancy (section 3.4), are important in early periods after arrival but are increasingly offset by the negative effects that come along with reception centers like psychological stress as individuals continue to live in reception centers.

Data Availability

The data underlying this article are based on multiple sources that are subject to different access restrictions. Survey-data on refugees 2016-2021, including small-scale regional and neighborhood information (result section), were provided in course of onsite-visits at the SOEP Research Data Center (<https://www.doi.org/10.5684/soep.core.v38.1o>) and merged with county-level official data, available

at <https://www.inkar.de/>. Register-data on asylum seekers 2015 (Figure 1) were provided in course of onsite-visits at the Berlin office of the Research Data Centers of the Federation and the Federal States (<https://doi.org/10.21242/22221.2015.00.00.1.1.0>).

Code Availability

The syntax for onsite-analyses at research data centers and the processing of export tables are provided at <https://osf.io/mndjt/>.

Ethical approval

The study uses secondary data only. Using the IAB-BAMF-SOEP Survey of Refugees as main data source, the authors assured and adhered to all data protection measures asked by the provider that are in line with German and European data protection laws (for more details, see https://www.diw.de/en/diw_01.c.601584.en/data_access). In order to address the special need for protection and the vulnerability of refugees, survey participants were informed at the beginning that their participation was voluntary and that their personal information would be separated from their answers. Participants were also assured that their answers would have no impact on their asylum procedure. In order to overcome language barriers, the survey questionnaires were offered in seven languages, both in writing and orally via recorded audio files (Brücker *et al.* 2016, p. 19; DIW Berlin 2016).

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Figure 1

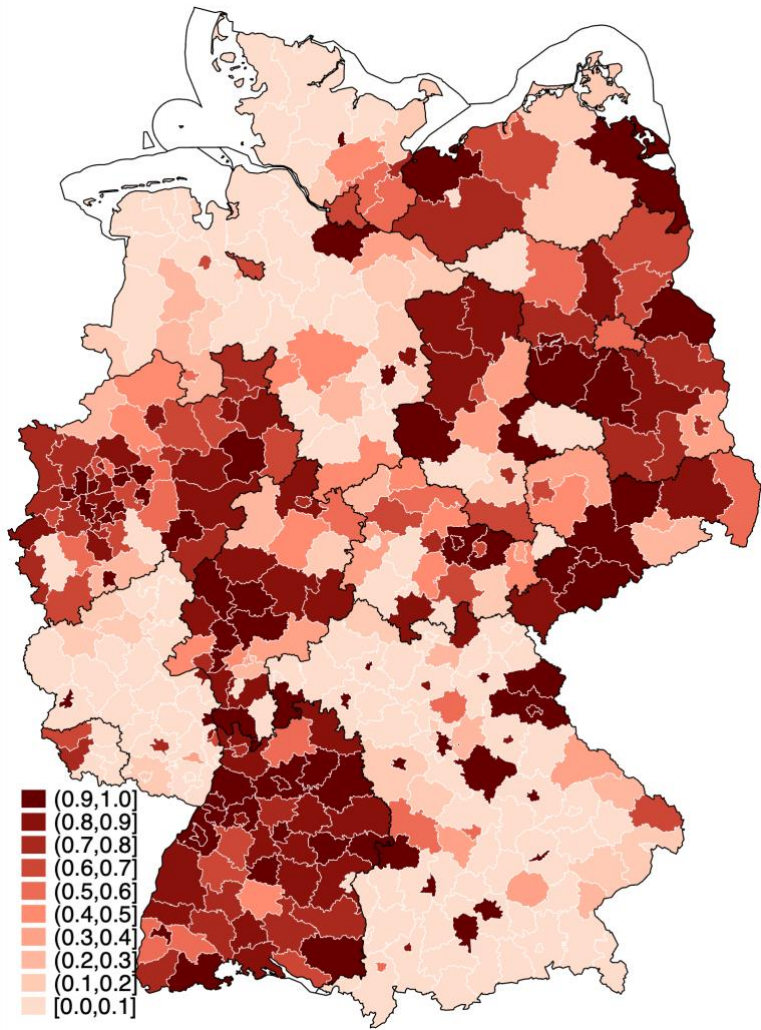


Figure 2

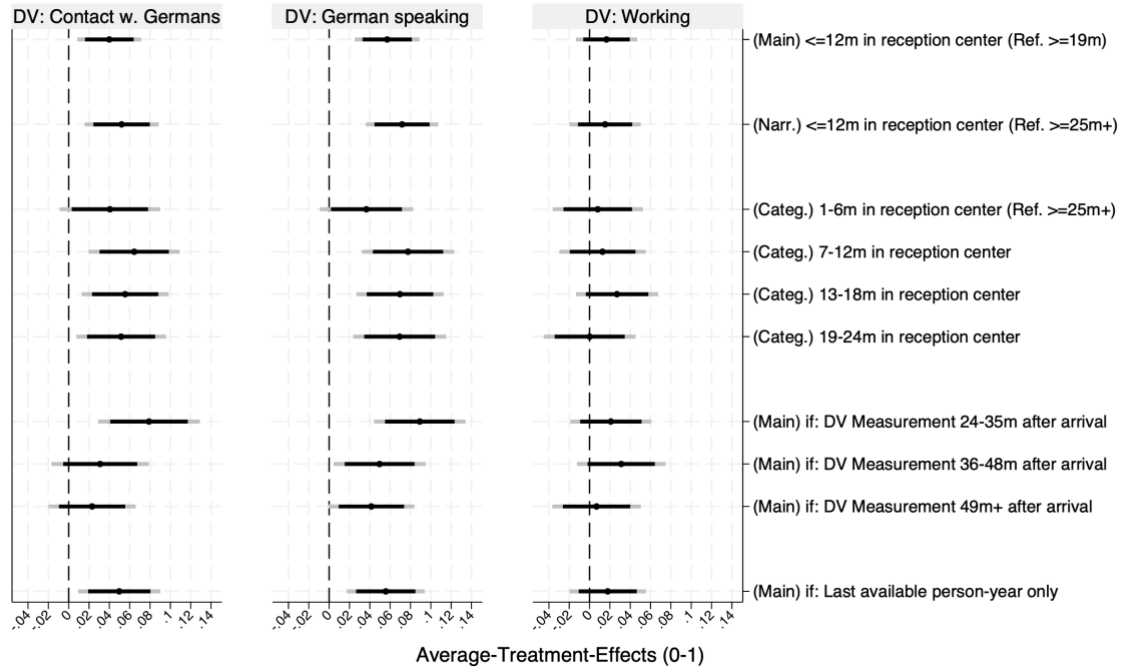


Figure 3

