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Migration and integration: Tackling policy challenges, opportunities and solutions

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Migration and integration: Tackling policy challenges, opportunities and solutions

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Editorial: Migration and integration: tackling policy challenges, opportunities and solutions

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Editorial on the Research Topic
Migration and integration: tackling policy challenges, opportunities and solutions

Over recent decades, Europe has witnessed a profound demographic transformation, marked by a significant increase in the foreign-born population. From the late 1990s to 2022, the share of foreign-born individuals in the European Union surged from 3.5 percent to 21 percent, with a substantial portion comprising non-EU nationals (Eurostat, 2022). This demographic shift, propelled by economic migration and humanitarian crises, has fundamentally altered the ethnic and cultural landscape of European societies.

While immigration brings potential economic and cultural benefits, it also presents integration challenges. Immigrants and their descendants often encounter barriers in accessing employment and face discrimination, contributing to higher unemployment rates and lower-quality jobs, particularly in low-skilled sectors (OECD, 2018). Moreover, the rise of anti-immigrant sentiments, reflected in the emergence of populist far-right parties and anti-refugee rhetoric, underscores the complexity of integrating diverse populations into European communities.

Tackling these challenges necessitates a comprehensive understanding of the impact and effectiveness of migration and integration policies at various levels of governance—from supranational to local. Policy measures are instrumental in directing migrant flows, ensuring access to essential services such as healthcare and housing, and facilitating the integration process. Yet, despite the importance of these interventions, a persistent gap often exists between policy intentions and their actual implementation. Limited resources or political will can hinder governments from fully realizing integration measures.

This Research Topic convenes a series of investigations into migration and integration policies, scrutinizing their ramifications on the structural and socio-cultural integration of immigrants. The contributions range from policy analysis, dissecting the content and purpose of national laws and regulations (as evidenced by the works of King as well as by Kleinewiese in this issue), to explorations of policy execution and its impacts at more localized levels (exemplified by the research conducted by Damen et al., as well as Kassam and Becker). For instance, King utilized data from the European Union Labour Force survey to examine the impact of migration and integration policies on immigrant

marginalization within Europe. His research underscores the significant role played by restrictive immigration policies, labor market institutions, and the welfare state on migrants' experience of marginalization. Complementarily, Kleinewiese employed factorial survey experiments to probe the underpinnings of everyday discrimination against immigrants, revealing that the perception of fairness can mitigate ethnic discrimination.

In this context, particular emphasis is placed on understanding the role of migration and integration policies in addressing the needs of marginalized immigrant groups, including women and refugees. Kosyakova and Kogan provide an overview of the research findings in refugees' labor market challenges and discuss the individual and contextual factors shaping refugees' labor market trajectories. Meanwhile, Kassam and Becker's study focuses on recently arrived Syrian refugees in Germany, shedding light on the importance of ethnic social networks and economic factors in shaping their political engagement. Additionally, Damen et al. analyze recent Syrian refugees in the Netherlands, highlighting the critical role of reception policies and regional unemployment rates in facilitating refugee's employment. Furthermore, Zavisca et al.'s research offers valuable insights into the hardships endured by internally displaced persons as a result of the conflict in Ukraine. Their findings emphasize the profound negative effects of housing deprivation, which significantly undermines both the material and experiential wellbeing of internally displaced individuals.

Another important dimension examined in this issue concerns selectivity of immigrant populations and how it interacts with policies in immigrant countries of origin and destination (Tibajev and Nygård and Gundacker et al., 2024 in this issue). Using large scale, representative data among immigrants in Sweden, Tibajev and Nygård investigate the selectivity patterns of female immigrants. Their findings reveal a surprising trend of more favorable selection among female immigrants in terms of employment activity compared to expectations based on their origin-country female employment rates. Similarly, Gundacker et al.'s (2024) study illustrates how external barriers shape the socio-demographic composition of refugees. They show that riskier routes and higher entry barriers are associated with a lower share of female migrants, a lower share traveling with family members, and a higher socio-economic background.

Among individual factors, human capital emerges as an important predictor of immigrants' integration outcomes. Kanas and Fenger, leveraging comparative survey data from the Programme for the International Assessment of Adult Competencies, highlight the role of non-cognitive skills in perpetuating labor market disparities between immigrants and native-born workers, advocating for targeted policy interventions to bridge these gaps. Seibel's comparative survey analysis across Denmark, Germany, and the Netherlands stresses the importance of immigrants' awareness of their social rights to access crucial resources for their wellbeing, such as healthcare and financial security. However, the strength of this relationship varies across receiving countries and differs according to welfare domains, including healthcare, childcare, unemployment benefits, social assistance, and state pensions. Additionally, Kuhlemann's examination of the time use patterns of recent refugees in Germany provides valuable insights into their daily activities and priorities compared to other immigrant groups and natives. The study suggests a potential overrepresentation of refugees in childcare responsibilities and overall low activity clusters, which may serve as barriers to their employment and social inclusion. Further insights emerge from earlier studies mentioned in this editorial. Tibajev and Nygård highlight the significance of pre-migration work experience for the labor force participation of immigrant women in Sweden. Similarly, Damen et al. emphasize the importance of host-country-specific skills, such as proficiency in the Dutch language and completion of integration courses, for the employment outcomes of refugees in the Netherlands.

In synthesis, this issue underscores the imperative for a comprehensive approach to migration and integration policies, one that accounts for the complex interplay between policy formulation, implementation, and compositional differences in immigrant populations. By delving into these dynamics, this compilation of research deepens our understanding and lays the groundwork for the development of more impactful and inclusive policies that promote the integration and wellbeing of diverse immigrant populations in Europe.

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Labor market situation of refugees in Europe: The role of individual and contextual factors

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The paper sheds light on the patterns of labor market integration of refugees in Western countries, who arrived primarily during the 2015–2016 mass refugee migration. Its major focus lies on the role of individual and contextual factors responsible for refugees' success in the labor market. At the host country level, the extent of permeability along the ethnic lines and the welcome of reception—both on the part of the majority population and the part of the established minorities—constitute further essential moderators of refugees' labor market success. This comprehensive literature overview draws on the flourishing body of research in Europe and beyond and discusses commonalities and differences across refugee origins and destinations while paying particular attention to the time trends and meaningful heterogeneities along with refugees' socio-demographic characteristics. We conclude by identifying major avenues for future research.

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refugees, immigrants, labor market, stratification, policies, social distances, discrimination, Europe

Introduction

Various forms of persecution, conflict, violence, and human rights violations prompt people to leave their homes every day. In 2018, the number of forcibly displaced persons reached 70.8 million, largely driven by the conflicts in Syria, Afghanistan, Venezuela, and the Horn of Africa (UNHCR, 2019). With only a third of the displaced population seeking refuge abroad, the global dynamics of forced migration induced a worldwide increase in the number of asylum applications (UNHCR, 2019). The largest refugee[1] origin groups in 2016—Syrians, Iraqis, Afghans, Sudanese, Somalians, Eritreans, Congolese, and Rohingyas from Myanmar—were resettled predominantly in the neighboring countries—Turkey, Pakistan, Lebanon, Iran, Uganda, Ethiopia, Jordan, Democratic Republic of Congo, and Kenya (Aksoy and Poutvaara, 2021). In Europe, Germany became one of the key refugee destinations, receiving 1.6 million first-time asylum applications in 2015–2018, which is about 41% of all first-time asylum applications submitted in the European Union during that period (Brücker et al., 2019).

1 Henceforth, the term "refugees" is used colloquially and includes all persons who move to another country for humanitarian reasons (e.g., as refugees or asylum seekers) independent on their legal situation in the hosting country.

The 2015–2016 refugee migration was not a singular event in European history but a distinct one. In contrast to other refugee migrations to Europe since the end of the 1980s, this one was marked by a combination of a mass population inflow from countries which differed considerably from the European ones in terms of the importance of religion, traditional values and authoritarianism (Triandafyllidou, 2018; Brücker et al., 2020; Safak-AyvazoGlu et al., 2021). Other mass refugee movements to Europe occurred within the European continent. In the early 1990s, a mass within-European migration was caused by the disintegration of the Soviet Union and the Yugoslavian wars (Van Mol and de Valk, 2016). Since the beginning of 2022, Europe has been facing a massive surge of within-European refugee migration anew as the world was upended by the invasion of Russian troops into Ukraine. The UNHCR named it the largest refugee migration since the end of World War II in a short period of time: one-third of Ukrainians have been forced to flee their homes, with seven million people being displaced internally within Ukraine. A further 4.8 million have resettled across Europe (numbers are as of June 2022) (UNHCR, 2022).

Whereas the European response to the refugee migration from Ukraine was marked by solidarity and ultimate support, the refugee migration of 2015–2016 had heated debates on economic realities, national identities and social security concepts in many receiving societies (see discussion by De Coninck, 2022; Paré, 2022). Domestic debates on the policies for foreigners were reflected in the results of national elections, in which right-wing populist party movements such as the Front Nationale in France or the Alternative für Deutschland (AfD) in Germany increased their shares. These debates also exerted considerable pressure on the mainstream parties and the domestic policy approaches to, among other things, refugees rights and their access to social welfare, schooling or the labor market (Inglehart and Norris, 2017; Zunes, 2017).

Another narrative in the host countries' public discourse was to frame refugee migration as a chance to meet the demand for migrant labor due to the aging workforce and growing labor shortages in many European countries (Cohen, 2015; OECD, 2018, 137). Whether refugee migration can indeed provide a solution to local labor shortages would depend on the extent to which advantages of the refugees' relatively young age structure and potential trainability (Brücker et al., 2020; Khan-Gökkaya and Mösko, 2021) outweigh their lack of individual resources and the barriers they face in the host countries.

A considerable body of research on recent refugee migration has emerged, and the field continues to grow, not least due to the ongoing refugee migration from Ukraine. The aim of this paper is to provide a comprehensive literature overview on the topic, covering both recent and earlier refugee populations. To this end, we first present key facts on patterns of refugees' economic incorporation in Western countries, whenever possible discussing differences by refugees' destinations, origins, and gender. We further discuss major correlates of refugees' labor market success at the individual and contextual levels, as well as draw researchers' attention to the possible cross-level interactions.

At the individual level, resources that are crucial to the labor market situation of newcomers are human capital (e.g., education, training, labor market experience), cognitive and non-cognitive skills (e.g., motivational factors), health prerequisites, cultural knowledge and language proficiency, and social capital (Feller, 2005; Phillimore, 2011; Bakker et al., 2014; FitzGerald and Arar, 2018; Kogan and Kalter, 2020). The institutional characteristics of the host countries—particularly immigrant integration policies, labor markets and welfare regimes—are likely to influence immigrants' labor market prospects (Reitz, 1998; Kogan, 2007; Kanas and Steinmetz, 2021). Since refugees enter heterogeneous receiving societies, countries' existing ethno-racial hierarchies might contribute to the perpetuation of ethnic and racial stereotypes, prejudice, and discrimination. The general climate of perception and acceptance is, therefore, a key factor shaping refugees' labor market pathways.

For the literature review, we selected sociological and economic studies that rely on predominantly quantitative research methods and large-scale data sources. For this purpose, we considered mainly journal articles and some gray literature, such as discussion papers and reports on the recent refugees' labor market integration in Western societies. We relied on the backward and forward snowballing approach, that is, we identified new papers by screening the reference lists of included articles and by examining the articles cited in included papers (Sayers, 2007). Our aim is to synthesize research findings published within the past decade on the incorporation of refugees across these national contexts.

Refugees' labor market situation

Empirical studies on the labor market situation of refugees have shown that refugees are generally disadvantaged compared to other migrants in Western destination countries (DeVoretz et al., 2004; Bevelander, 2011; Brücker et al., 2019; Brell et al., 2020; Fasani et al., 2022). Overall, their employment rates are far below those of other foreign population groups and even further below those of the native-born population of the respective host countries (Dustmann et al., 2017; Brell et al., 2020). Especially in the first period after their arrival, refugees are less likely to be employed than other immigrants with the same duration of stay. There is considerable variation between the receiving countries with respect to refugees' employment entry, with employment rates two years after arrival ranging from below 20% in Finland, Denmark, Germany and Norway to 60% in Canada (Brell et al., 2020, p. 104). These compared to considerably higher employment rates of other immigrants in Europe and Northern America, with the employment gaps between refugees and other

immigrants tending to be smaller in the USA and Canada than in Europe (ibid.).

With a longer duration of stay, the refugees catch up (Bevelander, 2011; Bakker et al., 2017; Dustmann et al., 2017; Brell et al., 2020; Jestl et al., 2021; Fasani et al., 2022), albeit at different speeds and to varying extents (Cortes, 2004; Connor, 2010; De Vroome and van Tubergen, 2010; Bevelander, 2011). For instance, based on the cross-national comparative data from the European Union Labor Force Survey (EULFS) 2008, Dustmann et al. (2017) demonstrate that it takes refugees, on average more than 25 years to achieve employment parity with the majority native-born in Europe. In Germany, refugees reach an employment rate of 70% 14 years after arrival, whereas other immigrants reach this level after six years of residence (Brücker et al., 2019).

Initially, refugees tend to enter temporary, marginal or part-time employment, with the proportions in atypical employment decreasing with the increasing length of stay (Jackson and Bauder, 2014; Bakker et al., 2017; Brücker et al., 2019). Despite improvements in employment conditions, refugees often occupy jobs in low-skilled and low-paid sectors (Connor, 2010; Dumont et al., 2016; Kanas and Steinmetz, 2021; Fasani et al., 2022). Their wages are in the lowest earning decile, which is not entirely in line with the wages profiles of other migrants (Connor, 2010; Brell et al., 2020; Akgüç and Welter-Médée, 2021; Fasani et al., 2022). Refugees' earning gap to economic and non-economic migrants persists over their duration of stay (Bevelander and Pendakur, 2014; Brell et al., 2020).

Migration scholars contend that the labor market integration of female refugees falls far behind that of their male counterparts (Pittaway and Bartolomei, 2001; Dumper, 2002; Koyama, 2015; Cheung and Phillimore, 2017; Salikutluk and Menke, 2021; Kosyakova et al., 2022a). In this context, the term "triple disadvantage" emerged, suggesting a cumulative disadvantage related to immigration, refugee status and gender (Liebig and Tronstad, 2018) [2]. Disadvantageous gender-specific labor market trajectories are particularly pronounced in the initial periods after the migration (Fasani et al., 2022). Two years after arrival, employment rates of refugee women only reach 11% of the employment rate of refugee men in Germany, which stands in sharp contrast to the female–male employment ratio among immigrants (40%) or the native-born majority (88%) (see Appendix Table A1 in Brell et al., 2020). Similar patterns are reported for Anglo-Saxon countries, albeit with much smaller gaps between employment rates of refugee men and women. For example, in Canada, the female–male employment ratio for refugees is 63%, while for immigrants and natives, it is 74 and 94%, respectively (ibid). Over time, across various refugee arrival cohorts and across various destination countries, the female refugees' labor market disadvantage decreases but never fully vanishes (Bakker et al., 2017; Brell et al., 2020; Kanas and Steinmetz, 2021; Salikutluk and Menke, 2021; Kosyakova et al., 2022a).

In sum, the literature findings point to the commonalities in labor market entry barriers for newcomers, irrespective of their status upon arrival, such as difficulties in finding employment and a higher propensity to unskilled labor. Distinct patterns of low labor force participation among refugee newcomers suggest that refugees might require more time to adjust to the labor markets of the host countries and acquire marketable skills and competitive qualifications (to be discussed in detail in Individual-level correlates of refugees' labor market integration patterns). Additionally, they might face structural constraints and institutional hurdles (to be discussed in detail in Institutional contexts of reception and refugee labor market incorporation) or even discrimination at the entry in host country labor markets (to be discussed in Social distances and discrimination).

Individual-level correlates of refugees' labor market integration patterns

The lack of pre- and post-migration human capital, i.e., education, training, and labor market experience, is a major barrier to labor market integration, since both are crucial skills that boost economic success. Correspondingly, refugees' adverse labor market outcomes are often explained in terms of their lower *pre-migration educational attainment*. Most studies conclude that refugees have lower educational levels than other immigrants (Potocky-Tripodi, 2003; Connor, 2010; Spörlein and Kristen, 2019; Brücker et al., 2020; Spörlein et al., 2020) and particularly than the population in the destination countries (Brücker et al., 2020; Spörlein et al., 2020). For instance, 40% of recent refugees in Germany arrived with no secondary schooling degree, and almost half of them have no education at all (Brücker et al., 2020). Among the adult German population, only 4% have failed to complete secondary schooling. These results are not unique to Germany (Kanas and Steinmetz, 2021; Fasani et al., 2022). The data from the EULFS *ad hoc* modules for 2008 and 2014 show that 45% of refugees in Europe have only obtained a primary degree, while this proportion is 36% for economic and 39% for family immigrants (Kanas and Steinmetz, 2021).

The distribution of refugees' education is bimodal: considerable shares of refugees have either rudimentary or higher education. In fact, shares of highly educated refugees of certain origins are comparable to those among other immigrants. On average, 24% of refugees, 29% of other immigrants, and 28% of natives in EU countries possess a tertiary degree (Dumont et al., 2016; Fasani et al., 2022). The

2 Originally, the existence of a triple disadvantage was shown for women from less developed nations in Asia and Afrika (Raijman and Semyonov, 1997).

educational level of refugees settling in Europe is significantly higher than the average level of education of the resident population in refugees' countries of origin (Spörlein and Kristen, 2019; Guichard, 2020; Spörlein et al., 2020; Aksoy and Poutvaara, 2021), indicating refugees' educational selectivity. Still, *recognition of credentials* poses a serious challenge to highly educated refugees (Riemsdijk and Axelsson, 2021; see also Credential recognition), particularly in regulated professions such as medical doctors or teachers (Smyth and Kum, 2010; Jacobsen, 2021). As a result, highly educated refugees are likely to face devaluation of their foreign degrees (Hartog and Zorlu, 2009) and find themselves in jobs for which they are formally overqualified (Duvander, 2001; Smyth and Kum, 2010; Willott and Stevenson, 2013; Dumont et al., 2016), much like other highly educated immigrants.

Large parts of the refugee population bring with them *labor market experience*, often in qualified jobs (Liebau and Salikutluk, 2016; Brücker et al., 2019, 2020). Yet, only few refugees succeed in earning adequate returns on their pre-migration work experience in the destination labor markets, which is very similar to other immigrant groups (De Vroome and van Tubergen, 2010; Verwiebe et al., 2019; Kosyakova et al., 2022a). In migration research, the lower transferability of pre-migration work experience is often traced back to low comparability of the origin and destination labor markets (Friedberg, 2000; Chiswick and Miller, 2009). For example, differences in healthcare systems and working cultures have been identified as crucial barriers for refugee health professionals in Germany (Khan-Gökkaya and Mösko, 2021) and refugee teachers in Scotland (Smyth and Kum, 2010) to enter suitable jobs.

Concerning refugees' *post-migration human capital*, there are two major lines of research. The first is related to refugees' investment intentions and the second concerns refugees' returns on these investments in the destination countries. In contrast to economically motivated immigrants, refugees arrive unprepared for integration into the destination labor markets, having lower levels of education and facing difficulties in transferability of pre-migration human capital. At the same time, refugees' longer settlement perspectives in the destination countries should contribute to higher investments in formal education and training in the destination countries (Cortes, 2004; Cobb-Clark et al., 2005; Damelang and Kosyakova, 2021). Research findings regarding refugees' acquisition of host country–specific education are equivocal: some previous studies report greater post-migration education investments among refugees compared to other immigrants (e.g., Khan, 1997; Cortes, 2004), whereas others do not (e.g., Connor, 2010). Research findings are more consistent regarding higher returns on investments in host country human capital compared to the education obtained in origin countries: refugees' post-migration educational investments are associated with higher rates of labor market participation and employment (De Vroome and van Tubergen, 2010; Zwysen, 2019), higher earnings (Cortes, 2004) and higher occupational status (Connor, 2010; De Vroome and van Tubergen, 2010).

Another crucial aspect of destination-specific human capital is destination language proficiency. Apparently, *language acquisition* is more consequential for refugees than for migrants arriving with economic or family-related motives. In the aftermath of their typically unprepared migration, refugees rarely arrive with any skills in destination languages (van Tubergen and Kalmijn, 2009; Brücker et al., 2020; Kristen and Seuring, 2021; Kosyakova et al., 2022b). At the same time, refugees' exposure to the traumatic experience results in potentially less efficient destination language learning after migration (van Tubergen and Kalmijn, 2009; van Tubergen, 2010). A greater linguistic dissimilarity between the languages of the origin and destination country may further exacerbate difficulties in host country language acquisition among non-European refugees (Beenstock et al., 2001; Chiswick et al., 2006; Isphording and Otten, 2014). Due to their lengthy stays in the asylum seekers centers, refugees' exposure to the native population remains low (van Tubergen, 2010). Correspondingly, the gap in destination language proficiency between refugees and economic migrants persists long after their arrival (van Tubergen and Kalmijn, 2005; Chiswick et al., 2006; Kristen and Seuring, 2021; Kosyakova et al., 2022b), translating into delayed labor market and societal integration (Connor, 2010; Grenier and Xue, 2011; Cheung and Phillimore, 2014; Dustmann et al., 2017; Auer, 2018).

Another important difference between refugee and economic or family immigrants is the former's more adverse *health status* (Chiswick et al., 2008). Refugees are often more exposed to traumatic events than other migrants, both in their countries of origin and in transit countries. Likewise, refugees' flight is marked by traumatic experiences, such as physical assaults or shipwreck (Porter and Haslam, 2005; Bogic et al., 2015; Hunkler and Khourshed, 2020). After their arrival in the destination countries, refugees often live in adverse conditions (Robjant et al., 2009; Nickerson et al., 2010), experience mental stress in relation to family members remaining in the country of origin or transit countries (Nickerson et al., 2010; Löbel and Jacobsen, 2021), have to go through lengthy and demanding asylum procedures (Silove et al., 1998; Laban et al., 2004; Kosyakova and Brenzel, 2020; Kosyakova and Brücker, 2020) and face restrictions in access to healthcare services (Norredam et al., 2006; Jaschke and Kosyakova, 2021).

These experiences have a negative impact on refugees' mental and physical health (Phillimore, 2011; Walther et al., 2020; Ambrosetti et al., 2021; Jaschke and Kosyakova, 2021), which subsequently hampers their socioeconomic integration (De Vroome and van Tubergen, 2010; van Tubergen, 2010; Ruiz and Vargas-Silva, 2018). In turn, empirical research has only recently started to delve deeper into the consequences of trauma for the integration of refugees in destination countries, and the results are equivocal. While traumatic experiences

are clearly negatively related to refugees' mental and physical health outcomes (Jaschke and Kosyakova, 2021), individuals with traumatic experiences seem to have better destination language skills (Hunkler and Khourshed, 2020) and invest more in job search than in educational attainment (Freitas-Monteiro and Ludolph, 2021). These unexpected patterns are attributed to a greater integration aspiration of refugees with traumatic experiences (Hunkler and Khourshed, 2020), who seem to be less forward-looking and prefer quick employment entry at the expense of job quality (Freitas-Monteiro and Ludolph, 2021).

Social networks, the importance of which has been emphasized in empirical studies dealing with immigrant labor market situation (Kogan and Kalter, 2020), are regarded as particularly essential for refugees due to their lack of destination language skills and less informed migration decisions (van Tubergen, 2011). At the same time, refugees are likely to possess fewer pre-migration social contacts in the destination countries than economic or family immigrants. Accordingly, either no or very small effects of social ties in destination countries on refugees' employment prospects or earnings have been reported (Waxman, 2001; Lamba, 2003; Allen, 2009). Evidence on the influence of post-migration social contacts is mixed. While van Tubergen (2011) found a detrimental effect of reliance on co-ethnic job-related social ties on the occupational status of refugees, the common conclusion in economic and sociological literature is that co-ethnic networks are beneficial for refugees' economic outcomes (Massey et al., 1998; Edin et al., 2003; van Tubergen, 2011; Martén et al., 2019; Gërxhani and Kosyakova, 2020; Stips and Kis-Katos, 2020). Furthermore, co-ethnic networks are essential to the emotional support that refugees need during the challenging time of finding their way in the host country (Beiser and Hou, 2017). By providing helpful information or practical assistance, co-ethnic contacts help immigrants get along and settle in destination countries (Baier and Siegert, 2018).

On the other hand, the resources that can be mobilized *via* co-ethnic networks of less advantageous groups, such as refugees, are less helpful for the newcomers than relationships with the native majority are. Studies have shown that being friends with natives and/or being member of a mainstream organization improves refugees' employment prospects (De Vroome and van Tubergen, 2010) and overall well being (Tip et al., 2019), similarly to other immigrants. Relying on a field experiment, Jaschke et al. (2022) further demonstrated the importance of mentoring by local volunteers for refugees' social integration and participation. However, on average refugees tend to interact less with the native population than economic migrants (Martinovic et al., 2011).

The *female-specific adverse outcomes* are partly explained by the presence of (small) children in the household (Kosyakova et al., 2022a), for which affordable childcare facilities are lacking (Koyama, 2015). Another important explanation relates to the differences in pre- and post-migration human capital (Kosyakova et al., 2022a). Compared to male refugees, women arrive with no or lower educational attainment and insufficient labor market experience (Brücker et al., 2020). As studies for Germany demonstrate, female refugees—particularly those with small children—invest less in country-specific human capital, such as language learning, schooling or training, after arriving in the destination country (Bernhard and Bernhard, 2021; Hartmann and Steinmann, 2021; Kosyakova et al., 2022a). While female refugees in Great Britain are more likely to participate in language programs than men, they tend to do so later because of unaffordable childcare, problems fitting classes around school hours, the absence of single-sex classes and a lack of confidence in formal education (Dumper, 2002; Cheung and Phillimore, 2017). Moreover, family responsibilities seem to hamper refugee women's social integration (Hartmann and Steinmann, 2021), which in turn translates into fewer opportunities on the labor market (Dumper, 2002; Cheung and Phillimore, 2017; Salikutluk and Menke, 2021; Kosyakova et al., 2022a), a situation which is not unique to refugee women.

Institutional contexts of reception and refugee labor market incorporation

At the contextual level, the legal requirements as well as the characteristics, structures and institutions of the host societies—the labor markets, the education systems and the social protection systems (Reitz, 1998; Kogan, 2007)—are of central importance to the integration prospects of the newcomers. The general climate of acceptance—the welcoming culture—as well as the extent of prejudice and discrimination against immigrants influence the integration process significantly. Specific for refugee migration is the context of refugee admission and special programs for the settlement and integration of refugees. As discussed below, the duration and smooth running of the asylum procedure, organization of asylum accommodation, granting of extended residence status and provision of integration courses by the government are important cornerstones for the integration of refugees.

Legal status

In most destination countries, refugees are subject to specific procedures to examine their asylum applications. During this process, refugees' access to the labor market and educational systems of the host countries is usually restricted (De Vroome and van Tubergen, 2010; Hainmueller et al., 2016; Bakker et al., 2017; Kosyakova and Brenzel, 2020). This limitation also applies in the case of rejected applications. The legal status can likewise indirectly affect labor market integration, for example by impairing refugees' investment into country-specific

education and training (Damelang and Kosyakova, 2021) or destination language skills (Kosyakova et al., 2022b). The lower motivation for destination-specific investments could partially be attributed to the lower subjective probability of obtaining asylum and remaining in the destination country (Phillimore, 2011). The clarification of legal status, i.e., the decision and outcome of asylum procedures, is therefore a key factor in labor market integration (see Krahn et al., 2000). In Germany, just having a decision on an asylum application accelerates the start of a first employment and the transition to the first language course among refugee migrants (Kosyakova and Brenzel, 2020).

In contrast, long asylum procedures have been found to be detrimental to the social and economic integration of the newcomers due to legal insecurity, devaluation of human capital and potential depletion of working aspirations during the waiting period. This, in turn, may postpone or even impede the process of integration in the labor market and society of the host country. For instance, results for Switzerland have shown that each additional year of asylum procedures reduces the employment probability by 4–5% (Hainmueller et al., 2016). Also in Germany and in the Netherlands, a long duration of the asylum procedure produced negative effects on refugees' labor market integration (De Vroome and van Tubergen, 2010; Bakker et al., 2014; Kosyakova and Brenzel, 2020), impair destination-language proficiency (Damen et al., 2022) and delay entry into language courses (Kosyakova and Brenzel, 2020).

Settlement and residency requirement

Another distinctive aspect of asylum integration policies relates to the policies of refugee settlement and refugees' legal mobility restrictions. Concerned about the displacement effects on housing markets, residential segregation of refugees and the capacity of local labor markets to absorb large groups of refugees (Lastrapes and Lebesmuehlbacher, 2020; Fasani et al., 2022), many destination countries (e.g., Australia, Denmark, Germany, Ireland, Norway, Sweden, Switzerland, the UK, and the US) enforced spatial dispersal policies, which required refugees to settle in specific locations within the destination country (Larsen, 2011; Bansak et al., 2018; Martén et al., 2019; Brücker et al., 2020; Fasani et al., 2022). These settlement policies play a role in refugees' integration insofar as refugees are often allocated to municipalities in which housing is available but employment opportunities are scarce (Bevelander and Pendakur, 2014). Empirical evidence reveals that the labor market conditions refugees encountered upon arrival determine their economic and social integration (see e.g., Åslund and Rooth, 2007 for Norway; Larsen, 2011 for Denmark; Fasani et al., 2022 for cross-comparative evidence; Kanas and Kosyakova, 2022 for Germany).

Beyond restricting residency choice, some countries impose residency obligation rules that prohibit regional mobility. For instance, in 2016, Germany introduced a residency obligation for approved refugees with the aim to prevent geographical mobility and ethnic concentration. In a nutshell, refugees' receipt of social benefits is conditional on their residence in the federal state (or even municipality) in which their asylum application was processed for at least three years after approval of the application (Brücker et al., 2019). Similarly, in Switzerland, refugees with subsidiary protection are constrained to reside in the initial location for five years after arrival, which emphasizes the role of the first local reception context in refugees' labor market prospects (Martén et al., 2019). A practice of restricted residency requirements impairs geographical mobility among immigrants—and particularly among refugees—and as a result diminishes their employment chances (Brücker et al., 2019). Residing in areas with more favorable opportunity structures, including the structural conditions of the housing and labor markets, on the other hand, improves immigrants' labor market prospects (Edin et al., 2003; Fasani et al., 2022). Larger cities, for example, offer greater opportunities to access ethnic networks, which are considered beneficial in the initial stage of refugee settlement (e.g., Rooth, 1999). At the same time, refugees in rural areas seem to have regular exposure to the native speakers' networks, which could be beneficial for refugees' destination language acquisition (Khalil et al., 2022).

(Limited) provision of social services

The massive inflow of refugees in Europe in 2015 put their housing high on the agenda of local policymakers. In Germany, a rapidly growing number of newcomers and shortage of well-organized accommodation capacities forced authorities to seek for emergency solutions and organize living spaces in schools, former barracks, empty hotels, former business premises, and tent cities or container villages (Baier and Siegert, 2018). The growing shortage of housing in Sweden urged authorities to change their policy from economically compensating municipalities that are willing to take in refugees to imposing mandatory acceptance of refugees assigned by the state and organization of their accommodation (Emilsson and Öberg, 2021). However, predating the 2015 "reception crisis," many destination countries failed to provide adequate accommodation for refugees (ECRE, 2019).

Upon their arrival, refugees are usually allocated to transitional accommodation, often with many other refugees, before they can move to permanent housing. The residential arrangements can influence refugees' quality of life and their structural integration, since life in temporary collective accommodations compromises privacy and autonomy and increases isolation from the local community (Adam et al., 2021; Siegert, 2021). The importance of stable and secure housing for refugees' mental health and overall life satisfaction is well-documented (e.g., Porter and Haslam, 2005; Walther et al., 2020; Ambrosetti et al., 2021; Jaschke and Kosyakova, 2021). However,

the role of refugees' residential arrangements in the structural dimensions of integration (in the education system and the labor market) is subject to controversy. Whereas several studies report a negative correlation between residence in collective accommodations and the speed of transition into the first job (Bevelander et al., 2019; Kosyakova and Brenzel, 2020), others show that residence in collective accommodation is positively associated with school grades of refugee offspring (Will and Homuth, 2020).

Provision of language courses and labor market preparation activities

To facilitate the economic integration of refugee populations, European governments have established various policy tools, ranging from language courses (Bilgili et al., 2015; Konle-Seidl, 2018) to skills assessment and work preparation measures (Konle-Seidl, 2018; Kanas and Steinmetz, 2021; Riemsdijk and Axelsson, 2021). The mandatory language courses are often accompanied by integration courses and civic education to a "basic knowledge of the host society's language, history, and institution" (Goodman, 2011) and are more often available for refugees than for other immigrants in most EU countries (Zwysen, 2019; Kanas and Steinmetz, 2021). Overall, such language courses positively affect the economic integration of the newcomers (Clausen et al., 2009; Lochmann et al., 2019; Kanas and Kosyakova, 2022). Recent studies on refugees suggest that the successful completion of such targeted training is positively associated with destination language skills (van Tubergen, 2010; Kosyakova et al., 2022b) and labor market integration (De Vroome and van Tubergen, 2010; Battisti et al., 2019; Fossati and Liechti, 2020; Kosyakova and Brenzel, 2020).

Most European countries focus on mandatory measures such as knowledge of the language and the country to improve refugees' labor market integration (e.g., Austria, France, Germany, Netherlands, and the UK). Some countries—Denmark, Finland and Sweden—focus on refugees' economic incentives for participating in integration programmes and consider incentive-based measures as being more effective for refugees' integration (Qi et al., 2021; Riemsdijk and Axelsson, 2021). To create economic incentives and foster refugees' employment entry, Danish government, for example, sharply reduced welfare benefits for approved refugees in 2001, which effectively increased their economic integration (Rosholm and Vejlin, 2010; Andersen et al., 2019). Likewise, Swedish reforms that reduced duration of benefits' access but increased its amount simultaneously improving access to labor market preparation activities had beneficial effects on refugees' employment and earnings (Qi et al., 2021). Also in Germany, labor market and career counseling programmes were found to have a positive effect on refugees' integration prospects (Kosyakova et al., 2022a).

Credential recognition

As discussed above, immigrants' economic disadvantage in the destination country can be traced back to the difficulties in the transferability of certified skills from the origin countries and the low signaling value of foreign degrees for local employers (Damelang et al., 2019). Without formally recognized credentials, highly qualified refugees have restricted access to licensed occupations and have difficulties in properly signaling their skills to potential employers. For refugees, credential recognition appears to be even more challenging, since many of them arrive without formal documentation of their skills and education (Konle-Seidl, 2018) and have limited access to information about where and how to apply for recognition (Liebau and Salikutluk, 2016).

Licensing bodies' reluctance to recognize foreign educational and occupational credentials has been named a serious obstacle to refugees' integration in Canada (Swan et al., 1991; Aycan and Berry, 1996), particularly among professionals (Basran and Zong, 1998). Compared to other immigrants, refugees are more likely to have their applications for credential recognition rejected in Germany (Liebau and Salikutluk, 2016). German authorities have also been found to discourage some refugees from applying for credential recognition (Sommer, 2021). In Sweden, too, refugees are diverted to other career options (Khan-Gökkaya and Mösko, 2021). Many find themselves disenchanted and adjust their aspirations toward lower-qualified jobs (Smyth and Kum, 2010; Frykman, 2012).

In recent decades, many immigrant-receiving countries have developed and implemented policies and practices for skill and credential recognition (Konle-Seidl, 2018; Andersson, 2021). The procedure includes assessing whether foreign educational credentials are comparable to those in destination countries. Particularly in the so-called regulated occupations, e.g., teaching, nursing, and medicine (Smyth and Kum, 2010; Konle-Seidl, 2018), credential recognition is a prerequisite for entering the job market. Correspondingly, many highly skilled immigrants with qualifications in teaching, nursing, and medicine face considerable obstacles in (re-)entering their professions (Andersson, 2021) in destination countries with strictly regulated labor markets and vocationally specific skills requirements, e.g., Germany or Austria (Sommer, 2021).

Integration policy packages

Only few attempts have been made to assess whether immigrants and refugees perform better in labor markets in countries with more comprehensive integration policies (Cangiano, 2014; Kanas and Steinmetz, 2021). Empirical evidence suggests that more extensive labor market policies improve immigrants' structural integration and reduce refugees' disadvantage compared to other

immigrants (Kanas and Steinmetz, 2021). Specifically, refugees' disadvantage is effectively reduced in countries with more extensive work and social security rights, policies that grant equal access to trade unions, equal working conditions and access to social security and housing benefits (Cangiano, 2014; Hooijer and Picot, 2015; Kanas and Steinmetz, 2021). Policies facilitating labor market access promote immigrants' structural integration by increasing their employment opportunities. By easing the transferability of immigrants' credentials and skills acquired in the countries of origin, policies that focus on access to general and targeted support (public employment services, education and training, credential recognition, and validation of skills acquired abroad) improve immigrants' structural integration. Overall, these policies seem to be less effective in reducing refugees' labor market disadvantages (Kanas and Steinmetz, 2021).

Social distances and discrimination

Refugees' difficulties in the host country's labor markets might also be related to hostility and prejudice on the part of the majority population (Esses et al., 2017). Aksoy et al. (2020) have convincingly demonstrated that negative attitudes toward migrants influence refugees' economic integration negatively. Furthermore, discrimination refugees might experience in the access to employment, housing and in everyday interaction might slow down their economic progress in the host country (Montgomery and Foldspang, 2008; Foroutan et al., 2017; Diekmann and Fereidooni, 2019). Whereas survey-based research and in-depth interviews capture self-reports of refugees' experiences with racism and labor market discrimination (Pichl, 2017; Diekmann and Fereidooni, 2019; Röder et al., 2021), experimental research is likely to directly quantify the extent of discriminatory behavior on the part of employers. In a series of correspondence tests, Arai et al. (2016) uncovered discrimination against job applicants with Arabic-sounding names in the Swedish context, with men being particularly affected.

The economic and cultural threat explanations—derived from the integrated threat theory of prejudice (Stephan and Stephan, 2000; Stephan and Renfro, 2002)—and particularly the classical differentiation between realistic (e.g., threat to one's well being) and symbolic (e.g., perceived threat to one's values and beliefs) types of threat are likely to account for negative attitudes toward newcomers. Whereas economically vulnerable groups largely fear labor market competition from the newcomers, the majority population of receiving societies are generally particularly worried about the threats newcomers might pose to their way of life, cultural values, and societal norms. There is further evidence that established immigrants and their offspring might also harbor resentment against newcomers, viewing them as potential competitors for the scarce resources and social welfare in the host country (Van Der Zwan et al., 2017). Yet, compared to the (Christian) majority population without a migration background, individuals with a migration background and those of Muslim faith appear to side more with newcomers (De Coninck, 2020).

Research demonstrates time and spatial variation in attitudes to refugees (Crawley et al., 2013; Friedrichs et al., 2019) as well as differences in attitudes to refugees and other immigrants (Coenders et al., 2004; De Coninck, 2020; Abdelaaty and Steele, 2022). For instance, young male asylum seekers are found to have a harder time to have their asylum claims recognized in regions with higher levels of xenophobia, in which young males are more likely to be classified as bogus immigrants (Ward, 2019; Gundacker et al., 2021). The same holds true for applicants of Muslim origin in regions with a particular anti-Muslim bias (Bansak et al., 2016; Gundacker et al., 2021). Notably, several studies report that refugees are perceived more positively than other immigrants in a number of European countries (Esses et al., 2013; Meidert and Rapp, 2019; De Coninck, 2020). De Coninck (2020) attributes this difference to the media framing of the two groups, whereas Meidert and Rapp (2019) discuss the role of deservingness in favorable attitudes to refugees. Abdelaaty and Steele's study (2022) has shown that individual support for economic immigrants is more consistently related to the respondents' economic situation, whereas attitudes toward refugees are moderated more by the host countries' political climate.

On the other hand, various studies demonstrated that the dramatic increase in refugees inflow in recent years provoked anti-refugee sentiments. For instance, Hangartner et al. (2019) have shown that natives' hostility toward refugees grew proportionally to the numbers of arrivals. Deiss-Helbig and Remer (2022), in turn, attributed deteriorated attitudes toward refugees not to the presence of refugees *per se* but to a rapid increase in refugees' group size in the neighborhood. Other studies demonstrated that terrorist attacks has driven anti-refugee sentiments (Czymara and Schmidt-Catran, 2017; Frey, 2021) or even induced xenophobic violence (Jäckle and König, 2017, 2018; Frey, 2020).

So far, little is known about whether refugee origins play a role in their public perceptions, and the existing findings are equivocal. In a conjoint experiment carried out in 15 European countries, Bansak et al. (2016) detect minor differences in attitudes to asylum seekers of different origins. Notwithstanding that, asylum seekers from Kosovo are least likely to be accepted, whereas those from Syria and the Ukraine are most likely to be accepted. The attitudes to those fleeing Afghanistan, Iraq, Pakistan, and Eritrea are somewhere in between. De Coninck's (2020) cross-national study of Belgium, France, the Netherlands and Sweden reports more positive attitudes toward newcomers (both refugees and immigrants) of European origin. von Hermanni and Neumann (2019), on the other hand, report lower acceptance of refugees from Eastern Europe than of

refugees from Africa or the Middle East in Germany. These findings thus seem to resonate, albeit inconsistently, with previous research that has identified a stable ranking of ethnic groups, with North Europeans at the top, followed by East and South Europeans, and African and Middle Eastern groups at the bottom of the ranking (Hagendoorn, 1993).

The sociopsychological mechanisms named responsible for such ethnic hierarchies are stable ingroup preferences (Tajfel, 1982) and stereotypes (Allport, 1954). Cultural and socioeconomic status differences are among possible sociological explanations for existing ethnic hierarchies, particularly under conditions of perceived threat from the outgroup (Pepels and Hagendoorn, 2000). Hagendoorn (1995) contends that the criteria for assigning social status may differ for majority and ethnic minority groups: Whereas majority groups rank order ethnic groups primarily based on cultural differences, ethnic minorities rank order ethnic groups primarily in terms of socioeconomic status differences.

Concluding remarks

Building on a considerable body of research on the recent refugee migration, this paper provided a comprehensive literature overview on the patterns of refugee labor market integration in Western countries and the determinants of its success or failure. Our focus laid on the major correlates at both individual and contextual levels, demonstrating their unique contributions and interdependencies.

Considering the massive refugee inflow in European countries, the question about the medium and long-term integration prospects of newly arrived refugees becomes more and more relevant. Although the pertinent empirical research is still in its infancy due to the recency of refugee migration, the existing migration scholarship could provide variants for possible scenarios. The first scenario is more pessimistic and suggests that newcomers who face strong initial labor market barriers in the European host countries might be trapped in the lower segment of the labor market and face limited opportunities for occupational upgrading. Under certain conditions, these refugees' labor market inferiority might perpetuate and develop into persistent ethnic disadvantages. A more optimistic scenario is also possible, as the growing number and geographical concentration of newcomers might contribute to boosting these groups' economic success (Semyonov, 1988; Tolnay, 2001). The economic enclave perspective (Portes and Manning, 1986; Zhou, 1992; Logan and Alba, 1999) advocates that the urban areas with large concentrations of newly arrived may provide greater opportunities, especially for minority-owned businesses. These businesses, in turn, recruit employees of the same ethnic origin and thus increase their compatriots' employment and occupational prospects.

Which scenario prevails depends on the individual characteristics of the newly arrived refugees, on the one hand, and the structural characteristics and institutional regulations in the host countries, on the other hand. Given the regional allocation and restrictive mobility refugees face in many destination countries, it is up to future research to examine whether refugees with more favorable resources can circumvent the adverse consequences of initial labor market conditions.

The most recent research on refugees' incorporation is predominantly based on studies of young single men from Middle Eastern and African countries who face institutional and structural constraints and largely unwelcoming societal attitudes. Whether patterns of refugee integration pertaining to refugees arriving in 2015–2016 will be comparable to those of the Ukrainian refugees of 2022 is an open empirical question. What is already known is that there are striking differences to refugees in 2015–2016 regarding their socio-demographic structure, on the one hand, and reception situation, on the other hand.

The proportion of women among refugees from Ukraine is much higher than among other refugees due to the general military mobilization and the ban on leaving the country for men of working age, as well as the lower flight risks for women owing to open borders within the EU's due to visa-free travel and the activation of the EU's "Temporary Protection Directive"[3] and shorter travel distances. On the individual level, a high proportion of minors and older people could imply that a considerable proportion of refugees from Ukraine will have to perform care tasks (Brücker, 2022), which is likely to slow down their economic integration. Yet, a high level of education among Ukrainian women and their pronounced labor market participation (The World Bank, 2022) promises favorable integration outcomes. On the contextual level, the EU's "Temporary Protection Directive" grants refugees from Ukraine a temporary residence permit without an asylum procedure (at least for one year) and gives full access to the labor market. Accordingly, Ukrainian refugees face legal certainty (at least in the short term) and bypass integration obstacles due to asylum procedure. Likewise, remarkable solidarity and ultimate support for the refugees from Ukraine (De Coninck, 2022) create a beneficial environmental context for economic and societal integration. Still, many refugees from Ukraine face a high level of uncertainty about the further course of the war and their potential return. This uncertainty, in turn, affects all aspects of labor market integration, which in one way or another depend on costly investments in host-country-specific human capital, including the acquisition of host-country

3 The full name of the Directive is "Council Directive 2001/55/EC of July 20, 2001 on Minimum Standards for Giving Temporary Protection in the Event of a Mass Influx of Displaced Persons and on Measures Promoting a Balance of Efforts between Member States in Receiving Such Persons and Bearing the Consequences Thereof." It is also known under "Mass Influx Directive".

language skills, the recognition of foreign degrees, and the acquisition of further vocational qualifications in the host country. Analogously, hiring workers also requires investment on the part of employers, which can also be hampered if the prospects for staying are uncertain (Bertola, 1988; Dixit and Pindyck, 1994).

The topics of refugees' medium- and long-term stratification patterns and the heterogeneity in refugee economic and social integration depending on their origin, individual characteristics and institutional contexts of their reception are possible avenues for future research. On the one hand, such research should help us better understand how immigrant selectivity shapes the outcomes of their economic and social integration. On the other hand, pronounced differences in a reception context among refugee arrival cohorts would provide a unique opportunity to understand which structural characteristics and institutional regulations are the most effective tools for refugees' economic incorporation. However, the precise role of structural characteristics and institutional regulations in the host country can only be determined with appropriate research designs, designs that allow for sufficient variation at the macro-level of host countries, regions or across time. Future research should also more actively utilize natural experiments to determine the causal effects of institutional factors in refugee economic incorporation. Thus, we close with a call for theoretical and methodological innovations in research on individual and contextual factors for refugees' labor market integration, which are likely to push forward our understanding of immigrant integration at large.

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Corrigendum: Labor market situation of refugees in Europe: The role of individual and contextual factors

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Ethnic discrimination in neighborhood ingroup-outgroup encounters: Reducing threat-perception and increasing fairness as possible solutions

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Research on discriminating behavior against ethnic minorities in everyday situations is still a rather under-researched field, since most prior research on ethnic discrimination focuses on housing markets, job markets, criminal justice, institutions or discourses. This article contributes toward filling the research-gap on everyday discrimination by bringing together prior research from sociology and social-psychology, including threat and competition theories from integration research, social identity theory, particularism-universalism theory and experimental findings on fairness norms. It conceptually advances the field by combining them into an integrated interdisciplinary approach that can examine discriminating behavior in everyday situations. This approach studies the dynamics of ingroup-outgroup relationships, fairness norms and threat in regard to negative behavior toward others (e.g., a neighbor). In particular, it focusses on the dynamics under which negative behavior is more likely toward an ethnic outgroup-person than an ingroup-person (i.e., discriminating behavior). To scrutinize the expectations derived within this framework, a factorial survey experiment was designed, implemented and analyzed (by means of multilevel mixed-effects linear regressions and average marginal effects). The survey experiment presents a hypothetical scenario between two neighbors in order to measure the effects and dynamics of ingroup-outgroup relationships, fairness norms and threat on behavior. While no significant outgroup-effect can be found in the general analysis of the main effects, more in-depth analyses show an interplay of situational cues: Outgroup-discriminating behavior becomes significantly more likely when the "actor" has low general fairness norms and/or when threat-level in a situation is low. These results foreground the importance of interdisciplinary in-depth analyses of dynamics for understanding the conditions under which discriminating behavior takes place in everyday situations—and for deriving measures that can reduce discrimination.

KEYWORDS

ingroup-outgroup, ethnic discrimination, fairness norms, threat, everyday discrimination, discriminating behavior, factorial survey

Introduction

Discrimination based on ethnicity is a problem that every society faces. One that has yet to be solved. The issue is increasingly being addressed by politicians, the media, social media and in research. While most people focus on examining either the prevalence of ethnic discrimination and racism (attitudes, discourses, actions) and the individual or institutional causes, there is still a gap to be filled in regard to the dynamics and mechanisms of ethnic discrimination in everyday situations—such as encounters in the neighborhood (Diekmann and Fereidooni, 2019). During such encounters, it is likely that several causes affect how, for example neighbors, will react toward one another. Such causes involve, for instance, the perceived environment (including challenges or threats), a person's norms and ingroup-outgroup relationships (Blau, 1962; Tajfel et al., 1971; Tajfel and Turner, 1979; Smelser, 2015).

While much research has been conducted on discrimination of ethnic minority groups in the context of institutions, criminal justice, housing markets and labor markets (e.g., Heath et al., 2008; Pager and Shepherd, 2008; Wu, 2016; Quillian et al., 2017, 2019, 2020; Horr et al., 2018; Auspurg et al., 2019; Sawert, 2020; Zschirnt, 2020), until recently, discrimination in common everyday situations has been almost entirely neglected. While this dimension of ethnic discrimination is still under-researched, the very recent appearance of a number of publications studying everyday discrimination (e.g., in the metro or in the classroom) underlines the importance of filling this gap (e.g., Wenz and Hoenig, 2020; Mujcic and Frijters, 2021; Sylvers et al., 2022; Zhang et al., 2022). Because everyday discriminating behavior can occur in many different situations, more (experimental) studies on particular circumstances should be conducted. Looking at encounters between neighbors is a situation that merits special attention, since it is a very common situation that people find themselves in. Some adjacent research exists, such as cross-sectional and longitudinal studies looking at, for instance, neighborhood trust (in the context of diversity). They show that trusting one's neighbor is affected dynamically by ingroup-outgroup relationships as well as both individual characteristics and the environment (e.g., threat) (Laurence et al., 2019a,b). However, to date, there is a lack of research scrutinizing common everyday discriminating behavior between neighbors. In order to address this research gap, this article empirically focusses on such an encounter-situation between neighbors. As a point of departure, it poses the following research questions: How do ingroup-outgroup relationships, fairness norms and threat-levels influence negative behavior toward a neighbor? When is such behavior discriminating? What are the dynamics between ingroup-outgroup, fairness and threat that make discriminating behavior against a neighbor more likely?

In order to find answers to the research questions above, this article first presents the relevant literature, develops considerations and derives expectations related to the research questions. It then presents evidence from a factorial survey experiment (Rossi and Anderson, 1982; Jasso, 2006; Auspurg and Hinz, 2015) on ethnic discrimination among neighbors (in Germany). The survey experiment was conducted with a random sample, containing Germans and persons from minority nationalities in Germany. With this methodological approach, the factors of interest (ingroup-outgroup relevant ethnicities, fairness and perceived threat) can be measured independently in their effects on discriminating behavior. Due to the within-design, the effects are analyzed using multilevel mixed-effects linear regressions (Raudenbush and Bryk, 2002). The analyses also go into the depths of the dynamics at play by examining relevant interaction effects (e.g., between the ingroup-outgroup relationship and perceived threat) using multilevel mixed-effects linear regressions and average marginal effects. After the section on the results of the analyses, the findings are discussed in light of the research questions and relevant prior research.

Overall, this approach contributes both to developing the research field on ethnic discrimination—by proposing an integrated, interdisciplinary approach to examining everyday discrimination—and to providing first rigorous empirical experimental survey results that offer information to policymakers and other relevant stakeholders on what factors need to be changed in order to reduce discrimination (Laouénan and Rathelot, 2022), during everyday encounters in neighborhoods. This approach is supported by previous research showing that discriminating behavior can be reduced by changing particular relevant parameters of the situation (Auer and Ruedin, 2022). With its survey experimental approach, this article provides a foundation for future research on discriminating behavior in common everyday situations. The antecedents and dynamics found in the analyses of this study should be tested in regard to other common everyday-encounter situations, in order to find either similar dynamics or differing ones, to provide information for situation-specific interventions that can reduce discriminating behavior.

Materials and methods: Interdisciplinary integrated approach and research methodology

An interdisciplinary integrated framework of antecedents and dynamics of everyday discrimination in neighborhoods

While interesting research has been conducted regarding certain factors of influence on discrimination (e.g., threat and

competition theories, social identity theory), this article goes beyond previous research in bringing together a number of theoretical and empirical perspectives, mainly from sociology and social-psychology. Primarily, it integrates threat theory—particularly from sociological integration research (e.g., Olzak, 1994; Olzak et al., 1994; Soule and van Dyke, 1999; Ebert and Okamoto, 2015; Shepherd et al., 2018)—with theories on ingroup-outgroup relationships—such as social identity theory and sociological particularism-universalism theory (Parsons, 1951; Blau, 1962; Tajfel, 1978; Tajfel and Turner, 1986; Smelser, 2015)—and psychological-experimental results on fairness norms (Waytz et al., 2013; Dungan et al., 2014, 2015). It proceeds in the sense of middle-range theories, assuming that the causes and mechanisms are context-specific to a certain extent but may be generalizable to other contexts (Merton, 1968; Hedström and Ylikoski, 2014). Building on this integrated framework, this interdisciplinary approach posits that ethnic ingroup-outgroup relationships lead to discrimination in the tension field of group, individual and environmental factors. This approach aims to examine ethnic discrimination in common everyday situations, such as an encounter between neighbors. As it aims at delivering results that are relevant for implementing measures that can reduce discrimination, the focus lies on examining under what conditions ethnic outgroup-discrimination leads people to treat others badly (behavior).

Ingroup-outgroup relationships and standards seem to contribute to behavior, such as discriminating actions, together with other factors (cf. Wilder and Shapiro, 1984; Marques et al., 1998; McGuire et al., 2017). Such factors include, but are not limited to, fairness norms and threatening situations. This leads to the question: Why is it relevant to examine ingroup-outgroup relationships, fairness norms and threat (and their dynamics) together? Both of the latter antecedents bear relevance to dynamics at play during ingroup-outgroup situations and are, therefore, relevant for understanding how to reduce ethnic discrimination as a driver of negative behavior toward others. Fairness norms are universalistic in the sense that one applies them to all other persons (irrespective of group-membership or characteristics), whereas ingroup-outgroup relationships are (per definition) particularistic, so only applied to persons with particular characteristics such as gender or ethnicity, or to members of a group (e.g., football team, workgroup) (Blau, 1962; Waytz et al., 2013; Smelser, 2015). Social-psychological experiments show that both particularistic and universalistic standards influence how people will behave (Dungan et al., 2014, 2015). Moreover, since, being fair is somewhat oppositional to discriminating against someone, higher fairness norms might reduce discrimination. Previous research on threat in the context of ingroup-outgroup relationships argues that when a threat is perceived, the negative behavior toward outgroup members becomes more likely (Rabbie, 1982). Hence, when inspecting ethnic discrimination in neighborhood ingroup-outgroup encounters, it is relevant to examine the role of fairness norms and threat—in order to find possible solutions that will lead to less discriminating behavior.

Why is it important to study hypothetical behavior in specific everyday situations to examine the dynamics of discrimination?

Previous literature on discrimination often examines negative attitudes of members of an ethnic majority toward ethnic minorities (e.g., Quillian, 1995; Fetzer, 2000; McLaren, 2003; Lahav, 2004; Schlueter and Davidov, 2013; Esses and Hamilton, 2021). One major subfield of this research examines attitudes in the context of perceived threat. Jedinger and Eisentraut (2020), for instance, posit that perceived cultural, economic and criminal threats through minority groups can negatively influence the attitudes of ethnic majority groups toward minority groups—especially in regard to particular ethnic minorities. While studying attitudes is relevant for many research questions on discrimination, it is less than ideal for studying discriminating behavior toward ethnic minority groups (cf. Okamoto and Ebert, 2016). If one is interested in research that is able to provide suggestions for measures that can decrease discriminating behavior in common everyday situations, one must study how discrimination leads to negative behavior toward minority outgroup persons. There is only a limited amount of research studying behavior (actions) in regard to ethnic discrimination. However, there are some publications, such as from the perspective of group threat and competition theories (e.g., Olzak, 1994; Olzak et al., 1994; Soule and van Dyke, 1999; Ebert and Okamoto, 2015; Shepherd et al., 2018).

There are a number of field experiments on the influence of ethnicity on behavior, covering issues such as returning "lost letters" (placed there by researchers) or getting someone to lend you something (e.g., Koopmans and Veit, 2014; Zhang et al., 2019; Baldassarri, 2020). However, oftentimes, it is not possible to observe discriminating behavior in real-life situations or to implement (field) experiments on participants, due to ethical considerations. Such studies could jeopardize peoples' physical safety and psychological wellbeing. Therefore, for studying certain discriminating behavior, the next best thing is applying factorial surveys containing a hypothetical situation and inquiring about behavior. This proceeding is described in more detail in the section *Data and Methods*, subsection *Methodology: Factorial survey experiment*. Previous methodological research on factorial surveys shows that this approach is suitable for scrutinizing real-life behavior because the reported hypothetical behavior is much alike actual behavior (Rettinger and Kramer, 2009; Hainmueller et al., 2015; Petzold and Wolbring, 2019).

Discrimination as a result of ingroup-outgroup relationships?

Ingroup-outgroup relationships and their influence on behavior have been studied by both social-psychologists and sociologists (e.g., Blau, 1962; Tajfel et al., 1971; Tajfel and Turner, 1979; Jetten et al., 1996; Smelser, 2015). Ingroup members typically rate each other more highly than outgroup members and share common characteristics or interests (Triandis, 1989; Earley, 1993). In regard to ethnic discrimination, much of this research is from the perspective of social-psychology (Zick, 2017). A lot of this research is based on social identity theory (Tajfel, 1978; Tajfel and Turner, 1986). Sociological research also addresses the influences of ingroup-outgroup relationships on behavior (e.g., Parsons, 1951; Blau, 1962; Smelser, 2015). However, while there are some studies that pick up these perspectives, particularly in order to examine deviant behavior (e.g., Kleinewiese and Graeff, 2020), other recent sociological literature picks up the perspective of social identity theory (e.g., Kretschmer and Leszczensky, 2022). Using an integrated interdisciplinary approach, we can utilize the advantages of both perspectives in order to understand how discriminatory behavior can result from ingroup-outgroup relationships. Presumably, people identify with their group (here: people with a common ethnicity), which can cause them to treat people from the outgroup worse than those from their ingroup. This can happen during typical everyday situations that we all encounter regularly. For example: meeting a neighbor. The classical sociological perspective, focusses more on the difference between influences that are oriented toward people in general vs. only toward a specific subgroup (e.g., Parsons, 1951; Blau, 1962; Smelser, 2015). This divide suggests, that we treat people differently based on alleged groups (that we categorized or sorted them into in accordance or contrast to ourselves). While coming at the problem from slightly different angles, sociological and social-psychological perspectives are easily integrated as they both provide a basis for arguing that people will often treat outgroup-members differently than ingroups members. From this viewpoint, ethnic discrimination happens when someone treats a member of an ethnic-outgroup differently from a member of their ethnic-ingroup, based on their ethnicity. The current article is interested in the dynamics of everyday discrimination of people from an ethnic majority against people from an ethnic minority.

Based on these considerations derived from previous research, I expect that, in an everyday encounter between neighbors, a person from an ethnic majority will treat a person from an ethnic minority (outgroup) worse than a person from the ethnic majority (ingroup). In regard to the specific situation analyzed in this article, this means that I assume that an old *white* man will be more likely to call police if the young man he encounters is a *person of color* than if the young man is *white*.

Does high fairness lead to "tattling" on others?

People with high fairness norms are more likely to report other people to authorities (unlike, for example, people with strong loyalty norms). Whistleblowers, for instance, have high fairness norms. Psychological experiments support this assumption (e.g., Dungan et al., 2019). They also show that when fairness norms can be increased in an experiment, reporting to authorities becomes more likely (Waytz et al., 2013; Dungan et al., 2014, 2015). Reporting others to an authority—for alleged or real misdeeds—is colloquially called "to tattle on someone." Such behavior is usually considered to be negative, particularly toward the person who is reported. The reporting person can be, derogatively, called a "tattletale". In other words, reporting someone to an authority is often considered to be negative behavior.

Research suggests that fairness norms affect behavior in the context of group dynamics (e.g., during ingroup-outgroup situations) (Tajfel et al., 1971). It follows, that when looking at an everyday situation in which ingroup-outgroup relationships can lead to discriminating behavior, general fairness norms can also have an effect on behavior (cf. Blau et al., 1991)—including on reporting people to authorities (for example, by calling the police). The current article is particularly interested in identifying antecedents that offer potential for behavior-change in real-life (if the antecedent were manipulated/changed, such as increasing fairness norms). Therefore, the integrated interdisciplinary approach in this article includes the dimension of peoples' fairness norms (e.g., Waytz et al., 2013; Dungan et al., 2014, 2015), as a possible influence on their (negative) behavior toward others.

Based on these findings and considerations, I expect that a person with high fairness norms is more likely to report someone else to an authority, than a person with low fairness norms. Applied to the neighborhood situation examined in this article, this means I expect that the old white man will be more likely to call the police on his neighbor when the old man's fairness norms are high than when they are low.

Does high threat lead to "tattling" on others?

When a person perceives a situation that they are in to be threatening, this can affect their attitudes, emotions and actions toward others. When a person feels that someone is behaving dangerously toward them (i.e., they feel threatened), they are more likely to report the situation to an authority, such as the police (e.g., Kääriäinen and Sirén, 2011; Asiama and Zhong, 2022). Threats, both real and perceived, are particularly relevant in situations that include ingroup-outgroup

relationships (Kleinewiese and Graeff, 2020), as threat by an outgroup individual can be perceived as threat to one's ingroup (cf. Tajfel, 1978).

Threats and perception of other groups as threatening are also studied in regard to ethnic majority-minority relations. Previous research focusses on negative behavior and attitudes of majorities against minorities as an outcome of threat or competition (e.g., Blumer, 1958; Bobo and Hutchings, 1996). Within the research fields of group threat and competition theories, in the context of integration and discrimination, a number of studies show that high threat makes anti-minority behavior more likely (e.g., Olzak, 1994; Olzak et al., 1994; Soule and van Dyke, 1999; Ebert and Okamoto, 2015; Shepherd et al., 2018). Moreover, in situations in which there is ethnic discrimination, high threat can increase stress and foster a change in behavior (Pease et al., 2020). Psychological research also finds evidence that threat in intergroup situations can lead to discrimination and conflict (Chang et al., 2016). Remarkably, although from diverse fields, the above findings all show that threat and ethnic ingroup-outgroup relationships are closely intertwined. They also suggest that high threat increases reporting-behavior. Hence, threat needs to be included in examining an everyday encounter between neighbors that may lead to discrimination.

Based on these considerations derived from prior research, I expect that a person will be more likely to report someone to an authority the more threatening a situation is. In the particular situation which this article examines, this means that I expect that the old white man will be more likely to call the police when the threat in the situation is higher.

Why the dynamics of antecedents are important when researching discrimination in everyday situations

While the aforementioned literature and expectations point toward interesting first insights on how ethnic ingroup-outgroup relationships, fairness norms and threat may impact a person's behavior toward their neighbor, scrutinizing their deeper dynamics is the most important step toward finding the real-life processes leading toward discriminating behavior among neighbors. Findings from prior research in a number of fields coherently suggest that the ingroup-outgroup effect interacts both with fairness norms and with threat-levels. It seems, that particularistic standards (e.g., ingroup-outgroup) and universalistic standards (e.g., fairness norms) can influence behavior together, i.e., dynamically (cf. Blau, 1962; Rodrigues et al., 2016). Fairness norms can influence behavior in situations with ingroup-outgroup relationships (e.g., Tajfel et al., 1971; Jetten et al., 1996). Specifically, higher fairness norms make discrimination against an outgroup less likely (Jetten et al., 1996). Threats can lead from ingroup-outgroup relationships (that do not always need to be antagonistic) to "us-against-them" attitudes of members of two groups (Rabbie, 1982). This can shift behavior from simply ignoring outgroup-members to being hostile toward them (Chang et al., 2016). The implication of this is that when a situation has higher levels of threat, behavior based on ingroup-outgroup categorization becomes more likely. This can be a result of higher ingroup conformity and/or stronger negative attitudes toward the outgroup (e.g., Riek et al., 2006; Stollberg et al., 2017; Barth et al., 2018). Research on ethnic discrimination indicates that members of ethnic majority groups become more prejudiced toward ethnic minority groups after threatening situations arise, provided the threat is attributed to the minority group (Becker et al., 2011; Schlueter and Davidov, 2013). Majority group members then also display more negative behavior toward minority group members (Frey, 2020).

Summarizing the prior research, it seems that the ingroup-outgroup effect on the negative behavior (toward ethnic minorities) may only be meaningful under certain circumstances (e.g., a high-threat situation) but not under others. It is, therefore, important to conduct in-depth analyses of the dynamics of the ingroup-outgroup relationship and fairness norms or threat, respectively.

Based on the stated considerations and previous literature, I expect that a person is more likely to report someone to an authority based on their outgroup-ethnicity (than if the person were from their ethnic ingroup) in (a) high-threat situations, or, (b) when the reporting person has low fairness norms. In regard to the specific situation examined in this article—an encounter between two neighbors—this means that the old white man is more likely to call the police on the young man if the young man is a person on color (than if he is white) when (a) the situation becomes more threatening, or, (b) the old man has low general fairness norms.

Data and methods

Survey procedure

In January 2021, a factorial survey experiment was implemented in order to assess the antecedents and, particularly, the in-depth dynamics, of everyday discrimination among neighbors. Since everyone has neighbors, a random sample was drawn from the general population of inhabitants in Germany. Due to the COVID-19 pandemic, I had to switch from the originally planned in-person paper-pencil questionnaire distribution to a random online distribution. This decision was based on ethical and health concerns, i.e., methods such as random walks could have led to a spread of the disease. The "advertisement" for survey-participation contained a short text and a link to the study. This link led the respondents to

the questionnaire, which was created *via* the survey-platform Unipark. For data security reasons, the places where respondents lived (beyond the country, which is Germany) were not logged or inquired. The conclusions drawn in previous methodological research differ in regard to whether or not online survey samples are less representative and generalizable than offline samples (Best et al., 2001; Gosling et al., 2004). However, methodological research suggests that factorial surveys typically have high external validity, as they can describe realistic situations. As with laboratory experiments from psychology, convenience samples suffice in order to draw conclusions on causality, given that the scenario-vignettes have been randomly distributed to the participants (Auspurg and Hinz, 2015). The respondents were able to select between completing the survey in German, Arabic or Turkish. The latter languages were selected as they cover much of the non-German-speaking inhabitants in Germany, in order to not exclude these groups from the survey (see also Jacobsen et al., 2021). While the sampling did not allow documenting how many people saw the advertisement of the survey, the participation rate of the people who clicked on it lies at 99.53% ($N = 637$). The 637 participants received four vignette-versions of the survey experimental scenario each (2,548 overall). Due to 18 item non-responses, $n = 2{,}530$ vignette responses were gathered (response rate to distributed scenario-versions/-vignettes = 99.29%). The detailed sample composition is shown in the Supplementary Table A5 *Respondent-specific variables* (e.g., means, standard deviations). In order to achieve high response-rates incentives were offered, as methodical research shows that incentives increase response rates to web/online surveys (Göritz, 2006). The respondents received incentives of 10 € each.

The questionnaire began with a page providing information on the study (including on the intended methods, e.g., receiving several scenario variations) and its terms, such as guaranteed participant anonymity. It then asked the potential participants if they agree to these terms and would like to participate. Only people who agreed were forwarded to the survey. The agreement was checked by a data security expert before survey implementation. The first page was followed by the factorial survey section and a questionnaire on respondent-specific variables (e.g., socio-demographics, discrimination experiences).

The factorial survey scenario was constructed to examine the expectations stated in this article and based on the integrated interdisciplinary framework introduced above. In order to ensure closeness to real-life situations, plausibility and understandability as well as ensure that the vignette treatment-levels are clearly distinct from one another, qualitative pretests were conducted (see, e.g., Auspurg and Hinz, 2015). The information gained from the qualitative pretests was used to improve the factorial survey instrument, before it was implemented in the quantitative study.

Methodology: Factorial survey experiment

This study implemented a factorial survey experiment (Rossi and Anderson, 1982; Jasso, 2006). Methodically, factorial surveys are advantageous as, ideally, they combine the high internal validity of experiments with the high external validity of classic surveys (Auspurg and Hinz, 2015). Since measuring certain behaviors (e.g., violence, corruption, discrimination) in real-life or with experiments is often unethical or unfeasible, measuring such behaviors by means of hypothetical scenarios in the form of factorial surveys is a suitable alternative. Such scenarios describe a hypothetical situation, varying the sections in which the independent variables (treatments/dimensions) are operationalized independently from one another. This is followed by a question for an intended hypothetical action, often by inquiring about the likelihood of the action in the described situation (Dickel and Graeff, 2018; Kleinewiese and Graeff, 2020). But is measuring hypothetical actions in hypothetical situations adequate for drawing conclusions regarding real-life behavior? Hypothetical behavior cannot be assumed to be entirely identical to behavior in real-life under the same conditions. However, methodical research shows that hypothetical experimental survey designs deliver very similar results to the same situations and resulting behavior in real-life (Hainmueller et al., 2015). As put by (Rettinger and Kramer, 2009), factorial survey scenarios are "(…) a good substitute for similar manipulations in the real world when the latter are not possible." Typically, regression analyses will begin with a model containing only the experimental treatments (independent variables in the scenario) and then continue with a model that amends these with respondent-specific variables (e.g., socio-economic variables, experiences, attitudes) as control-variables. If the effects of the treatments are the same in the model including the control-variables as in the one containing only the treatments, we find support for the premise that the internal validity of the experiment is upheld. This means that the effects are actually and independently measuring the effects of the experimental variables and the respondent-level is not interfering. This is particularly relevant for designs that include individual features (e.g., self-control, morality) as this can control that the measured effects depend on the experiment (hypothetical actor in the scenario) and not on the respondent's characteristics (see Kleinewiese, 2021). Previous research on ethnic discrimination has successfully used factorial surveys as a tool for measuring ethnic discrimination (e.g., Sniderman et al., 1991). It follows, that applying a factorial survey to examine the dynamics of situations including groups of different ethnicities and how these may lead to discriminating behavior is an expedient scientific undertaking.

The current design is a full factorial design, i.e., vignettes are constructed from all combinations of the scenario's treatments'

levels. This results in a vignette-universe (total number of vignettes) of $2^3 \times 4^1 = 32$. Each participant randomly received four different versions (four vignettes) of the scenario (different treatment-level combinations), therefore, it is a "within-design." Since $n = 2{,}530$ vignette responses were collected, each scenario-version (vignette) was responded to about 79 times. Table 1 contains the scenario, including its instructions, hypothetical situation and the varied treatments as well as the question on hypothetical behavior (translated into English).

Dependent variable: The likelihood of calling the police on your neighbor

After reading the instructions and the description of the vignette on the hypothetical situation between two neighbors, the participants were asked to assess a question on the behavior of the hypothetical protagonist (an old man living in the neighborhood). They were asked how likely they think it is that the old man will call the police. They responded on an 11-point rating scale ranging from 0 to 100% (coded as 1–11) (see Table 1 for more details on the vignette-scenario). Previous methodical research on measures for independent variables in factorial surveys recommends 11-point rating scales, as they outperform other types of scales. They lead to a smaller number of missing values and higher validity of regression estimates (Sauer et al., 2020). Previous research has successfully applied 11-point rating scales (0–100%) to measure how likely an action of a hypothetical person is (e.g., Dickel and Graeff, 2018; Kleinewiese and Graeff, 2020).

Independent variables: Experimental treatments varied independently and respondent-specific variables as controls

The scenario contains four experimental treatments (independent variables/dimensions). The first one is the ethnicity of the old man (the protagonist of the scenario), the second treatment is the ethnicity of the young man (the other person in the scenario). These treatments are needed in order to measure how the ethnicity of each person affects the likelihood that the old man will call the police. Moreover, it allows for examining ingroup-outgroup effects and dynamics. The third treatment is fairness norms (held by the old man). The fairness norms are operationalized as entitlement norms. While it may seem that this is not directly related to the hypothetical situation "at hand" that is precisely the point. Based on the theoretical framework and forwarded expectation, fairness norms represent "general fairness standards," which are universalistic in that they are not oriented toward the person's own group but rather applied to everyone, generally (Blau, 1962; Waytz et al., 2013; Smelser, 2015). Therefore, it was important to operationalize the treatment "non-situation-specific" to make sure that the treatment is—in fact—perceived as a universalistic norm by participants. Furthermore, we tested this treatment extensively in our qualitative pretests of the design and no issues were found. The fourth treatment is threat, operationalized as increasingly threatening behavior of the young man (and his peers). This treatment was also tested extensively during the qualitative pretests and the participants found the levels to be clearly distinct and rising (with each level) in perceived threat. Four levels were selected for this treatment in order to gain a more nuanced picture of the dynamics of threat in regard to calling the police than a simple differentiation between threat/no threat would have allowed. This is in line with previous factorial survey experiments using "threat treatments" that show a strong influence of increasing levels of threat on behavior, particularly in ingroup-outgroup situations (Kleinewiese and Graeff, 2020). See Table 1 for more details on the treatments and their levels.

The respondent-specific variables are important for assessing the sample composition. Moreover, they serve

TABLE 1 The vignette-scenario text, the question and the response (dependent vignette-variable), including the experimental treatments of the factorial survey experiment.

Instructions for participants

Please read the scenario and answer the question that follows it by clicking a percentage on the scale below. Place yourself in the position of the old man described in the scenario and base your response on how likely you think it is that he will act in such a manner.

Vignette-scenario text

Imagine that an old *[Ethnicity old man]* man is watching a young *[Ethnicity young man]* man on the street in front of his house.

The old man is *[Fairness norms]* people with a higher social status having a better life than people with a lower social status.

The young man is standing *[Threat]*.

Question

How likely do you think it is that the old man will call the police?

(0–100%; 11-point scale).

Experimental treatments/ dimensions	Operationalization	Number of levels	Coding
Ethnicity old man	White | person of color	2	1 | 2
Ethnicity young man	White | person of color	2	1 | 2
Fairness norms	Against | for	2	1 | 2
Threat	Alone in a garage driveway | together with three other young men in a garage driveway | together with three other young men in a garage driveway, spraying graffiti on the garage door | together with three other young men in a garage driveway and appears to be offering them drugs	4	1 | 2 | 3 | 4

as control-variables in regression analyses, to test if internal validity remains intact. As each participant (respondent) assesses several vignettes (within-design), analyses typically differentiate the vignette-level (level 1) and the respondent-level (level 2). The respondent-specific variables are: age, gender, income, citizenship and discrimination experiences. They are described in Supplementary Table A5.

Analytical strategy: Descriptives, multilevel mixed linear regressions and average marginal effects

The first step of the analyses will be checking for correlations between the experimental treatments. There should be no significant correlations, since the effects are designed to be independent from one another (Auspurg and Hinz, 2015). The dependent variable (likelihood of calling the police on the neighbor) is examined descriptively, reporting the mean and standard deviation.

For examining and the dynamics of ingroup-outgroup relationships, fairness norms and threat in regard to behavior in everyday situations between neighbors, I rely on multilevel mixed-effects linear regressions and average marginal effects. Regression analyses on the vignette-level (i.e., effects of the treatments on the dependent variable) allow for estimating the effects of the independent variables without the issue of "real-world" confoundings (Auspurg and Hinz, 2015). With the regression analyses, I can contribute refined insights into the dynamics of ethnic ingroup-outgroup situations and how discrimination can play a role in the behavior of neighbors toward each other.

Multilevel mixed-effects linear models fit the two-level design of this study (vignettes nested in respondents). The intraclass correlation coefficients (ICCs) calculated for the regressions support this choice of model (see Supplementary Tables A2–A4 for the ICCs of each regression model). Moreover, likelihood-ratio tests of the models are highly significant ($p \leq 0.000$). Statistically, this supports the choice of the models, i.e., that they are suitable (Lois, 2015). The models are termed "mixed" because they consist of fixed and random effects—with random deviations in addition to those covered by the overall error term. In the current case, the models have two levels and a random intercept. For the results shown in the subsequent section, the multilevel mixed-effects linear models were implemented in STATA (Raudenbush and Bryk, 2002; Stata, 2019). The models use a maximum likelihood estimator. They have a Gaussian error distribution, with Gaussian within-group errors with one common variance. Constant variance is set for the independent residuals (McCulloch et al., 2008; Stata, 2019).

The core findings are presented in the results section of this article. Additional analyses (e.g., regression models that include both the vignette treatments and the respondent-specific control variables) can be viewed in the Supplementary Tables A2–A4. The first model presented in the results section estimates the main effects of the ethnicity of the young man, the fairness norms and the threat on the likelihood of the old man calling the police for those vignettes in which the old man's ethnicity is "white" (see Figure 1). The selection of this "fraction" of vignettes allows for measuring the "ingroup-outgroup effect" of the majority ethnicity toward the minority. Methodically, this fraction allows for unbiased estimation of the treatment-effects on the dependent variable because the original full factorial design is divided into two halves that are identical in regard to the remaining experimental treatments and their levels. Therefore, methodologically speaking, the vignettes on which the analyses are conducted are, as a fraction, a symmetrical orthogonal design (Dülmer, 2007). The subsequent analyses shown in the "results" section are also conducted with the fraction of vignettes in which the old man's ethnicity is "white." For the purpose of showing the dynamics of ingroup-outgroup effect, fairness and threat, this article then presents the results of two multilevel mixed-effects linear models estimating the main effects of the treatments and one relevant interaction effect each. The two interaction effects that are of relevance to analyzing the dynamics from the introduced integrated interdisciplinary approach are, firstly, ingroup-outgroup (ethnicity of the young man when the old man is white) and fairness norms and, secondly, ingroup-outgroup (ethnicity of the young man when the old man is white) and threat (see Figure 2). In order to gain a deeper understanding of these dynamics, the average marginal effects are shown in Figures 3, 4.

Results

Descriptives and correlations: Checking the experiment's variables

I start by examining the experiment's variables: the independent variables and the dependent variable. Checking for possible correlations between the independent variables confirms that there are no significant correlations. Scrutinizing the dependent variable descriptively, I find that the mean is 5.695 with a standard deviation of 2.841 (on a response scale ranging from 1 to 11). With this information, I can proceed to the multilevel mixed-effects linear regressions.

At first glance: How the experimental treatments appear to affect the likelihood of an old white man calling the police on his neighbor

In order to gain first insights, it is expedient to look at how the treatments ethnic outgroup/ingroup, fairness norms and threat affect the behavior of the old "white" man. Since the factorial survey situation is alike real life in neighborhoods, the respondents are able to immerse themselves in the situation, slipping into the perspective of the old man. In regard to the fairness norms this means that the respondents perceive themselves at the presented level of fairness when reading a vignette and respond accordingly.

Evidence from prior research supports the expectations that the old white man is more likely to call the police (a) if the young man is a person of color, (b) if the old man generally has higher fairness norms, (c) if the perceived threat in the situation is higher. The results of the multilevel mixed-effects linear regression in Figure 1 show that only two of these expectations seem to be supported (see also Supplementary Table A2, Model 3, in the Appendix). The effect of the young man's ethnicity is positive but not significant. Hence, the expectation that the old man will be more likely to call the police when the young man is a person of color (than when the young man is white) is not substantiated here. This appears to be in contrast to the assumption that people behave discriminatingly toward outgroup members. The old man's fairness norms have the expected positive effect ($p < 0.001$), i.e., the old man is more likely to call the police on his neighbor when he is generally "fairer" and, concomitantly, oriented toward universalistic standards (that are applied equally to all people). As expected, threat has a strong positive effect on the likelihood of the old man calling the police ($p < 0.001$), i.e., when the perceived threat increases, so does the likelihood of the old white man calling the police.

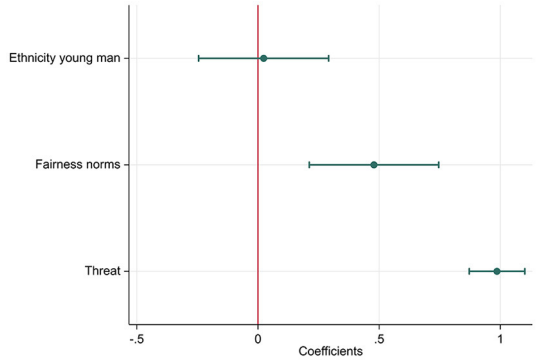

FIGURE 1
Factorial survey treatment-effects on the likelihood of the old white man calling the police, multilevel mixed-effects linear regression.

A second look: What the dynamics between ingroup-outgroup, threat and fairness tell us about what is actually happening

Does this mean that an ingroup-outgroup relationship between the old white man and a person of color young man does not affect how likely the old man is to call the police? Hence, that discrimination does not play an important part in regard to his behavior? Not necessarily. While the results above provide interesting insights, they do not tell us much about how the causes interact with each other. Since in real-life, it is likely that a person will be influenced in his or her behavior more dynamically, the relevant interaction-effects need to be scrutinized in order to find out what is actually happening in regard to ethnic discrimination. As Figure 2 shows (see also Supplementary Table A4, Model 7, in the Appendix), my expectation that a positive effect of the young man's ethnicity on the likelihood of the old white man calling the police (he is more likely to call the police in the outgroup situation, i.e., when the young man is a person of color) will be higher the more threatening a situation becomes, is not confirmed here. In fact, the opposite seems to be the case: The interaction-effect with the young man's ethnicity has a negative sign ($p < 0.01$). Hence, with increasing threat the effect of the young man's ethnicity on the old man calling the police appears to decrease. Despite this surprising finding for everyday situations between neighbors, the significant effect suggests an influence on how the old man will behave. Figure 2 supports my expectation that (see also Supplementary Table A4, Model 9, in the Appendix) high fairness norms decrease the effect of the ethnic ingroup-outgroup relationship on the old man calling the police. This assumption is backed by the negative significant interaction-effect of the young man's ethnicity and the old man's general fairness norms ($p < 0.05$). In other words: The effect of the ingroup-outgroup relationship on calling the police on one's neighbor (it is more likely that a majority ethnic group member will call the police on an ethnic minority group member than on a fellow member of the majority) appears to be reduced when the old man has higher fairness norms (as opposed to when he has low fairness norms). Examining the interactions—taking the dynamics of the situation into account—suggests that discrimination against minorities can play a part in neighborhood encounters and behavior. This draws a rather more nuanced picture than the analysis of only the main effects. It shows that under some conditions, ingroup-outgroup relationships are of relevance but not necessarily always and that the interplay and dynamics are of fundamental

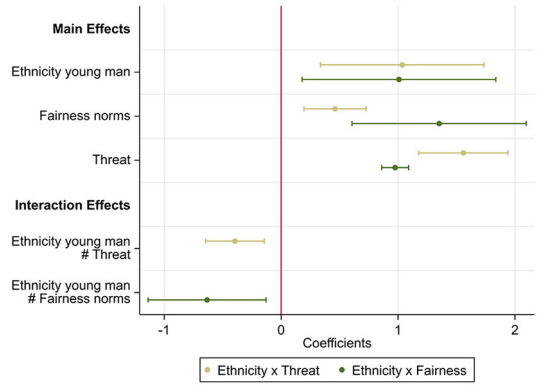

FIGURE 2
Factorial survey treatments'-interaction-effects on the likelihood of the old white man calling the police, multilevel mixed-effects linear regressions.

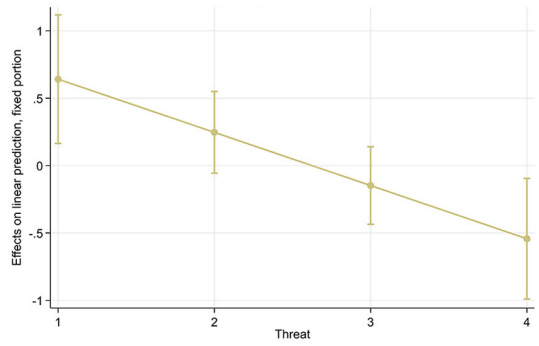

FIGURE 3
Average marginal effects of the young man's ethnicity, according to threat-level, with 95% confidence intervals.

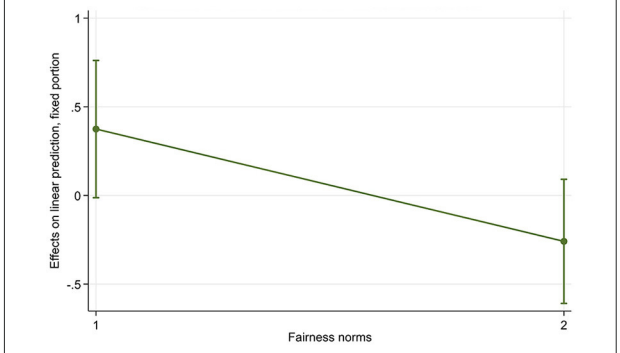

FIGURE 4
Average marginal effects of the young man's ethnicity, according to fairness norm-level, with 95% confidence intervals.

importance when examining everyday discriminating behavior, for example, among neighbors.

Into the deep: Expected and unexpected in-depth patterns of dynamics of the ingroup-outgroup relationship, threat and fairness in everyday discrimination among neighbors

As the interactions studied above indicate, we need to do in-depth analyses in order to better understand the role of ethnic discrimination in the tension field of ingroup-outgroup relationships, fairness norms and threat. In order to go even deeper into the dynamics indicated by the interaction-effects and to understand what they mean for particular circumstances (e.g., when encountering a person who lacks a sense of fairness or a particularly threatening situation) and behavior, we need to scrutinize the interactions' average marginal effects. Figure 3 (for the interaction ethnicity x threat) and Figure 4 (for the interaction ethnicity x fairness norms) depict these average marginal effects. Figure 3 shows a downward trend. When threat is low, the old white man is more likely to call the police if the young man is a person of color than when he is white (ethnic discrimination). As the threat increases one level, the aforementioned effect becomes smaller (but is still positive, i.e., there is still ethnic discrimination against the outgroup). When the threat increases one more level, the effect drops further and becomes negative. Contrary to my expectation, this not only suggests that ethnic discrimination against the outgroup does not play a role at this higher level of threat, it even suggests that the old white man may now be more likely to call the police when the young man is white. In the situation which describes the highest threat (one more level up), this negative effect becomes even stronger. Besides being surprising, these results underline that we need to look at in depth-dynamics in order to understand when and how behavior is affected by ethnic discrimination in specific situations. Figure 4 also shows a negative tendency. As expected, the influence of the young man's ethnicity on calling the police has a positive effect when the old man's fairness norms are low. This suggests that the old white man discriminates against the ethnic outgroup when he is a person who does not generally care about fairness. When the old man's general fairness norms are high, however, the effect of the young man's ethnicity on calling the police shows a negative effect. This shows when the old man generally cares about fairness, he is not likely to discriminate against a person from the ethnic outgroup. In fact, he may even be more likely to call the police when the person is from his ethnic ingroup. The results clearly demonstrate—at least in the case of a typical situation between neighbors—that when examining behavior affected by ethnic discrimination (based on ingroup-outgroup relationships) we need to take a nuanced look at the dynamics with other relevant factors (such as fairness norms and threat-level). In doing so, one can uncover "hidden" discrimination

that we cannot identify by means of more superficial analyses. This is highly relevant in the quest of reducing discrimination in everyday encounters.

Discussion

Research on discrimination against ethnic minorities focusses on discrimination in housing markets, labor markets, criminal justice and institutions (e.g., Heath et al., 2008; Wu, 2016; Quillian et al., 2017, 2019, 2020; Horr et al., 2018; Auspurg et al., 2019; Sawert, 2020; Zschirnt, 2020). But what about everyday discrimination; what about situations that many or all people in a country may encounter regularly? This is an area of discrimination research that, despite a small number of recent publications (e.g., Wenz and Hoenig, 2020; Sylvers et al., 2022; Zhang et al., 2022) remains under-researched. Moreover, there is a complete gap in this field on everyday encounters between neighbors. This article contributes toward filling this gap in research by examining the antecedents and dynamics of discriminating behavior of neighbors by means of a factorial survey experiment. In addition, its integrated interdisciplinary approach provides a foundation, on which future research on everyday discrimination can build.

By taking the dynamics of everyday situations involving negative behavior toward others into account, firstly, I show that discriminating behavior in encounters between neighbors is brought about in the interplay of relevant factors. Looking only at the main effects, discriminating behavior cannot be identified because the ingroup-outgroup relationship based on ethnicities does not show a significant effect on how likely the negative action of one neighbor toward another is. However, the significant interaction-effects and their average marginal effects show that discriminating behavior does, in fact, take place—in specific situations (depending on fairness norms and threat-levels). Secondly, the results of the average marginal effects show that these interactions are highly dynamic, i.e., discriminating behavior against a person from the ethnic outgroup is likely in low-threat situations but behaving negatively toward a neighbor from one's ingroup appears to be more likely in highly threatening situations.

This also helps to answer the research questions presented in the introduction. The first question was how ingroup-outgroup relationships, fairness norms and threat-levels influence negative behavior toward a neighbor? The answer is simple: dynamically; the main effects show that fairness and threat have strong positive influences (i.e., one is more likely to report a neighbor when one has high fairness norms or the situation is more threatening). However, the more in-depth analyses—as discussed above—show patterns that are highly specific to the interplay of influences in the situation. The second question inquired: When is such behavior discriminating? Reporting a neighbor to authorities is discriminating when it is more likely that one will report the neighbor if he is from the ethnic outgroup than if he is from the ethnic ingroup. The third question was on what the dynamics between ingroup-outgroup, fairness and threat are that make discriminating behavior against a neighbor more likely. In the everyday encounter between neighbors that this article focusses on, fairness norms play the role we would expect in that outgroup-discriminating behavior is less likely when the "behaving person" has high general fairness norms than when that person has low general fairness norms. In other words: High fairness makes the discriminating behavior less likely. Threat, on the other hand, shows more unexpected dynamics. From previous literature we would expect that higher threat makes discriminating behavior more likely (e.g., Rabbie, 1982; Chang et al., 2016; Frey, 2020). However, the in-depth analyses performed on the neighborhood-scenario suggest that (at least during everyday encounters between neighbors) the outgroup-discriminating behavior appears to happen when the situation is not threatening (or threat is rather low). This effect is strongest, when there is no threat at all. On the other hand, when threat is high, behaving negatively toward one's ingroup is more likely (than against the outgroup). These surprising findings highlight the importance of examining in-depth dynamics of common everyday situations that could lead to discriminating behavior; they show—unexpectedly—reducing perceived threat is not a solution for discrimination against an ethnic outgroup in an everyday encounter between neighbors. However, as expected, increasing fairness would be a solution, i.e., could help reduce the likelihood of behavior based on ethnic discrimination. These findings also suggest that macro-perspectives (while interesting for a number of research questions on discrimination) fall short in regard to comprehending situational dynamics. Something that is paramount for conducting research that can inform policy-changes and other interventions (Laouénan and Rathelot, 2022). This is because—while studies aiming to determine antecedents more generally are valuable to science—they run the risk of "over generalizing" causalities, which may vary from situation to situation (cf. Bar-Tal, 2006). It is suggested that future research should amend such perspectives with studies that follow the current approach: Studies that interdisciplinarily examine one specific everyday situation and how (based on previous research, available methodologies and survey-resources) important factors dynamically effect discrimination.

My theoretical approach to studying everyday discrimination goes beyond most previous approaches by utilizing previous research from both sociology and social-psychology and integrating their respective strengths. For instance, in regard to ingroup-outgroup relationships, it draws on social identity theory and particularism-universalism theory which both address ingroup-outgroup categorizations (e.g., Parsons, 1951; Blau, 1962; Tajfel, 1978; Tajfel and Turner, 1986; Smelser, 2015). It also includes integrating ideas from integration research's threat and competition theory with

research on how threats affect behavior more generally (e.g., Blumer, 1958; Olzak, 1994; Olzak et al., 1994; Bobo and Hutchings, 1996; Soule and van Dyke, 1999; Kääriäinen and Sirén, 2011; Ebert and Okamoto, 2015; Shepherd et al., 2018; Asiama and Zhong, 2022). Moreover, amending the aforementioned with findings from social-psychological experimental research on how fairness norms affect behavior (e.g., Tajfel et al., 1971; Bar-Tal, 2006; Waytz et al., 2013; Dungan et al., 2014, 2015). Integrating these approaches into one framework, allows studying the dynamics at play. None of the theories and approaches—by themselves—could be the foundation of empirical research that is able to examine the dynamics of ethnic discrimination in an everyday situation. Hence, the current approach develops the research field further by showing that the whole is more than the sum of its parts, i.e., taken together we can determine dynamics of discrimination. The results of this study support that this has an added value and that future studies on everyday discrimination should consider using this framework or a similar one, one that includes relevant antecedents at the level of the individual, group and setting. Such studies may also want to compare the dynamics of everyday discriminating behavior toward neighbors with the dynamics of discriminating behavior in other everyday situations (such as shopping for groceries), in order to compare how similar (or different) such dynamics are across situations.

A limitation of this study is that the selected situation between neighbors is fixed in regard to a number of situational features. For example, I do not vary the gender of the neighbors. However, previous research on gender and inter-religion friendships, for instance, suggests that religion-based ingroup-outgroup relationships can differ based on gender-compositions (Kretschmer and Leszczensky, 2022). Hence, it seems feasible that ethnic ingroup-outgroup discrimination may also vary according to gender-composition. Future research should conduct an in-depth examination of this proposition. Moreover, environmental factors that contribute to implicit biases, such as substantial changes in ethnic diversity (Kawalerowicz, 2021), should also be included in future experimental surveys. Another limitation is that only two ethnic groups (white/person of color) are included. Despite being aware of these limitations, I selected this design because of methodological issues that would otherwise have arisen, such as plausibility issues and possible biases in the results (see Shamon et al., 2019). This is, for instance, due to the complex design that was necessary for modeling the ingroup-outgroup relationship and its impact on the experimental design (e.g., size of the full factorial, orthogonality and level balance) (cf. Dülmer, 2007). Future methodological research may want to explore solutions to these issues, allowing for more complex designs and analyses that can include additional treatments (such as gender) that are likely to affect discrimination, or additional levels of ethnicity.

This article provides empirical results which feed information that is important for policymakers and other relevant stakeholders aiming to reduce ethnic discrimination during everyday encounters between neighbors. The primary recommendation that can be derived from the current study is that to reduce discrimination against neighbors from ethnic minorities, one should increase general fairness—both its salience in specific situations and sustainably as personal norms—for example, by educating students in regard to ethics and general standards of fairness.

Data availability statement

The dataset presented in this article is currently not publicly available. However, the author is able to share the vignette-data with other scientists upon request.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

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Refugees' time investments—Differences in the time use of refugees, other immigrants, and natives in Germany

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Introduction: Since the 2015/16 refugee influx to Germany and other European countries, these host societies have been challenged with the integration of culturally distant refugees. These recent arrivals can strategically invest their time in activities promoting their integration, thereby rendering time use as a channel of integration. Refugees are a vulnerable group that differs from other immigrants with respect to their migration motivation, experience, and conditions in the receiving countries. Accordingly, refugees might also differ from other immigrants with respect to their time use. This might play a role in explaining differences in refugees' and other immigrants' integration outcomes.

Methods: Using a cluster analysis approach, this contribution (1) descriptively examines whether and to what extent refugees' time use differs from that of other immigrants and the host-country population in Germany and (2) examines the role of refugees' legal status for their time use. The study examines time allocation to different activities of refugees, other first-generation immigrants, and native Germans, using data collected from 2016 to 2019 of the German Socio-Economic Panel, including the IAB-BAMF-SOEP Survey of Refugees and the IAB-SOEP Migration Sample.

Results and discussion: Results from (1) the cluster analysis approach show different clusters of time use patterns for the three population groups of refugees, other immigrants, and natives. For native Germans and other immigrants, the dominant time use cluster is characterized by full-time investment in employment activities. For refugees, the dominant time use pattern is characterized by low overall invested hours to the measured activities (*low activity* cluster). In contrast to the other two groups, a cluster of refugees predominantly allocating their time to employment activities is not found. Pooled analyses (2) of the role of refugees' legal status show some evidence that those who have a form of protection status, in comparison to those who have asylum seeker status, have a lower probability to display childcare- and household-related activities than to report *low activity*. However, fixed effects analyses show that refugees receiving a positive decision on their asylum application do not change with respect to their time use patterns.

KEYWORDS

refugees, time use, cluster analysis, migration, integration

Introduction

In 2015 and 2016, Germany and other OECD countries experienced a large influx of refugees seeking protection from war, persecution, and violence in their home countries (OECD/EU, 2018; Jaschke and Kosyakova, 2021). Refugees can be distinguished from other immigrant groups by the forced character of their migration (Echterhoff et al., 2020; Kogan and Kalter, 2020). Coming from destabilized countries (Kosyakova and Brücker, 2020), refugees do not have a perspective of returning to their home countries in the short-term (Brücker et al., 2020). The reasons for leaving their home countries make the group of refugees, who arrive in countries like Germany, a very selective one. Previous research has shown that refugees from the 2015/16 influx to Germany and other European countries are selective in so far that they have higher human capital and education than their counterparts who stayed in the home countries (Guichard, 2020; Aksoy and Poutvaara, 2021). Before and during their migration, many refugees experience trauma (Mansouri and Cauchi, 2007; Ambrosetti et al., 2021). This and the uncertainty and waiting in the asylum process of the host country lead to refugees' high post-migration stress (Ambrosetti et al., 2021). These factors of refugees' selectivity, their reasons for migration, their migration experience, and the restrictions they face in the asylum process in the host countries, distinguish refugees from other immigrant groups. More importantly, these factors restrict refugees in their opportunity and ability to integrate into the host society (Ambrosetti et al., 2021).

The integration of refugees and immigrants in general is a central goal of receiving societies and benefits these societies as well as the immigrants (Ager and Strang, 2008; Cheung and Phillimore, 2014). Integration is reflected in immigrants' participation in the labor market or in the educational system, in their housing and their health conditions in comparison to the native population of the host country (Ager and Strang, 2008). In short, integration describes the opportunity for immigrants to participate in life in the host country (Seidle and Joppke, 2012; Echterhoff et al., 2020). Immigrants can make active investments in their integration by strategically allocating time to activities that foster such integration in their everyday lives. This means that the allocation of time to activities on a regular everyday basis can be an indicator of immigrants' integration efforts. In addition, the resulting time use patterns themselves can be an indicator of integration, in so far that immigrants who display similar time use patterns as the members of the receiving society can be considered highly integrated into the host society. Integration *via* similarity in time use patterns mainly shows integration in terms of engagement in activities and habits, but I argue that the prioritization of investing time in some activities over others also reflects values and beliefs. For instance, the decision of immigrants to invest time in going to school in the host country reflects that they value education. Furthermore, the amount of time invested in this activity is an indicator of how much they value the activity. Investing 8 h a day in educational activities thereby reflects a higher value being placed on education than investing 3 h a day. Hence, the time use of immigrants, in terms of what activities time is invested in and how much of it, is an important indicator of integration that needs to be examined.

The time use of immigrants has rarely been studied as a whole and has rather been investigated in isolated activities. Most prominently, time investment in human capital accumulation, labor market activities, or housework has been examined (e.g., Cortes, 2004; Vargas and Chavez, 2010; Ribar, 2012). Previous research on the time use of refugees is mostly qualitative or looked at isolated activities as well (e.g., Cortes, 2004; Brekke, 2010). The goal of the present paper is to examine time use more holistically by describing it with a cluster analysis approach. This approach uses the time individuals allocated to different activities and generates clusters or groups of similar time use. These groups represent a categorization of time use patterns for the population in focus (refugees), which can be descriptively compared to the categorizations of time use patterns found for other populations (other immigrants and natives).

Given the differences between refugees and other immigrants as stated above, refugees' and other immigrants' time use is likely to differ. However, refugees' agency in time allocation, depending on the institutional restrictions in the host society, might further increase this difference. The present paper focuses on refugees in Germany, which is one of the European countries with the highest share of received asylum seekers from the 2015/16 influx (OECD, 2017), and therefore provides an ideal setting to study this heterogeneous group of refugees in the context of a European host society. Refugees face several institutional and legal barriers when first arriving in Germany. The amount of time since arriving in Germany and their legal status determine refugees' access to the labor market, their opportunity to move between municipalities as well as German federal states, and their financial situation. A positive decision on their asylum application lifts many of these barriers, which increases refugees' agency in time allocation and thereby increases their integration prospects into the host society. Hence, this paper (1) describes refugees' time use patterns and contrasts them with the time use patterns of other immigrants and the native German population. Additionally, it examines (2) the role of refugees' legal status for their time use by looking at how a refugee's time use changes after receiving a positive decision on their asylum application.

Theoretical considerations and previous research on time use

Time use

Time is a limited resource, and the choice of how to allocate it has implications for many areas of individuals' lives (Zerubavel, 1985). Allocating time to one activity means that one has less time available to allocate to other activities on each day, given that the day has a fix amount of 24 h. How one decides to spend this time is a product of external requirements (if one has a job, he/she is required to work a set amount of time), personal preferences (if one prefers to do sports rather than to take a language course, he/she invests time in sports), and other potential factors. In any case, allocating time to an activity serves a certain purpose, such as making money, trying to keep being healthy, or developing interpersonal relationships. This reasoning is in line with Becker's (1965) economic theory of the allocation of time, stating that individuals maximize their utility by allocating time to different activities. Depending on the individual and the context the individual lives in, utility takes different forms, such as income, productivity, or wellbeing ("psychic income"; Becker, 1965, p. 498). However, not only the composition of utility, in other words individuals' goals, but also the way of maximizing this utility differs between individuals in terms of how they allocate time to different activities to achieve these goals (Becker, 1965). The combination of goals that individuals want to reach, in other words their utility, and their strategy of reaching them therefore determines their overall time use patterns. While the goals that are leading time investment should differ based on individuals' characteristics and preferences, they are also likely to differ between the populations of refugees, other immigrants, and natives due to structural and systematic differences between them. Consequently, this would suggest differences in the time use patterns of the three populations.

The time use of refugees, other immigrants, and natives

In order to understand how refugees' time use might differ from other immigrants' and natives' time use, it is crucial to look at the systematic and structural differences between these groups of the population. Refugee migration is characterized by being forced due to war, violence, or persecution in the home country (Echterhoff et al., 2020; Kogan and Kalter, 2020). Their motivation to leave their home countries is not mainly driven by pull factors of the host countries, but rather by push factors of the country of origin (Borjas, 1987; Chiswick, 1999; Aksoy and Poutvaara, 2021). The process of migration of refugees itself is often dangerous and long (Echterhoff et al., 2020), where they have to rely on smugglers, suffer physical deprivation and harm, or experience other life-threatening situations and trauma on their way to the host countries (Mansouri and Cauchi, 2007; Gillespie et al., 2018; Alencar et al., 2019; Ambrosetti et al., 2021). Refugees come to the host country without a visa and have to apply for asylum before receiving legal status, whereas other immigrants apply for visas before migrating. This means that other immigrants know the legal conditions and preliminary duration of their stay in advance. In contrast, refugees cannot know the outcome of their asylum process and length of their stay when they arrive in the host country. After migrating, refugees might also be more prone to experiencing post-migration stress compared to other immigrants (Li et al., 2016). Post-migration stress is determined by factors like refugees' legal status, their housing situation, labor market access, and host-country language skills (Ambrosetti et al., 2021). Hence, in contrast to most other immigrants, refugees' migration motivation and migration process involve a lot of traumatic experiences that negatively affect their mental health (Mansouri and Cauchi, 2007; Lindert et al., 2009; Allsopp et al., 2014; Kogan and Kalter, 2020; Ambrosetti et al., 2021) and physical health (Allsopp et al., 2014; Jaschke and Kosyakova, 2021). These health issues are further amplified by the circumstances that refugees face in the host countries. Health issues affect refugees' everyday lives (Brücker et al., 2019) and make them more prone to having difficulties adapting to the host country compared to other immigrants. In addition, they might affect refugees' ability to use their time effectively, resulting in differences in the time use patterns of refugees and other immigrants (Expectation 1).

Due to the forced character of refugees' migration, they have little time to prepare for migrating to a host country in comparison to other immigrants. This means that refugees have less time to take language courses, make additional money for financial security, or invest in educational attainment that is transferable to the host country. Hence, refugees' human capital is less likely to be transferable to the host country compared to other immigrants' human capital (Brell et al., 2020; Kogan and Kalter, 2020), which poses incentives to invest time in host-country-specific human capital accumulation after migration to the host country. This can be explained with a rational choice approach to immigrants' human capital investment (Duleep and Regets, 1999), which expects investment in education rather than employment based on the transferability of skills and credentials acquired in the country of origin. An individual will invest in host-country education if opportunity costs are lower than the expected returns of the educational degree. This is the case if origin country-acquired human capital is not fully transferable to the host-country labor market. Furthermore, foreign education certificates, even if recognized in the host country, cannot fully close the gap to host country educational certificates in terms of employment probability (Damelang et al., 2020). This means that immigrants whose skills and educational credentials are less transferable to the host country

are more inclined to invest in education compared to those whose credentials are fully transferable (Duleep and Regets, 1999). In addition, refugees expect to stay in the host countries longer since they have no short-term perspective of returning to their home countries (Kogan and Kalter, 2020), which further amplifies the expected returns of host-country specific human capital (Cortes, 2004). In combination with the young age of recently arrived refugees (in Germany, more than 60% of arrived refugees are between 20 and 35 years old; Brücker et al., 2020), these factors make the investment of time in education and training in the host country more likely for refugees compared to other immigrants (Expectation 2).

In contrast to all groups of first-generation immigrants, including refugees, individuals of the native population of the host country are brought up in the host country. This means they usually lack experience of migration, which includes issues surrounding transferability of human capital, visa applications and granting procedures, and host-country language acquisition. Hence, natives usually do not have to deal with any forms of post-migration stress and other migration-related issues, making them more equipped to allocate their time with their own agency and oriented toward a different form of utility compared to immigrants and refugees. Hence, I expect that refugees' time use differs from the time use of natives (Expectation 3).

Previous research examining the overall time use patterns of refugees is rare. A qualitative study by Brekke (2010) examining refugees in Sweden used information on their time allocation during a regular workday and found that refugees experience long periods each day without being engaged in a specific activity. These periods include staring out of windows or looking at themselves in the mirror (Brekke, 2010). Similarly, Dupont et al. (2005), who examined refugees in the Netherlands, found that they invest time in drug use in order to deal with their trauma and the long waiting periods in the asylum process.

Quantitative research on refugees' and other immigrants' time use focused on isolated activities. For instance, research on the labor market behavior of immigrants in various host countries has shown that during the first 5 years after migration, immigrant men allocate more time to paid labor and immigrant women more time to household work compared to natives (Vargas and Chavez, 2010; Ribar, 2012). Over time, their patterns became more similar to the native population (Vargas and Chavez, 2010; Ribar, 2012). Concerning refugees in particular, research showed that they are less likely to work compared to other immigrants (Cortes, 2004; Brell et al., 2020) and natives (Bratsberg et al., 2017; Bevelander and Luik, 2020) immediately after their arrival in the host country. But Cortes (2004) found that refugees make larger gains in working hours and income compared to economic immigrants in the 10 years since their arrival. Eventually, refugees surpass economic immigrants in terms of income and working hours. In the same 10-year interval, refugees also have higher rates of human capital accumulation in comparison to economic immigrants (Cortes, 2004).

Institutional background and legal barriers for refugees in Germany

As mentioned above, the initial circumstances that refugees face when arriving a new host country, mainly related to the asylum regulations, are an important factor distinguishing refugees from other immigrants. Upon arriving in the host country, refugees find themselves in a situation in which they have rather low control over their allocation of time due to legal restrictions. In the case of Germany, asylum seekers are directed to a reception facility, where they register and apply for asylum. They are assigned to an accommodation which they cannot leave without official permission (Residenzpflicht) and where they have to live during their first 6–18 months in Germany or until they receive an answer about their asylum application (BAMF, 2021). Asylum seekers can receive a positive decision on their asylum application in form of asylum, refugee protection, or subsidiary protection, if their application is not rejected due to their lacking entitlement to asylum (Kosyakova and Brenzel, 2020; BAMF, 2021). Each of these forms of protection come with a temporary residence permit and several rights. Among them are the opportunity to participate in integration and language courses as well as the permission to work in Germany (BAMF, 2021). This means that refugees gain more autonomy in the allocation of their time once they receive a positive decision on their asylum application. Refugees whose asylum application is rejected can receive a temporary suspension of deportation (Duldung). Similar to refugees who are still in the asylum process, those with a temporary suspension of deportation can enter the German labor market only after having received a permission to work from the authorities (BAMF, 2021).

Previous research on the effects of refugees' legal status on time use-related aspects has found that refugees who have a temporary residence permit are less likely to be employed compared to refugees who hold the citizenship of the host country, irrespective of their time spent in the host country (Bakker et al., 2014). Similarly, a lower likelihood to be employed in comparison to refugees with a citizenship status has been found for refugees with a permanent residence permit (Bakker et al., 2014). For Germany, Kosyakova and Brenzel (2020) found that refugees who have received a decision on their asylum application are faster in taking up employment and enrolling in language courses compared to those who have not yet received a decision. These findings suggest that receiving a decision on the asylum application fosters changes in time use in terms of investing time in educational and labor market activities.

When looking at refugees' legal status, it is also important to consider the country of origin. Asylum seekers from countries with good prospects to remain in the host country, meaning

countries with more than 50% of asylum applications being accepted (BAMF, 2022b), can access language and integration courses even before receiving a positive decision about their asylum application (BAMF, 2017; Kosyakova and Brenzel, 2020). In addition, they only have a residence obligation (Residenzpflicht) within the first 3 months since their arrival in Germany (BAMF, 2021), which can be longer for refugees from save origin countries. The obligation to keep living in the federal state where they applied for asylum (Wohnsitzauflage) remains for all refugees, even after receiving legal protection status (BAMF, 2022a). Hence, for refugees with good prospects to remain, the decision on the asylum application should have less impact on their time use, since they have more autonomy even before the decision compared to refugees from other origin countries. Between the end of 2015 and the end of 2019, countries of origin with good prospects to remain were Eritrea, Iraq, Iran, Somalia, and Syria (Kosyakova and Brenzel, 2020).

Consequently, I expect to find that refugees' time use changes when they receive legal status (Expectation 4) and that this change in time use is less likely for refugees from countries with good prospects to remain in Germany compared to refugees from origin countries with lower prospects to remain in Germany (Expectation 5).

Data and analytic strategy

The focus of this paper lies on describing the time use of refugees in contrast to other immigrants and the native population in Germany, as well as assessing the role of refugees' legal status in their allocation of time. For this analysis, I rely on data from the German Socio-Economic Panel (Goebel et al., 2019; SOEP v36, 2021). The SOEP is a household panel starting in 1984 that randomly samples households in Germany and surveys all members of these households annually. The data also include a sample of refugees in form of the IAB-BAMF-SOEP Survey of Refugees (Kühne et al., 2019; IAB-BAMF-SOEP, 2021), which includes data from 2016 to 2019 of refugees who arrived in Germany between 2013 and 2016. The survey is conducted jointly by the Institute for Employment Research (IAB), the research data center of the German Federal Office for Migration and Refugees (BAMF), and the German Socio-Economic Panel (SOEP) at the German Institute for Economic Research (DIW). For information on other immigrants, I rely on the IAB-SOEP Migration Sample (Brücker et al., 2014; IAB-SOEP, 2021), which is a cooperation project between IAB and SOEP. Observations were pooled over waves from 2016 to 2019 and respondents between the age of 18 and 40 were considered, representing the young working age population in Germany with a more similar age structure to the refugee group (75% of refugee respondents were included in this age group). First-generation immigrants whose first interview was more than 6 years after immigration were excluded to make sure that refugees and other immigrants were observed in similar stages of living in Germany.

The data measured time use in a stylized way: every respondent indicated the number of hours that they allocated to a set of activities on a typical weekday. I used information for all activities that are available in the data for natives, immigrants, and refugees. These are employment, running errands, childcare, care and support for other persons, education/training, repairs and gardening, physical leisure activities and sports, leisure activities, and housework. I excluded all observations in which respondents did not receive one of the time use (sub-) questions, refused to answer, or gave an improbable answer for at least one of the activities. Hence, I coded time use in nine activities as the number of hours allocated to this activity, ranging from 0 to 24 allocated hours.

To construct the variable of interest, time use, I used k-means clustering to identify clusters of similar time allocation, whilst taking into account all nine activities as well as the number of hours allocated to the activities. The time use variables were standardized across all respondents used for the cluster analysis to ensure the equal influence of all activities for cluster assignment (Hastie et al., 2009, chap. 14.3.3). The k-means algorithm thereby randomly chose a number k of starting cluster centers, determined the closest cluster center for each observation, and assigned each observation to the cluster with its closest center (Hastie et al., 2009, chap. 14.3.6). To determine the closeness, Euclidean distance was used. In the next step, the initial cluster center in each cluster was replaced by the new cluster mean. This process was repeated until "within each cluster the average dissimilarity of the observations from the cluster mean, as defined by the points in that cluster, is minimized" (Hastie et al., 2009, p. 509). The resulting clusters depended on the starting values of the k centers (Makles, 2012); hence I estimated 20 rounds of clustering with different seeds for selection of the k starting centers with ks 1–15. Population groups were analyzed separately in samples of 16,022 native German, 12,316 refugee, and 2,013 immigrant observations.

The resulting clusters of time use were (1) analyzed descriptively and compared among the population groups. Further, (2) I assessed the role of refugees' asylum application status in a multinomial conditional fixed effects regression analysis. Here, I made use of the longitudinal structure of the data, looking at refugees only. The event in focus was receiving a positive decision on the asylum application. All waves after this positive decision were coded 1, while all waves before were coded 0. In addition, I estimated models with observations pooled over waves with multinomial logistic regressions, where legal status was coded as seven-category variable (1 = asylum seeker status, 2 = no permit, 3 = refugee or asylum status, 4 = subsidiary status or other humanitarian permit, 5 = Duldung (temporary suspension of deportation), 6 = permanent residence permit, 7 = other residence permit).

Analyses (2) took into account institutional factors (the time since arriving in Germany, country of origin, housing characteristics) and individual characteristics (age, marital status, number of persons and children in household, educational attainment at immigration, physical health, life satisfaction). The time since arriving in Germany was measured in years. Country of origin was grouped into nine categories [1 = Western countries (including Western Europe and Northern America as well as New Zealand and Australia), 2 = Eastern European countries, 3 = Middle Eastern countries (without Syria and Iraq), 4 = Asia (without Afghanistan; combined Central, East, South, and South East Asia mainly due to low numbers of observations for these regions), 5 = Latin America, 6 = Africa, 7 = Syria, 8 = Afghanistan, 9 = Iraq (these countries have sufficiently high numbers to be examined in separate categories)]. Housing characteristics were included in a dummy variable, which was 0 for living in a shared housing environment, such as refugee shelters or reception facilities, and 1 for living in private housing. Age was measured in years (centered), and marital status was measured dichotomously (0 not married, 1 married). I also included the number of persons and children living in the respondent's household. For education at immigration, I used an ordinal variable of education attained abroad with four categories (1 = compulsory school, no degree, 2 = compulsory school degree, 3 = secondary school degree, 4 = other school degree). Physical health was measured as subjective health reported on a 5-point scale from 1 "bad" to 5 "very good," and life satisfaction as proxy for mental health was measured on a 11-point scale from 0 "completely dissatisfied" to 10 "completely satisfied." The models also controlled for survey year. The analytical sample for analysis (2) included 9,780 refugee observations for the pooled models. The fixed effects analyses of refugees' legal status included between 1,358 and 4,435 observations, depending on the changes occurring in the dependent variable between waves.

Table 1 shows some of the descriptive statistics of the analytical sample of refugees in contrast to the samples of natives and other immigrants. The full descriptive tables can be found in the Supplementary Tables 1–3. The samples cut off observations below 18 and above 40 years, which was implemented in order to make the native and other immigrant samples more similar to the refugees in terms of their characteristics. This was successful in terms of age: the samples were rather balanced, all having a mean age of respondents around 30. Other imbalances between the samples remained. The refugee sample included more than 60% male observations, while the native and other immigrant samples were slightly female dominated. Refugees also tended to have more children in the household (almost two children in comparison to only one or less in the other samples). Among the refugee observations, the share of those only having primary education was more than 25 percentage points higher compared to the other samples. Refugees' health status on the other hand was very high (almost half of the refugee observations reported very good health). Concerning labor force status, the refugee sample included almost 22% of refugee observations in employment compared to 70% for other immigrants and 75% for natives. This is also reflected in the 19% of the refugee sample who reported at least 1 h spent in employment during a regular day. Of this share, the average hours reported to be spent in employment was 6.5 h. Further descriptive information on the allocation of hours to the different activities can be found in the Supplementary Tables 4–6. Refugees mostly came from origin countries in the Middle East (more than half were from Syria), while most other immigrants reported their origin to be in Western countries. Concerning their legal status, most observations in the refugee sample had asylum or refugee status (55.09%), with 19% of observations reporting asylum seeker status and around 14% reporting subsidiary protection status or another form of humanitarian protection. Over the four survey points from 2016 to 2019, the share of observations with asylum seeker residence permit declined, while the share of observations with asylum or refugee status and especially of those with subsidiary or other humanitarian status increased drastically. In 2019, <10% of the refugee sample had an asylum seeker status and over 80% had some form of protection status.

Results

The optimal number of clusters

In order to decide on the optimal number of clusters and to assess the stability of this number across different starting points of k, I estimated the proportional reduction of error coefficient (PRE) for each round of clustering. This measure estimates the reduction in the within cluster sum of squares of each round proportional to the previous round (Makles, 2012). Figure 1 shows the optimal number of clusters for the different rounds of clustering by population group, suggested by the PRE. The size of the circles represents the frequency with which the numbers occurred as optimum. Figure 1A on the left shows the one best solution for each clustering round and displays a concentration around the lower numbers of optimal clusters. Given that the PRE of the one best solution per round of clustering is often very similar to the second best and further solutions, I rely on the results from Figure 1B on the right. This graph shows the four best solutions for the number of clusters for each round. Here, we can see more spread in the suggested optimal number of clusters, but still the highest concentration among the numbers between two and five. Hence, the cluster analysis was conducted for ks of two, three, four, and five clusters by population group, using the same seed per k for each population group. Additionally, in order to look at the stability of the resulting clusters across different seeds, the cluster analysis was conducted twice for each number of clusters and population group.

TABLE 1 Descriptive statistics.

Population group	Refugees		Natives		Other immigrants	
Variable	***N***	**Mean/Percentage**	***N***	**Mean/Percentage**	***N***	**Mean/Percentage**
Gender	9,780		15,314		1,841	
Female	3,769	38.54%	7,960	51.98%	1,042	56.60%
Male	6,011	61.46%	7,354	48.02%	799	43.40%
Number of children in HH	9,780	1.67	15,314	0.71	1,841	1.11
Number of persons in HH	9,780	3.68	15,314	2.98	1,841	3.10
Education	9,780		15,314		1,841	
Primary education	3,257	33.30%	1,058	6.91%	68	3.69%
Lower secondary education	2,454	25.09%	2,121	13.85%	204	11.08%
Upper secondary education	1,924	19.67%	6,298	41.13%	439	23.85%
Post-secondary non-tertiary education	263	2.69%	1,706	11.14%	348	18.90%
Tertiary undergraduate education	1,804	18.45%	2,401	15.68%	485	26.34%
Tertiary post-graduate education	78	0.80%	1,730	11.30%	297	16.13%
Physical health	9,780		15,314		1,841	
Bad	166	1.70%	170	1.11%	21	1.14%
Poor	541	5.53%	1,144	7.47%	133	7.22%
Satisfactory	1,178	12.04%	3,406	22.24%	288	15.64%
Good	3,302	33.76%	7,693	50.24%	928	50.41%
Very good	4,593	46.96%	2,901	18.94%	471	25.58%
Life satisfaction	9,780	7.28	15,314	7.58	1,841	7.86
Legal status	9,780		–	–	–	–
Asylum seeker status	1,874	19.16%				
No permit	34	0.35%				
Refugee + asylum status	5,511	56.35%				
Subsidiary protection + other humanitarian status	1,407	14.39%				
Duldung	499	5.10%				
Permanent residence permit	88	0.90%				
Other residence permit	367	3.75%				
Country of origin	9,780		–	–	1,841	
Western countries	–	–			1,286	69.85%
Eastern Europe	460	4.70%			222	12.06%
Middle East (without Syria and Iraq)	460	4.70%			76	4.13%
Asia (without Afghanistan)	265	2.71%			114	6.19%
Latin America	–	–			47	2.55%
Africa	1,090	11.15%			90	4.89%
Syria	5,406	55.28%			4	0.22%
Afghanistan	926	9.47%			0	0%
Iraq	1,173	11.99%			2	0.11%
Age	9,780	28.96	15,314	29.33	1,841	32.41
Labor force status: Employed	2,122	21.70%	11,532	75.30%	1,292	70.18%

Includes observations with no missing on any of the displayed variables per population group.

Time use patterns

I descriptively examined the resulting clusters in terms of the average investment of hours in each activity by cluster. Based on these descriptive statistics, the clusters were labeled according to their main activity, i.e., the activity to which the most hours were allocated. If a cluster was characterized by two or more activities with similar amounts of invested time (<2 h difference), this is reflected in the cluster name by the prefix *mixed*. I also distinguished between *full-time*, when the main

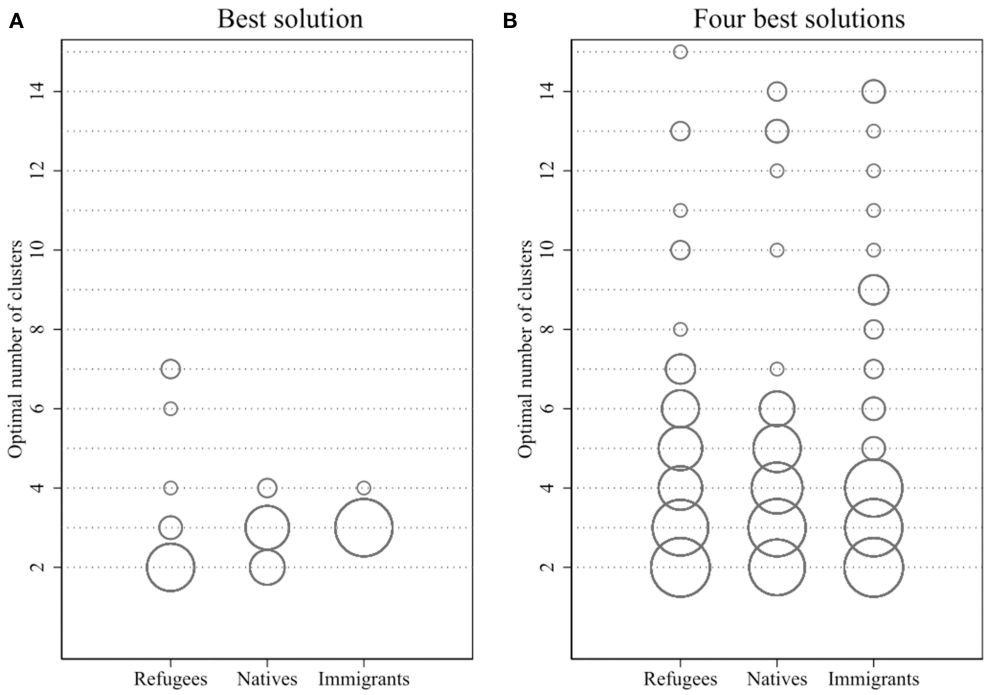


FIGURE 1
Optimal number of clusters by population group. Circle size represents frequency, with larger circles representing higher frequency. **(A)** Best solution. **(B)** Four best solutions.

activity was allocated at least 7 h, and *part-time*, when the main activity was allocated between 4 and 7 h. Clusters were labeled with *low activity* if the overall hours reported by the respondents in the cluster was on average <10 per day. Tables 2–4 show these descriptive statistics and labels for both seeds of the five-cluster solutions for refugees, natives, and immigrants, in order to exemplify how the labeling was done.

In order to compare the time use patterns of refugees, other immigrants, and natives, the labeling was done for all performed cluster analyses according to the rules above. Figures 2–4 show the resulting cluster labels by k and the used seed, sorted by cluster size (Figure 2 for refugees, Figure 3 for natives, Figure 4 for other immigrants). For refugees, across different numbers of k clusters, I consistently found the largest cluster to be characterized by low activity, meaning <10 h overall reported by the respondents in this cluster. Secondly, I consistently found a cluster characterized by time investment in childcare and household activities. Other time use clusters were only found for larger ks and were either characterized by investment in education or also in childcare and care activities.

When comparing the patterns of time use clusters, one can see differences between the patterns of natives and immigrants in comparison to the refugees. Natives and other immigrants were consistently grouped into a large cluster of respondents investing time in employment. Only after this largest cluster did natives and other immigrants display similarities with the time use of refugees. For the group of other immigrants, the second largest cluster was characterized by time investment in childcare and household, similarly as for refugees. I also found some *mixed* clusters for other immigrants when looking at larger ks, meaning that in these clusters, there was no clear main activity. Such clusters are also found for refugees. For natives, on the other hand, the cluster analyses found no consistent second largest cluster. Instead, the clusters were overall very similar to each other in the sense that there was always a rather large time investment in employment, see e.g., the clusters *full-time employment and other activities* or *mixed part-time leisure and part-time employment*. Like refugees, however, natives displayed a cluster characterized by investment in education, which was only found once in all cluster solutions for other immigrants. A childcare cluster for natives was only displayed for k larger than two, but it was consistently among the smallest clusters. Overall, when looking at the clusters that the k-means clustering algorithm found for different numbers of k, the clusters were rather consistent across different ks and across different seeds within the population groups. However, the clusters were very different across the population groups, meaning that refugees, other immigrants, and natives seemed to invest their time differently.

TABLE 2 Mean hours invested in activities by cluster (refugees).

Refugees	**Solution seed 1**				
	Cluster				
	1	**2**	**3**	**4**	**5**
Mean of hours allocated to					
Employment	2.30	1.22	0.10	0.31	0.46
Errands	1.01	1.66	1.57	1.51	0.99
Childcare	1.62	1.63	8.02	7.07	0.95
Care	0.05	0.09	0.08	5.63	0.04
Education	0.10	0.44	0.27	0.48	6.10
Repairs	0.13	0.46	0.08	0.24	0.13
Leisure Activities	0.88	1.50	0.68	0.72	1.10
Sports	0.37	1.81	0.26	0.45	0.82
Housework	1.24	1.68	4.33	3.60	1.27
N	4,938	2,096	2,987	298	1,997
Mean number of reported hours	7.70	10.48	15.40	20.00	11.85
Mean number of reported activities	3.50	4.69	3.80	4.92	4.49
Cluster name	**Mixed, low activity**	**Mixed**	**FT Childcare and Household**	**Mixed FT Childcare and PT Care**	**PT Education**
	Solution seed 2				
	1	**2**	**3**	**4**	**5**
Mean of hours allocated to					
Employment	0.11	1.48	1.56	2.24	0.32
Errands	1.61	1.14	1.03	1.40	1.50
Childcare	8.05	0.98	1.74	2.28	7.02
Care	0.08	0.03	0.05	0.14	5.59
Education	0.29	1.86	1.23	1.08	0.52
Repairs	0.06	0.02	0.00	1.25	0.22
Leisure Activities	0.68	1.25	0.87	1.06	0.71
Sports	0.31	1.45	0.01	0.79	0.44
Housework	4.35	1.38	1.33	1.33	3.63
N	2,956	4,109	3,470	1,478	303
Mean number of reported hours	15.53	9.59	7.82	11.57	19.93
Mean number of reported activities	3.81	4.32	3.05	5.32	4.90
Cluster name	**FT Childcare and Household**	**Mixed, low activity (education and leisure)**	**Mixed, low activity (childcare)**	**Mixed**	**Mixed FT Childcare and PT Care**

Since these results still show some similarities across the population groups, I examined the distribution of the respondents across the clusters in an additional step. Figure 5 shows these distributions in percent, with clusters again being sorted by size. The percentages of respondents in similar clusters were similar across populations groups. Natives' and other immigrants' largest cluster of *full-time employment* was similar in relative size for the same k. Refugees' and other immigrants'

TABLE 3 Mean hours invested in activities by cluster (natives).

Natives	**Solution seed 1**				
	Cluster				
	1	**2**	**3**	**4**	**5**
Mean of hours allocated to					
Employment	7.15	8.59	4.81	1.96	0.86
Errands	1.14	0.79	0.88	1.35	0.65
Childcare	2.19	0.97	0.38	11.66	0.17
Care	0.07	0.03	0.04	0.25	0.02
Education	0.34	0.29	0.70	0.12	7.37
Repairs	2.53	0.25	0.20	0.35	0.14
Leisure Activities	1.58	1.24	5.22	1.11	1.98
Sports	0.74	0.70	0.75	0.44	0.99
Housework	1.49	1.01	1.13	2.79	0.91
N	660	9,370	1,683	1,917	2,392
Mean number of reported hours	17.23	13.88	14.09	20.03	13.08
Mean number of reported activities	5.36	4.58	4.21	4.81	4.37
Cluster name	**FT Employment and other activities**	**FT Employment**	**Mixed PT Leisure and PT Employment**	**FT Childcare**	**FT Education**
	Solution seed 2				
	1	**2**	**3**	**4**	**5**
Mean of hours allocated to					
Employment	4.59	0.82	1.70	7.99	8.59
Errands	0.87	0.65	1.36	0.96	0.76
Childcare	0.39	0.17	12.37	1.56	0.88
Care	0.04	0.02	0.26	0.05	0.03
Education	0.73	7.40	0.11	0.30	0.30
Repairs	0.15	0.13	0.34	1.29	0.00
Leisure activities	5.42	1.99	1.12	1.35	1.26
Sports	0.73	0.98	0.43	0.75	0.69
Housework	1.11	0.91	2.86	1.25	0.98
N	1,519	2,369	1,740	3,297	7,097
Mean number of reported hours	14.02	13.08	20.54	15.50	13.49
Mean number of reported activities	4.10	4.36	4.73	5.62	4.21
Cluster name	**Mixed PT Leisure and PT Employment**	**FT Education**	**FT Childcare**	**FT Employment and other activities**	**FT Employment**

full-time childcare and household and *full-time childcare* clusters only had up to a 4-percentage point difference in size for the same k. For refugees' and natives' *part-time education* cluster, this difference was even smaller with one percentage point. One difference between the distributions was very striking: natives' childcare-related clusters (*full-time childcare*) were only about half the size of the childcare-related clusters of refugees and other immigrants (*full-time childcare and household, full-time childcare*). Overall, it is important to note that the analyses showed some similarities between the time use of refugees, other immigrants, and natives, but the three groups never displayed the same clusters for the same k. Hence, these results are in line with Expectations 1 and 3, that refugees' time use differs from the time use of other immigrants and natives. In addition, I rather consistently find a cluster of time investment in education for larger ks for refugees, but only once for other immigrants.

TABLE 4 Mean hours invested in activities by cluster (other immigrants).

Other immigrants	Solution seed 1				
	Cluster				
	1	2	3	4	5
Mean of hours allocated to					
Employment	1.03	8.83	0.81	8.56	5.12
Errands	0.96	0.66	1.18	0.79	8.32
Childcare	2.19	1.56	10.61	1.02	0.79
Care	0.10	0.02	0.05	0.03	1.53
Education	1.99	0.17	0.15	0.35	0.97
Repairs	0.37	0.18	0.10	0.23	1.62
Leisure Activities	1.91	0.93	0.89	1.13	0.06
Sports	0.49	0.00	0.27	1.19	0.82
Housework	1.82	1.02	3.42	1.04	1.00
N	383	660	408	528	34
Mean of number of reported hours	10.85	13.38	17.49	14.34	20.24
Mean of number of reported activities	4.58	3.73	4.14	5.06	5.62
Cluster name	**Mixed**	**FT Employment**	**FT Childcare and Household**	**FT Employment and other activities**	**FT Errands and Employment**
	Solution seed 2				
	1	**2**	**3**	**4**	**5**
Mean of hours allocated to					
Employment	1.00	0.97	5.12	8.72	6.73
Errands	0.87	1.16	8.32	0.57	0.98
Childcare	1.57	8.99	0.79	1.49	1.03
Care	0.12	0.05	1.53	0.04	0.03
Education	6.18	0.12	0.97	0.20	0.33
Repairs	0.49	0.12	1.62	0.13	0.38
Leisure activities	1.26	1.05	0.06	0.67	1.94
Sports	0.72	0.25	0.82	0.20	1.00
Housework	1.48	3.21	1.00	0.95	1.23
N	118	538	34	769	554
Mean of number of reported hours	13.70	15.91	20.24	12.97	13.63
Mean of number of reported activities	4.91	4.22	5.62	3.74	5.15
Cluster name	**PT Education**	**FT Childcare and Household**	**FT Errands and Employment**	**FT Employment**	**PT Employment**

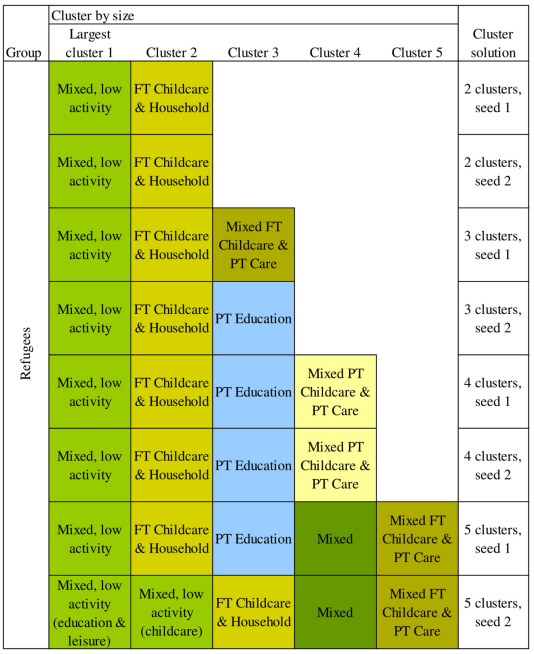


FIGURE 2
Time use clusters by size (refugees).

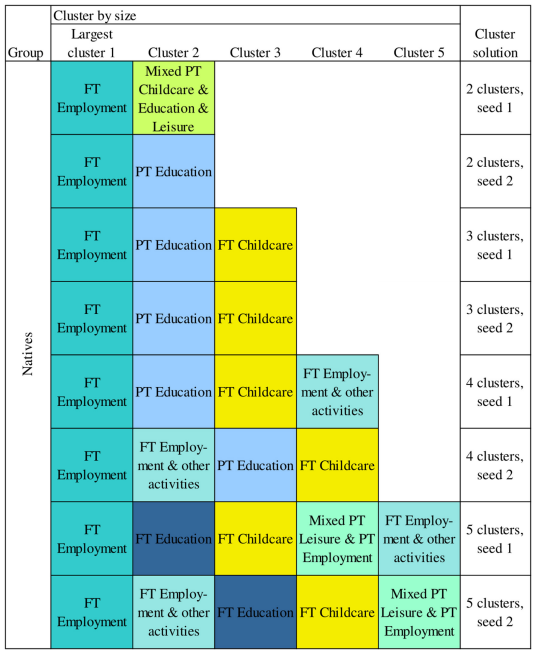


FIGURE 3
Time use clusters by size (natives).

Furthermore, this education cluster of other immigrants is much smaller than the ones found for refugees. This is in line with Expectation 2, stating that refugees are more likely to invest time in education in the host country than other immigrants.

Heterogeneity in time use patterns—Descriptive analyses

As for the heterogeneity in time use patterns within population groups, several interesting findings emerged. An examination of how immigrants' migration motivation was associated with cluster membership showed that economic immigrants were significantly more likely to sort into the employment clusters compared to family immigrants. This was consistently around 6–11 percentage points for all k cluster solutions. However, family immigrants were not always significantly more likely to sort into the childcare-oriented clusters compared to economic immigrants. For natives, a gender analysis showed that women were significantly more likely to sort into the *full-time employment* cluster than men, if the clustering algorithm also detected a cluster of *full-time employment and other activities*, which was much more likely to be sorted into by men (more than 15 percentage points more than women). For both analyses, results can be found in Supplementary Tables 7, 8.

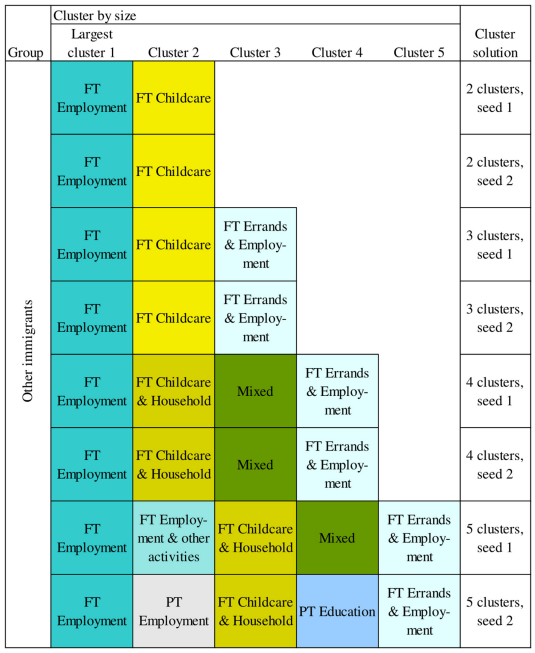
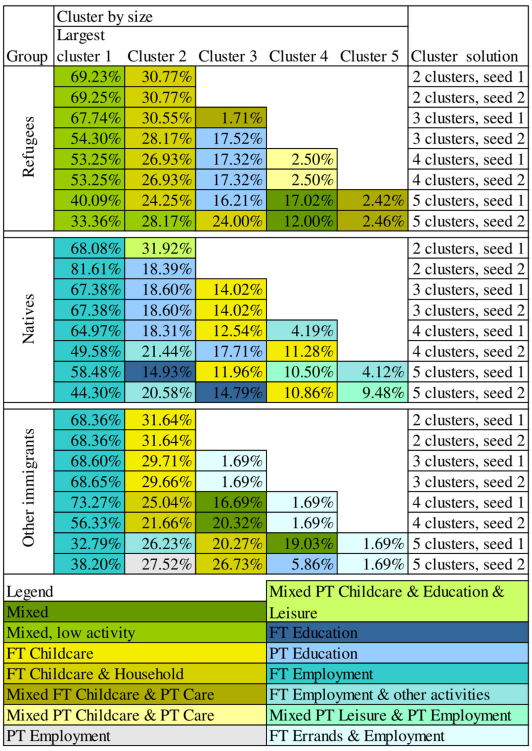


FIGURE 4
Time use clusters by size (other immigrants).

Refugees, in comparison to the other two samples had on average about 0.5 to one child more in the household. Furthermore, 64% of the refugee sample reported at least



Group	Largest cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster solution
Refugees	69.23%	30.77%				2 clusters, seed 1
	69.25%	30.77%				2 clusters, seed 2
	67.74%	30.55%	1.71%			3 clusters, seed 1
	54.30%	28.17%	17.52%			3 clusters, seed 2
	53.25%	26.93%	17.32%	2.50%		4 clusters, seed 1
	53.25%	26.93%	17.32%	2.50%		4 clusters, seed 2
	40.09%	24.25%	16.21%	17.02%	2.42%	5 clusters, seed 1
	33.36%	28.17%	24.00%	12.00%	2.46%	5 clusters, seed 2
Natives	68.08%	31.92%				2 clusters, seed 1
	81.61%	18.39%				2 clusters, seed 2
	67.38%	18.60%	14.02%			3 clusters, seed 1
	67.38%	18.60%	14.02%			3 clusters, seed 2
	64.97%	18.31%	12.54%	4.19%		4 clusters, seed 1
	49.58%	21.44%	17.71%	11.28%		4 clusters, seed 2
	58.48%	14.93%	11.96%	10.50%	4.12%	5 clusters, seed 1
	44.30%	20.58%	14.79%	10.86%	9.48%	5 clusters, seed 2
Other immigrants	68.36%	31.64%				2 clusters, seed 1
	68.36%	31.64%				2 clusters, seed 2
	68.60%	29.71%	1.69%			3 clusters, seed 1
	68.65%	29.66%	1.69%			3 clusters, seed 2
	73.27%	25.04%	16.69%	1.69%		4 clusters, seed 1
	56.33%	21.66%	20.32%	1.69%		4 clusters, seed 2
	32.79%	26.23%	20.27%	19.03%	1.69%	5 clusters, seed 1
	38.20%	27.52%	26.73%	5.86%	1.69%	5 clusters, seed 2

Legend	
Mixed	Mixed PT Childcare & Education & Leisure
Mixed, low activity	FT Education
FT Childcare	PT Education
FT Childcare & Household	FT Employment
Mixed FT Childcare & PT Care	FT Employment & other activities
Mixed PT Childcare & PT Care	Mixed PT Leisure & PT Employment
PT Employment	FT Errands & Employment

FIGURE 5
Distribution of observations across the clusters by population group.

one child in the household (43% for natives), which might have driven the large childcare-oriented clusters. Indeed, looking at the percentage of refugee observations without children in the household by cluster, showed that in the clusters involving childcare, shares of observations without children were small (between 0.31 and 4.06%). Accordingly, in the refugee clusters that do not involve childcare, the shares of observations without children were higher. For instance, in the *part-time education* cluster the share of observations without children in the household was around 24% (see Supplementary Table 9). However, the consistently largest cluster of *low activity*, which comprised between 40 and 70% of the refugee sample overall, included between 70 and 97% of observations without children in the household for most ks. This suggests that separate analyses for refugees without children in the household would likely yield very small childcare and care clusters, but still very large low activity clusters.

Refugees' cluster membership by country of origin showed that refugees from African, Asian, and Eastern European countries were represented with the highest shares in the *low activity* clusters amongst all refugee groups. The childcare-oriented clusters included high shares of refugees from Eastern European countries. Lastly, the education-oriented cluster: Refugees from the Middle Eastern countries had the highest share in this cluster (21% of this group belonged to the education-oriented cluster). The shares of Syrian, Afghan, Iraqi, and African refugees in this cluster, however, were also rather high with around 16% (see Supplementary Table 10).

Heterogeneity in refugees' time use patterns—Refugees' legal status

The role of refugees' legal status for their time use patterns was examined in two ways. First, I used pooled multinomial logistic regression models for each cluster solution. Interestingly, for all numbers of clusters, results indicated that respondents with refugee or asylum status, or subsidiary protection or other humanitarian status, were rather consistently significantly more likely to sort into the *mixed* and *low activity* clusters compared to the *full-time childcare and household* cluster. Effect sizes were around 2–4 percentage points. Having a permanent residence permit showed a significant effect only in some models: respondents with a permanent residence permit were significantly more likely to sort into the education- and care-related clusters compared to the low activity clusters. Here, effect sizes were even larger with around 10 percentage points. However, in most models these effects were not significant. As example, Table 5 shows the effects for the three cluster solutions. The solutions for the other clusters can be found in the Supplementary Tables 12–15.

Second, I used the longitudinal structure of the data with multinomial logistic conditional fixed effects models, which estimated the effect of receiving a positive decision on the asylum application on sorting into the different clusters. These models found only very small and insignificant changes in the probability to sort into different clusters when the respondents received their positive decision (see Table 6). Hence, refugees do not seem to drastically change their time allocation to the measured activities once they receive their legal asylum status, at least in the short term (not in line with Expectation 4).

Additional sensitivity analyses showed similar results when only looking at refugees from countries of origin with good prospects to remain in Germany (between 2015 and 2019, countries of origin with good prospects to remain were Eritrea, Iraq, Iran, Somalia, and Syria). On the other hand, for fixed-effects analyses on the group of refugees without good prospects to remain, case numbers were too low. For these refugees, receiving legal asylum should result in the most changes within their lives compared to refugees with good prospects to remain, who have some privileges before receiving a legal status such as access to integration courses. In order to address potential differences between refugees with and without good prospects to remain in Germany, additional analyses on the

TABLE 5 Pooled analyses: the role of refugees' legal status.

Three clusters	Solution seed 1			Solution seed 2		
AME in p.p.	**Mixed FT Childcare and PT Care**	**Mixed, low activity**	**FT Childcare and HH**	**Mixed, low activity**	**FT Childcare and HH**	**PT Education**
Reference: asylum seeker status						
Refugee + asylum status	0.35	2.28	**−2.64**	2.42	**−2.66**	0.24
Subsidiary protection + other humanitarian status	0.50	3.14	**−3.63**	3.30	−2.34	−0.96
Duldung	0.66	1.90	−2.56	3.47	−2.44	−1.03
Permanent residence permit	**8.53**	4.60	−13.10	−3.78	−6.33	**10.10**
Other residence permit	0.34	0.21	−0.55	0.32	−0.46	0.15

This table shows average marginal effects (AME) in percentage points. Effects are marked bold if the coefficients in the models the AME are based on are significant on at least 5%-level with respect to the reference cluster (Mixed, low activity). Models control for: gender, educational attainment at immigration, years since migrating to Germany, country of origin, survey year, marital status, number of children and persons living in respondent's household, physical health, life satisfaction, housing situation, age (centered).

pooled refugee sample were conducted. These analyses looked at the effect of being from an origin country with good prospects to remain on sorting into the different time use clusters. In Table 7, the results of this analysis show overall rather small and insignificant effects. This shows that refugees from origin countries with and without good prospects to remain in Germany largely do not differ in terms of their time use, irrespective of their legal status (not in line with Expectation 5).

Discussion

The time use of refugees has rarely been quantitatively studied by looking at more than one activity. The present study looks at refugees' time use in a more holistic way and explores the differences in time use of refugees, other immigrants, and natives in Germany. The use of time is an active investment in integration for refugees and other immigrants and hence, a difference in time use between these two groups might contribute to understanding differences in integration outcomes. Indeed, the present study found differences in the time use patterns of refugees, other immigrants, and natives. Members of the majority German population and other immigrants seemed to be more likely to invest time in employment, whereas refugees formed large clusters of either childcare or low activity. However, there were clusters of refugees' time use that were also found for the other two groups. Immigrants also displayed large clusters of time investment in childcare-oriented activities, whereas natives displayed clusters of time investment in education, just like refugees. Overall, even though there were some similar time use clusters, the exact same time use clusters for same k and seed for all three population groups were never found. This is in line with Expectations 1 and 3 stating that the time use of refugees differs from the time use of other immigrants and natives in Germany. In addition, in line with Expectation 2, refugees' time use patterns showed a group that invests time in education, which was not found for other immigrants.

This difference of refugees' time use from the time use of other immigrants and natives was mostly driven by refugees' low time investment in employment. Even though almost 20% of the refugee sample reported a time investment of at least 1 h in employment activities, this did not lead to the formation of an employment cluster. One reason for this is that the other activities were much more important for the cluster formation among the refugee sample since they were more consistently invested in by all respondents in the sample, meaning that the share of respondents who invested time in these activities was higher. Employment was among the three activities with the lowest share of observations investing time in this activity for refugees. In contrast for natives, employment was the activity with the third highest share of observations who invest time in this activity, with only 6 percentage points

TABLE 6 Fixed effects analyses: the role of refugees' legal status.

AME in p.p.	2 clusters		3 clusters		4 clusters		5 clusters	
Solution	**Seed 1**	**Seed 2**	**Seed 1**	**Seed 2**	**Seed 1**	**Seed 2**	**Seed 1**	**Seed 2**
Positive decision on asylum case, reference: no decision, yet								
Mixed, low activity	1.16	1.12	0.35	−0.87	−1.03	−1.03	−3.40	−1.64
Mixed, low activity (education and leisure)								−0.99
Mixed							0.66	−0.38
FT Childcare and HH	−1.16	−1.12	−1.39	−1.44	−0.98	−0.98	1.92	1.72
Mixed FT Childcare and PT Care			1.04				1.92	1.29
Mixed PT Childcare and PT Care					1.32	1.32		
PT Education				2.31	0.69	0.69	−1.11	
N	1,360	1,358	1,530	3,032	3,152	3,152	4,435	4,365

Table shows average marginal effects (AME) in percentage points. Effects are marked bold if the coefficients in the models the AME are based on are significant on at least 5%-level with respect to the reference cluster (Mixed, low activity). Models control for: marital status, number of children and persons living in respondent's household, physical health, life satisfaction, housing situation, age (centered).

TABLE 7 Pooled analyses: the role of good prospects to remain.

AME in p.p.	2 clusters		3 clusters		4 clusters		5 clusters	
Solution	**Seed 1**	**Seed 2**	**Seed 1**	**Seed 2**	**Seed 1**	**Seed 2**	**Seed 1**	**Seed 2**
Origin country with good prospects to remain, reference: safe origin country								
Mixed, low activity	1.09	1.15	1.06	−1.10	−1.08	−1.08	−1.53	−0.24
Mixed, low activity (education and leisure)								−1.34
Mixed							0.25	**2.43**
FT Childcare and HH	−1.09	−1.15	−1.20	−0.91	−1.47	−1.47	−1.04	−1.18
Mixed FT Childcare and PT Care			0.13				0.31	0.34
Mixed PT Childcare and PT Care					0.36	0.36		
PT Education				2.01	2.18	2.18	2.00	

Table shows average marginal effects (AME) in percentage points. Effects are marked bold if the coefficients in the models the AME are based on are significant on at least 5%-level with respect to the reference cluster (Mixed, low activity). Models control for: gender, educational attainment at immigration, years since migrating to Germany, country of origin, survey year, marital status, number of children and persons living in respondent's household, physical health, life satisfaction, housing situation, age (centered).

difference to the activity with the highest share. This is similar for the immigrant sample (detailed information can be found in Supplementary Tables 4–6).

The second factor that drove clustering in the refugee sample is the high share of those who reported only few hours in the surveyed activities overall. In the refugee sample, 43% of observations reported <10 h of activities, while this share was much lower for natives (7%) and for other immigrants (10%). Since the analysis is limited to the information on time spent in the measured activities, it neglects potential other activities. This is especially problematic if refugees were to allocate more of their time to such unmeasured activities (rather than being really inactive) compared to the other population groups, because it makes comparing the groups more difficult. For instance,

previous qualitative research suggests that some refugees spent time volunteering and helping other refugees (Kallio et al., 2021; Lubit, 2022). Activities such as this are not captured in the data. Another activity not captured in the data but likely important for refugees is job search effort. A short descriptive analysis of the shares of refugee observations out of labor force and registered as unemployed by cluster, showed that indeed the *low activity* and the *mixed* clusters consistently show higher shares of observations that are registered as unemployed (proxying looking for a job) than of observations out of labor force (proxying not employed but also not looking for work). For the other clusters, this difference in shares was either the opposite or there was no difference in shares (see Supplementary Table 11). This suggests that at least some of the observations sorted into the *low activity* clusters because actively looking for work was not captured in the data. Similarly, the measurement of the education-related activities might result in differences between refugees and the other population groups. Since more than 70% of the refugee observations in the sample have been enrolled in some form of integration or language course, more could have reported to invest time in education than the 23% who did report it. This might be due to the refugee respondents not counting their participation in the language classes as educational activity, which would additionally increase the sorting of refugee observations into the *low activity* clusters.

However, even if both the additional measuring of other activities and the use of a different method to look at time use patterns would lead to refugees' time use clusters looking different than in the present study, the clusters of refugees' time use would still likely not be similar to the time use clusters of natives and other immigrants. Instead, they would likely form additional clusters of job searching activities, volunteering activities, or similar activities, which in turn would not be found in the same size for natives and other immigrants. Hence, the difference in time use patterns would prevail.

This difference in time use patterns between refugees and other immigrants should have important implications for their integration outcomes. The deliberate and strategic investment of time in certain activities that foster integration will affect integration outcomes and, in addition, the time use patterns of an immigrant or refugee becoming more similar to the patterns of the native population is an indicator of integration itself. For instance, if we deem time investment in employment to foster integration, then refugees would lag behind other immigrants at least in the first years since their arrival in the host country. Similarly, given that refugees' time use clusters are more different from the natives' compared to the other immigrants' clusters, the similarity of time use patterns as indicator of integration would also suggest that refugees lag behind other immigrants in terms of integration. As discussed, multiple differences between refugees and other immigrants, such as migration motivation and experience, make such differences in time use patterns likely. Especially the conditions in the host country that come with many legal barriers for refugees should play a role for time use patterns.

Indeed, my analyses showed that having asylum or refugee status as well as subsidiary protection or other humanitarian status was associated with a lower probability to sort into the childcare- and household-oriented cluster in comparison to the *low activity* cluster. On the other hand, the fixed effects analyses looking at the effect of receiving a positive decision on the refugees' asylum cases for their time use found insignificant and small effects (no support for Expectation 4). Since receiving legal asylum lifts many of the institutional restrictions which refugees face in the host society, their time allocation after reception should be much more free than before, meaning that they potentially have more similar agency in their time allocation than natives and other immigrants. However, the results suggest that it might be difficult for refugees to change their time use and their situation immediately after receiving their legal status. Kosyakova and Brenzel (2020) reported that refugees in 2017 in Germany had waited on average 6 months for a positive decision on their asylum application. This means 6 months of living without a legal status and the restrictions that come with this situation. In addition, these refugees took up their first employment in Germany on average 20 months after applying for asylum (Kosyakova and Brenzel, 2020), suggesting that refugees need time to adjust to the host country, find a job, and learn the German language, even after they receive their legal status. Hence, the period of 4 years that I examined in this paper, of which the first observed year had to be without legal status in the fixed effects models, might be too short to observe meaningful changes in the time use of refugees. In addition, over 50% of the refugee sample were from Syria meaning they had good prospects to remain in Germany, which comes with fewer restrictions even before gaining legal status. With Expectation 5, I argued that refugees from such countries with good prospects to remain should be less likely to show a change in time use when receiving legal status since there were fewer restrictions lifted with it. However, my analyses showed that refugees from countries with and without good prospects to remain largely showed no difference in time use, and hence, Expectation 5 was not supported.

The study's drawbacks mostly concern the data. They measure time use in a stylized way, yet it would be preferable to have time use diaries in which respondents chronologically report the hours spent doing certain activities throughout the course of a day. Such data can be used to study time use sequences, which would be useful to get a holistic view of the time allocation per day. Hence, the use of unordered time information is only an approximation of what a usual day in a refugee's life looks like. In addition, the lack of measurement of other activities, which are potentially more relevant for the group of refugees, prevents the analysis from more accurately and holistically describing the time use of all three population groups. Further research is therefore needed to more deeply investigate the differences in the time use of refugees, other

immigrants, and natives, as well as its predictors such as legal status or individual characteristics. Furthermore, it is necessary to explicitly study the implications of differences in time use for integration outcomes and time use patterns as indicator of integration. This would further the understanding of the factors holding back refugee integration and the development of measures to eliminate such factors in order to facilitate the integration of refugees.

Data availability statement

Publicly available datasets were analyzed in this study. This data can be found here: SOEP Research Data Center: https://www.diw.de/en/diw_01.c.601584.en/data_access.html.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

Author contributions

JK developed the concept and design of the study, performed all data preparation and statistical analyses, wrote all drafts of the manuscript, and revised and approved the submitted manuscript version.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fhumd.2022.1037778/full#supplementary-material

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The contextual cogs of "migrant jobs": A comparative study of the institutional determinants of migrant marginalization in European labor markets

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Migrants play a significant role in European labor markets and are used as sources of "cheap labor"; often being disproportionately represented in low-wage, poor conditions, or otherwise precarious positions. Past research has suggested that the process of migrants being filtered into these low-end occupations is linked to institutional factors in receiving countries such as immigration policy, the welfare state and employment regulation. This paper calculates the extent of migrant marginalization in 17 European countries and uses qualitative comparative analysis (QCA) and regression modeling to understand how institutional factors operate and interact, leading to migrant marginalization. The QCA showed that when a country with a prominent low skills sector and restrictive immigration policy is combined with either strong employment protection legislation or a developed welfare state, migrants will be more strongly marginalized on the labor market. The results of the statistical analysis largely aligned with the idea that restrictive immigrant policy by itself and in combination with other factors can increase marginalization.

KEYWORDS

migration, welfare state, institutions, labor market, precarious work

1. Introduction

Immigrants play a vital role in the economies of many western European countries and have done for decades, even centuries (Van Mol and Valk, 2016). Indeed, as Robinson puts it: "There has never been a moment in modern European history (if before) that migratory and/or immigrant labor was not a significant aspect of European economies" (Robinson, 1983, p. 23). Some perspectives stress global differences in wage-levels and prosperity between countries and processes of empire as central to explaining migrants' place in Western labor markets; firms in the global North pursue strategies of "labor arbitrage" at home for jobs that they haven't been able to outsource to countries with lower wages, and gain access to cheaper labor *via* migration (Wills et al., 2009; Smith, 2016). A significant amount of these migrant workers are used as a source of "cheap labor": for jobs with low levels of pay, benefits, and employment protection (King and Rueda, 2008; Emmenegger and Careja, 2012).

Ruhs and Anderson (2010) say that similar to how jobs previously performed by men become "women's jobs," so too can jobs become "migrant jobs" and thus accrue lower social status, with such job demarcations and stigmatizations becoming structurally embedded with time (Ruhs and Anderson, 2010, p. 39). There has been significant discussion of the particularly unfavorable circumstances of migrant workers in European labor forces, with a number of factors combining and leading to migrants being relegated to a secondary labor market, working within a context of a new "migrant division of labor," or in situations of severe precariousness more "extreme" or "hyper" than that of locals' (Piore, 1979; May et al., 2007; Porthé et al., 2010; Lewis et al., 2015).

This paper follows critiques of human capital and neoclassical approaches that overly focus on skill levels and supply-side factors and miss the importance of demand-side effects that shape labor market dynamics (e.g., Rubery, 2007; Grimshaw et al., 2017). Within the narrower but undertheorized frame of migrants' labor market and poverty outcomes, it has been shown that we need to go beyond mere migrant composition to explain their socioeconomic position, and also consider the broader institutional context (Büchel and Frick, 2005; Barrett and Maître, 2013; Hooijer and Picot, 2015; Eugster, 2018; Guzi et al., 2021; Krings, 2021; García-Serrano and Hernanz, 2022).

Contextual and institutional factors have been shown to interact to shape dynamics on national labor markets that can differentially affect migrants and locals: specifically the interplay of immigration policy, welfare policy and labor market regulation has been repeatedly highlighted as how migrants find themselves marginalized (May et al., 2007; Ruhs and Anderson, 2010; Pajnik, 2016). While employment regulation and welfare state elements are relevant for all people living in a country, migrants' access to and use of such institutions can be modulated by their status as migrants and the related forces this exerts on them. Eugster (2018) emphasizes that the interaction of such institutions is of large importance: e.g., even if a migrant has formal access to social rights or employment regulations, if they face negative consequences for receiving benefits, have less freedom to choose their employer/industry, or are segmented into "outsider" jobs that are not covered by employment legislation, their effective capacity to benefit from these institutions is less than locals'.

The goal of this paper is to understand how such institutional factors shape the extent to which migrants end up performing the least desirable jobs in Europe. Previous research using standard statistical methods has illuminated the presence and relevance of certain contextual factors. This paper adds to this body of work using similar methods with different specifications, and enriches our understanding in a novel way by identifying complex combinations of contextual factors by conducting a qualitative comparative analysis (QCA).

The next section begins with the theoretical frameworks that are drawn upon to conceptualize the situation of migrants in European labor markets, followed by previous empirical findings on the topic that inform the decision to focus on institutional-level explanations and selection of causal conditions. After this, the sample and methods are outlined, including how the outcome is derived and causal conditions operationalized. The results of the QCA analyses and a focus on two country cases follow. The results of the regression analysis are then presented. The paper concludes by considering the results' implications for the broader body of work on migrants' labor market outcomes and related institutional factors, as well as addressing limitations of the research.

2. Background and literature review

Before engaging with the main theoretical and empirical works that this study engages with and is based on, a note on the term "migrant/immigrant" as conceptualized throughout and used in the analysis. "Immigrant/migrant" is not a naturally occurring category that can be defined from a completely objective standpoint, but is rather a particular and partial encircling of the various human mobilities that constantly occur (Favell, 2022). Previous research has operationalized "migrant"/"immigrant" using a number of approaches depending on the perspective and interest of the researchers. Indeed in the public discourse the term is understood in various ways at different points in time and in specific contexts. Given the topic of this paper is immigrants at the bottom end of contemporary European labor markets and their being a source of "Cheap Labor" for European economies, something that is inexorably tied to historical colonial and economic linkages between countries and regions globally (Cohen, 1988), migrant is primarily taken here to mean people from outside these core wealthy countries[1]. It's assumed that for migrants from these wealthier regions there are different mechanisms and causes at play, and that in trying to understand the phenomenon of migrants being used as "Cheap Labor," theoretically migrants from wealthy countries are not part of the story. Fernández-Macías et al. argue that including such groups stretches the idea of "migrant worker" which is commonly understood as migrants from less-developed regions (Fernández-Macías et al., 2012, p. 113). As well as the common understanding that "immigrants" and "expats" are treated differently, there is also empirical research highlighting

1 While the choice to not include all people born abroad in the migrant group is largely driven by the objective differences in the experiences of people from different regions borne out in theory and empirical findings, it is also intended as a way to recognize the continuing legacy of centuries of colonialism and exploitation that still shape contemporary dynamics of migration.

that these groups have qualitatively different experiences. A number of studies have empirically found migrants from North and Western Europe, North America and Australasia to fare better than those from CEE and non-EU countries, on various labor market outcomes, sometimes even surpassing nationals (Fernández-Macías et al., 2012; Felbo-Kolding et al., 2019; Fellini and Guetto, 2019; Heath and Schneider, 2021; Felbo-Kolding and Leschke, 2022).

Different schools of migration theory underscore how global inequalities drive migration dynamics in such a way that people from less wealthy countries end up working jobs at the low end of the labor market in wealthy destination countries (Massey et al., 1993). Neoclassical approaches see things in terms of equilibriums of wages/conditions and individual-level gain-maximizing decision making, so significant gaps in prosperity between countries will result in migrants from these places as having different frames of reference and perspectives to locals on what constitutes a job worth taking, given the higher potential for gains in terms of wages, wealth or living standards. Structural theoretical frameworks—e.g., dual labor market theory, world systems theory— seeing things more in terms of the macro-level forces and the structure of different modern economies point to labor demand in parts of European economies or the lack of quality employment opportunities in sending countries (Massey et al., 1993). However, structural accounts (such as Piore, 1979) also contain this mechanism that migrant workers accept these lower end jobs due to lower expectations in terms of wages and conditions.

A further element discussed throughout the paper are the pressures created by legal structures in the receiving countries *via* immigration policy, that often act more strongly upon people from countries outside the wealthy core (e.g., ease of getting a visa); which makes sense if one sees bordering processes as contributing to the reproduction of global inequalities (Favell, 2019).

2.1. Theorizing migrant workers' unique position

Migrants can be seen as part of broader developments that have occurred since the 1980s, as those exposed most strongly to reforms at the workplace: "while subcontracting is now the paradigmatic form of employment across the world, the migrant is the world's paradigmatic worker" (Wills et al., 2009, p. 6). Wills et al. point to neo-liberal management of the domestic economy as a key factor in driving down wages and working conditions at home, while the export of neo-liberal policies create the need and desire for people abroad to migrate to look for work (Wills et al., 2009). Several frameworks present migrants as a group that seem to be at a sort of "cutting edge" or test subjects of negative developments for labor within Western societies. Nobil Ahmad says in many approaches dealing with precarious work, illegal migrants are seen as the emblematic precarious workers—an extreme case that experience the emerging neoliberal social order at its worst (Nobil Ahmad, 2008, p. 303). In Standing's work on "the Precariat" he says migrants make up an important part numerically and qualitatively of this emerging class, simultaneously being subjected to and blamed for the increasing insecurity and uncertainty we observe (Standing, 2011). Lewis et al. employ the notion of "hyper-precarity" to differentiate exploited migrants' situation from that of the precariat class more generally, as they are at a nexus of both employment and immigration precarity, leading to unfreedoms and lack of alternatives to submitting to exploitative and unfavorable working arrangements (Lewis et al., 2015, p. 588). In line with Sassen's influential work on global cities as command centers of global capitalism with stark job polarization, studies in London have spoken of a "Migrant division of Labor" to describe how the city is reliant on migrants to perform dirty work necessary for its functioning (Sassen, 1991; Datta et al., 2007; May et al., 2007; Wills et al., 2009).

Geddes and Scott (2010) argue that structurally, migrant workers function as a hidden "subsidy" to producers in the UK low-wage agricultural sector, and are seen as a qualitatively distinct form of labor. If we use the concept of a labor market, where people and their potential labor power are the commodities, then according to this analysis the buyers assess the migrant commodities differently from non-migrant ones. Pajnik points out that in EU-level debates and policy, migrants are viewed as mere commodities: skilled migrants as opportunities for economic development; low-skilled migrants as solutions to labor market shortages caused by nationals' unwillingness to carry out "3D" (dangerous, demanding, dirty) jobs (Pajnik, 2016, p. 160).

Migratory routes in Western Europe have had a number of permutations: some countries implemented "guest-worker" schemes to fill labor shortages; others facilitated labor from former colonies; and continuing until today there are programs to attract migrants for sectoral labor demands, often spurred employers associations (Sassen, 1991; Menz, 2008; De Haas et al., 2020). These migrants, who are generally able-bodied and young, have influenced the makeup of European labor forces and the likelihood of success for different industries and economic activities across the continent (Ruhs and Anderson, 2010). Certain industries, such as horticulture or social care in the UK (Geddes and Scott, 2010; Evans, 2021), could not exist in their current form without migrant workers to rely on.

2.2. Previous empirical findings on the position of migrants in the workforce

Ubalde and Alarcón (2020) find a gap between the occupational status of migrants and locals, and the difference increases when only comparing with non-European migrants.

These results were after controlling for human capital, acculturation, family background and sociodemographic elements, concluding that discriminatory factors in the European labor market do persist. Gorodzeisky and Richards (2013) summarize that there is a high degree of labor market segmentation between local and migrant workers in Europe, with the latter more likely to be concentrated in less-favorable sectors characterized by longer hours, lower pay, less employment stability and less skill development and promotion opportunities. The sectors migrants tend to be concentrated in are also those where unions are least likely to be present (Gorodzeisky and Richards, 2013).

Emmenegger and Careja (2012) show that in Germany, UK and France immigrants are disproportionately employed in sectors impacted by outsourcing to secondary labor markets and that are the most dualized (e.g., construction, restaurants, logistics, household, cleaning). Ambrosini and Barone (2007) report segregation into low-paying non-unionized job sectors with limited upward mobility, and note that these are often also unhealthy and dangerous roles. A number of other authors and literature reviews have concluded that migrants are overrepresented in jobs characterized by hazardous tasks, occupational risks, physically-demanding work, poor working conditions, uncertainty and low autonomy (González and Irastorza, 2008; Benach et al., 2010; Sterud et al., 2018; Arici et al., 2019).

The 2019 OECD Migration Outlook found the proportional gap of in-work poverty has increased over the last number of years, with 18% of working migrants in the EU living below the poverty threshold in 2017, compared to 8% of nationals (OECD, 2019a). The number of migrants working part-time and wishing to work more hours has grown (especially for women migrants), as has the gap in over-qualification rates (OECD, 2019a).

2.3. Mechanisms channeling migrants to the low-end

Burgoon et al. (2012) note that foreign-born workers tend to be easier for employers to pressurize and more difficult to organize than native workers. This is for several reasons, including being less familiar with the regulations and rights for workers, and having precarious legal positions (often related to the immigration policy they're subject too) leading them to be more docile in dealing with employers. Bridget Anderson et al. have considered how employers fuel the situation, what advantages they see in migrant labor, and the discourses that arise describing migrant workers. Anderson et al. (2006) showed that employers are aware that by hiring immigrants they often get high-quality, yet low-wage workers, who are more likely to accept more negative conditions such as unsociable shift times. Ruhs and Anderson (2010) describe how as employers hire migrant workers for these discount prices and company-favorable conditions over time, they are not forced to pursue other strategies of creating efficiencies that they otherwise would. They stress that labor demand and supply are not generated independently of each other, and that employers form expectations of and a reliance upon this source of labor. They show how the word "skills" is used in an ambiguous way and differs across contexts, sometimes referring to credentialized qualifications and soft skills, other times more personal characteristics and behavioral traits (e.g., "hard-working," "friendly," "caring" etc.). They warn that discussions of "skills," "skill-shortages" and "skill-based immigration policies" should be scrutinized: that sometimes what is really meant by skills are traits and behaviors related to employer control over the workplace, e.g., a willingness to accept certain wages and working conditions (Ruhs and Anderson, 2010, p. 6). As well as determining whether workers have the required skills, employers assess what employment relations and conditions the workers will tolerate: what type of shifts they're willing to work, how easy they are to discipline, how compliant and cooperative they are, what levels of stress and emotionally draining work they can handle (Ruhs and Anderson, p. 20). Other research has shown that migrants, especially new arrivals, are sometimes seen as harder workers than the local labor supply, and as being prepared to work longer hours and generally more reliable, due to their lack of choice and undeveloped aspirations (MacKenzie and Forde, 2009).

Others have discussed the absence of union activity and collectivization by migrants, which might seem like the obvious strategy to combat and improve their lot at work. Rodriguez and Mearns (2012) say that due to legal insecurities and fear of repercussions if they were to enact political agency, migrant workers are unlikely to engage in trade unionism. King and Rueda describe how for several reasons "cheap labor" often fails to develop political strength and identities based in occupation, but instead according to their migration status, gender or ethnicity (King and Rueda, 2008, p. 293). This is said to be due to their political weakness in capitalist democracies, because they often move rapidly between jobs and don't have time to build ties, and how they have become politicized and treated as suspects of ideological extremism or objects of hostility from anti-immigrant movements (King and Rueda, 2008).

Emmenegger et al. (2012) identify migrants' limited political and civil rights, widespread discrimination and language problems as micro-level processes that form migrant workers into a qualitatively distinct group on the labor market. Discrimination against migrants (especially non-EU) in the hiring process has been found in multiple country studies, sometimes using experimental research methods (Nobil Ahmad, 2008; Carlsson, 2010; Weichselbaumer, 2015). The International Labor Organization report that in studies on a number of developed western nations, around one third of vacancies tested were closed to young male applicants of migrant or

ethnic minority background, and that these discrimination rates were higher in smaller- and medium-sized businesses and within the service sector (International Labor Conference and Internationales Arbeitsamt, 2004). They also found irregular migrants were preferred by employers as they were willing to work for lower wages, short periods and perform hazardous tasks (International Labor Conference and Internationales Arbeitsamt, 2004).

2.4. The importance of institutions

In addition to general criticisms of orthodox/neoclassical and human capital approaches' to the labor market (Piore, 1979; Grimshaw et al., 2017), others have pointed out the limitations of such approaches' explanatory power specifically when it comes to migrants' labor market outcomes (McGovern, 2007; Ruhs and Anderson, 2010; Krings, 2021). Rather than seeing economic migrants as quintessential "homo economicus," these authors highlight the importance of institutional elements of labor markets and the importance of the state. Büchel and Frick found that even when controlling for the socioeconomic characteristics of people within the household and individual-level indicators related to integration (years since migration, intermarriage), cross-country differences in migrants' economic success persisted, leading them to suggest that institutional-level factors such as access to the labor market and aspects of social security related to citizenship or immigration play an important role in migrants' economic success (Büchel and Frick, 2005). Devitt (2011) has highlighted how receiving country institutions shape domestic demand for migrant labor, including how domestic (under)supply can impact this demand.

Given migrants in low-end work in Europe is a topic that multiple strands of social research can provide insights about—migration, welfare state, varieties of capitalism, labor market economics, employment regulation—it is not surprising to find that many authors have stressed the overlapping and interacting of certain contextual and institutional factors in explaining the situation. In trying to understand precarious migrant workers (especially undocumented), Anderson et al. say we should do away with the overly-simplified image of the individual "abusive employer," but recognize the active role of the state in structurally constructing these vulnerable groups and the important effects that employment and immigration legislation have in providing employers extra mechanisms of control over migrant employees (Anderson et al., 2006, p. 313). May et al. (2007) argue we need to consider how the welfare state regime interacts with other areas of state-craft like labor market (de)regulation and immigration policy to foster these labor market dynamics, in the context of immigrants' overrepresentation in low-paid jobs in London. Similarly, Corrigan (2014) lists citizenship and immigration policies, social welfare policies and labor market policies as the three institutional domains of the integration of migrants. Speaking of the structural demand for migrant workers in the UK context, Ruhs and Anderson (2010) say that this demand is created not just by immigration policy, but also other broader regulatory, institutional, and social policy systems.

Introducing the concept of migrant "hyper-precarity," Lewis et al. (2015) posit that this state emerges from the interplay between neoliberal labor markets and restrictive immigration regimes. McGovern (2012) advocates that Piore (1979) influential account of the segmentation of immigrants in the labor market be extended to encompass the role of the state and immigration policies. Similarly, Pajnik (2016, p. 159) argues that labor market and migration regimes over-determine migrants' lives, and that neoliberal or market-oriented policies favoring "flexibility" in employment relationships have been accompanied by provisions that marginalize workers' rights, the shrinking and individualization of the welfare state, and the deregulation and wage-reduction in sectors that haven't been outsourced—that migrants often find themselves in (e.g., construction, agriculture, services). She says we need to consider the migration and labor market orders of workfare societies to intersectionally analyze migrant statuses, and the policies and industries of migrant work (Pajnik, 2016, p. 162). Krings (2021) while looking at migrant low-wage employment in Germany highlights that labor market outcomes of migrants are shaped by immigration rules and product market regulations, not just wage-setting institutions and employer behavior.

McGovern (2012) draws attention to the fact that by limiting the freedom of migrant workers to enter and by placing various controlling mechanisms on the nature and conditions of the work they can do, countries prevent individuals from freely selling their labor power to the highest bidder, despite markets (including labor markets) remaining unobstructed being a central dictum of neoliberalism. According to McGovern, this has created a legally-imposed and enduring form of labor market inequality negatively impacting migrants. After qualitatively studying the experiences of immigrant workers in Spain and comparing them to Spanish workers', Porthé et al. (2010) conclude that according to seven dimensions of precariousness, immigrant workers are pushed into situations of "extreme precariousness." This is said to be due to them suffering an "accumulation of factors of vulnerabilities," a vector including migrant status and socio-economic position (Porthé et al., 2010, p. 423).

Migrant poverty levels are closely related to labor market position, and here also the composition of migrants has been found to be insufficient in explaining poverty rates across countries. Using qualitative comparative analysis (QCA), Hooijer and Picot (2015) study migrant disadvantage in terms of risk-of-poverty, specifically how welfare state type, employment regulation and immigration policy influence this disadvantage. They find a generous welfare state alone is not enough to prevent poverty gaps between migrants and natives, as these

rights can be strongly differentiated where countries receive high amounts of humanitarian immigration. At the same time, they find considerable gaps where the welfare state is lean and labor market deregulated—highlighting how the effect of certain institutions are conditional on others'.

The institutional component of migrant marginalization in the labor market (whose empirical existence is more strongly established) is under-theorized, and most work grappling with it has thus far focused on single policy areas, despite the above-mentioned emphasis on institutional fields overlapping and interacting to bring about these outcomes (Guzi et al., 2021). Some have studied institutional effects on migrant employment and unemployment rates (e.g., Huber, 2015), but as has been shown in above works illustrating the often bleak and exploitative situation for working migrants, just being employed doesn't assure sufficient quality of life or security. Two recent studies largely using a Varieties of Capitalism (VoC) framework have directly investigated institutional effects on migrant-native gaps in labor market outcomes, beyond individual-level composition (Guzi et al., 2021; García-Serrano and Hernanz, 2022). In terms of job quality, García-Serrano and Hernanz found more coordinated wage bargaining, union presence, and stricter EPL tended to disadvantage migrants vis-à-vis natives, while integration policies and government involvement in minimum wage reduced these gaps (García-Serrano and Hernanz, 2022). They also emphasized that the same policy wont bring identical results, but must be adapted for national contexts (García-Serrano and Hernanz, 2022). Guzi et al. found that EPL increases the gap between migrants and natives in terms of low-skill employment, while certain welfare spending measures decreased outcome gaps (Guzi et al., 2021). These works make great strides in advancing this field of knowledge, but in their use of frequentist statistical methods, potentially leave some of the complex interaction of institutional factors unexplored (Ragin, 2010). For this reason, this paper uses a QCA approach: to uncover not only which institutional factors are at play, but also how they interact with each other to bring about migrant marginalization. In allowing for conjunctural causation, equifinality and asymmetric causation, QCA is ideal for investigating exactly these complex mechanisms, not just their existence in isolation (Oana et al., 2021).

Having reviewed this literature, it is expected that where immigration policy is more restrictive, we would find a higher migrant marginalization and segmentation into lower-end jobs. It is primarily *via* this policy field that migrants' statuses are determined, and thus the stronger the restrictions, the more migrants are differentiated from locals' and we could expect patterns of segmentation to develop. How this combines with the welfare state and employment regulation to shape marginalization is difficult to predict, given these domains affect both migrant and national side of the equation. For example, while Sainsbury (2012) found that the type of welfare state a country has matters for migrants' social rights and decommodification, a leaner welfare state could potentially preclude the option for locals to refuse low-end jobs, thus leading to a lower gap between migrants and locals. Just as a stronger welfare state, if coverage is differentiated, could create a viable option for locals of a country to not take up work in low-end sectors, this could also foster a need to find migrant workers for these positions, potentially creating a larger migrant-local gap. Similarly, a highly deregulated labor market could create equally insecure conditions for migrants and locals alike, whereas migrants could potentially be unprotected in a country with high employment protection, due to their migrant status, visa or industry. Rather than working in a single causal direction, it is expected that EPL and the welfare state will be conditioned on the broader labor market and migration policy.

3. Materials and methods

3.1. Data and sample

The primary data source is the European Union Labor Force Survey (EU LFS), provided by Eurostat. The EU LFS is a large cross-sectional household sample survey providing quarterly results on labor participation of people aged 15 and over as well as on persons outside the labor force. The data includes people living in private households; persons carrying out obligatory military or community service are not included in the target group, nor persons in institutions/collective households (Eurostat., 2020). To ensure a big enough sample size of migrant respondents in all countries without spreading the cross-section over too long a period, data from the 2017 and 2018 waves were combined, and the sample restricted to those of the commonly-used definition of being working-aged: 20–64 (OECD, 2020)[2]. A main advantage of EU-LFS is the large sample sizes allowing good representation of countries' migrant populations. A table with information on the size of the raw sample and subsequent steps excluding observations is provided in Supplementary material.

The groups compared are people born in country, to migrants working in that country. The migrant sample includes respondents not born in the survey country, nor the EU-15, North America or Australasia. The choice to operationalize the migrant group in this way is based on theoretical and empirical considerations as discussed at the beginning of the background section, and has similarly featured in methods employed by previous research (Kogan, 2006). Since according to both neo-classical and structural-macro theories of migration wage and prosperity gaps between countries are key in explaining migration (Massey et al., 1993), and these

2 A robustness check was performed by instead combining 5 years of LFS data (2014–2018), and the parsimonious solution did not change. Available upon request.

gaps contribute to the forces leading to migrants accepting undesirable jobs and unfavorable work conditions, migrants from the aforementioned regions were excluded due to the absence of these prominent inter-country wealth gaps.

Within this framework of wealthy countries engaging in labor arbitrage, migrants are not here limited or divided to smaller groups (e.g., migrants on particular types of work visas, refugees, or migrants from certain countries/religions) but include all people who have moved, since these broader forces stemming from global inequalities are relevant to all such sub-groups and they will generally all need to engage with the labor market. In a similar vein, "people with migration background" or "second/third generation migrants" are not included in the concept of migrant used here. This is not to deny that these groups can face real discrimination/marginalization, nor that there is overlap between what these groups and "first generation migrants" face related to the labor market; but this paper is not aimed primarily at dynamics of general racial or ethnic discrimination and the related processes that would be involved in explaining their labor market outcomes. Additionally, these groups are not as differentiated in legal terms as non-citizens and thus the institutional mechanisms that are central are not as relevant: e.g., differentiated access to the welfare state or being subject to immigration policy doesn't apply to "second generation migrants" as much as to people who have immigrated.

The country cases included are the EU-15 (including the United Kingdom), plus Norway and Switzerland. The main two reasons behind this are first, the majority of theoretical and empirical works handling the relevant contextual factors—the welfare state, migration (policies and macro explanations), employment systems and regulation—are based upon similar samples of wealthy Western European countries (Esping-Andersen, 1990; Ferrera, 1996; Freeman, 2006; Devitt, 2011; Hooijer and Picot, 2015). Second, the historical and institutional differences, as well as differences in the histories of migration, between these countries and the excluded post-socialist ones are too vast to usefully include them in the analysis. Settler colonial countries such as the US, Canada and Australia might share similarities, however their immigration systems and histories are also too distinct from the selected European cases to be included.

3.2. Analytical approach

As discussed in the literature review, the situation of migrants in the workforce has been said to be shaped by numerous institutional fields: fields which have however been theorized and researched largely in isolation from one another (e.g., Boucher and Gest, 2015). Given that research has consistently stressed the multitude and interaction of institutional factors, qualitative comparative analysis (QCA) was chosen as a method to investigate how certain institutional factors bring about migrant marginalization. The paper follows a growing number of research works that employ both standard statistical analyses and QCA to benefit from the advantages of both approaches (Meuer and Rupietta, 2017). On the one hand the standard statistical analysis is variable-oriented and relies on correlational analysis, comparing *across* cases, QCA is based on set theory, case-oriented, and uses Boolean algebra to compare *between* cases (Meuer and Rupietta, 2017). While interaction effects within a standard frequentist/regression analysis approach can be used to investigate the interaction and combination of variables, QCA provides a flexible strategy to handle causal complexity and potential combinations are given central importance in the method. The core motivation of QCA is to account for the complex interplay of different factors bringing about an outcome of interest, and it is particularly suitable for addressing causes-of-effects questions (Oana et al., 2021). QCA incorporates the three core elements of causal complexity: assuming and allowing for conjunctural causation, equifinality and asymmetric causation, where different sets combine with the logical operations AND, OR and NOT, respectively (Schneider and Wagemann, 2012; Oana et al., 2021). QCA uses Boolean algebra to analyze which causes, or combinations of causes, are necessary or sufficient for a given outcome—the outcome here being migrant marginalization.

3.3. Qualitative comparative analysis (QCA)

The outcome of the QCA was first calculated using statistical methods, as is commonly done (Meuer and Rupietta, 2017). Logistic regression models were used to estimate the levels of migrant marginalization in each country (see Section 3.3.6). The logistic regressions were performed in Stata 15, and all QCA steps performed with R using the "QCA" and "SetMethods" packages (Oana and Schneider, 2018). The selection of causal conditions was based on prior theoretical knowledge as outlined in the background section and further in the following section. This is a fuzzy set QCA (fsQCA), which allows cases to have partial membership scores in a set, ranging from 0 to 1 (as opposed to crisp set QCA where all cases are coded to either fully in or out: 1 or 0). Following the calibration (see Section 3.3.7)—that is, assigning country cases fuzzy-set membership scores in all conditions and the outcome (full details in Supplementary material)—the core elements of a QCA are performed: constructing a truth table, and analyses of necessity and sufficiency. Constructing the truth table involves three steps: the identification of all logically possible configurations; the assignment of each case to one of these truth table rows based on its membership scores; and the definition of the outcome values for each row (Schneider and Wagemann, 2012). The truth table is constructed so that we can investigate which conditions

(or combinations of conditions) are sufficient for bringing about the outcome, *via* the logical minimization of the truth table (i.e., analysis of sufficiency) (Schneider and Wagemann, 2012). While sufficiency is about "whenever cause(s) X is present, outcome (Y) is also present" (Y is a superset of X), statements of necessity can be read as—"wherever Y is present, X is also present" (Y is a subset of X). After the "analytic moment" (Boolean minimization of the truth table) two brief case studies are undertaken to evaluate and further interpret results from the formal QCA analysis.

Some authors have criticized QCA on various grounds, including failure to produce correct causal pathways in simulated datasets (Lucas and Szatrowski, 2014). Defenses against this line of criticism have argued that it ignores the incorporation of case-based and other forms of substantive knowledge inherent to QCA as an approach (Ragin, 2014), as well as criticized the application of the method in tests (Ragin, 2014; Baumgartner and Thiem, 2020) and the expectation of QCA to recover regression models (Baumgartner and Thiem, 2020). The case knowledge used throughout the research process and in the case studies in this article is intended to ensure a fruitful "dialogue with the data" that should be part of a QCA (Rihoux and Lobe, 2013), while the use of established statistical analysis provides a valuable alternative, and here argued complimentary, approach to further our understanding of the topic.

3.3.1. Causal conditions

Previous literature has highlighted the role of the welfare state, employment regulation and immigration policy as factors important to the situation of migrants in precarious and low-wage work around Europe, and thus form the first three causal conditions of the QCA. The fourth condition, the extent of low-skill employment in a country, is another important element and is further justified below. In-depth knowledge of cases and concepts minimize ex ante measurement error and threats to internal validity (Thomann and Maggetti, 2020). The welfare state and immigration policy causal conditions are based on in depth theoretical knowledge of cases (Esping-Andersen, 1990; Ferrera, 1996; Helbling et al., 2017), and the OECD employment protection index was compiled using the Secretariat's reading of statutory laws, collective bargaining agreements and case law as well as contributions from officials from OECD member countries and advice from country experts (OECD, 2020).

3.3.2. Developed welfare state

To differentiate countries by their welfare state systems, the well-known conceptual framework of welfare state regimes based on the work of Esping-Andersen (1990) is used. Since the original typology has been criticized for not adequately capturing the characteristics of Southern European countries, a fourth "southern" model was included on top of the three original regime types of "liberal," "conservative" and "social-democratic" (Ferrera, 1996). This approach was chosen since other methods of operationalizing the welfare state, such as social spending as percentage of GDP, are less holistic and fail to understand a welfare state's role or character within the broader national context, and the typology framework has proven to be a useful, popular and easily-understood theoretical approach for comparing countries (Ferragina and Seeleib-Kaiser, 2011).

3.3.3. Job security/employment protection legislation

To capture a country's employment regulation, the OECD's Employment Protection Legislation index (OECD, 2021) for the year 2017 was taken. The index evaluates countries' regulations on the dismissal of workers on regular contracts and the hiring of workers on temporary contracts, and covers both individual and collective dismissals (OECD, 2021). While this is a detailed and relatively comprehensive indicator, it has also received criticism on a number of grounds (Crouch et al., 1999; Addison and Teixeira, 2003). To combat the general indicator's shortcomings, the data was reweighted following the strategy of Emmenegger (2011) (see Supplementary material).

3.3.4. Restrictive immigration policy

Freeman says that "Hardly anything can be more important for the eventual status of immigrants than the legal circumstances of their first entry" (Freeman, 2004, p. 950). To capture and compare countries' immigration policies, the Immigration Policies in Comparison (IMPIC) database was used. IMPIC measures policy outputs of 33 OECD countries from 1980 until 2010 covering the regulation of labor immigration, family reunification, refugee and asylum policy, and policy targeting co-ethnics (Helbling et al., 2017). IMPIC defines and measures immigration policies as governments' statements of what it intends to do or not to do (including laws, policies, decisions or orders) in regards to the selection, admission, settlement and deportation of foreign citizens residing in the country. It is specifically designed to allow cross-national comparisons of countries' immigration policies. Based on the analytical approach of Helbling et al. (2020), itself stemming from the finding of Schmid and Helbling (2016), namely that the three policy fields of labor migration, family reunification and asylum can be reduced to a single and consistent empirical dimension, this one comprehensive IMPIC measure covering these three policy fields as a measure of a country's immigration policy was used. The data is from 2010, the most recent year available.

3.3.5. Prominent low-skill employment

The size of a country's low-wage/low-skill employment sectors is one of the principle demand-side explanations for labor migration (Devitt, 2011). The type of jobs that are available in a country and employers' needs to find people to fill these positions are part of the pull-factors and network effects that shape migration flows (Ruhs and Anderson, 2010; Devitt, 2011). Since the outcome of the QCA analysis is the extent to which migrants end up filtered into the low-end of the labor market, the relative size and prevalence of this sector is an important element. While this could be included in the models calculating countries' marginalization scores, the extent of the low-skill sector in a country is actively shaped by states' economic, industrial and other policy, and is an interesting factor in itself; and so was included as a causal condition. Given that the particular low-skill industries or sectors that are prevalent in European countries differ, including sectors defined in a more absolute or concrete sense (e.g., size of the hospitality, agriculture, manufacturing industry) in the QCA analysis is not possible for such a wide assortment of economies (Devitt, 2011; Cangiano, 2012; World Bank, 2020; Guzi et al., 2021). To capture the importance of low-skill employment and simultaneously allow for the fact that the particular low-skill sectors that prevail differ across countries, the percentage of low-skill jobs in each country was calculated using the EU-LFS (ISCO 5 and 9 jobs as percentage of total employment, following Andersson et al. (2019) and the (OECD, 2019b).

3.3.6. Outcome: Calculating migrant marginalization

The outcome is migrant marginalization in the labor market: more specifically, the likelihood of a migrant working in the lowest job quartile compared to a national in a given country. First, jobs were categorized by converting respondents' occupations to the International Socio-Economic Index of Occupational Status (ISEI) scale: a continuous hierarchical scale empirically constructed using income, education and occupational data from men and women, where the scores can be conceived of as the cultural and economic resources typical of the incumbents of certain occupations (Ganzeboom, 2010). Based on the ISEI composition in each country, four job quartiles were created for each country and respondents assigned to one. Using quartiles in this aggregated manner is suitable for synthesizing large amounts of data, and improves comparability between countries (Fernández-Macías et al., 2012, p. 24). Ubalde and Alarcón (2020) also used the ISEI scale in a comparative study of attitudinal context and migrant disadvantage in the labor market.

With "working a bottom quartile job" as the dichotomous dependent variable, logistic regression models were then ran with migrant status as the key explanatory variable. To account for compositional effects of countries' migrant and nationals' characteristics, respondents' gender, age, and education [split into three levels according to International Standard Classification of Education (ISCED)] were included as control variables. As a robustness check and to investigate the role gender plays, the regressions were re-ran separately for men and women, the results of which are provided in the Supplementary material. The distribution of countries according to the extent of their migrant marginalization was largely similar in these gender-separated models to the distribution of the overall sample (with Greece being the most notable exception). What was striking was that the magnitude of marginalization was considerably higher across the board in the women-only sample. The odds ratios of working a bottom-quartile job for a migrant compared to a local were larger in every country in the women-only sample.

3.3.7. Calibration

The conditions of employment protection legislation (ER), restrictive immigration policy (I), prominent low-skill sector (L), and the outcome (O) were calibrated using the direct calibration method (or transformational assignment, in the language of Thiem and Dusa, 2013), whereby base quantitative values are mapped into unit intervals with the help of logistic functions, with minimum information from the researcher (Ragin, 2000; Oana et al., 2021). Welfare state development (W) was calibrated using the qualitative method, with countries being assigned scores solely based on prior theory. The raw data, calibrated scores, truth table and discussion of the calibration are supplied in Supplementary material.

3.4. Regression analysis

A two-step regression approach is used to investigate whether country-level factors—comparable to the "causal conditions" in the QCA—moderate the migrant-national difference in low-end employment. The focus is thus on cross-level interactions between the country-level variables and being a migrant or national from a given country. The two-step strategy is a natural one for investigating such interactions, performs well when the number of observations at the cluster-level is low, and has the advantage over alternative methods to mixed modeling that the effects of the individual level variables can vary freely across countries (Heisig et al., 2017).

The two-step approach features two sequential estimations: firstly country-specific logistic regressions are run with working a bottom-quartile ISEI job as the dependent variable, and with the binary variable of being a migrant or not as the primary independent variable (using the same operationalization of migrant as discussed in Sections 2 and 3.1), while also including age, gender and education as control variables in the adjusted models. The coefficient estimates for the migrant variable give

an estimate of "migrant marginalization" for each country. This estimate is then used in the second step "slopes-as-outcomes" regressions. The independent variables in these models are the four country-level variables immigration policy, employment protection legislation, welfare state regime and extent of low skill employment. These are all based on the same data sources as outlined in Section 3.3 (and provided in the Supplementary material), but here are operationalized as independent variables rather than being calibrated into fuzzy sets. All four country-level variables have been z-standardized to have a mean of 0 and standard deviation of 1 at the country level. Feasible generalized least squares (FGLS) estimation is used to account for the fact that the dependent variable is not an observed value but an estimated one, and thus subject to sampling error (see Lewis and Linzer, 2005; Heisig et al., 2017; Heisig and Schaeffer, 2020)[3].

The second step regression contains models with the single country-level variables, and also models including interaction terms to investigate the combined effects of institutional factors. The interaction terms included are restrictive immigration policy (I), interacting with each of the other variables: employment protection legislation (E), welfare state regime (W) and low-skill employment (L). This was the most theoretically interesting interaction and hypothesized to operate by itself but also in interaction with the three other contextual variables. Each model is run on both the adjusted and unadjusted marginalization scores.

The code for the analysis is available in the following github repository: https://github.com/SeanKGitHub/MigrantMarginalisation.

4. Results

4.1. Calculating outcome for QCA: Logistic regressions for migrant marginalization

Figure 1 contains the odds ratios and their 95% confidence intervals of a migrant to a local working a bottom quartile job, controlling for education, age and gender: These results then form the outcome in the next stage of analysis, the QCA. The first thing worth noting is that in all 17 countries there is a statistically significant difference between the odds of a migrant and a local working in the bottom quarter of the occupational distribution. From the graph we see that the gap between migrant and locals is largest in Spain, Austria and Italy, while the lowest differences are found in France, Finland and the Netherlands. Spain and Italy showing some of the highest scores for migrant marginalization and France's being considerably lower corroborates Fellini and Guetto's (2019) findings that non-Western migrants to the former two countries with highly segmented labor markets experience stronger occupational downgrading and lower upward mobility than in France. García-Serrano and Hernanz using a job quality index also found Italy and Spain to have the largest gaps between migrants and natives (2022).

4.2. Qualitative comparative analysis

The analysis of necessity was first carried out to determine if any causal conditions were necessary for high migrant marginalization. No single conditions reached the recommended consistency threshold of 0.9 and so are not reported here. The same process was carried out separately for the negation of the outcome and again no single conditions were found to be necessary[4]. The potential necessity of combinations of conditions was also investigated. Given it is almost always possible to eventually find combinations that form supersets of an outcome (Oana et al., 2021), first it was attempted to identify combinations of causes that could represent a functional higher-order concept, but none were arrived at. QCA software was then used to check for possible combinations that would reach consistency of 0.9. Of the few that had consistency above 0.9, none had a relevance of necessity (RoN) that reached 0.5, and so were not further interpreted (Schneider and Wagemann, 2012; Oana et al., 2021). Results of the analysis of necessity are reported in Supplementary material.

4.2.1. Analysis of sufficiency

For the analysis of sufficiency, first a truth table was constructed containing all possible combinations of causal conditions. Given there are four causal conditions, the truth table contains $2^4 = 16$ rows of unique possible combinations[5]. Nine of these rows had conditions exhibited by at least one country case in the sample, while the other seven were logical remainders. For each individual row the QCA software then

3 The analysis was performed using the 'twostep' command in Stata 16 Ulrich (Kohler and Giesecke, 2021). The weights provided with the EU-LFS data were not permitted by the command and so the results presented are unweighted, thus the marginal difference in magnitudes in results between Figure 1 and panel 2 of Figure 3.

4 Since what causes an absence of high migrant marginalization would require different theory that is beyond the scope of this article, these results are only presented in Supplementary material.

5 As well as more general QCA Robustness checks provided in Supplementary material, the analysis of sufficiency was also ran with Integration Policy (based on MIPEX) included as a fifth causal condition, based on the findings of García-Serrano and Hernanz. After including a MIPEX condition, the parsimonious solution remained the same, while the conservative solution was more complex. These results and calibration can be found in Supplementary material.

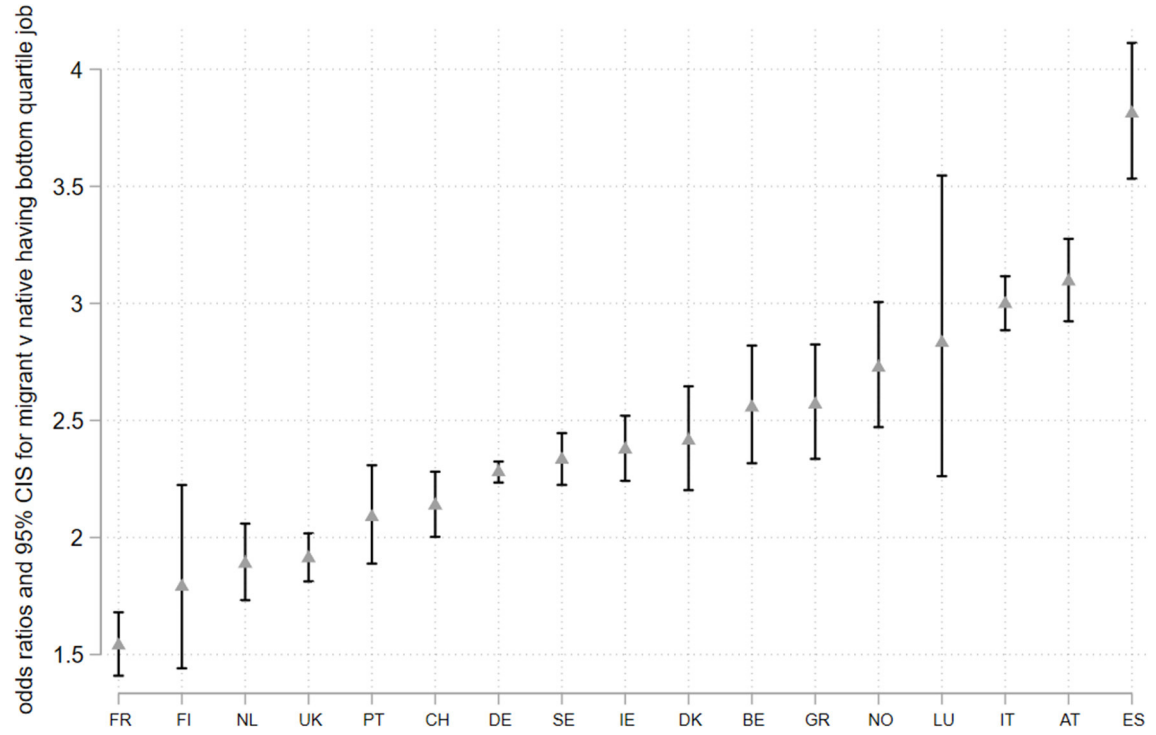

FIGURE 1
Odd ratios of migrants working bottom quartile job compared to nationals, controlling for age, sex and education.

calculated its consistency score for the outcome using Boolean algebra. In the QCA literature a value of 0.75 or 0.8 has been established as a lower bound threshold consistency and here 0.8 was taken (Ragin, 2010; Schneider and Wagemann, 2012). This process can be summarized as calculating for each row that contains enough empirical evidence, whether or not the evidence is considered sufficient for the outcome (Oana et al., 2021). The full truth tables are found in Supplementary material. It has been argued by some that only the most parsimonious solution of a QCA can be interpreted causally (Baumgartner and Thiem, 2020), and so after first producing the conservative solution, specific logical remainders rows that produce the simplest summary of the empirical facts were allowed into the logical minimization of the truth table by the QCA software, to produce this most parsimonious solution. This however did not lead to any changes in the solution terms for the outcome of high migrant marginalization (but did for the analysis of sufficiency of the negation of the outcome, provided in Supplementary material). While the mechanisms involved in the negation of the outcome would require further theorizing outside the scope of this paper, this solution was an "Enhanced Standard Analysis," whereby the simplifying assumptions included in the solution were checked for their tenability (Baumgartner and Thiem, 2020), and the solution was found to contain none of the three types of untenable assumptions—contradictory simplifying assumptions, assumptions contradicting claims of necessity, assumptions on impossible remainders (Oana et al., 2021).

Table 1 contains the most parsimonious solution of the logical minimization of the truth table for the existence of the outcome "High Migrant Marginalization." We see that two causal pathways were identified as sufficient: the combination of employment protection, restrictive immigration policy and a prominent low-skill sector (ER*I*L), and the combination of restrictive immigration policy, a developed welfare state and prominent low-skill sector (I*W*L).

Figure 2 is the most parsimonious solution presented visually on an XY plot[6]. The strength of the solution's consistency is indicated by cases lying above or close to the diagonal, as we can see most do. We can further differentiate between the four quadrants. In the top right quadrant we have typical cases, where the country cases contain both the causal conditions found to be sufficient and the outcome: these can also be understood as cases explained by the solution formula (ES, IT, AT, DK, GR). The bottom left quadrant contains cases that exhibit neither the causal conditions in the solution nor the outcome, and are thus in line with the solution formula

6 Both causal pathways plotted individually can be found in Supplementary material.

TABLE 1 Logical minimization of high migrant marginalization truth table (parsimonious solution).

	inclS	PRI	covS	covU	Cases
ER* I* L	0.919	0.896	0.332	0.112	ES, GR, IT; AT
I* W* L	0.891	0.85	0.284	0.064	DK; AT
Solution	0.904	0.877	0.396		

Solution: ER* I* L + I* W* L → O.
ER, Employment Protection in Labor Market; I, Restrictive Immigration Policy; W, Developed Welfare State; L, Prominent Low-Skill Sector.

since the absence of the conditions don't lead to the outcome (UK, NL, FI, CH, FR, PT). The upper left quadrant contains deviant cases coverage: cases who do exhibit the outcome, but are not explained or covered by the solution formula (NO, IE, SE, BE, LU, DE). The bottom right quadrant of the plot is empty, indicating that there are no cases where they would have been the biggest challenges to claims of sufficiency if present: deviant case consistency in kind—exhibiting the conditions but not the outcome. A number of tests for robustness were performed to evaluate the sensitivity of the results to different methodological choices in the QCA process, as is recommended in the QCA literature (Schneider and Wagemann, 2012) and can be found in Supplementary material.

The first causal pathway to high migrant marginalization—the combination of a strong employment protection legislation, restrictive immigration policy and a prominent low-skill sector (ER*I*L)—covers the majority of explained cases: the southern group of Spain, Greece, and Italy, as well as Austria. The fact that Portugal is not included here in this cluster corroborates research by Ponzo (2021) where Portugal stood out as an exceptional case amongst this group of southern countries for having successful migrant integration. In this pathway there are many low-skill jobs to be done with relatively strong employment protection legislation regulating (at least parts of) the labor market, while restrictions on immigration and arrived immigrants are strong. Restrictive immigration policy can create limitations on migrants regarding their ability to change industry or employer, or even to leave their job at all (e.g., right to stay in the country is conditional on a single employer). Taking the presence of strong employment protection and high number of low-skills jobs alongside each other, we can imagine how it is likely to be in these low-skill jobs that employment protection is not fully enjoyed—*via* loopholes and exemptions from employment regulation which have become commonplace across Europe over the last number of decades of liberalization (Baccaro and Howell, 2011). To compound this, the migrant population affected by immigration policy may be more docile and fearful of speaking up to fight for regulation that exists on paper to be enforced in practice, or there can be explicit exemptions from employment regulation for immigrants. Echoing some of the dualization and job polarization literatures, we can imagine how a divide might develop between those jobs that enjoy strong employment protection regulation, and those low-skilled job positions that may not be as covered by employment protection legislation, and then tend to get filled by migrants.

The Southern European countries all have extensive agricultural/informal sectors featuring high migrant employment (Hazans, 2011; Natale et al., 2019; Nori and Farinella, 2020), much of whose extent of segmentation is not captured by official data due to its informal nature. The combination of employment protection and restrictive immigration might also directly influence the high levels of informal migrant work in these southern countries (Hassan and Schneider, 2016), in that employers and industries with low profit margins and limited legal access to migrant workers who are willing to work for less and in poorer conditions, are more likely to resort to informal and exploitative arrangements. While this isn't captured in official EU-LFS data, the actual existence of such high levels of informal work could contribute to the entrenchment of opinions and beliefs (e.g., "picking fruit is migrant work") that would shape the patterns of segmentation detected in official data.

The second causal pathway for high migrant marginalization is restrictive immigration policy and prominent low-skill sector combined with a developed welfare state, observed in Denmark and Austria. A developed welfare state provides some capacity to refuse certain jobs and survive independently of pure market forces (Esping-Andersen, 1990), and it is likely that the high number of low-skill jobs that exist in these countries are those that people want to avoid. The restrictive immigration policy may prevent or disincentivise this same freedom to avert these jobs for migrants, as they may be formally limited in their access to the welfare state or freedom to change industry, or there could exist penalties when applying for prolonging their stay if they have had spells of receiving benefits. Eugster suggests a similar mechanism when interpreting her finding that there was no generosity-dependent reductive effect of social rights on immigrants' poverty: while possibly having formal access to social programs, migrants may not use them if welfare dependency jeopardizes their stay (Eugster, 2018). When recalling the notion of decommodification central to Esping-Andersen's welfare regime framework, we see here that the effective decommodification can be less for migrants when their ability to engage with and avail of the welfare state is limited *via* their status as immigrants (Esping-Andersen, 1990; McGovern, 2012).

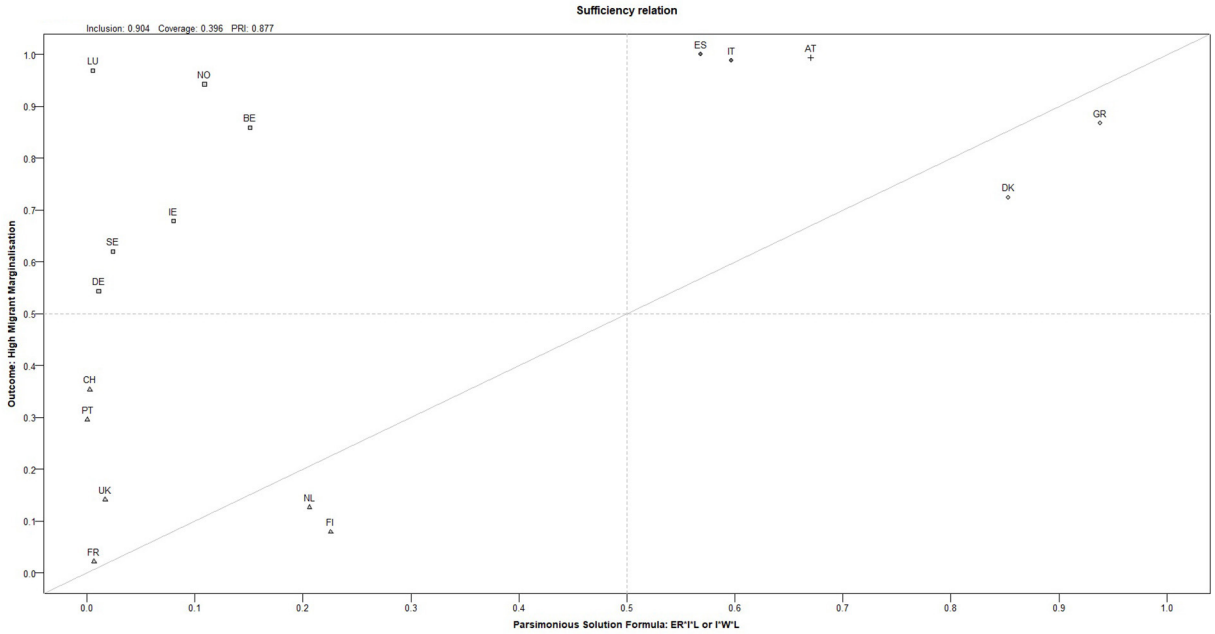

FIGURE 2
XY plot of sufficiency.

4.3. Case studies

"Just as reading a detailed map is not a substitute for taking a hike in the mountains," ending the analysis with the abstract solution terms is incomplete without revisiting cases in light of them, and applying case knowledge (Ragin, 2000, p. 283). Here a brief country case study as an instance of each causal pathway is undertaken to further investigate and evaluate the plausibility of the solution terms of the formal QCA results, and to return the analysis from the abstract level to that of real cases[7].

4.3.1. Employment protection, low-skill employment and restrictive immigration policy in a Southern European country: Italy

The Italian labor market is characterized by a low-skills equilibrium and low-wage regime, with firm size as another Italian idiosyncrasy (Devitt, 2018; Fellini et al., 2018). Devitt (2018) discusses how due to regulation changes from the 1970s, smaller firms became more competitive, with the typical firm now being a small family business relying on cheap low-skill labor. Firms employing migrants are smaller on average, and flexible work contracts became more common from the 1990s, especially for migrants (Devitt, 2018). Resulting from the 2003 Biagi law, employers were given further means of eluding the state and providing less security to labor, such as "project collaborator" contracts which are often migrants working dangerous and tough jobs (Devitt, 2018). Overall there is heterogeneity in employment regulation and a weak employment compliance system—Devitt identifying at least four sectors: heavy regulated primary sector; moderately regulated secondary sector of small firms; the informal and gray economies (Devitt, 2018).

The segregation of migrants into the low-end of the labor market is known to be dramatic in Italy and has remained consistent over time despite the fact that the composition of migrants has changed (Fellini et al., 2018; Panichella et al., 2021). For non-western migrants, returns on education are low and only differs slightly by area of origin (Fellini et al., 2018). This is not just relevant for a migrant's first job in Italy, but occupational mobility afterwards is also low and so migrants get trapped in low-end jobs (Fellini et al., 2018). Panichella et al. (2021) found that migrants are penalized and trapped in the working class, and that the ethnic penalty is not fully explained by education and social origin. By 2007, 73% of migrant workers were registered as manual workers, with men mainly being found in industry and construction, women in domestic work (Ministero, dell'Interno, 2007, quoted in Devitt, 2018). Migrants tend to be overqualified and employed in low-wage positions at a higher proportion while having a higher employment rate than locals, as well as often experiencing shoddy working conditions, temporary contracts, and fewer employment rights (Bonifazi et al., 2020).

7 Since Austria is a member of both causal pathways (model ambiguity), it is not used as a case study, as it is not possible to disentangle the pathways and interpret them individually.

Bonifazi et al. (2020) suggest that immigration policy plays a role in these outcomes as migrants are required to have a working position to renew their permit to stay, and so may feel obliged to accept low-wage and low-skill work (of which there is plenty). This is a pressure that Italians don't have to deal with and so it makes sense that it would lead to differentials in outcomes.

Devitt (2018) highlights the significant role played by labor market institutions (particularly employment regulation and standards compliance, and labor market policies) in the growth in demand for migrant labor between the 1970s and 2007. She argues that this occurred *via* the generation of a large number of low-standards jobs, and by producing obstacles and disincentives to labor market participation of domestic labor (Devitt, 2018).

Fellini and Guetto (2019) highlight looser regulation for smaller firms in Italy as fostering strong labor market segmentation, and for all Southern countries, the prevalence of informal and irregular economies that migrants often work in. They discuss how in Southern countries there tends to be easy access to employment for migrants, but a substantial ethnic penalty regarding the type of jobs they will work. In contrast to less segmented or dualized labor markets, they say how in the Southern countries it can be difficult to escape low-status and -pay "immigrant jobs," and that migrants' upward mobility is more likely to remain only within the secondary job market. After comparing labor market trajectories from different migrant groups, Fellini and Guetto also say that "historically rooted economic, political, and cultural relations between the sending and the destination countries defining the social standing of different national groups may be more important than skills transferability" (Fellini and Guetto, 2019, p. 52).

Fellini (2018) points to the segmented nature of the Italian (and Spanish) labor market and migration regulation that's used ex-post management of inward migration *via* regularization drives, as strengthening labor market segmentation and ethnic divide. She also concludes that the Southern "low unemployment risk—no access to skilled jobs" tendency in Italy has been reinforced since the 2008 financial crisis, with migrants even more negatively impacted and segregated into low-end jobs.

4.3.2. Developed welfare state, prominent low-skill sector and restrictive immigration policy: Denmark

The extent of decommodification and non-reliance on markets to live —including the ability to say no to a given job—is central to understanding the efficacy of the welfare state (Esping-Andersen, 1990). In the Danish case this decommodification for migrant groups has been altered [often driven by ethnic or racial rhetoric (Fernandes, 2013)], resulting in differentiated capacity to engage with the labor market than Danes', on top of pronounced risks of ethnification on the labor market (Fernandes, 2013).

According to classic welfare state theory, Denmark as an instance of the social democratic regime is characterized by universal access, generous benefits, high degree of public involvement and levels of redistribution (Esping-Andersen, 1990). Of course this depiction is not static, and the Danish welfare state has undergone changes over the years including lowering taxes and increasing user-contributions and eligibility requirements (Møller, 2013; Trenz and Grasso, 2018). Denmark's immigration and integration regimes have been referred to as draconian in comparison to their Scandinavian neighbors' (Brochmann and Hagelund, 2011, p. 13). Møller (2013) points out that some benefit reforms related to labor market social risks—mostly reductions in amounts and durations, and restrictions in access—explicitly targeted immigrants. The most dramatic changes were special programs for newly-arrived immigrants and refugees: the "start-aid" scheme where they would receive ∼35% less in social assistance than the general population, and the 2006 reforms de facto targeting immigrants and refugees that increased work demand for social assistance eligibility (Møller, 2013, p. 249). Andersen et al. (2019) found these reforms to have negative outcomes on various dimensions, including loss in disposable income, increase in (largely subsistence) crime, female labor force dropout, and education and language effects for children.

Møller ties these reforms to the idea that devolution *via* increased liberal "governance at a distance" can expose vulnerable social groups, including immigrants and refugees, to increased social risks, prejudice or discrimination (Møller, 2013, p. 258). Brochmann and Hagelund (2011) point out that Denmark has implemented policies that in practice target migrants, and in so doing have reformed general social policies. This is contrasted with the lack of measures taken to improve employment prospects of minority ethnic youth, in comparison with Sweden and Norway (Niknami et al., 2019, p. 8). Of the introductory labor market schemes brought in by Nordic countries, Denmark is the only to explicitly state as an aim that new immigrants must conform to an understanding of "Danish values" and norms (that they presumably do not have), and has policy with the most pronounced punitive and ethnified elements (Fernandes, 2013). While Sweden and Norway seem to be using the carrot and the stick, Denmark relies solely on sticks, with the problem and justifications for such policies being placed on the immigrants' themselves, their culture and religion (Fernandes, 2013, p. 212).

Suárez-Krabbe and Lindberg (2019) argue that as well as border, deportation and detention regimes—perhaps more obvious or "classic" sites when one thinks of the enforcement and reproducing of racialized logics and hierarchies (Richmond and Valtonen, 1994; Goldberg, 2011; Bowling and Westenra, 2018)—other areas of Danish policy and the welfare state

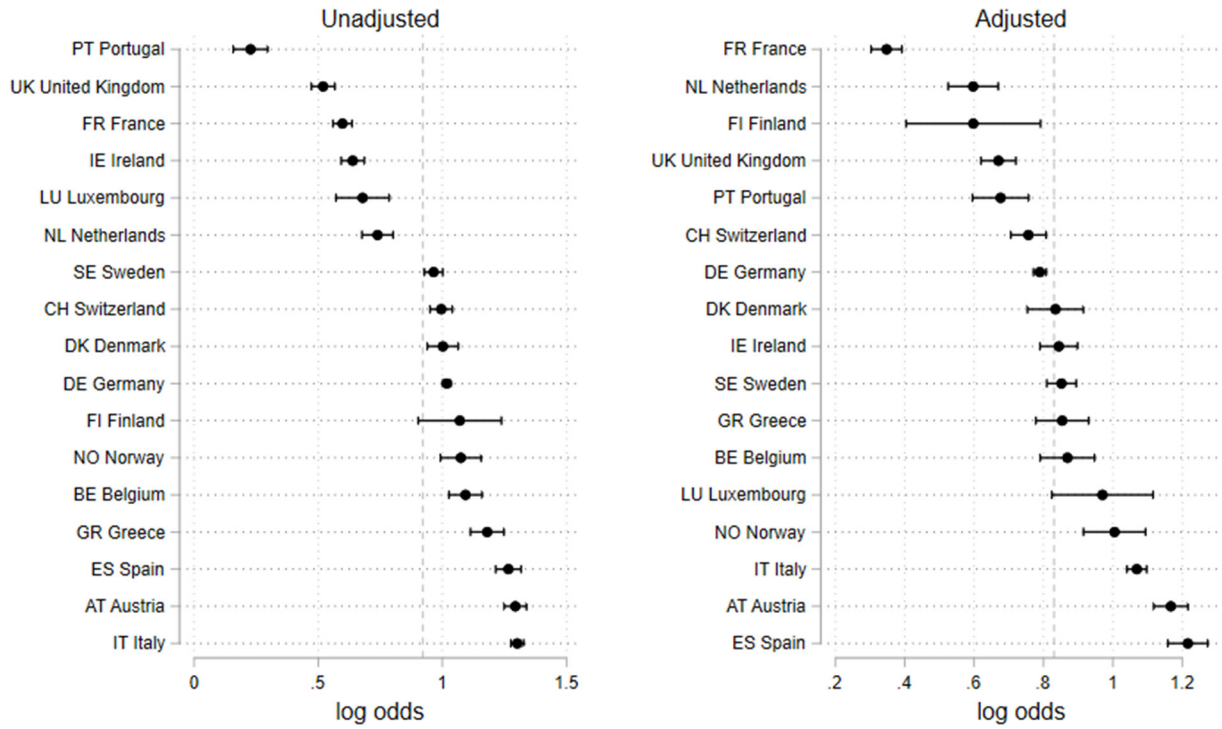

FIGURE 3
Migrant marginalization across 17 countries. Migrant vs. national working bottom quartile ISEI job. Source: EU-LFS. Results from country specific logistics regression. Adjusted scores control for education, age, and gender.

like access to healthcare, housing, education and political participation, are increasingly organized on racial lines, resulting in racialized non-Western migrants being exposed to forms of structural racism from the Danish state. They say this hierarchization of immigrants on racial and colonial patterns produces group-differentiated racialized outcomes (Suárez-Krabbe and Lindberg, 2019, p. 91).

4.4. Two-step regression results

Figure 3 displays the migrant marginalization scores for all 17 countries, both when using just migrant status as a predictor and when in including the control variables education, gender and age. In all countries and in both models, migrants are more likely than nationals to work a bottom quartile ISEI job[8]. Italy, Austria and Spain have the highest marginalization scores in both models, while France, the UK and Portugal are all within the bottom five in both variants. These logistic regressions constitute the first step of the two-step strategy, and the estimates shown here are used as the dependent variable in the following second step regression models.

Now to inspect how country-level factors shape these marginalization scores, the results of the country-level feasible generalized least squares regressions are presented in Table 2. Columns 1, 3, 5 and 7 are all based on first step regressions without any control variables included (left column of Figure 3), while models 2,4,6 and 8 all include individuals' age, gender and education (right column Figure 3). In accordance with Figure 3, all the constant terms here are positive, implying that overall, migrants are more often in a bottom quartile job than nationals. The predictors in all models are z-standardized and so the constant term here represents the predicted marginalization score for a country with average scores on the country-level variables.

Looking at models 1 and 2, we see that the coefficient for restrictive immigration policy is positive, which is in the same direction as what was hypothesized: that the extent of migrant marginalization is higher where immigration policy is more restrictive. The coefficient is sizeably reduced from 0.624 to 0.147 when the model is adjusted for compositional factors at the individual level, but in both models the effect size is

8 The right hand panel showing the adjusted estimates is essentially the same information as that presented in Figure 1, and used as the outcome of the QCA analysis. The minor differences between them are due to weights not being included in the "twostep" command used to generate the graphs and subsequent analysis.

TABLE 2 Country-level regression (feasible generalized least squares) of migrant marginalization on institutional factors.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
I	0.624 (0.480)	0.147 (0.824)	1.224 (0.381)	0.538 (0.606)	0.213 (0.774)	−0.012 (0.986)	−0.517 (0.726)	0.667 (0.562)
L	0.125 (0.198)	0.105 (0.156)	0.107 (0.302)	0.093 (0.240)	0.124 (0.129)	0.105 (0.155)	0.151 (0.143)	0.093 (0.238)
W	0.180 (0.084)	0.064 (0.394)	0.166 (0.128)	0.055 (0.490)	0.090 (0.318)	0.029 (0.721)	0.150 (0.163)	0.078 (0.341)
E	−0.076 (0.372)	−0.060 (0.356)	−0.082 (0.355)	−0.063 (0.349)	−0.072 (0.311)	−0.058 (0.366)	−0.081 (0.350)	−0.057 (0.390)
I # W			0.706 (0.565)	0.459 (0.620)				
I # E					1.825* (0.025)	0.709 (0.289)		
I # L							1.412 (0.344)	−0.641 (0.574)
Constant	0.922*** (0.000)	0.832*** (0.000)	0.954*** (0.000)	0.853*** (0.000)	0.969*** (0.000)	0.850*** (0.000)	0.885*** (0.000)	0.849*** (0.000)
A. R-squared	0.018	−0.076	−0.038	−0.148	0.335	−0.055	0.016	−0.140
AIC	11.67603	2.073622	13.13613	3.684361	5.594894	2.250583	12.22852	3.572285
N	17	17	17	17	17	17	17	17

P-values in brackets * = p<0.05, ** = p<0.01, *** = p<0.001. For these country-level regressions, all predictors were standardized to have a mean of 0 and a standard deviation of 1. Sources: E, Employment Protection Legislation (OECD EPL reweighted) (OECD, 2021); I, Immigration Policy Restrictiveness (IMPIC) (Helbling et al., 2017); W, Welfare State Comprehensivenes (Esping-Andersen, 1990; Ferrera, 1996); L, Prominent Low-Skill Sector, and Outcome (EU-LFS, own calculation).

far from reaching statistical significance. Higher amounts of low skill employment (L) and a more comprehensive welfare state (W) follow the same pattern, correlating positively with more migrant marginalization, and with the coefficient reducing once compositional effects are included in the model. Stronger employment protection legislation (E) is the only country-level variable with a (slightly) negative coefficient. The coefficient for immigration policy is the largest of the country-level variable. As can be seen from the *p*-values however, none of the coefficients in either model reach statistical significance.

Moving to the models 3–8 that feature interaction terms, we first see that when restrictive immigration policy is combined with a more comprehensive welfare state, migrant marginalization is higher, as indicated by the positive coefficients in models 3 and 4, however again these are far from reaching statistical significance. In the models that interacts restrictive immigration policy and employment protection legislation however, the results are stronger. This combination is associated with higher migrant marginalization, and in the unadjusted model (5), reaches statistical significance at the 5% level. Once compositional variables are adjusted for, the coefficient drops from 1.825 to 0.709, and falls out of the statistically significant threshold, however the result is still noteworthy. The final combination of country-level factors investigated were immigration policy restrictiveness interacting with the extent of the low skill sector. Here in the unadjusted model 7, the direction of the effect is positive, implying the combination entails higher migrant marginalization, but in the adjusted model (8) the net effect of the combination is close to zero, with the interaction coefficient in neither model reaching statistical significance.

5. Conclusion

Across Europe, migrants from poorer countries continue to play a key role in the economies of their destination countries and are more likely everywhere to work a low-end job than locals, even when accounting for important individual characteristics. The extent to which migrants are allocated to lower status work differs across countries, and this paper has attempted shed light on what shapes these cross-national differences. The QCA analysis revealed two combinations of institutional factors as leading to this high migrant marginalization: restrictive immigration policy, a prominent low-skill sector combined with strong employment protection legislation; and restrictive immigration policy, prominent low-skill sector combined with a developed welfare state.

Both pathways contain a common base featuring policy that places restrictions upon migrants, and a large number of low-skill jobs to be done. When this base pairing is combined with what are designed to be protective institutions—the welfare state and employment regulation—high migrant marginalization occurs. With restrictive migration policy and individuals being strongly differentiated based on national origin, a kind of two-lane system develops, with migrants not benefitting from protective institutions as much as nationals,

and being then filtered into the large pool of low-skill positions that need filling. This is in line with Eugster (2018) finding that more regulated wage bargaining coordination, minimum wage policies and generous traditional family benefits have a greater poverty-alleviating effect in countries with inclusive social rights for immigrants.

When it comes to the welfare state, if pressures exist that dissuade migrants from benefitting from the welfare state (e.g., consequences for residency, lower benefits for migrants), their effective decommodification is lower than locals', and thus freedom to operate on the labor market also. When we consider employment regulation in the twenty-first century, we must recognize that over time employer discretion has increased in different contexts in a variety of ways, and that circumvention and heterogeneity of regulation has become more commonplace (Baccaro and Howell, 2011). When there are a lot of low skill jobs, which are likely to be those where labor market regulations are more avoidable, migrants with extra pressures to be employed are more likely to take these jobs. When institutions contribute to fostering such dynamics, they can become ingrained socially, with certain jobs or industries becoming known as "migrant jobs" further deepening divides and marginalization.

In line with the work of Hooijer and Picot (2015) on poverty, these findings run counter to the idea that a single institutional element, like having a strong welfare state (e.g., Sainsbury, 2012), is enough to minimize disadvantage for migrants vis-à-vis nationals. We must be aware of how even protective and decommodifying institutions can foster marginalization if other policy domains are simultaneously in place and interact with them in certain ways—migrants position in the workforce is shaped by a multitude of forces.

The second methodological approach utilized in the paper, using two-step regression modeling, furthered the empirical base of our understanding how institutions impact migrant marginalization, and found evidence that, while somewhat suggestive, broadly aligned with the findings of the QCA. While many effects in the models failed to meet statistical significance levels, the effect of restrictive immigration policy, both by itself but also when interacted with a more comprehensive welfare state or stricter employment protection legislation, pointed in the direction of *increasing* migrant marginalization.

While the QCA identified causal pathways that operate in specific groups of cases, the regression analysis complemented this by looking at the overall effects of these country-level variables across all cases. Attempting to theoretically deduce how all relevant institutional factors could possibly interact and produce an effect of migrant marginalization is unreasonably ambitious, but the main hypothesis put forward, namely that more restrictive immigration policy by itself but also *via* interaction with other contextual elements increases migrant marginalization, is in alignment with the results of the regression models.

A limitation of this study due to its comparative nature was having to use a broad measure of "low-end work," rather than more precise operationalizations that capture interesting dynamics of precarious migrant labor markets operating in different national contexts. The economic sectors where migrants tend to be concentrated is relevant to the topic, as are regional differences within countries, but in this design a quartile approach that equalized the concrete sectors was needed to allow comparability. While there are quality case studies on migrant workers in different industries within national contexts (e.g., Ruhs and Anderson, 2010), future research could use comparative designs to further understand how these rates differ within concrete sectors or regions across countries, and what is behind it. The study is also limited by having a focus on institutional-level explanations, and important factors that exist on the individual, interpersonal and discursive levels are not included in the analysis.

The role of intermediary actors such as recruitment and staffing agencies, multinational corporations and local brokers play an increasingly important role in the operation of international labor markets as well as in shaping regulatory spaces of migration (Axelsson et al., 2022). This is a particularly difficult area to handle empirically given the variety of emerging mechanisms at work; the links between different sets of countries taking different forms, and (especially with short term labor migration) migrants being largely omitted from official data. Further research could do well to systematize and assess the scope and forms of these intermediate actors, so they could be better operationalized in comparative research.

Data availability statement

The data analyzed in this study is subject to the following licenses/restrictions: access to the EU-Labour Force Survey Data is granted by EUROSTAT. The rest of the data I use is public. Requests to access these datasets should be directed to ESTAT-Microdata-access@ec.europa.eu, https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpos.2022.974727/full#supplementary-material

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Explaining recently arrived refugees' labor market participation: The role of policy characteristics among Syrians in the Netherlands

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Various studies have indicated the disadvantaged positions of refugees on the labor market and studied various characteristics explaining this. Yet, little is known about the impact of settlement policy characteristics on recent arrivals' labor market participation, despite them being heavily subject to such policies. We argue such policies, next to individual characteristics, can serve as a means to gather resources relevant to the host country and consequently labor market positions, but can also serve as a post-migration stressor obstructing this. Using the Netherlands as an example, we contribute to studies on the refugee gap and provide insight into key policy characteristics explaining recently arrived refugees' (finding) employment. We use two-wave panel data of 2,379 recently arrived Syrian refugees in the Netherlands, including data on key policy and individual characteristics combined with administrative data. Employing a hybrid model, we show both within- and between-person variation. Results indicate policy matters: short and active stays in reception, complying with the civic integration obligation and a lower unemployment rate in the region refugees are randomly assigned to are beneficial for Syrians' (finding) employment. Like for other migrants, various forms of individual human capital also play a role.

KEYWORDS

labor market participation, employment, refugees, panel analysis, resources, recent arrivals, reception policy

Introduction

Immigrants, and especially refugees, are often found to hold economically disadvantaged positions, also known as the refugee gap (see among others: Waxman, 2001; Connor, 2010; de Vroome and van Tubergen, 2010; Correa-Velez et al., 2013; Bakker et al., 2017; Kanas and Steinmetz, 2021). Yet, newcomers' finding employment is important for both receiving societies and newcomers themselves regarding newcomers' self-reliance (Koenig et al., 2016; van Liempt and Staring, 2020) general and settlement

outcomes in other domains such as language and social contacts (Carrington et al., 2007; Colic-Peisker and Tilbury, 2007; Ager and Strang, 2008).

(Re)gaining lost resources and acquiring new skills relevant to the host society has been found crucial in securing employment (Hobfoll, 2001; Ryan et al., 2008). As shown in previous studies, newcomers' labor market positions can be explained through a wide range of such resources (for an overview, see Heath and Cheung, 2007; Ott, 2013), including *pre- and post-migration cultural capital* (Waxman, 2001; Chiswick and Miller, 2009; Hartog and Zorlu, 2009; Kanas and van Tubergen, 2009; de Vroome and van Tubergen, 2010; Correa-Velez et al., 2013; Cheng et al., 2019), *social capital* (Waxman, 2001; de Vroome and van Tubergen, 2010; Kanas et al., 2011; Correa-Velez et al., 2013; Cheung and Phillimore, 2014) and *personal capital* (Phillimore, 2011; Walther et al., 2019).

In this paper, we aim to contribute to the understanding of (the lack of) refugees' labor market participation by addressing the question: *What are key policy characteristics explaining recently arrived refugees' finding employment?* We do so because we argue that, even though the impact of individual characteristics has been thoroughly studied, the field of studies on the impact of settlement policy characteristics (which we understand to be procedures installed and influenced by the government) for recent arrivals is lean. Yet, unlike other migrants, refugees, and especially those who have recently arrived, are highly subject to such policies in most European countries. Such settlement policy characteristics could hamper or promote refugees' resource gathering and consequently their labor market participation (Kogan, 2007; Kanas and Steinmetz, 2021; Kosyakova and Kogan, 2022).

There are studies that included one or a few of such policy factors in explaining (recently arrives) refugees' labor market participation (see Kosyakova and Kogan, 2022, for an overview). At first, it was shown that awaiting a decision on the permit to stay in reception centers can hinder resource gathering in general (Phillimore, 2011; Weeda et al., 2018; Damen et al., 2021) and employment in particular (de Vroome and van Tubergen, 2010; Bakker et al., 2014; Hainmueller et al., 2016; Hvidtfeldt et al., 2018; Kosyakova and Brenzel, 2020). In some countries moreover, refugees are expected to pass a civic integration exam, (designed to) help them gain resources relevant to the host society and its labor market (Clausen et al., 2009; Blom et al., 2018; Battisti et al., 2019; Lochmann et al., 2019; Boot et al., 2020; CPB and SCP, 2020; Fossati and Liechti, 2020). Furthermore, refugees are generally randomly distributed across receiving societies, which can promote or hamper their labor market positions due to the (limited) opportunities available for resource gathering or employment (Åslund et al., 2000; Åslund and Rooth, 2007; Bevelander and Lundh, 2007; Larsen, 2011; Gerritsen et al., 2018; Aksoy et al., 2020; Fasani et al., 2022; Kanas and Kosyakova, 2022).

While the impact of various forms of individual human capital on newcomers' labor market positions has thus been studied thoroughly, and some studies include one or two policy characteristics, only a limited number of studies included a variety of such characteristics in trying to explain their impact on (changes in) recently arrived refugees' labor market integration (Waxman, 2001; Colic-Peisker and Tilbury, 2007; Kanas and Steinmetz, 2021). Waxman (2001) and Colic-Peisker and Tilbury (2007) showed differences in employment with regards to discrimination and non-recognition of certificates among recent arrivals (Colic-Peisker and Tilbury, 2007), as well as language but not duration of reception or qualifications (Waxman, 2001). However, both studies are largely descriptive, thereby lacking to statistically investigate the impact of the variety of policy characteristics. In addition, these studies predominantly use cross-sectional data and therefore cannot provide insight into the dynamics of refugees' employment. Kanas and Steinmetz (2021) do employ multiple waves and explain the role of labor market (but not settlement) policies.

Using the Netherlands as an example, our study provides insight into labor market positions within a cohort of 2,379 recently arrived Syrian refugees in the Netherlands. Adding to previous studies, we emphasize the impact of a wide variety of settlement policy characteristics (reception, civic integration, and regional unemployment rates), utilizing the opportunity to understand which of such characteristics are beneficial for recently arrived refugees' economic incorporation (Kosyakova and Kogan, 2022). Second, we examine employment among recent arrivals by employing two waves of survey data from refugees in the Netherlands who received a residence permit between 2014 and 2016 (consistent with the peak of the refugee influx in Europe). This provides us with the opportunity to identify key characteristics explaining recently arrived refugees' labor market participation. Third, we use two-wave panel data which allows us to better distinguish the dynamics in newcomers' finding employment. Given the long-term and dynamic nature of refugee settlement and the economic experience of refugees, longitudinal research is valuable to get a better grip on which characteristics are key in determining refugees' initial labor market positions (Beiser, 2006; McMichael et al., 2015).

Theoretical considerations

(Re)gaining resources and labor market positions

Integration starts upon arrival, which implies early experiences can influence long-term outcomes (Ghorashi, 2005; DiPrete and Eirich, 2006; Bakker et al., 2017). Moreover, during the initial period after arrival, newcomers tend to experience most changes (Diehl et al., 2016; Geurts and Lubbers,

2017), having to deal with lost resources (Hobfoll, 2001) and uncertainties and finding their way in the host society. To integrate, in this case into the labor market, refugees need to (re)gain lost resources and acquire new skills relevant to the host society (Hobfoll, 2001; Ryan et al., 2008)—"the presence or absence of which can shape their future opportunities and trajectories" (Phillimore et al., 2018, p. 5).

Previous research has indicated a refugee gap, showing the disadvantaged labor market positions of refugees, studying a variety of characteristics explaining this gap. For example, Waxman (2001) showcased the impact of language competency among refugees in Australia. de Vroome and van Tubergen (2010) displayed similar results regarding language and furthermore indicated the impact of host country specific education and work experience, as well as contacts with natives among refugees in the Netherlands. Also studying refugees in the Netherlands, Bakker et al. (2017) show the impact of migration motive, country of origin, length of stay, age, household characteristics, density of the region, having a Dutch qualification and Dutch nationality. Showcasing somewhat similar results among refugees' in Australia, Correa-Velez et al. (2013) showed the impact of region of birth, length of stay, using job service providers and informal networks, and owning a car were significant predictors of refugees' employment in Australia. They did however not find an impact of English language proficiency. Also in Australia, Cheng et al. (2019) indicated the impact of pre-immigration paid job experience, completed study/job training, having job searching knowledge/skills in Australia, possessing higher proficiency in spoken English and mental health. Touching upon the role of (labor market) policies, Kanas and Steinmetz (2021) establish the significant role of such policies in the economic disadvantage of family migrants and refugees.

Building on this, we include explanatory characteristics based on two out of the three overarching clusters as distinguished by Huddleston et al. (2013); policy and individual characteristics.[1] Using Hobfoll's (2001) theory on resources, we explain how these policy and individual characteristics benefit or hamper refugees' finding employment. Hobfoll (2001) defines resources as entities "valued in their own right or valued because they act as conduits to the achievement or protection of valued resources" (p. 339). While both hold for individual characteristics, policy characteristics can be regarded as more of a means to gather such resources but can also serve as a post-migration stressor obstructing this (see also: Bakker et al., 2014).

Since the impact of various forms of individual characteristics (such as pre-migration, post-migration, social and personal capital) on refugees' labor market positions has been studied thoroughly, we emphasize the impact of policy characteristics in this study. Thereby we focus on the period in reception, civic integration, and dispersal policy. Based on theory and previous research, we form hypotheses about the impact of these policy characteristics on recently arrived Syrian refugees in the Netherlands finding employment in the next section. To match the extensive range of studies in this field and to provide the most complete analysis possible, we also include an extensive selection of individual characteristics (which can be regarded as a type of control variable), but given the focus here is on policy, and the impact of these individual characteristics is already more established, we do not formulate separate hypotheses about on these.

The opposing impact of characteristics of the reception period

Starting upon arrival, asylum seekers (in the Netherlands and many other European countries) are provided accommodation in reception centers until their application is granted and housing is available. When they are awaiting the decision on their permit, their right to work is very much restricted. Employers need to apply for an employment permit, which most employers are not as keen to do, and moreover one can only work 24 out of the 52 weeks and needs to give up part of their salary to the reception center. These restrictions make it quite unlikely for newcomers to engage in employment when awaiting the decision on their permit but only do so after they move out of reception. In the rare case that one is already employed during their reception stay, this does not determine when they can move out of reception. Reception centers have been heavily criticized, especially regarding mental health. The main argument being that the isolated life in the reception center can cause refugees to waste vital years (Ghorashi, 2005; Smets et al., 2017). Based on this, it could be expected that a stay in reception centers can constrain refugees' ability to (re)gain the necessary resources (Bakker et al., 2014). We understand refugees having to stay in reception until their permit is granted and housing is available as a form of policy in itself, i.e., reception policy. Within this policy, it is for example determined how long the procedure regarding the decision on newcomers' residence permit may take (and thus how long they might have to stay in reception centers). Such a reception stay thus has various policy characteristics to it, such as the length of stay, but also the number of centers one stays in and opportunity to participate in activities, which we argue can all impact newcomers' employment.

Concerning labor market participation specifically, lengthy asylum procedures can be regarded as a post-migration stressor obstructing labor market opportunities. Longer stays can result in devaluation of human capital (Phelps, 1972; Smyth and

1 Though most likely connected to settlement policies, we were not able to include characteristics of the social context–such as discrimination–in this study.

Kum, 2010). Moreover, longer exposure to insecurity during reception stays as well as to non-employment may depress working aspirations (Hainmueller et al., 2016). Also, this feeling of insecurity or boredom might result in worsened mental health (Laban et al., 2004), which can consequently obstruct (labor market) integration (Phillimore, 2011; Weeda et al., 2018; Ambrosetti et al., 2021; Damen et al., 2021). Longer isolation from social resources, such as a social network that might assist with informal (labor market) information or opportunities, may furthermore delay refugees' job search and job-finding process (Bakker et al., 2014). Longer isolation can also mean being less exposed to the host country's language, which has been proven most important to learn (Kosyakova et al., 2022). Longer stays can thus negatively affect refugees' labor market participation for various reasons (de Vroome and van Tubergen, 2010; Bakker et al., 2014; Hainmueller et al., 2016; Hvidtfeldt et al., 2018; Kosyakova and Brenzel, 2020).

Moreover, characteristics of the reception period may affect labor market participation in addition to the impact of duration. For example, through the number of relocations, that has been shown to negatively affect how newcomers find their way in the new society (Nielsen et al., 2008; Damen et al., 2021). The mechanism underlying this is that such relocations take place without the involvement of the refugees themselves and can be disruptive (Vitus, 2011). This lack of control and disruptiveness might in turn hamper mental health and consequently refugees' integration (Phillimore, 2011; Weeda et al., 2018; Ambrosetti et al., 2021; Damen et al., 2021). Moreover, if one has to relocate often this could be an obstacle to engaging in activities to (re)gain resources. Thus, relocations can also serve as a post-migration stressor obstructing refugees' finding employment.

Regarding gathering resources, the possibility to engage in activities during the reception center could in turn have a positive impact. While there are restrictions when it comes to employment when awaiting the decision on one's residence permit, the Ministry of Social Affairs and Employment and the Central Organization for the Reception of Asylum Seekers (COA) committed to providing opportunities for various activities in reception centers in 2016 (Bakker et al., 2018). Since then, reception centers may offer a variety of activities for their residents as part of reception policy, such as Dutch language learning or volunteering. Engaging in such activities can result in the feeling of regaining control over one's life, help to (re)gather resources, give distraction, a goal, and increase confidence (Bakker et al., 2018), all possibly leading to more prosperous integration (Weeda et al., 2018; Damen et al., 2021).

Based on previous findings regarding characteristics of the reception period, we arrive at three hypotheses about their impact on Syrians' employment: *a longer stay (H1a), a higher number of relocations (H1b), and little participation in activities in reception centers (H1c) will negatively affect recent arrivals' employment.*

Civic integration and employment

The second policy characteristic theoretically important for refugees' employment is civic integration. Apart from the need to integrate in general, civic integration in this case means the obliged integration period during which newcomers have to take courses (language, knowledge of the receiving society culture, and labor market) which can most often be finished through exams, after which they are considered "integrated" if they pass. In many European receiving countries such civic integration is obliged through civic integration policies on the macro-level. The micro-level impact here is that through such obliged civic integration the labor market position of refugees can be improved by assisting them to gather vital resources through the various courses and exams. Various studies have indicated the positive impact of such courses on newcomers' labor market participation (Clausen et al., 2009; Battisti et al., 2019; Lochmann et al., 2019; Fossati and Liechti, 2020; Kanas and Kosyakova, 2022).

In the Netherlands, the civic integration program is completed with an exam.[2] which concerns language training and societal orientation. We can expect passing the integration course to be beneficial for refugees' employment because it represents practice with the Dutch language and a source of information on how things work in the Netherlands (Blom et al., 2018; Boot et al., 2020; CPB and SCP, 2020). Like in other countries, various studies in the Netherlands showed that passing the integration exam was indeed positively associated with the chance of employment (or not having obtained negatively associated) (de Vroome and van Tubergen, 2010; Odé et al., 2013; CPB and SCP, 2020). As such, we propose *successful completion of the integration course will positively affect the employment of recent arrivals in the Netherlands (H2).*

Dispersal policies and the impact of regional unemployment rates

The place where newcomers end up is important, for example, due to local labor market conditions, opportunities for establishing social contacts, and local facilities. Several European countries have adopted the policy of geographic

2 Almost all newcomers in the Netherlands are obliged to pass this integration exam within three years. Sanctions are imposed to punish those who fail. There are some exceptions; refugees with severe health issues can apply for dispensation. In addition, there is an "exemption due to demonstrable efforts". Those with a certificate for education in the Netherlands can also opt for an exemption as the certificate can serve as proof of having the necessary skills. Moreover, refugees can apply for more time to pass due to various reasons https://www.inburgeren.nl/geen-examen-doen/ziek-of-handicap.jsp

dispersal when it comes to newcomer's resettlement (Denmark, Ireland, Netherlands, Norway, Sweden, and the UK) (Fasani et al., 2022). In the Netherlands, this means refugees (with a temporary residence permit) are equally distributed among the municipalities in proportion to the number of inhabitants. Such a distribution can be seen as fair from the point of view of the municipalities, as they all host an equal share. For refugees, however, this can lead to unequal opportunities. Facilities to support newcomers, as well as opportunities for networking and finding employment, can simply be better in one municipality than in another and unlike most other Dutch people, refugees cannot decide where to live and are thus bound to its local (labor market) conditions.

The dispersal policy is thus another policy installed by the government which can impact newcomers' labor market participation. While there are many consequences of such a policy, the regional unemployment rate can be expected to be one of the most relevant regarding our outcome measure. By including this measure, we include the opportunity structure provided by low/high unemployment rates, and the dispersal policy explains why some newcomers are subjected to lower and others to higher unemployment rates, depending on the region they are assigned to and the regional labor market opportunities (Edin et al., 2003; Fasani et al., 2022).

Previous research from countries with such dispersal policies indeed points to its disadvantages (Åslund et al., 2000; Åslund and Rooth, 2007; Bevelander and Lundh, 2007; Larsen, 2011; Gerritsen et al., 2018; Aksoy et al., 2020; Fasani et al., 2022; Kanas and Kosyakova, 2022). Limited geographic mobility reduces the chances of finding employment or good job matches, and in some countries, refugees are allocated to relatively disadvantaged areas, where accommodation is cheaper but labor demand is weaker (Fasani et al., 2022) or there are limited opportunities for language learning (Kanas and Kosyakova, 2022). Despite being equally distributed across municipalities in the Netherlands, chances for employment can differ per region, partly due to regional (labor market) conditions (Gerritsen et al., 2018). As we cannot include a direct measure of dispersal policies as such, we include the regional unemployment rate as one (of many) characteristics of dispersal policy, which can indicate differences in (finding) employment among refugees assigned to different regions. We expect: *lower regional unemployment to contribute positively to the employment of recent arrivals in the Netherlands (H3).*

Individual capital and employment

Originating from human capital theory (Nafukho et al., 2004), various forms of individual capital are most popular in explaining differences in labor market positions. Because capital is relational, a distinction is made between pre-and post-migration human capital (Friedberg, 2000; de Vroome and van Tubergen, 2010; Cheng et al., 2019). Regarding pre-migration capital, home country education and work experience can be important for economic success (Connor, 2010; de Vroome and van Tubergen, 2010). Yet, transferring these skills can be difficult, especially for refugees, as pre-migration certificates and work experience are often not recognized or valued by employers (Friedberg, 2000; Colic-Peisker and Tilbury, 2007; Chiswick and Miller, 2009; Kanas and van Tubergen, 2009; de Vroome and van Tubergen, 2010). In this regard, it might either be that those with high-skilled work experience find work easier due to their (cognitive) skills, but on the other hand it might be easier to secure employment for those with low-skilled or no work experience due to the availability of such jobs in the destination country. Regarding post-migration human capital, education acquired in host countries is considered important in enhancing employability directly or indirectly (Hartog and Zorlu, 2009; Kanas and van Tubergen, 2009; de Vroome and van Tubergen, 2010). Other forms of post-migration human capital associated with labor market success are host country language (Waxman, 2001; Kanas and van Tubergen, 2009; de Vroome and van Tubergen, 2010; Koopmans, 2016; Cheng et al., 2019) and voluntary work experience (Bakker et al., 2018; Cheng et al., 2019). Bourdieu (1986) classified these types of knowledge, skills and qualifications as *cultural capital* but also indicated *social capital* as fundamental resource. Such social capital has also been found to be associated with newcomers' labor market success (see among others: de Vroome and van Tubergen, 2010; Kanas et al., 2011; Correa-Velez et al., 2013; Cheung and Phillimore, 2014). Co-ethnic networks can provide emotional and material support but also knowledge and information which can facilitate adjustment to the labor market (Kanas et al., 2011; Correa-Velez et al., 2013). At the same time, co-ethnics might be involved in a certain niche in the labor market, which might not match the newcomers' skills or (higher) ambitions. In this regard, social contacts with natives are found to be particularly important (Kanas and van Tubergen, 2009; de Vroome and van Tubergen, 2010; Kanas et al., 2011; Koopmans, 2016), as they can provide access to wider society and facilitate cultural adaptation with wider job choices as a result. Another individual characteristic regarded as *personal capital* is health (mental and physical). Health problems are relatively high among refugee populations (Beiser, 2006) and poor health can serve as a barrier to successful settlement (Ager and Strang, 2008; Phillimore, 2011; Walther et al., 2019; Ambrosetti et al., 2021). Considering labor market positions specifically, depression and general health problems have been found to negatively relate to different labor market outcomes among refugees (Connor, 2010; de Vroome and van Tubergen, 2010; Bakker et al., 2014; Cheng

et al., 2019). Although not our focus, we include these various individual human capital characteristics to substantiate earlier findings and properly estimate the impact of the policy characteristics.

Materials and methods

The analysis was based on two waves of the survey "New Permitholders in the Netherlands" (NSN2017 and NSN2019),[3] which were conducted as part of a larger project (Longitudinal cohort study permit holders) at the request of four Dutch ministries, aiming to gain insight into early integration among refugees in the Netherlands. The first wave of the NSN was collected in 2017[4] among Syrians aged 15 and older who received a (temporary) residence permit between January 1st, 2014, and July 1st, 2016. Their children born in the Netherlands and family members who reunited in 2014/2015 also belong to the target population. Based on these characteristics (ethnic background, age, legal status, child, or family member) a single random cluster sample was drawn from the target population by Statistics Netherlands. The questionnaire was tested thoroughly and translated into Modern Standard Arabic. A sequential mixed-mode survey design was used; respondents were first invited to complete the survey online (CAWI) but if they did not, they were given the opportunity to complete the survey in person with an interviewer (CAPI). In case of no response, interviewers would visit respondents up to four times to make an appointment.[5] All interviewers spoke Arabic and were from the same country of origin as the respondents. The second wave of the survey was collected in 2019 and a similar approach was taken regarding the data collection. Some questions were only asked in wave one (for example those on the reception period), which is why we copied the 2017 values to 2019 to keep these characteristics constant.

In total, 3,209 Syrians completed the first survey, corresponding to a response rate of 81%. Statistics Netherlands was able to provide data for 2,944 people in 2019 and 2,544 participated in the second survey, resulting in a response rate of 86%. The high response rates can partly be attributed to the personal and repetitive approach, but it also shows people were eager to provide their input. The survey files were weighted by Statistics Netherlands to match the distribution in the sample with that in the population. Moreover, the survey data was enriched with administrative data from Statistics Netherlands.[6] For this study, we made use of a balanced panel, meaning only respondents who participated in both waves were included (N = 2,544). Moreover, we selected those who were in the 15–74 age group, given that these are the official age limits for the working population in the Netherlands, and did not have any missing values on the variables in our models. Consequently, the final sample consisted of 2,379 respondents.

Measures

To access Syrians' labor market positions, we focus on net-participation, i.e., employment, which was dichotomized into those who were employed (1) versus those who were not employed (0).[7] Those employed included self-employed, employed full-time, or employed part-time and those not employed included those unemployed as well as those not in the labor force, e.g., actively seeking employment.

To explain labor market participation, we include different settlement policy measures. The first being characteristics of the reception period measured through *length of reception stay* (in years), the *number of reception centers one has stayed in* (0–9) and engaging in one or more *activities* (such as language learning, volunteering of work) during the reception period (1 = yes, 0 = no), which refer to a point in time before the first survey. Moreover, *passing the civic integration course* was included as a dummy variable (1 = passed or exempt from, 0 = not completed). Regional labor market conditions were included through the *regional unemployment rate*. The regional unemployment rate (in the first quarter of 2017 and 2019, the years of the corresponding survey) was included as a continuous variable (0–100). The COROP classification–a regional area classification used for analytical purposes within the Netherlands, also known as NUTS 3 (Verkade and Vermeulen, 2005)–has been used for this. This classification entails a total of 40 COROP areas in the Netherlands. Two provinces (Flevoland and Utrecht) are each one COROP area, the others are part of one (out of twelve) province and consist of several municipalities.

Additionally, we took several individual characteristics into account. *Pre-migration education* was included as a dummy variable (1 = followed or completed higher education, 0 =

3 The data employed in this study were gathered before the Corona outbreak in 2020 and do thus not account for the current economic climate.

4 The data collection was led by The Netherlands Institute for Social Research (SCP). There was collaboration with Statistics Netherlands (CBS), the Research and Documentation Center (WODC), the National Institute for Public Health and the Environment (RIVM), and the research agency Labyrinth.

5 See Kappelhof (2018) for more details on the survey design and implementation.

6 Variables regarding employment and most individual background characteristics arise from the self-reported survey data. Information about the length of the reception stay, compliance with the civic integration requirement, regional unemployment rate and being a family migrant were taken from the registers.

7 See Appendix A for the exact wording of this and all the other items as included.

followed or completed lower education or no education). *Pre-migration work experience* was included as a categorical variable (0 = no work, 1 = unknown skilled work, 2 = lower skilled work and 3 = higher skilled work). *Post-migration education* covered all those in vocational training to university and was included as a categorical variable (0 = no education/no certificate (ref), 1 = education but certificate unknown, 2 = certificate obtained). *Dutch language proficiency* was included as a self-reported score (1–10), for which a higher score represents stronger proficiency. *Volunteering experience* was included as a categorical variable indicating the frequency [0 = never (ref), 1 = yearly/monthly, 2 = weekly/daily]. *Social contact with other Syrians* and *social contact with Dutch nationals* were both included as dummy variables (1 = weekly or more frequent, 0 = monthly or less frequent). Finally, we included *mental health* (0–100, the higher the better the mental health[8]) and having one or more long-term *(physical) disorders* (1 = yes, 0 = no). Gender (1 = female, 0 = male), age in 2017 [in categories: 1 = 18-24 years (ref), 2 = 25-34 years, 3 = 35-44 years, 4 = 45 years and older], year of arrival (in categories: 1 = 2010–2014 (ref), 2 = 2015, 3 = 2016), having child(ren) living at home, regardless of their age (1 = yes, 0 = no), being a family migrant (1 = yes, 0 = no) and views on gender roles (scale of 1–5 based on four items, the higher the more progressive) were also included.

Method

To make optimal use of the panel character of the data and to test the hypotheses, we estimated a hybrid model (Allison, 2009) in Stata (version 16). A hybrid model is a random effects (RE) model with decomposed estimates, i.e., fixed effects (FE) and between effects (BE), all well known for analyzing panel data. Although FE brings us closest to displaying the impact of changes over time, non-time-varying characteristics (such as characteristics of the reception period or pre-migration education) are omitted from such a model. As we are interested in displaying the impact of a wide variety of characteristics on Syrians' finding employment in this study, we opted to employ a hybrid model. Within a hybrid model, both the effects of time-varying (such as passing the integration course and regional labor market conditions) and non-time-varying characteristics can be estimated simultaneously (Schunck and Perales, 2017). The hybrid model estimates within-person (FE) and between-person effects for the time-varying characteristics and between-person effects (BE) for the non-time-varying characteristics (Brüderl and Ludwig, 2019). The within-person effects reflect the effect of change in the independent variable on change in the dependent variable over time and between effects represent differences between persons in the outcome measure. As our main interest here is to explain dynamics in employment and estimates of the between-effects "are (in most cases) substantively of no interest" (Brüderl and Ludwig, 2019, p. 208), we opted to only display and discuss FE for the time-varying and BE for the non-time-varying characteristics. Models were estimated with the specification of a robust standard error (Schunck and Perales, 2017).

8 To assess respondents' mental health, the Mental Health Inventory 5 (MHI-5) was used. The MHI-5 is a measuring instrument that gives an impression of people's mental health in the last four weeks at the time of the survey (Rumpf et al., 2001). Respondents were asked how often they felt: very nervous, depressed, and gloomy, calm, so bad that nothing could cheer you up and happy. They could answer these questions on a six-point scale, ranging from (1) constantly to (6) never. Answers to the items calm and happy were reversed. For each person, the values of all five questions were recoded to a 0–5 scale and multiplied by 4, next a sum score was calculated based on the five items. In this way, the minimum score is 0 and the maximum score is 100.

Results

Descriptive statistics

Table 1 shows the descriptive statistics of the variables in the analyses, displaying the group differences in means for 2017 and 2019 as well as the between and within variation per variable. Focusing on the mean differences of the key variables in our study (employment and policy characteristics) the table shows that in 2017, 11% of Syrian refugees were employed, which increased to 33% in 2019. Refugees in this study on average spent 7 months in reception and stayed in three different centers. A large share of the respondents (79%) indicated they participated in at least one activity during their time in the reception center(s). They can thus be considered to have spent their time in reception actively. Those who have complied with the civic integration requirement (passed or exempt from) increased sharply, only 5% were successful in 2017, compared to 39% in 2019. The regional unemployment rate has decreased slightly from 5% in 2017 to 3% in 2019. Considering the variance between municipalities, the regional unemployment rate ranged from 3.6 to 6.3 percent in 2017 and 2.7 to 4.7 percent in 2019.

Looking at the individual changes in employment, Table 2 shows there has been a relatively large share of positive change; 25.1% made a positive change between t1 and t2. This means that over the course of 2 years, about a quarter of those not employed in 2017 did indicate to be employed in 2019. Only 2.7% of the Syrians in this study changed from being employed to not being employed between 2017 and 2019. Generally, we can see a positive trend: during their first years after settlement Syrian refugees' employment has developed positively, more refugees are employed over time.

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TABLE 1 Descriptive statistics of the variables in the analysis. Syrian refugees, 15–74 years, 2017–2019 (n = 2,379; in means and percentages), weighted averages.

Variable	Range	2017		2019		Std. Dev. between	Std. Dev. within
		Mean/%	L.S.E.	Mean/%	L.S.E.		
Employment	0–1	11	0.007	33	0.010	0.313	0.259
Length of reception stay (in years)[a]	0–2.6	0.7	0.011	00.7	0.011	0.430	-
Number of reception centers[a]	0–9	3.0	0.044	30.0	0.044	20.005	-
Active during reception period[a]	0–1	79	0.009	79	0.009	0.417	-
Passed integration course	0–1	5	0.005	39	0.010	0.293	0.291
Regional unemployment rate	0–100	5	0.000	3	0.000	0.605	0.747
Higher education Syria or other[a]	0–1	30	0.010	30	0.010	0.461	-
Type of work in Syria[a]							
No work	0–1	48	0.011	48	0.011	-	-
Work, level unknown	0–1	15	0.007	15	0.007	0.371	-
Work, lower skilled	0–1	22	0.009	22	0.009	0.430	-
Work, higher skilled	0–1	15	0.007	15	0.007	0.373	-
Certificate in the Netherlands							
No education/no certificate	0–1	91	0.008	86	0.008	-	-
Education but certificate unknown	0–1	4	0.005	3	0.004	0.133	0.121
Yes, certificate	0–1	5	0.006	11	0.007	0.194	0.161
Language proficiency	1–10	4,8	0.047	50.6	0.042	10.859	0.916
Volunteering							
Never	0–1	61	0.011	55	0.010	-	-
Monthly/yearly	0–1	10	0.007	9	0.006	0.219	0.198
Daily/weekly	0–1	29	0.010	36	0.010	0.381	0.275
Contact other Syrians	0–1	60	0.011	56	0.010	0.391	0.304
Contact Dutch nationals	0–1	60	0.011	57	0.010	0.399	0.290
Mental health	0–100	64.5	0.461	660.5	0.431	170.768	100.248
Long term physical disorder(s)	0–1	21	0.009	24	0.009	0.373	0.208
Female[a]	0–1	33	0.010	33	0.010	0.473	-
Age 2017[a]							
15–24	0–1	26	0.011	26	0.011	-	-
25–34	0–1	33	0.010	33	0.010	0.464	-
35–44	0–1	23	0.009	23	0.009	0.448	-
45 or older	0–1	18	0.008	18	0.008	0.420	-
Year of arrival[a]							
2010–2014	0–1	31	0.010	31	0.010	-	-
2015	0–1	64	0.011	64	0.011	0.474	-
2016	0–1	5	0.006	5	0.006	0.214	-
Children at home	0–1	49	0.011	55	0.010	0.470	0.145
Family migrant[a]	0–1	25	0.009	25	0.009	0.438	-
Gender roles	1–5	3.4	0.020	30.6	0.018	0.721	0.478

[a]For these variables we rely on the values from 2017, which were copied to 2019.

TABLE 2 Change in employment between survey waves.

Variable	2017	2019	Both no	Both yes	T1 no, T2 yes	T1 yes, T2 no
Employment	10,8%	33,3%	64,1%	8,2%	25,1%	2,7%

Weighted, balanced panel, 15–74 years, $n = 2{,}379$.

Explaining (changes in) Syrian's employment

Next, we are interested to identify important characteristics associated with positive changes in Syrians' employment. Before testing the hybrid model, we checked for multicollinearity. VIF scores ranged from 1.02 for certificate unknown to 3.61 for age over 44, indicating there was no multicollinearity problem. The results from the hybrid model–both FE for time-varying characteristics and BE for non-time-varying characteristics–are presented in Table 3. The results are unweighted, and we show results of the full model, including all explanatory characteristics. However, we have built the model in steps to provide insight into direct and indirect effects. For this step-by-step structure, see Appendix B. We discuss the results per explanatory characteristic, focusing on the impact of settlement policy characteristics. The results are presented in average marginal effects and can be interpreted as follows: below zero means a decrease in the chance of (finding) employment, above zero means an increase in the chance of (finding) employment. Goodness of fit of the proposed model was: $\chi 2(40, N = 2{,}379) = 355.95$, $p < 0.0001$.

Policy matters

The results show that procedures installed and influenced by the government can impact newcomers' labor market participation. As our results indicated, the impact of such policies already starts during the initial period after arrival, when newcomers are staying in reception centers and are subject to reception policies. Part of what happens during their reception stay is related to whether recent arrivals find a job afterward. If one has stayed in reception centers longer, their chance for employment decreases (H1a confirmed). Those who had to stay in reception longer for various reasons, i.e., decision on their permit delayed, no housing available, can thus experience additional disadvantages when it comes to their labor market success. On the contrary, for refugees who have been active during the reception period the chance to be employed increases, compared to refugees who did not participate in such activities (H1c confirmed). Spending the reception period shortly and actively can thus be understood to be beneficial regarding refugees' labor market participation. The results do not indicate a relationship between the number of reception centers and Syrians' employment (H1b rejected).

As intended on the macro-level, passing the integration course has a positive impact on Syrian refugees finding employment. For refugees who complied with the civic integration obligation, the chance to find employment increases (H2 confirmed). In addition, the place where refugees live proves to be important; a rising unemployment rate (regional change or through change of residence) decreases the chance for finding employment (H3 confirmed). In this regard, the dispersal policy, next to many other consequences that can be attributed to this, does explain why some newcomers are subjected to lower and others to higher unemployment rates, depending on the region they are assigned to and thereby signals and the possible uneven consequences of varying unemployment rates through random allocation.

Impact of individual capital

Although we are particularly interested in the impact of settlement policy characteristics, findings on the individual characteristics are also relevant. Results show an impact of pre-migration work experience; for those who had work in Syria of which the status was unknown, or it was a lower skilled job, the chance to be employed in the Netherlands increases. An improvement in Dutch language proficiency also has a positive impact, the chance of finding employment increases for those whose Dutch language proficiency has improved. Better mental health also leads to an increased chance of finding employment. The difference may seem modest, (0.00), but the scale runs from 0 to 100. This may have a greater impact once mental health deteriorates. Volunteering on the other hand seems to hinder finding employment. Social contacts with other Syrians or Dutch nationals, the level of education from Syria or other foreign countries, obtaining a certificate and physical health, perhaps strikingly, do not show a significant relationship with Syrians' employment. For Syrian women, the chance for employment is much lower than for Syrian men. Moreover, the chance for employment is lower for Syrians over the age of 35, for Syrians with children living at home, and for Syrians who came to the Netherlands later.

Additional analyses

There are some time-varying characteristics, such as obtaining a certificate in the Netherlands, social contacts, and

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TABLE 3 Characteristics explaining employment ($n = 2,379$).

	AME/se		AME/se
Length of reception stay[b]	−0.07***	Contact other Syrians[w]	−0.01
	0.02		0.02
Number of reception centers[b]	0.00	Contact Dutch nationals[w]	−0.02
	0.00		0.02
Activities during reception period[b]	0.03*	Mental health[w]	0.00**
	0.02		0.00
Passed integration course[w]	0.08***	Long term physical disorder(s)[w]	−0.04
	0.02		0.03
Regional unemployment rate[w]	−0.11***	Female[b]	−0.20***
	0.01		0.02
Higher education Syria/other[b]	−0.01	25–34 years[b]	−0.03
	0.01		0.02
Work in Syria, level unknown[b]	0.05*	35–44 years[b]	−0.05*
	0.02		0.02
Work in Syria, lower skilled	0.07***	45 or older[b]	−0.14***
	0.02		0.03
Work in Syria, higher skilled	0.03	Arrived in 2015[b]	−0.06***
	0.02		0.01
Certificate unknown[w]	−0.01	Arrived in 2016[b]	−0.10**
	0.04		0.03
Yes, certificate[w]	0.03	Children at home[w]	−0.06*
	0.03		0.03
Language proficiency[w]	0.02**	Family migrant[b]	−0.02
	0.01		0.02
d/w volunteering[w]	−0.09***	Gender roles[w]	0.01
	0.02		0.01
m/y volunteering[w]	−0.08***		
	0.02		

*$p < 0,05$; **$p < 0,01$; ***$p < 0,00$.
[w]within-person estimation (FE), [b]between-person estimation (BE).

physical health, for which we did not determine a significant within-person effect. To check whether these do indeed not play a role at all, we tested an additional random-effects model (Appendix C). We decided to do so because the FE approach is a 'strict' way of establishing relationships as it is dependent on the time points at which the respondents were studied. In this study, this means the FE approach only takes into account changes occurring between wave 1 and wave 2. Thereby respondents who have not changed on the dependent variable between the observed time points are excluded and anyone who already had a physical disorder when s/he/they arrived in the Netherlands, and therefore cannot work, is excluded. Few respondents changed in obtaining a certificate, social contacts, or their physical health between the two observed time points, which makes it difficult to estimate these relationships properly. We might be too quick to conclude—based on the available data—that these characteristics do not matter for Syrians' employment if we only look at the within-person (FE) estimations. What we see—based on the additional RE models—is that people with a physical disorder are less often employed than people without a physical disorder. Also, these models show that Syrians who obtained a certificate in the Netherlands are more likely to be employed than Syrians who did not. These characteristics thus do play a role in determining

Syrians' employment. We do not find significant relations for social contacts.

We additionally tested the full model for a restricted part of the sample; only those between 25 and 55 years of age. We did so since when it comes to employment, especially newcomers within this age range would be expected to engage in the workforce as their main activity. As Appendix D shows, results are largely robust. Similar explanations for (finding) employment hold whether we include the complete sample, or those restricted between 25 and 55 years. In the latter model we do find an additional significant effect for those with a long-term physical disorder, showing that for those who came to suffer from this their chance for employment decreases. There was no longer a significant result for those between 35 and 44 years of age, as compared to those between 25 and 34 their chances for employment do not differ, in contrast to compared to those between 15 and 24.

Discussion

Previous research has indicated a refugee gap, showing the disadvantaged labor market positions of refugees (see among others: Waxman, 2001; Colic-Peisker and Tilbury, 2007; de Vroome and van Tubergen, 2010; Correa-Velez et al., 2013; Bakker et al., 2017; Cheng et al., 2019; Kanas and Steinmetz, 2021). To integrate into the labor market, refugees need to (re)gain lost resources and acquire new skills relevant to the host society (Hobfoll, 2001; Ryan et al., 2008). Building on and further extending the impact of previously studied characteristics, we focused on the initial economic adjustment of recently arrived Syrian refugees in the Netherlands and contributed to the existing literature in three ways: (1) we explored the impact of a wide range of characteristics, focussing on the impact of settlement policy characteristics, (2) we examined employment among recent arrivals identifying key characteristics for refugees' initial labor market participation, (3) we employed panel data to better distinguish dynamics in Syrians' (finding) employment.

Results show a positive trend regarding the employment of recently arrived Syrian refugees in the Netherlands; their employment has increased between 2017 and 2019. Focusing on two of the three overarching clusters of explanatory characteristics (Huddleston et al., 2013), we showed which policy and individual characteristics explain these changes, partly through (re)gaining resources (Hobfoll, 2001). All in all, our findings indicate policy matters (see also: Kosyakova and Kogan, 2022). We find that a longer stay in reception centers reduces the chance of being employed (see also: de Vroome and van Tubergen, 2010; Bakker et al., 2014; Hainmueller et al., 2016; Hvidtfeldt et al., 2018; Kosyakova and Brenzel, 2020). The duration of the reception period can thus be regarded as a post-migration stressor which hampers (re)gaining resources and as a result Syrians' employment. For example, due to devaluation of human capital (Phelps, 1972; Smyth and Kum, 2010), declining work aspirations (Hainmueller et al., 2016), increased health risks (Phillimore, 2011; Weeda et al., 2018; Damen et al., 2021), and longer isolation from social resources (Bakker et al., 2014). Interestingly, the impact of the reception period is not as negative as portrayed before, as engaging in activities (such as language learning and volunteering) during the reception period has a positive impact on being employed. Spending the reception period actively can help to (re)gather resources, give distraction, a goal and increase confidence (Bakker et al., 2018), resulting in better chances to secure employment. In this regard, reception policy can be regarded as a first form of integration policy, because preparation for integration already starts during reception. The results did not indicate a relationship between the number of reception centers and Syrians' employment. This could be due to the way we included this variable (continuous as opposed to categorical). There might be an impact solely for those having stayed in over a number of different centers, which can be investigated in future studies.

Moreover, results show refugees who have complied with the civic integration obligation (passing their language and cultural knowledge exams) have a higher chance of finding employment (see also: Clausen et al., 2009; de Vroome and van Tubergen, 2010; Odé et al., 2013; Battisti et al., 2019; Lochmann et al., 2019; Fossati and Liechti, 2020; Kanas and Kosyakova, 2022). This finding can be understood in two ways. On the one hand, compliance with the integration requirement is a form of gaining resources relevant to the host society, such as a certain level of Dutch language and knowledge about Dutch society, culture, and the labor market. These resources can subsequently be used to promote their labor market position. In addition, it is possible that after fulfilling the civic integration obligation, there is more room to look for work (mentally and considering time available).

The region where Syrian refugees live is also important for their employment (see also: Åslund et al., 2000; Åslund and Rooth, 2007; Bevelander and Lundh, 2007; Larsen, 2011; Gerritsen et al., 2018; Aksoy et al., 2020; Fasani et al., 2022; Kanas and Kosyakova, 2022). The recent arrivals in this study are more likely to find employment in an environment with a relatively lower unemployment rate than in a context with less favorable labor market conditions. The positive impact of favorable regional labor market conditions probably applies to everyone looking for work. However, whereas the general population can choose where they want to live and change locations if they expect opportunities to be more favorable, refugees do not choose the region they are going to live in themselves and are thus more bound to regional opportunities. Our study shows this can have negative consequences for finding employment. A theoretical contribution following these results is that policy can work in two directions; on the one hand, policy can contribute to (re)gathering resources (Hobfoll, 2001), which can positively impact newcomers' labor market positions, on the

other hand, policy can also be seen as a post-migration stressor, counteracting newcomers' participation to some extent.

Considering individual resources, pre-migration (unknown or lower skilled work in Syria), post-migration human capital (host country language) and personal capital (mental health) were found to be important for Syrian refugees' labor market success. The findings regrinding pre-migration work experience partly resonate with our expectation; it might be easier to secure employment for those with unknown/low skilled work experience compared to no work experience, but not as much for those with high skilled work experience compared to no work experience, as the latter two might both more difficultly translate due to the job availability in the destination countries. As has also been shown in other research into the participation of refugees, women, the elderly, those who arrived later and those with children living at home occupy a less favorable position on the labor market. Volunteering also seemed to decrease one's chance for employment, but this might be due to a lock-in effect, i.e., those who can't find a job will start volunteering and are then less likely to find paid employment. Interestingly, we did not find significant associations between Syrians' pre-migration education, certificate obtained in the Netherlands, social contact, as well as physical health and their employment. This might be explained by the fact that the within-person estimation excludes respondents who have not changed between the observed time points, which makes it difficult to properly estimate these relationships. The additional RE models did show a negative relation between having a physical disorder and employment and an increased chance to be employed for Syrians who obtained a certificate in the Netherlands, but not for social contacts.

Notwithstanding our contributions, there are some limitations to this study. While we focused on Syrians' employment, we could not distinguish between type of employment (employed on temporary or permanent contract, parttime or fulltime, self-employed) and job quality. We do know from other studies that immigrants and especially refugees often hold a precarious position on the labor market, working in low-skilled and temporary jobs (Kanas and Steinmetz, 2021). While we find a positive trend for employment, it is thus likely that those who are employed find themselves in such precarious positions. Moreover, dynamics in the groups of employees and those self-employed may differ (see for example: Wauters and Lambrecht, 2008; Berry, 2012; Alrawadieh et al., 2019) but the number of self-employed respondents was too low in our data, which made it impossible to distinguish between the two for now. As we focus on recent arrivals, we were mainly interested in who already participates in the labor market shortly after arrival, rather than in what way. This also made it possible to include all respondents in the working population, as for example students with part-time jobs also count as those "employed". Future studies could investigate labor market characteristics explaining the type of employment and job quality of the jobs recent arrivals are able to secure in more detail, possibly limiting its sample to those whose main activity is employment or being (unintentionally) unemployed. Nevertheless, our analyses showed similar results for both the full sample as the restricted sample of those between 25 and 55 years.

Next, while our study provides insight in the impact of various policy characteristics on changes in Syrian refugees' employment, the effect of policy should ultimately be tested utilizing randomized controlled trials, comparing refugees subject to different policies. In the case of our study, all individuals are subject to the same policy, but there was difference regarding their interaction with the implementation and the phase they were in regarding civic integration. Since we know quite a lot about all kinds of background characteristics through combing survey and administrative panel data, we were able to estimate the impact of these policy characteristics more accurately than other generally cross-sectional studies employing less extensive data sources. This provides us with an indication of the impact of these policy characteristics but could be further evaluated using comparison groups. Related to this, we cannot completely rule out self-selection when it comes to those who engaged in activities during reception. While the opportunity to engage in such activities can be understood as a policy characteristic, the extent to which these activities are provided may differ and newcomers are not obliged to engage.[9] Our analyses show the impact of those who had the opportunity and took it, but this would be purer if it was part of the policy that every center provided similar activities, and everyone had to engage. Moreover, while showing the impact of the regional unemployment rate is an addition to previous studies, indicating differences in (finding) employment among refugees assigned to different regions, more regional aspects can be of influence, such as the population composition of the neighborhood, and local policy implementation (Bevelander and Lundh, 2007) for example, the local supply of language courses (Kanas and Kosyakova, 2022). Future research could include a variety of these characteristics to be able to make more precise statements about the impact of regional differences and dispersal policies.

In addition, we cannot make statements about the role of the labor market itself and, for example, the impact of discrimination. Syrian refugees indicate they have little

9 The policy regarding these activities is twofold. For those who received a permit but are awaiting housing to be available, there is the program 'preparation for civic integration' (see Bakker et al., 2020 for more information), This program started in 2008 and intensified in 2016, consisting of language lessons, knowledge about Dutch society and labor market and personal accompaniment. The program is generally offered the same way, but there is room for creativity. Those awaiting a decision can learn Dutch themselves, participate in Dutch classes by volunteers, or engage in (volunteer) work, but the extent to which such activities are provided differs.

experience with discrimination in the Netherlands (Dagevos and Miltenburg, 2020), but this is often difficult for individuals to assess. It is thus not unlikely that discrimination does play a role. In times of economic downturn, the role of discrimination tends to increase. Combined with the often-vulnerable position in which many refugees find themselves, this is not hopeful for (the development of) their labor market positions and will have to be considered in future studies.

In conclusion, though refugees often experience a difficult start on the labor market, five years after the large influx of refugees the share of them being employed has increased. We focused on refugees who have only been in the Netherlands for a relatively short time, during which they were highly subject to different forms of policy. Our study shows these policy characteristics are key for the start of refugees' labor market participation, which is an important finding regarding refugees' precarious position and could apply to other countries as well. A short and active reception period can be beneficial and shows that reception policy should be regarded as a first form of integration policy. Through completing the civic integration obligation, refugees can furthermore gain resources relevant to their labor market position. Regional labor market conditions also play a role, the regional unemployment rate can negatively impact refugees' opportunities for employment, and it thus matters which region refugees are assigned to. As for other migrants, post-migration (language) and personal (health) capital are also key in promoting Syrians' employment. By using panel data, we were able to better distinguish dynamics in Syrian's finding employment and thus the impact of the various characteristics. Yet, some relationships were difficult to estimate due to the little variation between the two measurement points. Nevertheless, we showed both policy and individual characteristics can be understood in terms of resources (Hobfoll, 2001), benefitting, or hampering refugees' employment. Given the precarious position of refugees on the labor market, gaining insight into characteristics of labor market success has always been important, but perhaps even more in the prevailing economic crisis. Refugees' precarious labor market position will likely be disproportionately damaged and attention to their labor market positions in times of crisis, therefore, remains valuable.

Data availability statement

The survey data is archived at the research institutes involved. Administrative data is available from Statistics Netherlands. Restrictions apply to the accessibility of these data. Requests to access the datasets should be directed to data@scp.nl or microdata@cbs.nl.

Ethics statement

Ethical review and approval was not required for the study on human participants at the time of data collection and analyses in accordance with the local legislation and institutional requirements. Written informed consent from the participants' legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

RD, WH, and JD contributed to the design and implementation of the research. RD took the lead in analyzing the data. All authors dedicated their time to the writing and revising of the manuscript. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fhumd.2022.1028017/full#supplementary-material

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Origin-country gender norms, individual work experience, and employment among immigrant women in Sweden

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Many Western countries are built on a dual-earner model and have high levels of female labor force participation. Increasing the labor market activity of immigrant women is therefore seen as a key part of immigrant integration. However, female labor force participation (LFP) differs substantially between countries, reflecting differences in work-related gender norms that can continue to influence preferences and behaviors after migration. In this study, we investigate how origin-country gender norms and migrant selection interact to produce post-migration outcomes. Our data shows that immigrant women in Sweden have a higher level of pre-migration work experience than expected based on origin-country female LFP, indicating positive selection. Furthermore, the association between origin-country LFP and post-migration employment varied with work experience. For women without origin-country work experience, origin-country LFP was positively associated with employment in Sweden. For women with origin-country work experience, origin-country LFP however was not associated with higher likelihood of employment in Sweden. Though our focus is on immigrant women, we also include immigrant men in our analysis to test our prediction more thoroughly. For men without origin-country work experience, origin-country LFP was negatively associated with employment in Sweden, while we found no association for men with origin-country work experience. Our results show that migrant selection is a crucial factor in understanding the relationship between origin-country LFP and post-migration labor market outcomes, and that these patterns vary with gender. Policy interventions targeting immigrant women from countries with low female LFP should therefore not assume that women arrive socialized with gender-norms that hinder labor market activity.

KEYWORDS

international migration, migrant selection, labor market, gender, norms, human capital

1. Introduction

In many Western countries, immigrants' labor market integration has become a key policy issue, particularly regarding immigrant women (Towns, 2002; Larsson, 2015; European Migration Network, 2022). In general, immigrants tend to have worse labor market outcomes than non-immigrants (Bevelander and Pendakur, 2014; Gorodzeisky and Semyonov, 2017), and women in general tend to have lower labor market participation and employment rates than men (Albrecht et al., 2003). Immigrant women are in turn less likely to be active in the labor market than non-immigrant women, less likely to be employed conditional on being active, and more often in unskilled jobs conditional on being employed (Ballarino and Panichella, 2018).

Since this double disadvantage (Boyd, 1984; Donato et al., 2014) is gender-specific, gender norms have increasingly been highlighted as an important explanatory factor (Antecol, 2000).

Societal gender norms often prescribe different behaviors for women and men, which shape gendered practices in the division of labor. These norms and practices are cultural, in the sense that they relate to values, beliefs, or preferences that are likely to be shared among people experiencing similar socialization processes (Polavieja, 2015). And while a person's values, beliefs, and preferences change over their life course—due to new experiences or circumstances, institutional pressure, or exchange with other people—change is often gradual. As a result, individual practices often continue to be influenced by norms encountered during early socialization to some degree (Perales et al., 2019). Thus, the labor market outcomes of immigrant women can be affected by both the work-related gender norms from their countries of origin, and the work-related gender norms in their countries of destination (Van Tubergen et al., 2004; Blau, 2015; Uunk et al., 2016; Kanas and Steinmetz, 2021).

To explore the relationship between origin-country gender norms and post-migration outcomes, previous research has used the rates of female labor force participation (henceforth LFP) in the country of origin as an indicator of the work-related gender norms that were dominant in the pre-migration socialization process. Assuming that higher female LFP is an indication of societal work-related norms that encourage female labor market participation, this indicator has then been used to predict post-migration labor market outcomes for immigrant women, finding consistent associations between higher origin-country female LFP and better labor market outcomes in several destination countries (Antecol, 2000; Van Tubergen et al., 2004; Blau et al., 2011).

However, a problem in this line of research is the failure to account for migrant selection—how individual experience relate to societal norms and what consequences that this selective experience may lead to. Immigrant women with work experience from a country with low a female LFP are positively selected in that they managed to overcome the normative or structural barriers to participate in the labor market and find a job. This implies strong determination, high cognitive or interpersonal skills, or the presence of other facilitating factors. Such characteristics and factors should in turn also be beneficial for post-migration labor market outcomes (for similar arguments see: Feliciano and Lanuza, 2017; Engzell and Ichou, 2020; Schmidt et al., 2022). Importantly, the lower origin-country female LFP, the more positively selected will women with work experience be, leading to the opposite association with post-migration outcomes from what previous research has postulated.

The aim of this study is to investigate how origin-country gender norms and migrant selection interact in influencing post-migration outcomes. Using immigrants in Sweden as our case, we model the probability of being employed in the destination country on gender-specific origin-country LFP, individual work experience, and an interaction between the two as a measure of selection. Our prediction is that the gender-specific LFP in the country of origin has different effects on employment after immigration depending on individual pre-migration work experience. Though our focus is on immigrant women, the effect of selection should exist regardless of gender. We therefore also include immigrant men in our analysis to test our prediction more thoroughly. By investigating the interaction between origin-country gender norms and migrant selection, we contribute to both the general field of research on female labor market integration and the growing body of literature emphasizing migrant selection.

From a policy perspective, our design makes an additional contribution. Low female LFP in a country of origin means that immigrant women from that country are both less likely to have been exposed to work-oriented norms during early socialization, and less likely to have work experience. It is therefore impossible to separate the effects of context-level and individual-level factors on employment probability without controlling for pre-migration work experience. This in turn makes it difficult for policy makers to gauge whether initiatives against unemployment should target gender norms relating to work, or the lack of individual work experiences. By considering both aspects simultaneously, our results can better inform policy on which interventions are likely to be effective.

The article is structured as follows. In the next section, we present the Swedish context. In international comparison, the Swedish welfare system is strongly geared toward a dual-earner labor market, and female LFP is high. However, the country's welfare and migration policies have also been suggested to cause different migrant selection to Sweden than in continental Europe or the USA (Polavieja et al., 2018). This makes Sweden an interesting case for studying labor market outcomes for immigrant women. After this, we describe the theoretical underpinnings of our study. We also survey previous research on origin-country LFP and post-migration labor market outcomes. There is a wealth of research in this area. However, to the best of our knowledge there is currently only one study, from the USA, that also includes individual work experience in the country of origin (Blau and Kahn, 2015). There is consequently a knowledge gap that we address in this article. Having presented our hypotheses, we describe our data, and detail our variables and analytical strategy. Finally, we present our results, and conclude by discussing their wider implications for integration policies.

2. Context

Labor market incorporation of immigrants in Europe is typically understood as a trade-off between employment and job quality, with policies in continental and northern Europe prioritizing job quality over swift employment (Kogan, 2006; Reyneri and Fullin, 2011). This is also the case for Sweden. Still, the Swedish labor market is relatively open to immigrants (Solano and Huddleston, 2020) and integration programs focus on socio-economic incorporation (Borevi, 2014). Sweden also has a welfare system based on a dual-earner households (Oláh and Bernhardt, 2008), meaning that labor market policies and welfare institutions are designed to encourage the employment of immigrant women (Stier et al., 2001; Bevelander and Pendakur, 2014; Boeckmann et al., 2015). However, gender and immigrant background often intersect in non-additive ways (Browne and Misra, 2003; Cho et al., 2013). Immigrant women consequently face gender-specific obstacles that can lead to further disadvantages that are not easily described in terms of trade-offs (Cantalini et al., 2022).

To a large extent, immigrants to Europe come from countries with more traditional gender norms (Röder and Mühlau, 2014). Cross-sectional studies have found that traditional, male single-earner, attitudes are negatively related to immigrant women's labor force participation and work hours (Kanas and Müller, 2021). However, since culture is malleable, destination-country gender norms are also a key factor in the labor market participation of

immigrant women (Kanas and Müller, 2021; Kanas and Steinmetz, 2021).

In international comparison, Sweden scores high in gender-egalitarianism (Inglehart et al., 2017). The gender gap in labor force participation in the Swedish population aged 15 and over is likewise low in international comparison, at 8 percentage points in 2011 (International Labor Organization, 2022). The strong societal norm of female LFP also means that immigrant women have high LFP in Sweden compared to international standards (Kanas and Müller, 2021). Still, the gender gap in LFP among immigrants is more than 12 percentage points—substantially larger than among non-immigrants (Statistics Sweden, 2021). Because of this, the integration of immigrant women is often framed as a particularly problematic issue in the political discourse (Towns, 2002; de los Reyes, 2021).

Since this study focuses on a single country, we are not able to explicitly test how the Swedish context influences the results. Yet, Sweden's open labor market, labor market focus in integration policy, dual-earner model, high female LFP, and prevalence of gender egalitarian values, all suggest a structural push toward higher LFP for all immigrant women. This in turn leaves less room for variation based on origin-country factors. The Swedish context is therefore likely to have a suppressing effect on the association between origin-country LFP and employment outcomes.

3. Theory

The labor market outcomes of immigrant women can be attributed to several factors. As for men, legal and structural barriers, lack of relevant human and social capital, and discrimination may all cause unfavorable results (Tibajev, 2022). Compared to immigrant men, immigrant women may face a double disadvantage in the labor market of being both migrants and women (Raijman and Semyonov, 1997). Research has suggested that gender norms play a role in this. Gender norms almost universally stipulate that men should participate in the labor force but norms vary in the degree to which women are also expected to do so. Importantly, there is often an expectation on women to do a larger share of unpaid household work, which hamstrings their possibilities to participate in the labor force and results in women's work not being recognized (Morokvasic, 1984). Differences in such gender norms have been suggested to explain the differing labor market outcomes of immigrant women from different countries, since immigrants bring cultural norms and social practices from their origin countries when they migrate (Read and Oselin, 2008).

The so-called cultural explanation was proposed by Reimers (1985), who noted that the higher degree of labor force participation of married black, compared to white, women was rooted in a particular historical experience of blacks in America, and not reducible to current conditions alone. On a similar note, she argued that different immigrant groups to the USA might have different views about "male and female roles in the family and about wives and mothers working outside the home, as well as [. . .] the value placed on children, family size, household composition, and the education of women" (Reimers, 1985, p. 251). Such cultural differences might in turn result in systematic differences in behavior when faced with similar constraints and opportunities. This explanation was further developed by Antecol (2000), who proposed using gender differences in LFP in the countries of origin as an indicator of historical experiences that influence current behavior in the country of destination. Concretely, she suggested that being socialized into a context with a higher degree of female LFP acted as a "portable factor" (Antecol, 2000, p. 419) leading to a higher likelihood of female labor market activity in the country of destination, net of other factors that influence participation.

3.1. Origin country work-related gender norms and post-migration outcomes

Building on Antecol, several studies have used female LFP in a country as an indicator of gender norms relating to work. Origin-country female LFP at the time of emigration is thus understood as a proxy for the societal norms regarding gender and work that dominated during a person's pre-migration socialization process. Studies in this tradition have found that immigrant women from countries with low female LFP are less likely to work after immigration than are immigrant women from countries with higher female LFP (Antecol, 2000; Blau et al., 2011; Polavieja, 2015; Gay et al., 2018; He and Gerber, 2020; Muchomba et al., 2020). Origin-country work-related gender norms have also been found to influence the labor market outcomes of children of immigrants (Eylem Gevrek et al., 2013; Finseraas and Kotsadam, 2017; McManus and Apgar, 2019), highlighting the roles of parents as socialization agents for transmitting work-related gender norms across generations (Fernández and Fogli, 2009).

Associations between origin-country female LFP and post-migration outcomes have also been reported from European countries, including Germany (Krieger, 2020), Italy (Scoppa and Stranges, 2019), and the Netherlands (Kok et al., 2011). There are additionally a number of comprehensive studies, assessing the association between origin-country female LFP and labor market outcomes in more than one country. Van Tubergen et al. (2004) included the USA, Australia, and 16 European countries, and found a positive association between origin-country female LFP and post-migration likelihood of labor force activity for immigrant women. Similarly, Kesler (2018) found a positive association between female LFP in the country of origin and the post-migration labor force participation for immigrant women in 16 European countries. Bredtmann and Otten (2015) used survey data on 26 European countries from the European Social Survey 2002-2011 and found a positive correlation between origin and destination country female LFP. In contrast, a recent study using data from European Social Survey, found that the association between female LFP in the country of origin and employment in the country of destination was only present for Muslim-majority countries of origin (Blekesaune, 2021).

Studies using Swedish registry data have found a substantial positive association between origin-country female LFP and the likelihood of establishment on the Swedish labor market for immigrant women (Neuman, 2018; Grönlund and Fairbrother, 2022). However, when controlling for individual fixed effects, Neuman (2018) found that immigrant women from countries with low levels of female LFP in fact worked to a higher degree than those from countries with high levels of female LFP. This suggests that factors unobserved in destination-countries' registry data play an important role in shaping the post-migration outcomes of immigrant women, highlighting the need to account

for origin-country work experience and its relation to the origin-country LFP.

3.2. Selection

As outlined above, there is wealth of empirical evidence indicating that work-related gender norms from the country of origin influence post-migration labor market outcomes for immigrant women. A recurring problem in this literature, however, has been the inability to separate societal work-related gender norms from individual work experience, and to explicitly model the joint effect of the two on post-migration outcome. That is, to account for migrant selection, the fact that migration processes are not random, and that there are systematic differences between migrating and sedentary parts of a population that can impact post-migration outcomes (Feliciano, 2020).

Cultures are never monolithic, and individual practices may differ substantially from those prescribed by societal norms. Non-conformity with dominant gender norms can be an important factor in the decision to migrate (Hofmann, 2014). Women seeking more egalitarian gender norms, women with a strong motivation to work, and women forced to work to provide for their family or compelled by other circumstances are thus subsets of immigrant women where the association between origin-country gender norms and post-migration outcomes might diverge from the general pattern (He and Gerber, 2020). This is because finding a job is facilitated by skills and education, but also hard-to-observe factors such as motivation, effort, cognitive skills, and non-meritocratic advantages.

When work-related gender norms are biased against women, finding a job as a woman takes more effort and determination given the same levels of skills and education. Immigrant women with work experience from a country with low female LFP are thus likely to be positively selected on unobserved factors relating to their capacity to find employment. This positive selection can, in turn, be helpful for entering the post-migration labor market (see Schmidt et al., 2022). An attempt at assessing the impact of selection on the association between origin-country female LFP and post-migration outcomes was made by He and Gerber (2020), who used the respective timing of migration by husbands and wives as a proxy for the relative work-orientation of individual immigrant women. Their assumption was that wives who migrate before their husbands are likely to be less traditional in their gender roles, than wives who migrate after their husbands. Focusing on immigrants to the USA, they found that origin-country female LFP influenced the likelihood of post-migration employment more for follower migrants than for unmarried, lead, and concurrent migrants. This suggests that selection can have an impact on the relation between origin-country LFP and labor market outcomes in the destination country.

Still, to the best of our knowledge, only one study has so far used data on pre-migration work experience to separate between country-level work-related gender norms and individual-level work-related practices. Analyzing the outcome of annual working hours in the USA, Blau and Kahn (2015) used the New Immigrant Survey to show a negative interaction between origin-country female LFP and individual experience. The positive impact of origin-country LFP on hours worked was stronger for women who did not themselves work before migrating, indicating that both pre-migration norms and work experience are important factors for post-migration labor market outcomes. The authors interpreted the negative interaction as a substitutionary effect between culture and human capital, i.e., that origin-country gender norms have an effect when individual job-related human capital is absent.

Based on the discussion above, we hypothesize that the association between origin-country female LFP and immigrant women's post-migration labor market outcomes will depend on the immigrant woman's individual work experience. For women without work experience, higher origin-country female LFP should have a positive effect on post-migration employment, as noted by previous research. Women from countries with high female LFP are socialized into work-related gender-norms promoting female labor market participation, yielding a higher probability of post-migration employment. This results in our first hypothesis.

H1: For women without own origin-country work experience, there will be a positive correlation between origin-country female LFP and probability of employment in Sweden.

For women with pre-migration work experience, female LFP in the country of origin should not have the same effect. Instead, we hypothesize that the association should be negative due to selection. Being a woman from a country with low female LFP and having worked nevertheless implies a stronger-than-average propensity for labor market participation or the presence of characteristics or factors that facilitate entry into employment even if employment for women is rare. These women should therefore be positively selected and consequently have the highest probability of post-migration employment. This results in a second hypothesis.

H2: For women with own origin-country work experience, there will be a negative correlation between origin-country female LFP and probability of employment in Sweden.

3.3. Selection and post-migration outcomes for men

Research on the association between origin-country gender norms and post-migration outcomes has typically focused exclusively on immigrant women. The reason for this is that the work-related gender norm for men is largely invariant. Men are generally expected to participate in the labor market, regardless of country and historical moment—at least during the last centuries. The male work-related norm is also largely unaffected by female work-related norms, since both single-earner and dual-earner norms assume that men participate in the labor market.

Even so, some of the aforementioned studies have included men as a falsification test. Their findings have generally been that the effect of origin-country LFP is negligible for men (Blau et al., 2011; Blau and Kahn, 2015; Neuman, 2018), even if some studies reported more substantial effects (Finseraas and Kotsadam, 2017; Grönlund and Fairbrother, 2022) or mixed findings (Neuman, 2018). In contrast to previous research, we however argue that including men allows for a more thorough investigation of how selection impacts the relation between origin country gender norms, individual work experience, and post-migration labor market outcomes. We therefore include men not as a falsification test, but to test our predictions about the effects of selection more thoroughly.

The universal norm that men should be participate in the labor market implies that variation in male LFP is not caused by work-related gender norms. Variations across time and space can instead be understood as a function of structural differences in labor markets and education systems. However, individual experiences might still differ from the societal norm, meaning that selection can be a factor also for men. Concretely, men without origin-country work experience should be negatively selected in relation to their gender-specific LFP. However, in the case of men, it is not because of differences in norms, but because men coming from countries with high male LFP had more ample opportunities to work, and the fact that they did not implies the presence of unobserved characteristics or factors that reduce the likelihood of finding employment in the future—such as disabilities or stigmatization. These unobserved characteristics or factors can in turn be assumed to also have a negative influence on the likelihood of post-migration employment. Following the reasoning of a universal male work norm, men with origin-country work experience should on the other hand be unaffected by origin-country male LFP. This gives us our two final hypotheses.

H3: For men without own origin-country work experience, there will be a negative correlation between origin-country male LFP and probability of employment in Sweden.

H4: For men with own origin-country work experience, there will be no correlation between origin-country male LFP and probability of employment in Sweden.

4. Data and methods

4.1. Data and sample selection

To study how selection affects the association between origin-country LFP and post-migration employment, we use individual level data on immigrants from the Level-of-Living Survey for Foreign Born and Their Children (Migrant-LNU). Migrant-LNU is a comprehensive high-quality data set, collected by Statistics Sweden in 2010–2012 through retrospective interviews with a representative sample of the immigrant population in Sweden. The inclusion criterion was that the person had first immigrated to Sweden at least five years prior to the start of data collection. Data consists of a random sample, stratified on seven regions of origin and three age categories, allowing both comparisons between the strata and representativeness of the whole population. The response rate was 49.9 percent, yielding 3,448 respondents. The comprehensiveness of the data, including detailed information about the respondents lives both before and after migration, makes the data set particularly well-suited to study the connection between pre-migration experiences and post-migration outcomes. More information about the Level-of-Living Surveys can be found at the Swedish Institute for Social Research (2017).

Given the focus on labor market experience before and after migration, we restricted our analytical sample to respondents who were at least 15 years old at the time of migration and were no older than 64 at the time of the survey. The lower age limit was set to ensure that respondents were old enough at the time of migration to have been exposed to origin-country gender norms during their socialization and had some opportunity to enter the labor market before migrating. The upper age limit was in turn set to ensure that respondents were still of working age when surveyed about their current labor market situation in Sweden. This excluded 1,578 respondents, mostly because many immigrants in the survey had come as children. Additional list-wise deletions on the included variables excluded 354 respondents, leaving an analytical sample of 1,516 (813 women and 703 men).

All results are weighted with post-stratification weights that account for the stratified sampling technique, as well as the differing non-response rates across the 21 strata and key demographic variables.

4.2. Variables

Our outcome variable is current labor market status, defined dichotomously as unemployed or employed (0/1). Based on the Migrant-LNU questions of labor market activity in the week preceding the survey, we define being employed as having gainful employment, full-time or part-time, or being self-employed. Respondents without employment/self-employment were instead coded as unemployed. From the latter group, we excluded respondents who were studying (and not simultaneously having or seeking employment) and the long-term ill or early retired. The reason for this being that these categories are not easily definable in terms of work-related gender norms or relation to the labor market since individuals in these categories can either be early retired after a lifetime of work or long-term ill for unrelated causes.

Gender and origin-country work experience are dichotomous variables based on survey responses in the Migrant-LNU. An alternative to distinguishing dichotomously between having and not having had employment before migration would be to use years in employment before immigration to Sweden as a continuous variable. However, this specification is less suitable for measuring selection since an individual is not twice as selected if she worked two years instead of one. Consequently, using a continuous variable specification added no additional explanatory power to the models. Therefore, we opted for the dichotomous distinction between having been employed or not.

Operationalizing origin-country work-related gender norms, previous studies differ in their choices of LFP measures. Some studies have used the LFP rate, measuring the share of women that are active in the labor market (Van Tubergen et al., 2004; Fernández and Fogli, 2009; Kesler, 2018; McManus and Apgar, 2019), while other have used the ratio of female to male LFP (Antecol, 2000; Blau et al., 2011; Blau and Kahn, 2015; He and Gerber, 2020). The latter choice has been informed by a desire to separate work-related gender norms from other factors that affect labor market participation, specifically labor market structure and educational expansion. Countries can differ systematically in economic situation, the timing and degree of structural transformations, and in the degree of participation in education. These factors also affect LFP, for example since subsistence farmers and students are not participating in the labor force.

Despite these concerns, we have opted to use the more straightforward LFP rate. The main reason is that it relates to our measure of selective experience more directly than any alternative. How common or uncommon an individual's pre-migration work experience is depends on the proportion of other people in work (the LFP rate). Similar to previous research, we understand observed

LFP for a specific country, year, and gender as the outcome of two processes: gender-specific norms regarding work and economic structure. The indicator for women will emphasize work-related gender norms, such as an ideal that women should focus on raising a family rather than working. For men, by contrast, the indicator emphasizes the structural component based on the theoretical assumption that men everywhere are expected to participate in the labor market. In other words, to the extent that male LFP rates differ from 100%, it is not because work-related gender norms stipulate that men should not work but because of higher participation in education, larger share of retirees, or similar structural factors.

The data on origin-country LFP comes from the ILO Yearbooks for Labor Statistics (International Labor Organization, 1971–2000) and the ILOSTAT Explorer database (International Labor Organization, 2022). Since work-related gender norms shift over time, female LFP have changed substantially over the 20th century in many countries. To capture this, we have used multi-year records and calculated LFP at the year of migration for each observation in the data following a similar approach by Tibajev (2019). In this way, we can appropriately approximate both gender norms and selectivity of the individuals' experiences given the time and place of the pre-migration socialization. Respondents in the sample come from 171 countries of origin with 974 unique origin-country years. Quality of data sources and definitions vary inescapably across time and space. In our coding, we have accepted numbers as presented and to our best ability calculated the gender-specific LFP for the same age groups across all country-years with the age restriction of 15 years and up as the anchor (following ILO definitions).

Control variables are migration age and years since migration (YSM), both squared, to account for the chances of accumulating work experience in either context and the degree of socialization into pre-migration and post-migration gender norms. We also include education level and place of highest education, to control for the individual's human capital. Region of origin[1], based on the country the respondent lived in before the age 16, is included to account for origin-specific effects apart from work-related gender norms, such as discrimination in the labor market. Lastly, we included reason for migration to account for the effects of the overall integration trajectory in the destination country connected to different motives for migration. We additionally tested the variables family status and number of children but discarded them for parsimoniousness as they did not have any influence over the main effects.

4.3. Analytical model

Our theoretical discussion and hypotheses concern the degree to which the effect of origin-country LFP will vary depending on gender and individual work experience. We therefore test the four hypotheses using logistic regression, regressing a three-way interaction between the main variables gender-specific origin-country LFP, gender, and individual origin-country work experience on the probability of current employment. The interaction model allows the effect of origin LFP to vary across the four combinations of gender and work experience, while holding constant for all the included control variables.

The regression results are presented as gender-specific average marginal effects (AME) on the probability of being employed per one percentage point difference in origin LFP, separated by gender and origin-country work experience. Presenting the results like this makes the analysis directly conform to the hypotheses, as each AME will correspond one prediction. They are also a useful way of displaying results when the effect size of a variable is contingent on the status of some other variable, i.e., in an interaction (Mize, 2019). Full results are available in the Supplementary material.

4.4. Alternative specifications

The design and methodological choices can have a substantial impact on the results of a quantitative analysis of the same dataset and research questions (Breznau et al., 2022). This study includes five particularly important choices. For transparency, we discuss them below and offer alternative specifications for each choice.

First, we have opted for employment in Sweden as the outcome variable. An alternative would be to instead use participation, i.e., also including the unemployed as a positive case and leaving individuals doing housework or other activities as non-participating. Differences between the two outcomes is that employment has a stronger emphasis on human capital as an explanation, while participation relies more on gender-specific norms (for a similar argument see Blau and Kahn, 2015). As an alternative specification, we therefore use participation as the outcome.

Second, we have coded students and long-term ill/early retired as missing values in the outcome variable, effectively excluding them (258 respondents) from the sample. As an alternative specification, we include these categories (and the additional 258 respondents), both as non-employed and non-participating in the labor market.

Third, as discussed above, our choice was to use the LFP rate rather than ratio, when approximating work-related gender norms and the selectivity of women's work experience. Previous studies have however argued that the female to male LFP ratio is a more accurate approximation of the work-related gender norm for women, net of structural constraints that affects both genders (approximated

1 Western countries: Australia; Belgium; Canada; Switzerland; Germany; Denmark; Spain; Finland; France; United Kingdom; Greece; Ireland; Iceland; Italy; Netherlands; Norway; New Zealand; Portugal; United States. Central & Eastern Europe: Albania; Bosnia and Herzegovina; Bulgaria; Belarus; Czechia; Estonia; Croatia; Hungary; Lithuania; Latvia; Moldova, Republic of; Poland; Serbia; Russian Federation; Slovakia; Ukraine; Yugoslavia. Africa & Asia: Afghanistan; Armenia; Angola; Azerbaijan; Bangladesh; Burundi; Congo, the Democratic Republic of the; Central African Republic; Congo; Côte d'Ivoire; Cameroon; China; Cape Verde; Algeria; Egypt; Eritrea; Ethiopia; Georgia; Ghana; Gambia; Equatorial Guinea; Indonesia; Israel; India; Iraq; Iran, Islamic Republic of; Jordan; Japan; Kenya; Kyrgyzstan; Korea, Republic of; Kazakhstan; Lao People's Democratic Republic; Lebanon; Sri Lanka; Liberia; Morocco; Madagascar; Mali; Myanmar; Mauritius; Malawi; Malaysia; Nigeria; Philippines; Pakistan; Palestine, State of; Rwanda; Saudi Arabia; Sudan; Singapore; Sierra Leone; Senegal; Somalia; Syrian Arab Republic; Togo; Thailand; Tajikistan; Tunisia; Turkey; Taiwan; Tanzania; Uganda; Uzbekistan; Viet Nam; South Africa; Zambia; Zimbabwe. Latin America: Argentina; Barbados; Bolivia, Plurinational State of; Brazil; Chile; Colombia; Costa Rica; Cuba; Dominica; Dominican Republic; Ecuador; Guatemala; Honduras; Haiti; Jamaica; Saint Kitts and Nevis; Mexico; Nicaragua; Panama; Peru; El Salvador; Trinidad and Tobago; Uruguay; Venezuela.

TABLE 1 Descriptive statistics.

		Women		Men	
	Range	Mean	SD	Mean	SD
Employment	0/1	0.84		0.87	
Participation	0/1	0.94		0.98	
Employment (alternative)[a]	0/1	0.68		0.74	
Participation (alternative)[a]	0/1	0.77		0.84	
Origin-country LFP rate	0.07–0.96	0.41	0.19	0.74	0.08
Origin-country LFP ratio	0.08–1.00	0.57	0.25	–	–
Origin-country work experience	0/1	0.54		0.65	
Immigration age	15.00–56.83	27.73	7.89	26.80	7.18
Years since migration (YSM)	1.34–47.83	19.91	9.59	20.93	9.15
Education					
Primary	0/1	0.18		0.20	
Upper secondary	0/1	0.39		0.41	
Post-secondary	0/1	0.18		0.19	
University	0/1	0.25		0.20	
Highest edu. in Sweden	0/1	0.48		0.42	
Region of origin					
Western countries	0/1	0.24		0.24	
Central & Eastern Europe	0/1	0.28		0.23	
Africa & Asia	0/1	0.41		0.46	
Latin America	0/1	0.06		0.07	
Migration reason					
Work/studies	0/1	0.12		0.20	
Family	0/1	0.58		0.34	
Refuge	0/1	0.25		0.43	
Other/missing	0/1	0.05		0.03	

[a] $N = 1{,}774$. See section 4.4 for definition.
$N = 1{,}516$. All values weighted with post-stratification weighting.

by male LFP). To test whether this affects our results, we used the female LFP ratio as an alternative specification. For men, this would create a variable that is a constant of one across all observations, and we therefore keep the male LFP rate as the measure also is this alternative specification.

Fourth, we have used values in the ILO origin-country data as they are presented in the yearbooks, using the gender-specific employment rate for 15 years and up (or closest possible version). Since not all countries are covered for all years, respondents who migrated before we have any datapoints from a specific country was assigned the earliest available LFP rate for that country. For other missing years, we have estimated a linear trend between the two closest years with the available data. The ILO data, especially regarding earlier years, comes from different data sources, with different definitions over time and space, and is of varying quality. An alternative approach would be to model an underlying LFP rate as a function of the recorded values, thereby treating drastic changes and extreme datapoints as errors rather than real fluctuations. As an alternative specification we therefore predicted LFP values for each country, year, and gender using an OLS regression with the LFP rate as the dependent variable and a cubic polynomial of years as the independent variable.

Fifth, we restricted our sample to only include persons who were older than 15 at the time of migration, and 64 or younger at the time of survey. As outlined above, the reason for the lower bound was to ensure that persons in the sample both had been exposed to origin-country gender norms during their socialization process and had had some opportunity to enter the labor force in the country of origin. The lower age limit follows the definition of working age used by the ILO and thus the rates of origin-country LFP in this study. However, it can be argued that a lower age limit of 15 years old is too low, and that persons at the lower ages have not yet had enough time to enter the labor market in the country of origin. As an alternative specification, we instead limited the sample to only persons with a migration age of 20 or over, excluding 255 additional respondents

who were not in prime working age in both the country of origin and destination from the sample.

Beside our main model, we include the results from all these alternative specifications, a total of 32 models, in the Supplementary material and briefly discuss them as a sensitivity analysis at the end of the results section.

5. Results

5.1. Descriptive statistics

Table 1 displays the descriptive statistics for all included variables, separate for women and men. The measured labor market outcomes in Sweden—participation and employment—are very high. It is important to remember that students and the long-term ill/early retired have been exclude from the sample based on our definitions. When included, as is visible in the alternative specification of these variables, the proportion of employed and participating is reduced. In comparison, the overall LFP rates in the survey year of 2011 in Sweden, however for the slightly broader age range of 15–64, were 77 percent for women and 84 percent for men (International Labor Organization, 2022).

Immigrant women have a lower rate of both participation and employment compared to men. The differences are small, highlighting the strong dual breadwinner norm in Sweden. By comparison, the gendered pattern is much more pronounced in the origin-country variables, with women both coming from countries with considerably lower gender-specific origin-country LFP and having themselves been to a lesser extent employed than men. It is also worth noting that the variation in origin-country LFP is much larger among women than among men. Our theoretical assumption that male labor market participation is globally the norm and has little variation is thus confirmed in the data.

Table 1 also shows the alternative measure female LFP ratio, i.e., female LFP divided by male LFP for the same country-year. The correlation between the LFP rate and ratio for women is 0.96. For men, the ratio is undefined. A gender difference evident in the table is the relationship between origin-country LFP rate and work experience. Women have a higher probability of origin-country work experience than their average LFP rate would suggest, while the relationship is the opposite for men.

Table 1 also displays the distribution of the control variables.

5.2. Origin-country LFP

To better illustrate the degree of selection, Figure 1 displays the predicted probability of origin-country employment over origin-country LFP rate for women and men, respectively. The figure confirms two aspects already evident in Table 1: that fewer women have on average been employed in their origin country, and that the gender-specific origin-country LFP rate is both lower and varies considerably more for women than for men.

The figure also shows that the connection between origin-country LFP rate and the individual immigrant's experience are quite different depending on gender. For women, there is a mostly a positive association, with women coming from high-LFP countries also being more likely to have had own work experience in the origin country compared to women coming from low-LFP countries. For men, there seem to be a negative association, though it is very small across the narrow range of male origin-country LFP.

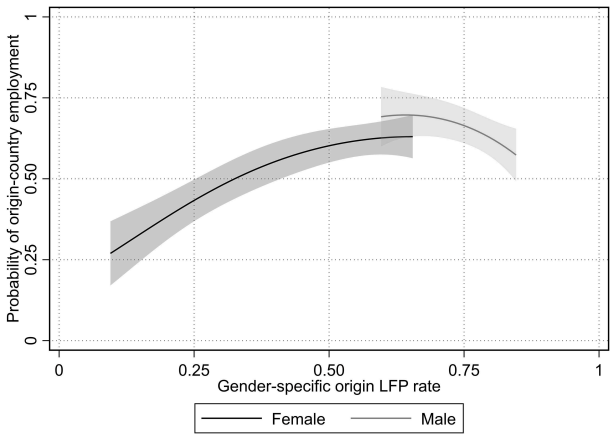

FIGURE 1
Probability of origin-country employment based on a logistic regression with gender-specific origin-country LFP (squared polynomial). Prediction ranges from 5th to 95th percentile of origin-country LFP.

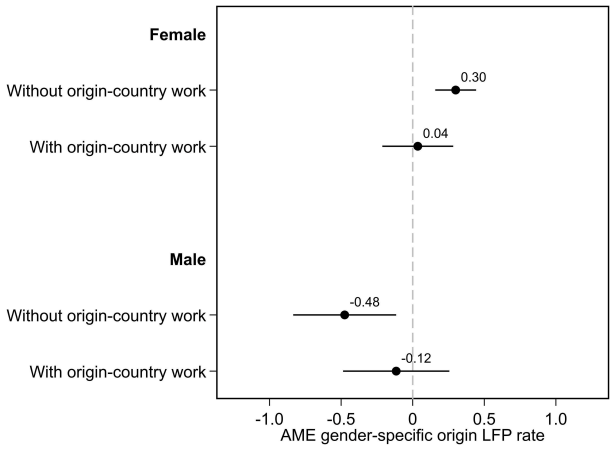

FIGURE 2
Main results. AME (with 95% confidence intervals from robust standard errors) on employment for gender-specific origin-country LFP rate, separated by gender and origin-country work experience. Full results from logistic model in Supplementary Table 1.

5.3. Predicting labor market activity in Sweden

Immigrant women and men in Sweden thus have origin-country work experiences to a degree that deviates from the country-level averages. To test to what extent this impacts post-migration employment outcomes, we fitted a logistic regression model with a three-way interaction between gender of the respondent, gender-specific origin-country LFP, and individual origin-country employment experience. The results are presented below. Based on our four hypotheses, Figure 2 displays the AME of one percentage

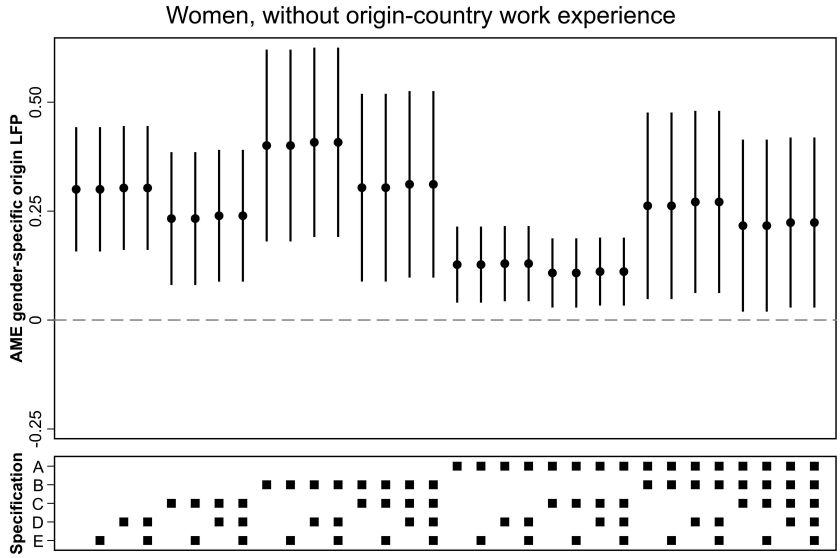

FIGURE 3
Sensitivity analysis of H1. AME (with 95% confidence intervals from robust standard errors) on employment for gender-specific origin-country LFP for women without origin-country work experience. (A) Outcome variable participation; (B) alternative definition of employment/participation; (C) LFP ratio instead of rate; (D) predicted LFP; (E) minimum 20 years of immigration age.

point difference in the LFP on the probability of employment in Sweden. Full results from the regression model are available in Supplementary Table 1.

H1 predicted that there would be a positive correlation between origin-country LFP and employment probability in Sweden for women without own origin-country work experience. Our result is that, on average, an increase of one percentage point in female origin-country LFP rate is associated with 0.30 percentage points higher probability of employment in Sweden. To illustrate, comparing two women without origin-country experience of employment and 22 and 60 percent female LFP rate—one standard deviation below and above the mean, respectively—the predicted difference in employment probability in Sweden is about 10% points. H1 is therefore confirmed.

H2 predicted that for women with own origin-country employment experience, the correlation between origin-country LFP rate and employment probability in Sweden should be negative. As seen in Figure 2, results indicate that there is a zero association between the origin-country female LFP rate and employment probability in Sweden for women with own experience. Since the AME is very small and nowhere near statistical significance at traditional levels, H2 is rejected.

For men, H3 predicted that there would be a negative association between the male origin-country LFP rate and the employment probability for men without origin-country experience, and H4 predicted a zero association for men with origin-country experience. Both hypotheses are confirmed. For men without origin-country employment, a difference in one percentage point higher origin-country LFP rate is associated with on average 0.48 percentage points lower probability of employment in Sweden, or thirteen percentage points lower probability of employment comparing two men coming from origins with 66 and 82 percent LFP rate, one standard deviation below and above the mean, respectively.

5.4. Sensitivity analysis

As discussed in the section on methods and data, there is a possibility to make other choices in designing the study. Specifically, to (A) use participation as the outcome variable; (B) include students and the long-term ill/early retired as neither participating nor having employment; (C) use the female origin-country LFP ratio between males and females rather than rate; (D) use predicted LFP rate; (E) only include immigrants who have been in prime working-age in both the origin country and Sweden.

Figure 3 displays the results using all 32 combinations of design choices for the results concerning H1, i.e., the probability of employment in Sweden for immigrant women without origin-country work experience. The main result (reproduced on the far left in the figure) is replicated regardless of model specifications. We therefore conclude that there is a positive association between origin-country LFP and employment probability in Sweden for women without origin-country work experience, in accordance with H1 and regardless of design choices.

Results for H2-4 are available in the Supplementary material. In short, women with origin-country work experience had zero correlation between origin-country LFP and employment or participation probabilities in Sweden, regardless of specification, rejecting H2 as in the main results. For men without origin-country work experience, there was a negative correlation between LFP and employment but no correlation between LFP and participation, partially confirming H3. For men with origin-country work

experience, there was no correlation with either employment or participation, confirming H4.

6. Discussion

Immigrant women typically face multiple disadvantages in destination-country labor markets, including a lower likelihood of being employed. Some of these disadvantages are shared with immigrant men, but gender and immigrant background intersect in multiple ways (Browne and Misra, 2003; Cho et al., 2013). Because of this, some factors affect immigrant men more, while others pertain particularly to immigrant women. One such factor is the gender norms surrounding the division of labor, that often prescribe for women to do more unpaid house labor while prescribing that men should be more active in the labor market.

The Swedish welfare system assumes and facilitates for a dual-earner household, and female LFP is consequently high. Many other countries—including many countries of origin for immigrants—instead assumes male single-earner households. Migrants have therefore often been exposed to corresponding gender norms during their pre-migration socialization processes, which can continue to shape preferences and behaviors also after immigration. Over the last 20 years, research has found consistent associations between origin-country LFP and post-migration labor market outcomes for immigrant women. This suggest that the gender norms a person is exposed to during their socialization process has a lingering effect, even when the context—and surrounding societal norms—change.

However, as we know from the literature on migrant selection, immigrants can be expected to have some characteristics, experiences or resources that sets them apart from the sedentary population (Feliciano, 2020). These characteristics, experiences, or factors could in turn have consequences for post-migration outcomes, including for the relation between origin-country gender norms and post-migration labor market integration. Despite this, most of the previous research has been unable to account for this selection, and its consequences for labor market outcomes are therefore unknown.

In this study, we have contributed to the research field by explicitly focusing on the question of selection by modeling the probability of being employed in Sweden on origin-country LFP, individual work experience, and an interaction between the two as a measure of selection. We tested four hypotheses, one for each combination of gender and individual origin-country work experience. For women *without* origin-country work experience, we hypothesized that origin-country LFP should be positively associated with employment in Sweden (H1). For women *with* origin-country work experience, we instead hypothesized that origin-country LFP should have a negative association with employment probability in Sweden, since women with work experience from countries with low female LFP should be more positively selected (H2). For men, we hypothesized that origin-country LFP—here measuring economic structure rather than the universal norm that men should be active in the labor market—would have a negative association with employment in Sweden for men *without* origin-country work experience, since men with no work experience should be more negatively selected the more common labor force participation was in their country of origin (H3). Finally, we hypothesized that there should be no correlation between gender-specific origin-country LPF and employment probability in Sweden for men *with* origin-country work experience, since the labor market structure of the origin country should have no independent effect on post-migration employment probabilities (H4). H1, H3, and H4 were confirmed by our analysis, but H2 was rejected.

Confined to a single destination country, the study is limited in what it can say about the combination of origin and destination country gender norms and their effect on different categories of immigrants. As mentioned in the section on the Swedish context, we expected that the association between origin-country LFP and employment in Sweden would be suppressed by the Swedish context because of a generally high LFP for both immigrant women and men. This may have been the reason for why H2 could not be confirmed. There is not much room for variation in employment probabilities for women who both worked in the origin country and arrived in a country where labor market participation is the norm for women, which might have created a ceiling effect. If so, there might still be an effect of positive selection on other labor market outcomes, such as job quality or income. Future studies could therefore extend the scope of inquiry by including such outcomes in the analysis.

The sensitivity analysis showed that the results were stable across different specifications and design choices. Still, our study has limitations. Migrant-LNU had a response rate of 49.9 percent. While all results are weighted to account for uneven response rate across sample strata and key demographic variables, it is possible that there is selection on unobservable characteristics. Migrant-LNU only include immigrants who first immigrated to Sweden at least 5 years before the start of data collection. This limits the population that our results can be generalized to. As with all surveys of immigrant populations, there is also a risk that the results are biased by selective outmigration if individuals who were unsuccessful at finding employment move out of the country at a higher rate than individuals who were successful. Another limitation is that origin-country LFP data might not always be reliable, and that inconsistent definitions between countries or across time can impact data quality.

Despite these limitations, our results indicate that there are gender-specific selection patterns among immigrants to Sweden regarding pre-migration work experience, and that this migrant selection impacts the relation between origin-country gender norms and post-migration labor market outcomes. From a policy perspective, our study shows that women coming from low female LFP countries are positively selected on work experience (Figure 1), and that the negative association between female LFP and employment probability does not exist for these positively selected women (Figure 2). While Swedish integration policy is focused on labor market entry—for both immigrant women and men—it has been criticized for a gap between intent and outcomes (Wiesbrock, 2011), and for reproducing ethnic differences through policy design (Kamali, 2006). Our results indicate that policy interventions targeting immigrant women from countries with low female LFP should not assume that all these women arrive socialized with gender-norms that hinder labor market activity, and instead tailor policy and interventions to individual experiences.

In this study, we have highlighted the importance of both factoring in and contextualizing pre-migration experiences when

seeking to understand post-migration outcomes. We know from previous research that not only experience, but complex webs of individual characteristics and social positions affect immigrant women's labor market behavior and opportunities (Webster and Haandrikman, 2022). A possible venue for future research is therefore to explore to what extent education or class-based selection also influences the effect of origin-country gender norms on post-migration labor market outcomes, to better understand the mechanisms of these selection patterns. Future research should also combine pre-migration variables with a multi-destination design, to better understand how the continued socialization and change in opportunity structure in different countries affect labor market results.

Data availability statement

The data analyzed in this study is subject to the following licenses/restrictions: The Level of Living Surveys (Levnadsnivåundersökningarna, LNU) include sensitive information on individuals, as defined by the Swedish Personal Data Act (Personuppgiftslagen, PUL, SFS 1998:204; § 13). This kind of information may be used in research if the project is compatible with the Act Concerning Ethical Review of Research Involving Humans (Etikprövningslagen, EPL, SFS 2003:460). Such compatibility is examined by an Ethical Review Board (Etikprövningsnämnden, EPN, www.epn.se/en). Therefore, an approval by EPN for the project in which LNU data is to be used is necessary for access to LNU data. Requests to access these datasets should be directed to https://www.sofi.su.se/english/2.17851/research/three-research-units/lnu-level-of-living/apply-for-lnu-data.

Ethics statement

The survey involving human participants were reviewed and approved by Regionala Etikprövningsnämnden i Stockholm. The participants provided their written informed consent to participate in this study.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fhumd.2023.1071800/full#supplementary-material

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Housing and integration of internally displaced persons: The case of Ukraine in 2018

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Housing is a widely recognized yet understudied domain of integration of internally displaced persons (IDPs) into their new communities. This article examines the role of housing for integration of Ukrainian IDPs displaced by Russia-fueled political violence in Eastern Ukraine that started in 2014 or by Russia's annexation of Crimea that year. In Ukraine, housing holds particular significance for integration because homeownership is both widespread and a vital source of people's sense of wellbeing, security, and normalcy. Our evidence comes from an original 2018 survey of housing experiences of both IDPs and long-term residents in IDPs' new localities. The survey design enables us to assess housing integration relationally, by comparing gaps in housing status and subjective housing-related wellbeing between IDPs and locals. We find that for IDPs in protracted displacement, deprivation of culturally normative housing conditions, particularly homeownership, impeded both material and experiential housing integration. Disparities in housing status drive differences in subjective experience, ranging from satisfaction with one's housing to feeling at home in one's community. These results from our 2018 study may help anticipate challenges of the massive, nationwide displacement crisis precipitated by Russia's 2022 invasion of Ukraine. Whether Ukrainians resettle in new communities or return to their old ones, divisions between those who have homes to return to and those who do not are likely to be salient. Policies aimed at restoring housing resources, particularly pathways to homeownership, will be essential to rebuilding Ukraine.

KEYWORDS

Ukraine, housing, internally displaced persons (IDPs), forced migration, homeownership, subjective wellbeing

1. Introduction

This article investigates the significance of housing for the integration of internally displaced persons (IDPs) in Ukraine, most of whom fled fighting in the eastern "Donbas" region between Russia-backed secessionists (often with direct participation of Russian forces) and Ukrainian troops that first erupted in 2014. Acquisition of decent housing with secure property rights is "one of the most symbolically and practically meaningful elements of local integration" (NRC, 2011). The International Organization for Migration (IOM) defines integration as a "dynamic two-way process that involves mutual adaptation of migrants and the host society" (IOM, 2012). In this spirit, we assess housing integration relationally, by analyzing differences in housing experiences between IDPs and other residents of the same localities (henceforth: "locals"), and interpreting gaps as evidence for lack of integration.

Using an original survey of IDPs and local residents in 2018, we assess differences in their housing status, a multi-dimensional construct consisting of housing tenure, quality, and quantity, reflecting positions in a housing stratification order (Zavisca and Gerber, 2016). We find large gaps in housing tenure between IDPs and locals, and more moderate differences in housing quantity and quality. Ukraine is a "homeowner society": following mass privatization of Soviet housing stock, 90% of Ukrainians came to own their homes, as did most IDPs prior to displacement. Although a few IDPs had managed to acquire homes of their own within 4 years of displacement, most dwelled in private rentals with no feasible pathways back into ownership, due to the lost value of their former homes and lack of affordable housing finance.

To further understand housing as a domain of integration, we assess the relationship between housing status and subjective housing-related wellbeing (SHW). Stratification researchers increasingly consider the distribution of subjective wellbeing, not only of material resources, in evaluating the health of economies and societies (Diener et al., 2018). Likewise, we argue that full housing integration requires convergence of IDPs and locals in SHW. We evaluate a range of indicators of SHW, ranging from those most proximal to housing status—satisfaction with housing conditions and sense of autonomy at home—to more distal—the ranking of housing among other problems people face, and the sense of being at home in one's community. We find that the various dimensions of housing status significantly impacted SHW, and (net of controls) accounted for much of the gap in SHW between IDPs and locals. This suggests that IDPs and locals value the same aspects of housing, and that closing gaps in material housing status—especially homeownership—would largely close gaps in SHW.

Since we conducted our research, Ukraine's displacement crisis has escalated dramatically due to Russia's full-scale invasion in February 2022. As of October 2022, around 7.7 million Ukrainian refugees had fled to Europe, and another 6.2 million were displaced within the country (UNHCR, 2022). Yet the ongoing trauma of Russia's 2022 assault should not make us forget that Ukraine's IDP crisis has been ongoing since 2014, when 1.8 million people were internally displaced due to the war between Russian-backed separatists and Ukrainian forces in the eastern Donbas region and the annexation of Crimea (Mykhnenko et al., 2022). By 2015, Ukraine was already among the ten countries with the largest IDP populations in the world (UNHCR, 2015), and the country with the largest displacement of people in Europe since World War II. Despite this, until recently Ukrainian IDPs have been less visible and less studied than other displaced populations (Mitchneck et al., 2016).

Though current displacement within Ukraine is tragically vaster in scope and scale, there are lessons to be learned from our 2018 study. Whether Ukrainians resettle in new communities or return to their old ones, divisions between those who have homes to return to and those who do not will likely persist. Housing trajectories of those who lost their homes will be profoundly consequential for recovery and integration, with potential major effects on social stratification and quality of life. Research on the housing experiences of the prior wave of IDPs can inform plans for reconstruction following the current crisis in Ukraine.

2. Housing as a domain of IDP integration

Because shelter is central for the human security of forced migrants, housing understandably has received extensive attention in the scholarly literature on refugees, asylum seekers, and IDPs. Ager and Strang (2008) posit housing as one of several means to and markers of integration. Yet housing is less focal in the literature on integration than issues such as employment, education, social capital, and citizenship (Strang and Ager, 2010; Donato and Ferris, 2020). Research on housing and forced migration tends to frame housing as a humanitarian need; a domain of legal protection to secure rights to shelter, land, and property; or a policy challenge and stressor for receiving communities. Examples of areas of analysis include containment and exclusion in refugee accommodation (Kreichauf, 2018; Kandylis, 2019); the impact of forced migration on local housing supply and prices (Becker and Ferrara, 2019); the relationship between housing and health for forced migrants (Ziersch and Due, 2018); and methods for assessing housing quality for the displaced (Yamen et al., 2022).

Yet housing is more than a physical shelter or an economic asset. Boccagni (2016) argues that for international migrants, research on homes should focus on issues of belonging, not only on physical structures. Belloni and Massa (2022) introduce the concept of "accumulated homelessness" to shift attention from the physical aspects of shelter for forced migrants to the emotional aspects of home such as security and familiarity. Brun and Fabos (2015, p. 7) discuss how forced migrants experience home "as a site in which power relations of the wider society...are played out." This perspective dovetails with recent calls for migration scholars to consider subjective wellbeing and life satisfaction as key to integration into host communities (Paparusso, 2021; Williams et al., 2021).

Despite housing's significance, there are few studies that center housing as a domain of societal integration specifically for IDPs. A growing literature examines housing integration of refugees and asylum seekers (Phillips, 2006; Fozdar and Hartley, 2014; Nielsen et al., 2015; Czischke and Huisman, 2018; Adam et al., 2021). However, as the limited literature on IDP integration suggests, housing may matter for IDPs in different ways than for refugees and asylum seekers who cross international borders. In contrast to refugees, most IDPs are citizens living among their compatriots, infusing housing with particular social and political meaning for integration of the displaced. It may be hard to feel a sense of local belonging when living in long-term temporary shelter typical of protracted displacement (Kabachnik et al., 2010). Socially, the question is whether physical housing is transformed into a sense of home, which entails feelings of security and belonging (Brun, 2015).

Because IDPs remain in their home countries, their host communities are likely to bear socioeconomic, linguistic, and cultural similarities to their origin communities. Although this could ease integration, it could also intensify experiences of exclusion and injustice. The sense of displacement may be exacerbated by dwelling among locals whose current circumstances closely resemble IDPs' pasts but are unattainable to IDPs in the present. Lacking a culturally normative dwelling can impede sociability and lead to social marginalization of IDPs (Roth, 2013).

Politically, citizenship rights that are tied to place of residence, such as voting, become difficult to exercise, as do other forms of civic engagement that require permanent residential status in a community (Koch, 2020). In sum, housing is a necessary (but not sufficient) resource for full societal integration of IDPs. This is especially true in societies where the social contract is predicated on having secure housing, as is the case in many post-Soviet countries (Zavisca, 2012; Zavisca et al., 2021).

3. The study context: Housing and displacement in Ukraine

3.1. Ukraine's housing system: A post-Soviet homeownership society

Ukraine and other post-Soviet countries have among the highest homeownership rates in the world, largely without mortgages (Schwartz and Seabrooke, 2008; Mandič, 2010; Stephens et al., 2015). As of 2015, 90% of Ukrainian adults lived in owner-occupied homes (Zavisca et al., 2021). This is a result of Soviet housing policy and mass post-Soviet privatization. In the 1950s, Khrushchev promised to provide a separate apartment for every nuclear family. This ambitious plan was not fully realized, as waiting lists for apartments stretched for years, but millions of families experienced radical change within a generation. By the close of the late Soviet period, most urban Ukrainians lived in state-owned apartments, while rural Ukrainians continued to dwell in low-quality, self-built houses. Soviet citizens had durable rights of residence and exchange (but not of sale for profit) and came to think of these dwellings as their own. Property rights, while limited, were secure. In short, a separate apartment for the nuclear family became a critical component of the Soviet social contract, and the centerpiece of a so-called "normal life" (Zavisca, 2012).

When the Soviet Union collapsed and Ukraine became an independent country, the new government initiated mass privatization to the occupants of socialist housing, creating the chief source of household wealth in the new economy. Ownership rights over the existing private sector—mainly rural, dilapidated homes—were also formalized. At the same time, the state drastically reduced its role in producing and distributing housing: by 2013, a residual waiting list remained, but allocation rates plummeted to only 3% of the 1990 rate. Yet the private sector has had limited capacity to produce affordable housing. As of 2013, over 90% of the housing stock had been constructed prior to 1990 (UNECE, 2013). As a result, most residents live in housing allocated initially by the state, acquired through privatization, and subsequently redistributed through familial and market exchange (Gerber et al., 2022).

Market exchange is limited mainly to direct purchase and sale. A fledgling mortgage sector was decimated by the 2008–2009 global financial crisis and the 2014 post-Maidan economic crisis (Burdyak and Novikov, 2014; Manzhos, 2016). As of 2015, the mortgage-to-GDP ratio was <1% (Kharabara, 2017). Although housing prices fell with the crises of the past decade, so did incomes, rendering housing unaffordable out of labor market earnings (UNECE, 2013; Mezentsev et al., 2019). Poor development and regulation of rental markets further restricted market-based housing mobility. Thus, the Ukrainian case resembles less an asset-based welfare system than a pre-commodified family-based one, as is characteristic of much of Southern Europe and post-socialist Eastern Europe (Mandič, 2010; Delfani et al., 2014).

This high rate of homeownership, coupled with low housing affordability and deep retrenchment of public housing provision and other social protections, means that mortgage-free ownership is essential to social welfare. Unencumbered ownership, by reducing housing costs to families, has acted as a buffer against unemployment, currency fluctuations, and repeated economic crises in the post-Soviet era. In such contexts, lack of homeownership has profound consequences for wellbeing (Zavisca et al., 2021; Gerber et al., 2022).

3.2. Accommodating displacement in Ukraine's housing system

Mass displacement from the Donbas region (and, to lesser extent, from Crimea) began in 2014. Ukraine's pro-Russia president, Viktor Yanukovich, was overthrown by popular uprising in Kyiv and fled to Russia. Russia then seized (and eventually annexed) Crimea by force, and Yanukovich supporters in the eastern Donbas region, backed by Russian weapons (and eventually personnel), took up arms against the Ukrainian government, declaring independent republics in Donetsk and Luhansk oblasts. Kyiv sent forces to attempt to defeat the separatists and restore full control over Donetsk and Luhansk, resulting in intense combat in 2014 and 2015. The combat reached a stalemate, ultimately yielding a ceasefire that left large parts of the two Ukrainian oblasts outside of Kyiv government control. Sporadic episodes of fighting continued in subsequent years. Although some fled Crimea after it was annexed, the most massive wave of internal displacement consisted of those fleeing the NGCA during and following the war there in 2014 and 2015.

Ukrainian IDPs overwhelmingly resettled into the existing housing stock in their new communities. Collective settlements played a minor and transient role in IDP housing; new housing was not built specifically for the displaced. Voluntary organizations provided limited assistance, and some of the most vulnerable populations were resettled into social housing (typically government-owned hostels and dorms). Ukraine did re-purpose structures such as summer camps, sanatoria, dormitories, and storage facilities, but generally only for the immediate emergency period as short-term shelter. Ukrainian government benefits for IDPs, especially related to housing, have been meager, and humanitarian assistance from NGOs waned over time. This limited infrastructure and aid left most IDPs in Ukraine to settle themselves into private rentals or with extended family (Dean, 2017).

This approach stands in sharp contrast to Georgia and Azerbaijan, the two other post-Soviet countries with the largest number of IDPs, whose conflicts occurred much sooner after the breakup of the Soviet Union. Those countries housed IDPs in collective centers and existing housing stock for protracted periods and, with substantial international assistance, built new housing settlements for some of the displaced. During our field research, government officials as well as representatives of NGOs involved

with IDP resettlement noted that Ukraine did not use collective centers as temporary shelter to the extent as did Georgia because of concerns that temporary solutions would become permanent. Some describe Georgia's new settlements as "slums" segregating IDPs from the local population (Dunn, 2012); international humanitarian aid organizations and policy communities advised against repeating the Georgian settlement policies because they believed that moving into existing local housing stock would better facilitate integration. Mitchneck et al. (2009) found, however, that Georgian IDPs living in the local housing stock were not necessarily more socially integrated into the local host communities than people living in collective centers, and many women in private accommodations were more socially isolated.

Ukrainian IDPs moving into existing housing stock—mostly private rentals—were disadvantaged from the get-go for several reasons. Rental housing stock is often of the lowest quality. Tenant rights in Ukraine are weak. Landlords are reluctant to provide tenants with written contracts or to give them documentation needed to acquire a "propiska," a residential registration needed to activate certain rights, including school enrollment, medical care, pension payments, and voter registration. A 2018 survey found that 95% of Ukrainians said they would not register tenants if they were renting out an apartment they owned, and 93% would not do so even if tenants agreed to a higher rent (Slobodian and Fitisova, 2019). IDPs were further disadvantaged relative to local housing markets because the housing left behind in the non-government-controlled areas (NGCAs) was often their only capital asset, rendered worthless. They could not sell those homes at prices sufficient to convert into capital for buying homes in their new places of residence. Furthermore, limited mortgage access and low wages made prospects for new ownership in displacement extremely poor. In addition, many IDPs have harbored the hope of return, in part because of housing assets, and moved to close-by areas. This proximity to previous communities allowed IDPs to cross into NGCAs periodically to check on housing and other assets left behind.

In sum, given the significance of housing for overall wellbeing and belonging in Ukraine, we expect housing will have played a large and negative role in IDPs' experiences. While IDP integration is more complex than housing status, we show in the following sections that in the Ukrainian context, housing status significantly differentiates the IDP experience from the local one. The local gaps in housing conditions between IDPs and their host populations contribute to lower senses of subjective wellbeing and belonging. We argue that the depth and breadth of divergent housing experiences hinder IDPs from integrating socially, economically, and civically. In particular homeownership, an expectation and reality for 90% of Ukrainians, is both a material and symbolic marker of incomplete integration for IDPs.

4. Materials and methods

4.1. Data

Our core data source is the 2018 Ukraine wave of the Comparative Survey of Housing and Societal Stability (CHESS). This original survey interviewed 3,200 urban Ukrainians ages 18–49, including 1,600 IDPs and 1,600 locals, from January to March 2018. The survey was designed by the authors and carried out by SOTSIS, a Ukrainian survey research organization. Note the sample restriction to ages 18–49 is a limitation that reflects the goals of the broader project (a study of the relationship between housing, demographic, and political outcomes during the reproductive and workforce stages of the life course).

The 2018 CHESS survey sample is drawn from 12 urban settlements, which were selected purposively and are not nationally representative. Figure 1 depicts sampling sites on a national map of IDP density, while Table 1 lists the sample sites and their population characteristics. Most settlements were selected within four oblasts near the conflict zone, in which the vast majority of IDPs resided: Dnipopetrovska, Kharkivska, and Zaporizka, and the government-controlled area (GCA) of Donetsk oblast. Within these oblasts, settlements were selected to vary on type of place (oblast capital vs. other city), distance from the line of contact separating GCAs and NGCAs, and density of IDP populations. We further restricted sampled sites to those where SOTSIS has a field office with capacity to safely and expeditiously carry out fieldwork given conflict conditions. In addition, Kyiv and Lviv, the two largest cities in Ukraine that host sizable IDP populations and were distant from the conflict zone (at the time of the survey), were included.

Random local samples within each settlement were drawn using random walk selection of residential addresses, followed by random selection of one individual among eligible residents at the address. The random walk procedure was employed due to the lack of a reliable list of addresses for a sampling frame. Starting at the geographical center of election districts, supervisors were instructed to follow a specified random route (with turns at intersections also randomized) to choose addresses. Supervisors then provided interviewers with specific addresses. The local response rate was 24.4%. About half of the non-responses were due to refusal to participate (52%), with the remainder due to no one being home or inability to access the building after three attempts.

The IDP sample consists of a combination of IDPs encountered during random walk, referrals from the local sample (who were asked to provide contact information for IDPs who they knew), and purposive recruitment *via* organizations serving IDPs. The IDP sample is thus not a probability sample, which was infeasible given the lack of access to a suitable sampling frame (other scholars of IDPs in Ukraine also employ non-probability methods to survey this difficult to reach population: c.f., Cheung et al., 2019; Sasse and Lackner, 2020; Vakhitova and Iavorskyi, 2020). The response rate for the IDP sample is 38.2%. One-third of IDP non-responses were due to refusals based on fear of participation in the survey; with the remainder refusing for other reasons or being otherwise unavailable.

Our core aim was to compare housing status between IDP and local populations within the same settlements, not to obtain nationally representative samples for either population. It is possible that sampling error due to non-response and non-probabilistic sampling of IDPs introduced biases at the settlement level. However, the achieved sample demographic characteristics are reasonably close to benchmark comparison surveys (see Appendix Table A1 in Supplementary material).

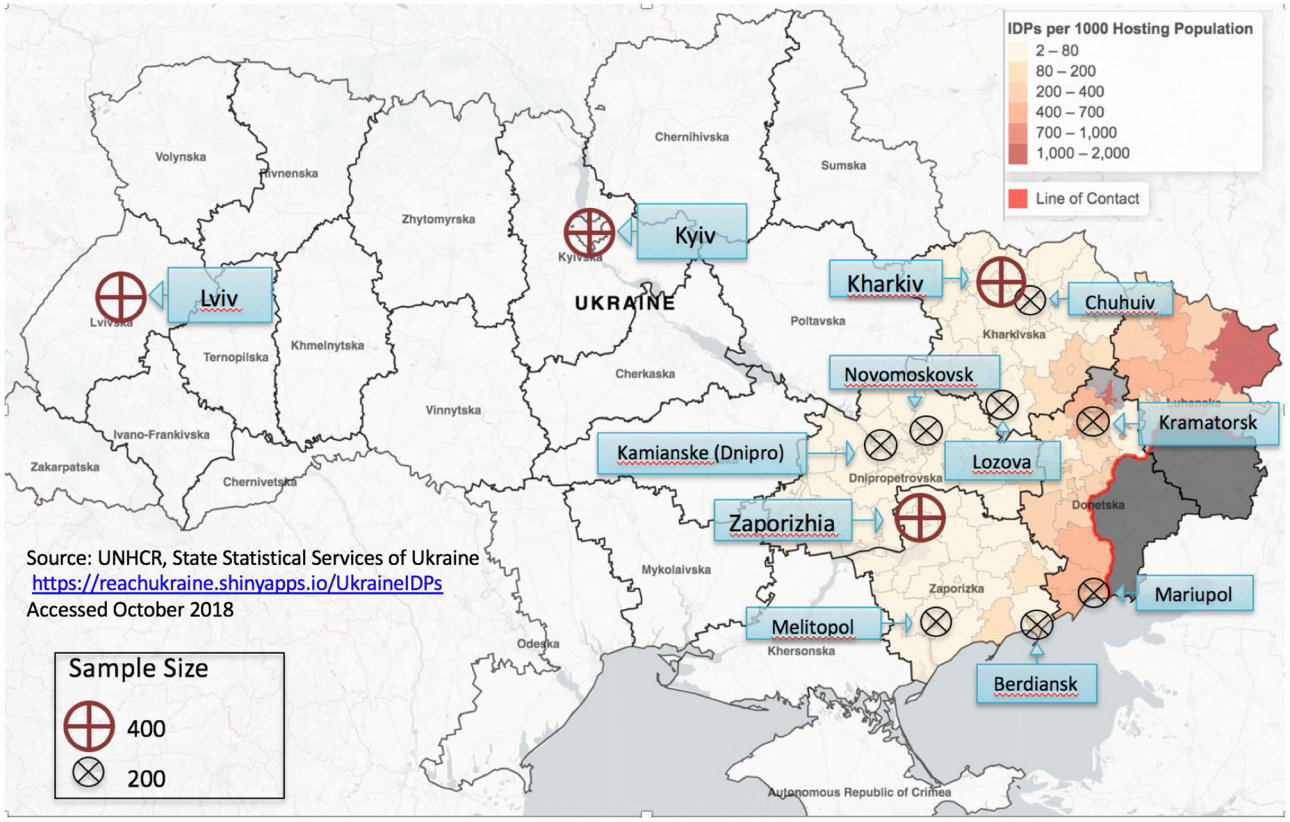

FIGURE 1
Survey sample sites.

TABLE 1 Sample site characteristics.

Zone	City	Oblast	Capital of oblast	Population	IDPs/1,000 host pop.	Sample size	
						IDPs	Locals
1	Kramatorsk	Donetska (GCA)	No	162,811	251	100	100
1	Mariupol	Donetska (GCA)	No	458,533	212	100	100
2	Chuhuiv	Kharkivska	No	32,379	51	100	100
2	Kharkiv	Kharkivska	Yes	1,451,000	61	200	200
2	Berdiansk	Zaporizka	No	115,500	86	100	100
3	Kamianske	Dnipropetrovska	Yes	241,475	22	100	100
3	Novomoskovsk	Dnipropetrovska	No	71,299	18	100	100
3	Lozova	Kharkivska	No	57,916	25	100	100
3	Melitopol	Zaporizka	No	156,889	18	100	100
3	Zaporizhia	Zaporizka	Yes	766,268	31	200	200
4	Kyiv City	Kyivska	Yes	2,868,702	5	200	200
5	Lviv City	Lvivska	Yes	729,038	1	200	200

Sources: https://www.unhcr.org/ua/; https://www.reach-initiative.org/where-we-work/ukraine/; https://ukrstat.gov.ua.

Our questionnaire design is adapted from the 2015 CHESS survey, a comparative survey of housing experiences in four post-Soviet countries including Ukraine. We also draw on field research we conducted in 2015 and 2016 to inform the survey design. Qualitative data collection consisted of nine in-depth interviews and ten focus groups in five cities, including six focus groups with locals, three with IDPs, and one with returned migrants from Russia. In addition, we conducted expert interviews and observed

events addressing Ukraine's IDP crisis hosted by international organizations (UNHCR, OIM, NRC, IRF, and US Dept of State); the Ukrainian government (Ministry of Social Policy and Ministry of IDP Affairs), and Ukrainian NGOs providing assistance to IDPs (Station Kharkiv, Proliska, Ukrainian Women's Fund, Crimea SOS, and WURC).

4.2. Analytical approach

Our analytical approach stems from our conceptualization of integration as the outcome of a dynamic process involving the local population and those IDPs who resettle there (IOM, 2012). We first compare indicators of material housing status—tenure, quality, and quantity—between IDPs and locals in 2018, viewing extensive gaps as markers of incomplete integration. We also compare these findings with IDP housing conditions in 2013 (pre-displacement) to document that IDPs' housing status mirrored those of locals before they were displaced. Next, we analyze gaps between IDPs and locals in their SHW, also important markers of integration in the housing domain. All observed differences between IDPs and locals are statistically significant, unless otherwise noted in the text (based on $p < 0.05$ for Pearson's Chi-square tests for contingency tables and t-tests for differences between means). Finally, we perform multivariate analysis to elucidate the relationship between material housing status and SHW. We demonstrate that material differences in housing status explain not only significant variation in SHW among IDPs, but also account for much of the gap in SHW between IDPs and locals. We further examine variation in housing gaps between IDPs and locals across geographic zones, which we define in terms of two socio-spatial elements: (1) IDP resettlement distance from the conflict zone and (2) the concentration of IDPs in the resettlement locations close to the conflict zone. Both proximity to origins and concentration of IDPs in the host community could impact prospects for housing integration. Higher concentrations of IDPs can mean more competition for scarce housing resources, but also stronger social networks and access to support that can facilitate housing access and integration. Geographic proximity or distance, as a proxy for cultural distance, could also impact capacity to integrate and feel at home. While we do find some variation, our key findings are consistent across zones, bolstering confidence that our results are likely to be generalizable across Ukraine.

To help interpret quantitative results, we provide illustrative examples of talk about housing status and SHW from our focus groups and interviews with IDPs. We select examples that resonate with the major trends found in our survey. Our aim is not a full-scale, systematic qualitative analysis, but rather to supplement and contextualize our survey findings in IDPs' own words.

4.3. Measures

4.3.1. Housing status

Our specific measures of each housing status dimension were developed for post-Soviet contexts through a comparative study of Ukraine Azjerbaijan, Kyrgyzstan, and Russia. For a detailed explication of our concept of housing status and approach to measurement, see Zavisca et al. (2021). Our housing tenure measure classifies respondents as: respondent owners (personally on the title); household owners (respondent does not hold title, but other resident household members do); renters of private housing; tenants in public housing; residents of private housing owned by non-resident relatives or friends. Distinguishing respondent from household owners is important in post-Soviet settings, where intrahousehold inequality in property rights is both extensive and consequential (Zavisca, 2012; Zavisca et al., 2021).

We measure housing quality through two composite scales (ranging from 0 to 1). The "amenities" scale captures the home's physical characteristic: the presence of a toilet, bath, running water, hot water, heating, gas supply, and PVC windows. The "comfort" scale measures experiential aspects of housing quality: whether cold in winter or hot in summer, leaky, noisy, unsafe, or poor air quality. Finally, housing quality (space) is measured using the dwelling's square meters per capita, and whether the respondent has a room of their own where they sleep with only their partner and/or small children under 3. We measure these elements of housing status retrospectively to 2013 (pre-displacement) as well as contemporaneously to ascertain whether IDPs' housing status mirrored those of locals before they were displaced.

4.3.2. Subjective housing-related wellbeing

In prior research, we have employed two measures of SHW—housing satisfaction and sense of autonomy at home—to validate the salience of housing status for people's lived experiences (Zavisca et al., 2021; Gerber et al., 2022). Likewise, we employ these same measures here. Housing satisfaction is measured *via* a 5-category Likert scale response, from very dissatisfied to very satisfied, to the question "How satisfied are you overall with your home." Housing autonomy is a scale (ranging from 0 to 1) that averages integer-scored Likert-scale responses to 3 questions on whether respondents feel that they can: get away from it all at home, do what they like at home, and control who lives in their home.

We also introduce two new measures of SHW that we expect to be especially salient for IDPs. First, we examine a dichotomous measure indicating whether respondents selected housing issues as among their top two main problems (from a list of nine choices). This measure demonstrates stark differences between IDPs and locals in the weight of housing in everyday concerns of Ukrainians, additional evidence that housing poses a barrier to IDP integration. Finally, we examine the degree to which IDPs vs. locals feel "at home" (vs. like guests) in the communities in which they live. A sense of place and belonging is especially significant in narratives of what displaced persons have lost and crave as they seek to integrate into new communities (Kabachnik et al., 2010; Chattoraj, 2022). Brun (2016) highlights how rented dwellings (or homes) become intertwined with identity creation distinct from shelter or status as an IDP. Our survey enables us to systematically analyze the role that material housing conditions play in this subjective sense of being at home.

4.3.3. Geographic zones

For purposes of geographic analysis, we divide the sample into 5 zones (see Table 1). Zone 1 is comprised of the two settlements

selected from the GCA region of Donetsk oblast, which had very high concentrations of over 200 IDPs per 1,000 host population. Zones 2 and 3 are settlements in Dnipropetrovska, Kharkivska, and Zaporizka oblasts, which neighbor the oblasts with occupied territories. We divide these settlements into two zones based on IDP density: Zone 2 consists of high-density settlements (≥50 IDPs per 1,000 host population), while Zone 3 consists of lower-density settlements (<50 IDPs per 1,000 host population). Zones 4 and 5 contain the cities of Kyiv and Lviv, respectively.

4.3.4. Other control variables

Multivariate analyses of the relationship between housing status and SHW control for other factors that could influence both housing status and SHW but are not analytically focal in this paper: gender (male/female); age; marital status (married; cohabitating; single and previously married; single and never married); education (less than secondary, secondary degree, and university degree); a scale of durable possessions (as a proxy for economic class, which is difficult to measure with current income or occupation in Ukraine); whether living as a nuclear family vs. with extended family or nonrelatives; and time since displacement (0–1, 2, 3, or 4 years).[1] Descriptive statistics for control variables are given in Appendix Table A2 in Supplementary material. For further rationale and details on control variable specifications, see Zavisca et al. (2021), Gerber et al. (2022), and Perelli-Harris et al. (2022).

5. Results: Housing status

5.1. The homeownership gap

Gaps in housing tenure are the starkest indicator of the differences in livelihoods and life chances between IDPs and locals, as well as of IDPs' downward housing mobility relative to pre-displacement. Locals were ten times more likely than IDPs, 4 years after displacement, to be owners. As Table 2 shows, in 2018 nearly 90% of local respondents were homeowners: 54% were personally named on the title to the property, while 36% did not hold title but other household members did. By contrast, only 9% of IDPs lived in homes that either they personally (5%) or other household members (4%) owned. The majority of IDPs in our sample (61%) lived in private rental housing—vs. only 6% of locals. An additional 20% of IDPs lived in public government-owned housing, a sector that had virtually vanished for locals. Two thirds of those in public housing were living in hostels, which are generally of poor quality and originally intended for students or temporary workers.

What makes displacement in Ukraine distinctive is not that few IDPs are homeowners—we suspect that displaced persons globally are unlikely to become owners even after several years in displacement—but that almost everyone else is. In this homeowner society, both private and public tenancy are marginal and marginalized housing tenures (Bobrova et al., 2022b). These differences in housing tenure reflect extraordinary downward housing mobility of IDPs caused by displacement: in 2013, 85% of IDPs lived in homes that they or other members of their households owned. Thus, many IDPs would have experienced lacking homeownership not only as a contemporaneous disadvantage relative to their neighbors in 2018, but also as a daily reminder of what they had lost.

TABLE 2 Housing tenure (column %).

	IDP		Local
	2013	2018	2018
Owner: Individual	57.1	4.5	53.5
Owner: Household	27.4	4.0	35.6
Private rental	5.7	60.5	6.3
Public housing	6.5	19.6	0.8
Relatives/friends	1.4	6.0	1.6
Other/DR*	1.9	5.4	2.2

*DR means difficulty responding (including don't know or refusal).

Table 3 compares IDP and local housing tenure in 2018 across displacement zones. The patterns of disparity across zones are fairly consistent, with IDPs much less likely to be homeowners, and much more likely to be renters. IDPs in Lviv were more than twice as likely as IDPs elsewhere to live in homes that they own. We attribute this unexpected finding to the greater distance of Lviv from the occupied regions whence IDPs were displaced, which makes Lviv a costlier destination, available mainly to IDPs with more financial resources or stronger family or professional networks there prior to displacement. Another notable (and statistically significant) difference is the relative preponderance of private renters vs. public tenants among IDPs in Zones 1, 2, and 3. Zone 1, adjacent to the NGCAs, has the highest proportion of private renters (75%), vs. 66% in zone 2 and 48% in zone 3. The rate of private renting across these three zones near the conflict decreases as IDP density decreases. Conversely, zone 3 has many more public renters (35%) vs. 10% in zone 2 and 13% in zone 1. Such localities appear to have had greater capacity to meet IDP demand for public housing, perhaps because there were relatively fewer displaced people in need.

Lacking homeownership drives insecure property rights for IDPs, who were typically unable to secure rental contracts or formally register their places of residence. Renters in Ukraine generally have limited rights and face high costs; this is especially true for IDPs. Among IDP private renters, only 47% had written rental contracts, vs. 64% of local renters. Likewise, only 38% of IDP tenants in public housing had contracts. IDP renters were also disproportionately concerned that they would be forced to move out of their residences: 35% of IDPs in our sample reported being somewhat or very worried, vs. only 11% of local renters. Surprisingly, however, IDP renters with rental contracts were about twice as likely to be worried (45%) as renters without written

1 Four years was the maximum because displacement began in 2014 and the survey was conducted in 2018. Alternatively, we could have controlled for time residing in locality, which would also allow for comparing IDPs with other movers within Ukraine. However, only 2% of locals had moved localities within the prior 4 years, so there are insufficient cases of local movers for meaningful comparison. Furthermore, only 3% of IDPs had moved localities more than once since displacement, so duration in locality and duration in displacement are highly correlated for IDPs.

TABLE 3 Housing tenure by displacement zone (column %).

	1. Donetsk		Dnipro./Khark./Zapor.				4. Kyiv		5. Lviv	
	GCA		2. High IDP		3. Low IDP		City		City	
	IDP	Local	IDP	Local	IDP	Local	IDP	Local	IDP	Local
Owner: Individual	0.5	50.5	3.0	59.0	2.8	55.0	5.0	50.5	16.0	44.0
Owner: Household	3.0	39.0	4.3	34.8	4.5	33.2	2.0	36.5	5.0	40.0
Private rental	74.5	7.0	65.5	4.3	48.3	6.0	70.5	8.0	63.0	9.0
Public housing	13.0	1.0	10.0	0.3	35.7	0.8	8.0	2.0	8.5	0.5
Relatives/friends	7.5	2.0	8.8	0.5	5.2	1.5	3.0	2.5	4.5	3.0
Other/DR	1.5	0.5	8.5	1.3	3.5	3.5	11.5	0.5	3.0	3.5

contracts (28%). Perhaps having a contract exacerbated worry because it put a formal fixed term with an end date on the tenancy agreement.

Private renting also exacerbated income precarity: although most homeowners in Ukraine do not have mortgage payments, tenants must pay rent. Housing costs in 2018 were relatively low for most Ukrainians: the average Ukrainian spent about half of household monthly income on food, and only 16% on housing costs (ukrstat.gov.ua). For the vast majority of Ukrainians who were mortgage-free homeowners, the only typical housing costs were utilities and maintenance. Renters, by contrast, would have had to allocate a much larger share of their monthly budgets to housing, for rent alone. Although we do not have data on housing-related expenditures, we do have a question on ability to afford a hierarchy of goods. Forty-two percent of surveyed IDPs reported they could not afford clothing or other durable goods, vs. 21% of locals. This gap correlates strongly with housing: the 9% of IDPs who were owners reported a similar distribution of purchasing power to locals.

IDPs' disadvantages were further compounded by their difficulty in acquiring a "propiska," or local residential registration. A vestige of the Soviet internal passport system (Buckley, 1995), a propiska documents local residency and hence entitlement to services tied to local registration such as education and health care. Furthermore, prospective employers often verify whether job applicants have local propiskas. Renters may only acquire a local propiska with the consent of the owner. Yet landlords are often reluctant to register tenants, both for tax reasons, and due to concern that such documents could preclude eviction or sale. As a result, only 20% of IDPs in our survey had a propiska for their current place of residence, vs. 86% of locals. This disparity presented significant barriers to broader economic and civic integration. Among those IDPs lacking propiskas, this was reported to cause problems with voting among 47%, finding a job among 22%, and access to medical care among 11%. Note that propiska registration is distinct from IDP registration: 88% of surveyed IDPs were registered on government lists of IDPs, which entitled them to very modest income support and other services for a limited period. Yet IDPs needed to register in the locality twice to receive full voting rights. IDP registration without propiska registration carried voting rights only in national elections, not in local ones—denying access to a key means to civic integration (Solodko et al., 2017).

5.2. Housing quality and quantity

The housing gap between IDPs and locals extended to quality and quantity, although the disparities are less dramatic than for tenure. Table 4 measures quality differences in terms of access to a core set of amenities and environmental (dis)comforts. With respect to amenities, the largest quality gaps between IDPs and locals in 2018 were in having one's own kitchen, toilet, and bath/shower. This is due to the segment living in dorms/hostels with shared facilities. IDPs were also less likely to have double-paned polyurethane windows (so-called "plastic" windows) than were locals. Such windows are indicators of post-Soviet construction or renovation, which are more typical in owner-occupied homes than in rentals. As an overall indicator of poor housing quality, we examine whether at least two basic amenities were lacking. Here we see a much larger gap between IDPs and locals in 2018: 36% of IDPs lived in housing lacking two or more basic amenities, vs. only 10% of locals. We also constructed a scale of access to these amenities (normalized to range from 0 to 1) which takes into account both consistency and presence of amenities (see Zavisca et al., 2021). A substantively moderate (0.13, equivalent to a difference of about 1 amenity) and statistically significant gap between IDPs and locals is evident. As with tenure, these gaps in housing quality were a function of displacement: IDPs in 2013 had similar access to amenities as did locals in 2018.

Another set of housing quality measures captures what we call housing "comfort"—the degree to which respondents are free from a variety of common problems with environmental quality at home: leaky plumbing, poor climate control (being cold in winter or hot in summer), noise, poor air quality, and unsafe building infrastructure. There are no statistically significant differences between IDPs and locals either on individual measures, or in the housing comfort scale (based on the frequency and presence of problems, scaled from 0 to 1, c.f. Zavisca et al., 2021). Taken together, these two measures suggest that housing comfort differences are fairly minor, especially compared to the large gaps observed in homeownership. This likely reflects the fact that IDPs resettled into existing housing stock, not temporary structures (e.g., tents or barracks). In post-Soviet Ukraine, the majority of urban housing has most or all basic amenities; most housing is also older, and so environmental/comfort problems are relatively common, and apparently not disproportionately present in IDP's dwellings.

TABLE 4 Housing quality.

(A) Amenities				(B) Comfort		
	IDP		Local		IDP	Local
	2013	2018	2018		2018	2018
Have amenity (%)				Have problem rarely or never (%)		
Toilet	95.6	82.8	97.4	Leaky	68.2	70.9
Bath/shower	96.3	80.6	97.5	Cold/hot	56.5	57.5
Kitchen	98.6	73.0	97.8	Noisy	50.3	52.7
Piped water	97.1	96.9	98.9	Air pollution	53.9	47.5
Hot water	88.8	91.4	97.4	Unsafe infrastr.	21.2	25.4
Piped gas	94.4	91.9	93.5	Scale: mean	0.77	0.78
Central heat	78.0	81.1	81.3	Scale: std. dev.	0.005	0.004
Poly. windows	84.9	65.0	85.6			
Missing 2+ amenities (%)	16.4	36.2	9.6			
Scale: mean	0.9	0.78	0.91			
Scale: std. dev.	0.003	0.006	0.003			

Retrospective questions on housing comfort in 2013 were not asked, due to potential unreliability of recall.

TABLE 5 Housing quantity.

	IDP		Local
	2013	2018	2018
Square meters per capita			
Mean	20.2	15.9	21.3
Std. dev.	10.2	11.7	12.4
<10 sq. meters (%)	4.3	30.3	6.4
Rooms per capita			
Mean	0.92	0.70	0.91
St. dev.	0.45	0.47	0.53
<0.5 rooms (%)	7.1	26.0	10.6
Lack own room (%)	10.3	31.4	12.3
Crowded (any of above) (%)	14.6	45.5	18.9

Turning to housing quantity, Table 5 shows that IDPs had, on average, less space and faced significantly more crowding than their local counterparts did in 2018. IDPs had only about two-thirds the space per capita as locals did. They were also significantly more likely to face crowding considered extreme by local norms (see Zavisca et al., 2021 for context). Among IDPs, 30% had fewer than 10 sq. m. per capita, and 26% fewer than 0.5 rooms per capita, conditions affecting only 6% and 11% of locals, respectively. Furthermore, 31% of IDPs did not have a room of their own within the household (defined as having a room for sleeping and personal use shared only with a partner and/or young child under 3), vs. just 12% of locals. Still, nearly half of IDPs (46%) experienced at least one form of crowding, in contrast to 19% of locals. Inferior housing quantity was a new disparity for most IDPs, driven by displacement, given that they did not have less space or more crowding as a group than locals in 2013.

Table 6 shows the variable IDP experience of housing quality and quantity across displacement zones. The patterns of disparity between IDPs and locals are generally consistent across zones: in each place, IDPs are significantly more likely to have fewer housing amenities and less space. That said, IDPs living farther from the NGCA, in Kyiv and Lviv, experienced housing differently from IDPs who settled closer to the NGCA. For example, residents of Lviv, including IDPs, were far less likely than IDPs elsewhere to lack basic amenities. On the other hand, the quantity situation was especially difficult in Kyiv, where space deprivation was more common for both IDPs (57%) and locals (33%). Zones closest to the NGCA (1, 2, and 3) had similar levels of crowding. IDP crowding is remarkably high in zone 3, where IDP concentration is lower than in zones 1 or 2, 3. This is counterintuitive from a socio-spatial perspective: we would expect IDPs to face more competition for scarce housing resources where they are more concentrated. Most likely, tenure differences explain this situation. As Table 3 shows, IDPs in zone 3 were far more likely to live in public housing (36%, vs. 13% in zones 1 and 10% in zone 2), which consists mainly of dormitory-style residences that are crowded and in poor condition.

In sum, incorporation of IDPs into local housing stock appears to have put people into conditions that, while substandard on average, satisfied basic shelter needs. The majority (63%) enjoyed a standard suite of utilities and amenities, and environmental quality conditions were on average equivalent to those faced by locals. Furthermore, just over half (54%) avoided serious crowding. Indeed, in the international humanitarian landscape of displacement, IDPs in Ukraine in 2018 were relatively well off—most were in shelters that provided adequate conditions to survive, if not to thrive.

Nevertheless, not only were gaps between IDPs and locals in tenure very large, quality and quantity conditions failed to meet

TABLE 6 Housing quality and quantity by zone (row %).

	1. Donetsk		Dnipro./Khark./Zapor.				4. Kyiv		5. Lviv	
	GCA		2. High IDP		3. Low IDP		City		City	
	IDP	Local	IDP	Local	IDP	Local	IDP	Local	IDP	Local
Lack 2+ amenities (%)	31.5	12.5	34.8	8.3	45.3	10.8	30.0	8.5	22.5	6.5
Amenities scale (mean)	0.80	0.88	0.78	0.88	0.74	0.92	0.81	0.92	0.86	0.93
Crowded (%)	33.5	17.0	40.3	15.0	53.2	14.0	57.0	33.0	33.5	27.5
Space m^2 per capita (mean)	17.7	21.1	16.3	22.0	14.6	22.4	12.7	18.5	20.1	19.4

All differences between IDPs and locals within zone are significant (t-test $p < 0.05$), except space in Lviv.

local norms for significant proportions of IDPs. Importantly, pre-displacement (in 2013) housing conditions for IDPs had been very similar to those of locals in the localities to which they had been displaced in 2018. In turn, these analogous contrasts of IDPs' objective housing conditions with those of both their former lives and their contemporaneous neighbors led to large gaps in SHW and in feeling "at home," as we show in the next section.

6. Results: Subjective housing-related wellbeing

We cannot infer IDPs' lived experience of housing integration from their material conditions alone; what matters is the degree to which their housing experiences met local norms in the Ukrainian context. To elucidate the relationship between housing and integration, we analyze gaps between IDPs and locals in their SHW, triangulating across a variety of measures relevant to integration. First, we examine subjective assessments of housing conditions, both overall satisfaction and sense of autonomy at home. Next, we assess the relative rank of housing among the overall problems that IDPs and locals faced. Then, we consider the degree to which respondents felt "at home" in their communities. For each measure, we interpret gaps between IDPs and locals as signs of incomplete integration. Illustrative examples from IDP focus groups and interviews illustrate the salience of housing status, and especially homeownership, for experiences of SHW. Finally, multivariate regressions statistically confirm that material housing status explain gaps in SHW both among IDPs, and between IDPs and locals.

6.1. Satisfaction and sense of autonomy at home

Our first indicator of SHW is derived from a common measure in the comparative literature on subjective wellbeing: a Likert scale capturing how satisfied people were with their housing conditions. As expected, IDPs reported lower levels of satisfaction than did locals. As Figure 2A demonstrates, 40% of IDPs reported being somewhat or very dissatisfied, vs. fewer than 20% of locals.

Subjective wellbeing at home, however, entails more than physical housing conditions. Home can also be the locus of a sense of autonomy and ontological (in)security (Saunders, 1986). Figure 2B shows the distribution of three measures of sense of autonomy at home: whether respondents felt home is a place they can get away from it all; do as they like; and have a say in deciding who can live there. In Ukraine in 2018, IDPs were much worse off than their local counterparts on all three measures.

These patterns were observed across Ukraine (Table 7). Mean levels of housing satisfaction and autonomy were remarkably similar for IDPs across zones (there was some variability for locals across zones, with higher levels of both mean satisfaction and autonomy in Donetsk, and lower levels in Lviv).

As Section 4.1 documented, most IDPs dwelled in worse conditions than they had before displacement and relative to the local populations in 2018, which we expect would account for their lower levels of satisfaction and sense of autonomy. Indeed, in regression analyses using the 2015 CHESS survey, we found that tenure, quality, and quantity were all strongly associated with both housing satisfaction and sense of autonomy at home across the former Soviet Union; homeownership is especially significant (Zavisca et al., 2021; Gerber et al., 2022). As we shall see in multivariate analysis below, this holds true for both IDPs and locals in Ukraine.

In focus groups and interviews, IDPs talked about the particular importance of ownership for housing satisfaction. Even when other conditions were satisfactory, owning was the overriding criterion. Employing a common turn of phrase, a home of one's own is required to "live normally" (c.f. Zavisca, 2012). For example, in a focus group in Lviv, an IDP renter explained that while very expensive, his rental conditions are "more or less normal" in terms of space and quality. "But you asked if we are satisfied. No, because…" "…it's not your own," interjected another participant. "Yes, you said it," he continued. "It's not mine. And satisfaction is only possible when your home is your own and you don't need to pay rent." Another renter in Kyiv said: "My apartment is nice—in terms of comfort, I'd give it a 10 out of 10. It's the rent that burdens me. Overall, I'd score it a 5 on a scale of 1–10. But if it was my own apartment and I didn't have to pay rent, I'd rank it 100!" Likewise, an interviewee in Kharkiv who lives rent-free in a vacant apartment owned by a relative, said: "The price is satisfactory, nothing else is. It's in bad condition and needs to be renovated, and I can't afford to take that on. Because it's not my apartment. I'm living there as a guest."

Laments about lack of security and control over the home pervaded our focus groups and interviews. Several IDPs described their housing situations as "living by the laws of birds," an aphorism

FIGURE 2
(A) Satisfaction with housing conditions. **(B)** Sense of autonomy.

TABLE 7 Housing satisfaction and autonomy by zone.

	All zones		1. Donetsk GCA		Dnipro./Khark./Zapor. 2. High IDP		Dnipro./Khark./Zapor. 3. Low IDP		4. Kyiv City		5. Lviv City	
	IDP	Local	IDP	Local	IDP	Local	IDP	Local	IDP	Local	IDP	Local
Satisfaction (mean)	0.46	0.68	0.50	0.81	0.45	0.67	0.45	0.70	0.43	0.58	0.47	0.61
Autonomy (mean)	0.49	0.75	0.65	0.90	0.46	0.70	0.47	0.78	0.45	0.75	0.45	0.59

Autonomy scale is the mean value for the 3 component measures given in Figure 2B.
Both measures are standardized from 0 to 1 (least to most satisfied/autonomous).

meaning to live a precarious existence without stability or rights. This sense of precarity extends low SHW beyond dissatisfaction. Housing is not simply a problem—it is *the* overriding problem of many IDPs.

6.2. The salience of housing as a personal problem

Housing in 2018 was far more salient as a major problem in everyday life for IDPs than for locals. We asked survey respondents to select their top two personal concerns from a list of issues. As Table 8 indicates, housing is a top problem for IDPs, selected by 52%, and far exceeding all other options besides material wellbeing. By contrast, just 15% of locals selected housing as among their top two concerns. Housing was by far the largest gap in selection of issues across the two populations and was pervasive across all geographic zones of our study. The issue was particularly stark in Kyiv (selected by 73% of IDPs vs. 23% of locals), likely due to very low housing affordability in the city.

We also asked survey respondents to specify their top housing concern: 47% of IDPs indicated that their main challenge is to acquire housing, vs. only 15% of locals. Locals were most likely to prioritize improving their current homes (40%) than IDPs (17%). Notably, one-third of locals said they have no housing concerns at all, compared to 9% of IDPs. These findings resonate with results of an IOM (2018) monitoring survey (which lacks a comparable local sample), in which 48% of IDPs indicated housing is their top problem, and among those, over half indicated that attaining a home of their own was their primary housing concern.

In our focus groups and interviews, IDPs emphasized how housing problems overwhelm them. For example, a renter in Kharkiv said: "My main problem, of course, is housing. This is a most painful question, unimaginably grave. Because my old house was destroyed in a single moment, and it is impossible to return. I so desperately want stable housing, an apartment where I can stay and make a home. Because from housing all other problems are born."

6.3. Sense of being "at home" in one's community

Another lens on housing and integration is the sense of being or not being "at home" in new environs. In a review article on migrant perceptions of "psychological home," Romoli et al. (2022) note that experiences of home "encompass more than spatial location and may include a sense of belonging, intimacy, and security, which contribute to one's wellbeing." Prior research on IDPs in Georgia suggests that their lack of integration continually highlights for them their homes of the past; homes become a

TABLE 8 Main problems identified by IDPs and locals (row %).

	All zones		1. Donetsk GCA		Dnipro./Khark./Zapor. 2. High IDP		Dnipro./Khark./Zapor. 3. Low IDP		4. Kyiv City		5. Lviv City	
	IDP	Local	IDP	Local	IDP	Local	IDP	Local	IDP	Local	IDP	Local
Housing issues	52.3	14.8	46.5	7.0	48.8	12.0	47.5	15.7	72.5	23.0	59.0	17.0
Material wellbeing	50.8	45.4	37.0	35.5	66.0	62.5	55.0	45.3	40.0	33.0	32.5	34.0
Military conflict	28.2	23.3	24.0	17.0	24.0	13.8	30.7	22.8	29.5	43.0	32.0	30.0
Health issues	13.1	12.6	11.0	7.0	8.8	10.5	13.5	14.3	12.5	10.0	23.0	19.5
Employment	9.3	8.6	5.0	12.5	7.8	10.5	14.3	6.5	4.5	6.5	6.5	9.5
Free time	8.6	17.8	16.0	5.0	8.3	24.5	6.8	16.8	7.0	17.5	9.0	21.0
Family issues	8.4	13.8	12.0	6.0	10.5	16.8	6.7	17.7	4.5	7.0	10.0	11.0
Education/skills	2.4	1.5	1.0	1.5	2.0	2.3	1.5	2.0	0.5	2.5	2.0	5.0
Other	0.4	0.1	0.0	1.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.5
DR	1.9	9.3	3.0	29.5	0.8	3.5	2.5	9.7	1.0	4.0	2.0	5.0

place of remembering rather than a door to local integration (Kabachnik et al., 2010). A study of Israeli settlers who were forcibly evacuated from the Gaza Strip and the West Bank likewise found that a negative sense of place post-displacement was nearly universal (Shamai, 2018). Ukraine presents a more mixed case, with considerable variance in sense of belonging in a new place.

We asked both IDPs and locals to what extent they feel at home, vs. like a guest or visitor, in the city or town where they live. As Table 9 demonstrates, just over half of IDPs felt at home (40% mostly and 14% completely), while a large minority felt more like guests (36% mostly and 10% completely). By contrast, virtually all locals (97%) felt at home (12% mostly and 85% completely). These patterns were fairly consistent across zones, suggesting that this was a condition endemic to internal displacement across Ukraine and only modestly shaped by settlement destination.

Although this question refers to "home" in terms of locality rather than housing, we would expect housing experiences to condition the sense of local belonging, a marker of integration. Indeed, among those IDPs who owned their homes, virtually all (94%) felt "at home" in their places of residence, vs. only half of those who did not. Informants in our focus groups and interviews also identified housing—and specifically homeownership—as a primary condition for IDPs to feel "at home" in their new communities: for example, an interviewee in Kyiv said that although she wished she could return to Luhansk, she did not expect to, and appreciated the opportunities that Kyiv offers as a big city. "Still, I won't really call Kyiv my home until I own a home here. Because you are only at home when you own a home. Living as a renter, I can be kicked out onto the street at any time. That's not home. For me, home is a private apartment or house." Said another interviewee in Lviv: "In principle, my friends would say about me, that I can feel at home anywhere, because wherever I go, I build up social capital. But all the same, it's hard without a material foundation. Financially, when you don't have housing, when all your money goes to rent.... I feel almost at home here, but when I own my own home, my own corner, then I will feel completely normal."

6.4. Housing status and SHW: Accounting for integration gap

In this section we ask: to what extent do the various dimensions of housing status—tenure, quality, quantity—drive gaps in SHW? If housing status explains variation in SHW within groups—among IDPs and locals—this validates our measures of housing status are capturing what matters for wellbeing in Ukrainian society. Furthermore, if housing status accounts for gaps between IDPs and locals in SHW, this demonstrates that material housing conditions are key to integration in terms of wellbeing.

To answer these questions, we estimated regressions for each of our four indicators of SHW (Table 10). Generalized linear model type varies depending on the distribution of the dependent variable (linear, logit, ordered logit). Table 10A shows regressions for the IDP sample only, Table 10B for locals only, and Table 10C for the combined sample. Only effects of housing status variables, our substantive focus, are shown in the table; full models with controls and fit statistics are in the Appendix Tables A3a, A3b in Supplementary material.[2]

Among IDPs, homeownership is a significant predictor of each measure of SWB, net of other predictors (Table 10A). Furthermore, being on the title (respondent owner) is associated with higher SWB than living in a home owned by other household members for satisfaction, autonomy, and whether housing is a main problem (though the difference between respondent and household owners is only statistically significant for the latter measure). At least one measure of quality and quantity is also a significant predictor across all four SWB measures.

2 Although a detailed discussion of all the predictors of SHW would take us beyond our focus, we note that our measure of possession of durable goods has consistently strong, positive effects on all four outcomes, and IDPs who were displaced four years have consistently lower SHW than those displaced two or fewer years ago. The patterns regarding housing obtain even after controlling for these two intuitive effects.

TABLE 9 Sense of being at home (column %).

	All zones		1. Donetsk GCA		Dnipro./Khark./Zapor. 2. High IDP		Dnipro./Khark./Zapor. 3. Low IDP		4. Kyiv City		5. Lviv City	
	IDP	Local	IDP	Local	IDP	Local	IDP	Local	IDP	Local	IDP	Local
Completely at home	14.0	84.9	14.5	94.5	17.8	84.3	11.0	79.5	14.5	90.0	14.5	87.5
More at home than guest	39.8	12.5	42.0	2.5	33.5	13.0	40.0	17.0	42.0	9.5	47.0	11.0
More guest than at home	35.8	2.6	35.0	3.0	40.8	2.7	35.8	3.5	33.5	0.5	29.0	1.0
Completely a guest	10.4	0.1	8.5	0.0	8.0	0.0	13.2	0.0	10.0	0.0	9.5	0.5

TABLE 10 Regression of subjective housing wellbeing on housing status.

	Housing satisfaction (ord. logit)	Housing autonomy (linear)	Housing not a main problem (logit)	Feel at home (ord. logit)
(A) Within IDP sample				
Tenure (not owned = baseline)				
Household member owns	0.73 (0.25)**	0.38 (0.14)**	1.09 (0.32)**	1.58 (0.25)***
Respondent owns	1.27 (0.24)***	0.72 (0.13)***	2.2 (0.42)***	1.30 (0.24)***
Quality				
Amenities scale	0.98 (0.23)***	0.37 (0.13)**	0.30 (0.28)	0.45 (0.24)
Environment scale	2.19 (0.25)***	0.58 (0.14)***	1.23 (0.30)***	2.16 (0.26)***
Quantity				
Log space per capita	0.34 (0.09)***	0.21 (0.05)***	0.36 (0.10)**	0.08 (0.09)
Own room	0.16 (0.12)	0.10 (0.07)	0.48 (0.14)***	0.02 (0.12)
(B) Within local sample				
Tenure (not owned = baseline)				
Household member owns	0.61 (0.19)**	0.39 (0.08)***	1.11 ***	1.00 (0.25)***
Respondent owns	0.48 (0.18)**	0.55 (0.08)***	1.40 ***	2.18 (0.25)***
Quality				
Amenities scale	1.10 (0.40)**	0.28 (0.17)	1.46 (0.59)*	2.16 (0.61)***
Environment scale	1.78 (0.29)***	0.21 (0.12)	0.93 (0.44)*	0.34 (0.46)
Quantity				
Log space per capita	0.53 (0.11)***	0.02 (0.05)	0.49 (0.17)**	0.11 (0.18)
Own room	0.81 (0.16)***	0.14 (0.07)*	0.91 (0.21)***	0.51 (0.24)*
(C) IDP effect size (pooled sample)				
IDP effect				
Baseline bivariate models	−1.48 (0.07)***	−1.04 (0.04)***	−1.84 (0.09)***	−3.60 (0.10)***
Add control vars only	−1.13 (0.08)***	0.85 (0.04)***	−1.59 (0.10)***	−3.39 (0.10)***
Add housing vars only	−0.55 (0.11)***	−0.44 (0.06)***	−0.60 (0.14)***	−2.44 (0.13)***
Add housing + control vars	−0.48 (0.11)***	−0.40 (0.06)***	−0.58 (0.15)***	−2.44 (0.13)***

All models control for: respondent age, gender, education, marital status, co-residence with extended family or non-relatives, durable goods scale, zone of residence, and displacement duration.
*$P = 0.05$, all two-tailed; **$P < 0.01$; ***$P < 0.001$.

Findings are similar for locals (Table 10B). Tenure, quality, and quantity all matter across measures of SWB. Having one's own room is a significant predictor of all SWB measures for locals, but not for IDPs. Perhaps IDPs, struggling with more basic housing needs, are less focused on layout than overall space. Otherwise, the dimensions of housing status apparently hold similar value for both

IDPs and locals. Our previous comparative work on SHW showed that tenure, quality, and quantity are all strongly associated with both housing satisfaction and sense of autonomy at home across the former Soviet Union including Ukraine, and homeownership is especially significant (Zavisca et al., 2021; Gerber et al., 2022).

Table 10C shows the extent to which housing status "explains away" differences between IDPs and locals in SHW. We assess this by comparing how the effect size for IDP changes when we add housing status measures to the model (following the approach of Perelli-Harris et al., 2022). The first row in this section shows the effect size of IDP in baseline bivariate models. For example, being an IDP yields a −1.48 difference in the log odds of improved housing satisfaction (in an ordinal model). The second row shows the IDP effect size after adding non-housing control variables to the model. We see that the effect size for housing satisfaction drops by about 25% to −1.13. The third row then adds our housing variables (the same block of variables as in Tables 10A, B), without other controls. This yields a much larger reduction in the IDP effect, to −0.55, accounting for nearly two-thirds of the gap between IDPs and locals. A full model with both housing and control variables accounts for very little of the IDP effect net of the housing variables model alone. The results are analogous for housing autonomy and housing as a main problem: material difference in housing status explain away the majority of the IDP gap in SHW, with little utility to adding additional controls (AIC and BIC fit statistics confirm that adding controls improves model fit net of housing for satisfaction and autonomy, but not for housing as a main problem or feeling at home; complete results available from authors). We interpret this as strong evidence that inequalities in material housing status impede not only material but experiential integration.

The results for feeling "at home" are especially interesting with respect to integration. Recall that this question asked whether people feel like they are more at home or guests in their *communities*, the question was not specifically about housing. This regression is hence our strongest test of the impact of housing on integration more broadly, as it moves beyond the domain of housing into broader experiences in displacement. Notably, our demographic, economic, and regional control variables explain almost none of the gap between IDPs and locals in feeling at home in their communities. By contrast, controlling for housing status reduces the gap by about one third. While housing does not entirely explain why IDPs feel less at home in their communities than do locals IDPs, clearly it plays a significant role.

7. Discussion

Our analysis of housing in Ukraine shows how exclusion of IDPs from culturally normative housing—in particular, homeownership—impeded their integration into host communities. Most IDPs could not become owners of decent quality homes even after prolonged periods in displacement, leaving them to live in substandard, insecure, unsatisfactory private rentals or public housing. In Ukraine, prior to Russia's full-fledged invasion of February 2022, the high costs of housing relative to income and lack of mortgage finance made sale of a home previously privatized by the state or gifted from family the primary basis for acquiring a new home. Ukrainians had most of their economic assets tied up in owning their homes, a consequence of post-Soviet privatization policies. IDPs had had to abandon that asset in the NGCAs, with very little hope of selling it, or of accumulating sufficient savings from labor market earnings to purchase a home in displacement.

These housing challenges significantly hampered IDPs' integration into local communities. In Ukraine in particular, an affordable home of one's own has been a key element of the post-Soviet social contract, yet in 2018 it remained out of reach for most IDPs. High rental costs put pressure on their incomes to cover costs that most Ukrainians did not have to bear, leading to financial vulnerability. Lacking a home of one's own was not only a financial disadvantage; it also impeded full political and cultural integration. IDP renters' inability to attain local residential registrations (propiska) posed barriers to voting, a key practice of citizenship. Housing challenges also exacerbated a sense of being out of place: IDPs were less likely than their local counterparts to feel satisfied with their homes, autonomous when at home, or more broadly at home in their communities. Half of IDPs in our sample still felt like guests or visitors where they lived after several years of displacement within their own country.

As noted above, a rationale on the part of the international community and the Ukrainian government to not house IDPs collectively or in new settlements built for them was that collective living would impede them from integrating. Our data suggest that uncoordinated private resettlement does not necessarily promote integration either. While Ukrainian IDPs would not necessarily have been better off had they been placed in long-term collective settlements, our findings suggest that individualized re-settlement approaches are insufficient to promote housing conditions that facilitate local integration in a way that allows IDPs to feel truly at home. Significant housing differences between IDPs and locals, largely irrespective of where they resettled in Ukraine, are a constant reminder of their own displacement.

We acknowledge a number of limitations to this study. Our empirical analysis is constrained to the domain of housing, examining relationships between material housing status and SHW. While these findings are suggestive of the significance of housing and especially homeownership for broader IDP integration, further analysis could extend to analyze the relationship between housing and other domains of integration such as employment, social networks, and health. Resource and feasibility constraints limited the age range (adults aged 18–49) and geography (12 localities across 5 socio-spatial zones) of our sample. Lack of access to a probabilistic sampling frame for IDPs, necessitated non-probability sampling techniques. That said, the remarkable consistency of our findings across these zones suggests that they reflect countrywide tendencies in IDPs' lived housing experiences in displacement, not simply artifacts of our sample limitations.

Our survey was collected before Russia's full-fledged invasion of Ukraine in February 2022, which spurred radical and, as of this writing, continuing changes to the dynamics of displacement. In a sadly prescient reflection on the experience of displacement in

2018, one focus group participant, after discussing what it means to feel at home, said: "Even in Kyiv there isn't true stability. Even if you could buy an apartment and establish roots, you think, what for? All of this could end here too, it's scary. We understand that everything can end overnight." Now, the entire nation is vulnerable to displacement, with nearly 40% having fled their homes as of this writing. Those who are not fully displaced surely suffer far more widespread crises of housing than our "local" respondents did in 2018. As Ukrainians return and rebuild, the experience of displacement will affect housing experiences and prospects. We conclude by reflecting on the relevance of our findings for the contemporary situation and planning for reconstruction and recovery.

The scale of Ukraine's housing and displacement catastrophe since February 2022 dwarfs that of the period after early 2014. Rebuilding will be a very heavy lift: according to a May 2022 report by the Kyiv School of Economics, residential buildings and roads accounted for about $60 billion, or nearly 10% of economic losses (even at that early date) and counting (KSE, 2022). As Russia continues to target civilian infrastructure, including housing, for destruction, Ukraine risks being further pushed into a society of housing haves and have nots. Already, recent IDPs are navigating exorbitant rental costs and eviction, without practical or legal recourse (Bobrova, 2022). Now too, many are living in places never meant to be homes (Bubola and Specia, 2022). In part because of the huge volume of IDPs, Ukraine is using schools and dormitories to house the displaced, as officials consider a myriad of options to give them shelter, including monetary aid to people whose homes have been destroyed by Russian attacks (Filipchuk and Syrbu, 2022).

As calls for an internationally supported "Marshall Plan" for Ukraine's reconstruction gain traction, housing needs to be central in these plans (Conley, 2022). Ukrainian housing advocates are proposing ways forward for long-term housing solutions (all of which will require major international assistance). For example, Cedos, the premier Ukrainian NGO conducting research-informed advocacy on housing policy, recommends investment in social (public) housing stock, which practically disappeared after privatization, plus measures to support and regulate private renting. Indeed, affordable social housing, as well as private rentals, which were lacking in Ukraine even before the war, are critical components of a healthy housing system (Bobrova et al., 2022a,b).

In our view, effective long-term reconstruction must also include affordable pathways into purchase of culturally normative housing. Ukraine is a "homeownership society," with over 90% of Ukrainians living in owner-occupied homes prior to displacement. According to our prior research, homeowners in Ukraine and other formerly Soviet societies have a stronger sense of SHW (Zavisca et al., 2021) and are more likely to be civically and politically active (Gerber and Zavisca, 2018). Losing a home thus not only harms living standards, it also erodes the sense of belonging and civic engagement—the very characteristics a society needs to rebuild. How people become homeowners also matters. The psychosocial benefits of homeownership in post-Soviet contexts, including Ukraine, are strongest among those who have purchased their homes (as opposed to receiving them through privatization or inheritance) (Gerber et al., 2022). Subsidized homeownership models (that is, with subsidized interest rates and insurance to protect borrowers from unemployment or inflation) would enable rebuilding a housing system with Ukrainian ownership norms, while expanding access so that options to own are not simply a function of family or (mis)fortune.

The benefit of multiple, affordable pathways to homeownership is a clearer pathway to local integration. We advocate including multiple ownership models in plans for housing reconstruction in Ukraine—as not only the right thing to do, but also the smart thing to do. Building "permanent" housing in less-than-ideal locations, as was done in Georgia after the 2008 Russian invasion, will not promote the sense of normalcy and belonging that is so necessary to rebuild Ukraine.

Furthermore, the propiska registration system urgently needs dramatic revision so as not to perpetuate barriers to the social and political integration of displaced persons on the basis of housing. Progress had been made in decoupling IDP registration, which is based on locality of residence, from the propiska system, which is based on documented rights to a specific place of residence (IOM, 2018). Nevertheless, the lack of local propiskas due to rental tenancy continued to present obstacles to accessing local services and rights, from voting to medical care to banking—all markers of integration. IDPs would benefit from propiska reforms that would also help all Ukrainians (Solodko et al., 2017; Slobodian and Fitisova, 2019).

The massive scale of displacement will also require rethinking the categories of IDP and local. Many Ukrainians are now displaced in their own cities, as housing destruction is widespread and seemingly random, with some buildings destroyed, and neighboring ones left unscathed. Preferably, community-based approaches would make new housing opportunities accessible to anyone in need, and wherever they choose to settle. This could also make housing assistance for those perceived as newcomers or outsiders more politically viable. Based on research on the wave of displacement that started in 2014, the initial welcome of IDPs eroded as the entire nation struggled. While IDPs experienced the worst upheaval, Ukraine's broader population had also seen living standards fall—as the conflict occurred in the context of a deep economic recession, with a cumulative real GDP decline of 17% from 2013 to 2015, and the currency losing one-third of its value against the dollar (RFERL, 2016). Although locals remained objectively better off as a group than IDPs with respect to housing, subjective perceptions suggested otherwise. In our survey, we asked both IDPs and locals who has more housing need, and who should get priority for subsidized mortgages should they become available. Half of locals perceived that their housing situations are equal to (40%) or even worse (7%) than that of IDPs. Furthermore, only 22% of locals supported the notion that IDPs should have priority for subsidized mortgages. Given these perceptions, developing new housing opportunities open to all citizens would be more likely to garner wide support, and could facilitate societal integration for IDPs.

In conclusion, our research suggests that solving the housing and residential permit problems for Ukrainian IDPs will foster broader integration. Ukraine avoided a trap that other post-Soviet societies fell into by spatially concentrating the displaced

and segregating them from local populations. But it must utilize new solutions to integrate its society socially, economically, and politically through housing. Investment in pathways to homeownership as well as secure rental and public housing, coupled with reforming of the propiska system, could break down barriers between IDPs and locals, housing haves and have nots—key ingredients to successful integration.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by University of Wisconsin Institutional Review Board. The participants provided their informed consent to participate in this study.

Author contributions

JZ, BM, and TG contributed to the conception and design of the study and the collection of the data. JZ organized the dataset and performed the statistical analysis. JZ and BM wrote the first draft of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

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Syrians of today, Germans of tomorrow: the effect of initial placement on the political interest of Syrian refugees in Germany

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Syrian nationals are not only the largest refugee group in Germany but also the third largest group of foreigners living in Germany. The naturalization trend among this group has been very pronounced in the last two years and is expected to increase sharply in the coming years. However, little is known about their political interest in German politics.[1] Given the importance of "political interest" as an indicator of social integration and future active citizenship, this paper examines the extent to which Syrian refugees are interested in German politics and how local conditions at the time of arrival influence refugees' interest in German politics. We focus on three dimensions of the neighborhood context theory (social networks, economic situation, and political environment) in combination with traditional political participation theory. The empirical strategy relies on the exogenous allocation of refugees across federal states, which can be used to identify the effect of local characteristics on refugees' political interest. We use in our analysis a nationally representative sample in Germany (IAB-BAMF-SOEP-Refugee-Sample). Our findings suggest that ethnic social networks play a significant role in boosting newly arrived refugees' interest in German politics. Moreover, a higher unemployment rate among the foreign population is associated with an increase in political interest among Syrian refugees. We also confirm that a high political interest among the native population in Germany leads to a higher political interest among Syrian refugees. These results show that more attention needs to be paid to the integration of Syrian refugees and underline the need to reassess the efficiency of the distribution policy for Syrian refugees.

KEYWORDS

political interest, Syrian refugees, neighborhood context, social network, initial placement

1. Introduction

> **"Wir schaffen das"**
>
> Phoenix, 2015 (previous German chancellor)[2]

1 Ragab and Antara (2018).

2 In English: "We can make it". A statement made by Angela Merkel on 31.08.2015. For more information see Phoenix (2015).

> **"Ja, wir haben es geschafft, wir sind angekommen"**
> Deutsche, 2021 (first Syrian refugee candidate for the Bundestag elections 2021)[3]

Following the outbreak of the Syrian revolution in 2011 and the brutal civil war that followed, a large part of the Syrian population was forced to flee the country. According to the United Nations High Commissioner for Refugees, there are currently more than 6.8 million Syrian refugees and asylum seekers in Syria's neighboring countries, Europe, and more than 100 other countries around the world. Germany has emerged as a major European destination for Syrian refugees. Between 2015 and 2016, more than 430,000 Syrian refugees applied for asylum in Germany, representing 30% of all asylum applications (BAMF, 2017) (see Appendix Figure 2A). Syrian nationals are not only the largest group of refugees but also the third largest group of foreigners living in Germany. The trend toward naturalization of this group has been very clear in the last 2 years (Statistisches Bundesamt, 2022) (see Appendix Figure 1A) and is expected to increase sharply in the coming years. As potential voters, Syrian refugees will gain political weight in the future and are undoubtedly a relevant group to be considered by German policymakers. However, little is known about their political interest in German politics and what determines this interest. Therefore, we explore the following questions:

- To what extent are Syrian refugees interested in (German) politics?
- What determines the political interest of Syrian refugees in Germany?

Low political interest is one of the consistent findings in surveys of immigrants in Germany (Diehl and Blohm, 2001). Nonetheless, several reasons support the need to study and promote the political interest of immigrants. Political engagement enables immigrants, in particular refugees, to defend their interests and rights in their new society against the rise of radical right-wing and anti-immigrant parties. Thus, increased political interest or participation by immigrants may promote public policies that conflict less with immigrants' preferences (Vernby, 2013). A greater level of political engagement can promote the social integration of immigrants in general and enable a successful adaptation to the host society.

Determinants influencing immigrants' political interest or/and participation have been studied from various perspectives. Recent studies suggest that standard predictors such as socioeconomic status can only predict immigrants' political participation to a certain extent (Rooij, 2012; Wass et al., 2015). The experiences of immigrants prior to their arrival, such as their cultural background and previous exposure to democracy, have been highlighted in other works as key factors influencing the level of political engagement in the host society (Dancygier, 2013; Strijbis, 2014; Voicu and Comșa, 2014; Wass et al., 2015; Ruedin, 2017; Rapp, 2018). Moving beyond the individual level, some studies highlight the role that local governments, immigrant associations, and advocates can play in promoting the political integration of immigrants in the cities where they live (Koopmans, 2004; Bloemraad, 2005; Bloemraad and Schönwälder, 2013; de Graauw and Vermeulen, 2016). Beyond the role of individual socioeconomic characteristics, in this study we focus on the impact of local characteristics of initial reception districts on interest in German politics. Our work is inspired by recent studies on this topic by Bratsberg et al. (2021) and Lindgren et al. (2022), who investigated the local neighborhood theory in the Swedish and Norwegian context. We contribute to the literature by analyzing the impact of local characteristics in the German context based on the three dimensions of ethnic social networks, economic situation, and political environment in addition to socioeconomic factors. Other than adding to the debate on the neighborhood context theory by transferring it to the German context, our contribution is also important from a policy perspective. Our findings on the group of Syrian refugees are to some extent also applicable to other groups of refugees in Germany as the local characteristics apply to all refugees. In our calculations, we also accounted for other refugee groups (see Appendix Table 4A). However, looking at other refugee groups in more detail may lead to small variations as differences between the groups do exist. Further studies would be needed in order to find out how other refugee groups are affected by the same local characteristics.

This paper consists of seven sections. Section two illustrates the institutional background and Section three provides an overview of the theory of political interest and participation. In Section four we describe our research design and thereafter, show the results in Section five. We discuss the results and summarize these in Sections six, seven.

2. Institutional background

2.1. Country-of-origin context: political system in Syria

Most Syrians were never exposed to democracy in Syria (Marshall, 2014). Since its independence in 1946, Syrians have mostly been living under military authorities and/or 'civil' dictatorships characterized by high levels of political repression (Lange, 2013). After independence, Syria experienced its only democracy in modern history. The period between 1946 and 1956 witnessed several attempts to establish a democratic system (Lange, 2013). Despite the richness of experience, Syria had twenty different cabinets and drafted four separate constitutions, which destabilized the democratic system. Syria's union with Nasserist Egypt in 1958–1961 brought an end to the brief democratic interval before the 1963 Ba'th coup, which has been controlling the state by totalitarian-style governments that exercise social, economic, and political repression as well as an extremely high degree of control over everyday life (Maktabi, 2010; Musawah, 2020; Yonker and Solomon, 2021). These practices have remained even after Bashar Al-Asaad took over as president when his father and former president of Syria Hafis Al-Assad died in 2000 (Lange, 2013). With Basher Al-Assad in power, a new era was promised. The establishment of political parties was allowed and the restrictions on civil organizations were limited to some extent (Moubayed, 2008). Economic liberalization and political pluralism have served

3 In English: "Yes we have made it, we have arrived". Tareq Alaows: He would be the first Syrian refugee to become a parliamentarian in the Bundestag (federal election, 2021). Yet he gave up after being harassed and threatened. For more information see Deutsche (2021).

Asaad's regime and his family (Daher, 2018). All political parties in Syria are (in)directly part of the Asaad system. They work under the supervision of the intelligence service and obey its orders, i.e., the role model, officially or unofficially, directly or indirectly, is the Baath Party. Political participation can only happen under strict government control and should serve the established regime (International Crisis Group, 2004; Human Rights Watch, 2010).

Nonetheless, this period has also witnessed a couple of attempts to change the status quo in order to obtain more freedom of choice and be able to participate in political decision-making (Carnegie Middle East Center, 2012).[4] All peaceful movements have been suppressed. Abroad, Syrians in exile have been playing an essential role in the Syrian political game against the established regime for a long time. The USA and Europe have hosted political Syrian refugees, who have tried to participate at the national and international levels to influence public opinion toward the Syrian political situation. Their efforts, however, remain limited.

The Arab Spring, which began in Tunisia and was followed by Egypt and Libya in March 2011, has brought the biggest change for the country and has broken the stagnant political situation in Syria (Żuber and Moussa, 2018). Hundreds of demonstrations and protests have been organized (Yacoubian, 2019), and thousands of people have participated in this uprising, particularly young males (Ahmed, 2014). March 2011 marked the start of the civil war in Syria. It started with peaceful student protests against the Syrian government and was met with a massive crackdown by the government (Reid, 2022). Further protests and government crackdowns followed, militant groups formed and the pro-democracy protests expanded into a civil war in 2012 (Reid, 2022). This has led to about 13 million Syrians being forcibly displaced, more than half of the country's population. Of these 13 million Syrians around 6.8 million are refugees and asylum-seekers who have fled the country. The rest, around 6.9 million people, are displaced within Syria (Reid, 2022).

Our expectations of the interest in politics among Syrian refugees in Germany are based on the above-mentioned history and forced migration background. On the one hand, one can expect a lack of interest in politics, since life in Syria has been a source of suffering persecution, deportation or execution. Therefore, it can be assumed that Syrian refugees keep intentionally away from any political participation or involvement in order to protect themselves. On the other hand, Syrians, who participated in the revolution and were politically active under these life- threatening situations, may see the democratic system in Germany as an opportunity to continue their activism or redirect their interest into politics.[5]

4 The Damascus Declaration (DD) is a secular opposition umbrella coalition called for a multiparty democracy in Syria, named after a declaration written in 2005 by numerous opposition groups and individuals. It calls for a gradual and peaceful transition to democracy and equality for all citizens in a secular and sovereign Syria. For more information see Carnegie Middle East Center (2012).

5 For more information on the political situation in Syria after 2011, see TDA (2015).

2.2. Legal and institutional framework for civic and political participation of refugees in Germany

Hosting over 1 million refugees in 2022, Germany is the fifth largest host country worldwide (UNHCR, 2021). Over half of these 1 million refugees in Germany, particularly 560,000 of them, are Syrians (UNHCR, 2021). Together with other non-citizens, this group of refugees, makes up 13.1% of foreigners in Germany in 2020 (Statista, 2022a). The group of people with a migration background comprises almost 30% of the German population (Statista, 2022b), which highlights the need for all-encompassing migration policies.

According to the Migration Integration Policy Index 2020, which compares 56 countries worldwide, it can be said that Germany fares rather well in their integration and migration policies when compared to other countries (MIPEX, 2020b). However, when comparing Germany to other Nordic countries or neighboring countries, Germany's policies are less comprehensive (MIPEX, 2020b). With a MIPEX score of 58/100 Germany lost its place in the international top ten because Germany lacks behind in providing non-EU immigrants with equal basic rights and with a secure future (MIPEX, 2020a). The MIPEX report underlines that Germany's approach "encourages the public to see immigrants as their neighbors, but also as foreigners and not as the equals of native German citizens" (MIPEX, 2020a).

In the following a short overview of possible political participation forms is outlined.

First, German law does not allow refugees or other non-European residents, who do not have a German citizenship, to participate in elections or to vote (Bekaj et al., 2018, p. 35). As a result, a large section of the immigrant population, including Syrian refugees, is left disenfranchised. Party membership, however, is permitted even without voting rights Most parties represented in the German Parliament (Bundestag) allow membership to non-EU-citizens based on residency permits in Germany (CDU et al., 2018; FDP, 2019; BÜNDNIS 90/DIE GRÜNE, 2021; DIE LINKE, 2021; Sozialdemokratische Partei Deutschlands, 2021): Joining the Christian Democratic Union of Germany is only possible *via* a guest member and is restricted to people, who have lived in Germany for at least 3 years (Tagesspiegel, 2017). Furthermore, non-German nationals are allowed to register a party if the majority of its members or the members of the board are German citizens as outlined in the law on political parties [Parteigesetz, para. 2 (3)], Otherwise, they are only permitted to organize in the form of political associations, and hence are prevented from participating in elections.

Given the lack of opportunities for traditional forms of democratic participation, foreign advisory and migration and integration councils (Ausländer-, Migrations-, and Integrationsbeiräte) have been established in various German cities and municipalities since the mid-1970s to ensure political representation of migrants at the local level (Gesemann and Roth, 2014). Regulation of the formation of these consultative bodies is governed by different constitutions of the German federal states

(Hanewinkel and Oltmer, 2017). Often, integration councils tend to have an advisory function, and therefore can only advocate for the interests of the immigrant population, but do not make binding decisions (Hanewinkel and Oltmer, 2017). Furthermore, it has been highlighted that next to the lack of decision-making power, the scarce financial resources of many integration councils limit their capacity to exert influence at the communal level (Hunger and Candan, 2009). The low turnout at many council elections, which amounts to ten per cent, poses another challenge to the legitimacy of migrant representative bodies (Vicente, 2011).

Next to state-led initiatives, there are several civil society organizations, trade unions, and political foundations in which asylum seekers and refugees can be active members that promote civic and political participation (Leinberger, 2006). Furthermore, migrants or refugees in Germany have the opportunity to establish organizations that produce collective goods for their group such as ethnic sports organizations, mosque, cultural organizations, political organizations, and interest groups. Furthermore, refugees can join already existing organizations and associations such as human rights and antiracist organizations, Christian humanitarian groups, and immigrants' and asylum rights organizations.

However, by joining these existing organizations or forming their own groups, refugees often face obstacles such as language skills or the complexity of the political system in Germany (Pearlman, 2017; Roth, 2017). Also, it is often the case that organizations take over as the voice of refugees and advocate the refugees' political interests to politicians (Bekaj et al., 2018). In order to shed light on the political interests of refugees, particularly Syrian refugees, we make use of the data on (subjective) interest (van Deth, 2013) in (German) politics provided by the IAB-BAMF-SOEP refugee sample. In public discourse, political interest is usually addressed in its inverse, disenchantment with politics. It is a precursor to political engagement and thus, represents a conative—i.e., action-, anticipation-, and influence-related—component of the attitude system (Breckler, 1984).

3. The economic, political, and social ethnic context

While political interest is often discussed in the context of political participation theory (Brady et al., 1995; Verba et al., 1995; van Deth, 2009; Wildenmann and Downs, 2013) not many studies focus on political interest in general and in combination with the political interest of refugees. Furthermore, the explanations of political interest are mostly based on political participation theory and do not take other factors such as the neighborhood context into account. Recent studies confirm that more factors are needed in order to explain the political interests of migrant groups (Rooij, 2012; Wass et al., 2015) and that the neighborhood context is playing an important role (Bratsberg et al., 2021; Deimel and Abs, 2022; Lindgren et al., 2022).

In the following theory section, the concept of political participation as a whole and political interest as the biggest factor leading to participation (van Deth, 2000) are described first, followed by a theory section about the neighborhood context describing how the context influences the concept of political interest.

When looking at political participation, which can be described as a behavior related to the political sphere (Lengfeld et al., 2021), several studies demonstrate that individuals' political participation can be explained by socioeconomic factors such as resources and skills as well as demographic factors (Diehl and Blohm, 2001; Mays, 2019). Verba et al. (1995) attribute political participation to social position and individual resources and show in their study that certain social groups, such as women or people with a migration background, are disadvantaged and therefore have a lower level of political participation. In order to explain political participation Verba et al. (1995) developed the Civic Voluntarism Model (CVM). In addition to the resources of their previous Socio-economic status model which incorporates variables such as income, education, and exployment status, the CVM also includes resources such as time, money and civic skills. Civic Skills are equated with communication and organizational skills. Overall, three areas are cited as favoring political activity: (1) motivation, (2) the resources such as time and money to participate in political processes, and (3) being involved in a recruitment network (Rubenson, 2000; Lüdemann, 2001). Motivation includes political interest, political knowledge, political identification, and political self-efficacy (Soßdorf, 2016). The recruitment network consists of contacts in the context of work, church, and various clubs.

As an explanation of these three additional factors, Brady et al. (1995) look at why people do not participate politically and come to the following conclusion that it is "because they can't, because they don't want to, or because nobody asked" (p. 271). Here it can be stated that the "can't" refers to time, money, and civic skills. The "not wanting to" aspect can be attributed to one's motivation, while the "not asking" aspect is related to the non-existent recruitment structures.

Political interest is understood as a precursor to political participation and as a part of one's personal attitude (Breckler, 1984). Similar to political participation, political interest is closely tied to resources, especially to education (Hadjar and Becker, 2006). Political interest is also closely tied to socialization processes and to the social context (Hadjar and Becker, 2006). For instance, the political stimuli of family and friends promotes political interest and can lead to political participation in adulthood (Kinder and Sears, 1985; Verba et al., 1995; Neundorf and Smets, 2017). People who come from a politician's family or who grow up in a politically affine family tend to show higher political interest than people who receive little or no political stimuli growing up (Neundorf et al., 2013; Quintelier, 2013, 2015). When considering people, who migrate to another country, studies show that people, who were already interested in politics in their country of origin continue to show a high level of political interest in their host/arrival country (Wilson, 1973; Black, 1987). This illustrates a translation of previously established patterns, which is not just limited to political interest, but to political identification and participation as well (Black, 1987; Finifter and Finifter, 1989; Müssig, 2020).

However, the neighborhood context also plays an important role when it comes to political interest and political participation in general. Research about the neighborhood context can be divided into three areas: as it either highlights (1) the economic context within the neighborhood, (2) the political context within the

neighborhood and/or (3) the size of social networks one has within the neighborhood.

In their studies, Huckfeldt (1979), Cohen and Dawson (1993), as well as Marschall (2004), shed light on the relevance of the neighborhood context as a factor influencing political behavior, specifically when considering the economic context within the neighborhood (1). They show that poorer neighborhoods show less political activity, while neighborhoods with a high socio-economic status promote political interest and political engagement of individuals. In a recent study Vasilopoulos et al. (2022) showed that a neighborhood with a higher unemployment rate in combination with a higher share of immigrants within a neighborhood can also influence party preference. Furthermore, Kern et al. (2015) have found a correlation between rising unemployment and an increase in political mobilization. Other than the economic context, the political environemnt (2) has also been found to influence one's political motivation factors such as political interest, voting behavior and political identification (Brown, 1981; Harrop et al., 1991; Jöst, 2021; Vasilopoulos et al., 2022). Furthermore, Finifter and Finifter (1989) have shown that voting behavior and party identification become more similar to the new neighborhood to which people move.

Several studies see the reason for a higher political activity not just in the socio-economic and the political context of the neighborhood (Huckfeldt, 1979; Giles and Dantico, 1982; Harrop et al., 1991; Jöst, 2021), but also in the networks (3), especially in the number of immigrants living in the neighborhood (Nihad, 2018; Bratsberg et al., 2021; Vasilopoulos et al., 2022). Bilodeau (2008) encountered that immigrants living in an area with a higher share of immigrants are more prone to take part in political actions. This can be due to a higher possibility of recruitment *via* one's own community and more political discussions and information sharing taking place (Leighley and Matsubayashi, 2009; Nihad, 2018). With more political information being shared, political knowledge increases, which, further supports political participation (DeSante and Perry, 2015; Bratsberg et al., 2021). Although living in neighborhoods with people, who have a similar migration background, supports the dimensions of participation (Togeby, 1999; Bilodeau, 2008), and shows a higher level of political recruitment taking place (Nihad, 2018), access to both, immigrants and non-immigrants within one's neighborhood is most effective for political participation (Nihad, 2018). Cohen and Dawson (1993) also assume that the neighborhood context can link people to norms or to social learning, which stimulates an assimilation process regarding political behavior. Also, Finifter and Finifter (1989) have shown that the more extensive one's network is, the more likely one's party identification with a party of the host country is. Another reason that is claimed to foster political engagement is group consciousness (Verba and Nie, 1972). With the ethnic share increasing it is believed that the ethnic enclave engages more in politics when they believe that participation benefits their group and them. As an addition to the developed CVM, Verba et al. (1995), however, found that group consciousness does not have an impact on political participation when other factors such as resource endowments and other conditions of participation are taken into account. One explanation for this contradiction is that group consciousness is often constrained to only one aspect of the concept (group identity) instead of to the three dimensions of group identity, recognition of disadvantaged status and the desire for collective action to overcome this status, which can lead to misleading results (Sanchez, 2006). In contrast to the Nihad's (2018) claim that contact with non-immigrants affects political participation, Lindgren et al. (2022) could not find an effect between contact with natives and the political participation of immigrants.

4. Method

4.1. Data and sample selection

We use four different sources of data in this research: the German Socio-Economic Panel v37, the main dataset of refugees IAB-BAMF-SOEP Refugees Sample, and macro-data at the district level from the German Federal Statistical Office and the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR).

The Socio-Economic Panel (SOEP)[6], is a multidisciplinary household survey in Germany, interviewing about 30,000 people in 15,000 households each year. It includes not only Germans but also foreign nationals living in Germany. The SOEP includes self-reported variables such as age, gender, household composition, education, employment status, occupation, earnings, health, satisfaction, attitudes, values, and personality indicators, and more.

The IAB-BAMF-SOEP Refugee Sample in Germany (Brücker et al., 2017; Kuehne et al., 2019) is a survey which is collected as part of the Socio-Economic Panel [SOEP, see Goebel et al. (2019)] with a focus on migrants seeking protection from political persecution, war, and conflict and has been conducted annually since 2016. It is representative of the nationalities and demographic characteristics of refugees who arrived in Germany in 2013 or later. Our research topic (interest in politics and attitudes toward the political system in Germany) was conducted mainly in 2017 and 2018.[7] Therefore, we pool information from those two waves. The survey is well-suited for our empirical strategy because it provides information on refugees' residences at the time of the survey and their first residences and the level of interest in (German) politics. This information allows us to exploit the exogenous allocation of refugees to different German districts. The total sample includes 9,760 adults (18 years and older), i.e., 5,485 in 2017 and 4,275 in 2018. For the empirical analysis, we define our analysis sample as follows: (i) we include only Syrian refugees or asylum seekers[8] of working age who participated in at least one of the 2017-2018 waves of the IAB-BAMF-SOEP survey; (ii) we further restrict the sample to refugees who provide information on their interest in German politics; (iii) we also limit the sample to refugees whose interview was during their first 3 years of residence in Germany to ensure

6 The Socio-Economic Panel (SOEP): SOEP-Core v37, EU Edition, 2022. For more information see Liebig et al. (2022)

7 The variable on the interest in politics in general was conducted in each year.

8 From here on, we refer to asylum seekers and recognized refugees as "refugees".

that our sample only includes refugees who are exogenously allocated to districts; (iv) we then drop respondents without information on their primary residence. In our final sample, we examine 2,273[9] Syrian refugees of both genders, distributed among 289 districts and were between 18 and 64 years old during the survey year. Table 1 shows a summary of all variables of interest for this paper.

4.2. Research design

Before we start with the empirical analysis, we give a descriptive overview of political interest among Syrian refugees. Thus, we compare our study group (Syrian refugees) with German citizens in terms of their interest in politics[10], then we illustrate the level of interest in German politics among Syrian refugees as a function of several individual characteristics [gender (male | female), level of education before migration (low | medium | high), and years of residence in Germany (1 | 2 | 3)].

In the empirical part, we aim to determine the influence of the primary residence of refugees on their interest in German politics. Our outcome "Interest in German politics" is a dummy variable that takes the 1 if refugees are weakly, strongly or very strongly interested in German politics, and the value 0 if they have no interest at all.[11] In addition to the primary residence effect, we illustrate the role of individual socioeconomic characteristics of refugees on their interest in German politics.

In our identification strategy, we rely on the exogenous distribution of refugees across federal states and, to some extent, counties within a federal state that can be used to credibly identify the effect of local characteristics on refugees' political interests (Edin et al., 2003; Beaman, 2012; Dustmann et al., 2016; Aksoy et al., 2020). The distribution of refugees in Germany follows a fixed two-step procedure: First, the central distribution to the federal states takes place according to the so-called "Königstein Key"[12]; the authorities in the federal states are responsible for the next step, the regional distribution of refugees to the districts. As many refugees are expected to stay in Germany for a long time, the federal government also passed the Integration Act in July 2016, which severely restricts the free choice of residence for refugees, and unless legal exception criteria[13] apply, refugees with a temporary or permanent residence permit are obliged to stay in their primary residence for at least 3 years.

Considering that the majority of refugees are still not in employment or education, which in turn means that the exemption criteria are not met, movements within and between the federal states are considered to be unlikely among refugees in Germany. Although procedures may vary between the federal states[14], they share a common feature: allocation is very rarely tied to individual desires, economic prospects, or cultural proximity (Stips and Kis-Katos, 2020). Aksoy et al. (2020) found that not only the number of refugees but also their socio-demographic characteristics are not correlated with district-level conditions. To ensure that the characteristics of the initial county allocation are not strongly correlated with the individual socioeconomic status of Syrian refugees, we follow Bratsberg et al. (2021) and fit the following set of regressions:

$$initial\_place_j = \alpha + \theta X_i + \omega_i,$$

where *initial_place* refers to the local characteristics i.e., in our case they are ethnic social network, unemployment rate and political interest among locals, and X refers to a vector of individual-level variables measured at the time of arrival, including gender, age, level of education as well as income before migration and the year of arrival. In Table 2, we show the results of the F-tests that we run after the regression with ethnic social network. Despite the F-value being statistically significant, it is mainly driven by the set of arrival year dummies; other covariates produce only small F-values when years of arrival are included. We therefore can conclude that characteristics of the initial allocation are quasi-exogenous if we control for arrival year fixed effects.

Our empirical strategy is to exploit variations across districts in Germany to estimate the effects of different characteristics (e.g., social network, economic situation, and political environment) on Syrian refugees' interest in German politics. Therefore, we control for unobservable variables by including the fixed effect of federal state in the year of refugee arrival (Bratsberg et al., 2021). This allows us to control for a number of factors that apply to districts in a federal state and that could affect the outcome variables but that we cannot observe directly (e.g., migration- and integration-related

9 In 1,775 individuals have participated only once (547 in 2017 & 730 in 2018); 498 individuals have participated twice.

10 There are certain discrepancies between the German nationals and the group of Syrian refugees regarding their demographic and socioeconomic characteristics. Therefore, we use a matching approach to ensure the comparability of the two groups. We use the stata-command "ebalance" (Hainmueller and Xu, 2013) which allow us to reweight the control group (the German citizens in this case) depending on several socio-economic and demographic variables. We control for the following individual characteristics: Gender is a dummy variable (0 if male | 1 if female); Age is a categorial variable illustrates 3 age groups (18–29 | 30–49 | 50-max); Education level is a categorial variable illustrates 3 level of education according to the International Standard Classification of Education 2011 (ISCED 0–2 low | 3–4 medium | 5–8 high education); Employment status is a dummy variable (0 if unemployed | 1 if employed); Federal state is a dummy variable for the federal state of place of residence; Survey year is a dummy variable for the year of survey.

11 The variable is based on the question: (How interested are you in politics in Germany? [1] Very interested [2] Moderately interested [3] Weakly interested [4] Completely disinterested). In the robustness check section, we use the categorical nature of the variable and we run a multinomial logit regression in order to ensure that we do not lose information through recoding the variable as binary dummy.

12 According to the "Königstein Key", the distribution across the federal states is based on population and tax revenue. Distribution within the Federal states is often based on population and the availability of housing.

13 Finding a job or vocational training offer or university place.

14 In six out of 16 Federal States, approved refugees are allocated to certain regions within the state (districts or municipalities), typically the region where they have received their asylum decision.

TABLE 1 Summarize statistics: main sample.

Variable	Mean	Std. dev.	Min	Max
Dependent variable				
Interest in German politics	0.53	0.50	0	1
Individual variable				
Female	0.35	0.48	0	1
Age at survey year	35.34	10.30	19	64
Age at arrival year	32.86	10.30	14	62
Children in household	1.95	0.73	1	3
High education level before migration	0.47	0.50	0	1
(Above) average income before mig.	0.45	0.50	0	1
Some German skills before mig.	0.04	0.20	0	1
Place of origin (Damascus or Aleppo)	0.51	0.50	0	1
(Temporary) residence permission	0.96	0.18	0	1
Religion (Islam 1, otherwise 0)	0.86	0.35	0	1
Accommodation (private 1, otherwise 0)	0.90	0.30	0	1
Health (subjective measure good 1, otherwise 0)	0.75	0.44	0	1
Districts variable				
Share of population of same age (in %)	11.45	3.08	3.71	19.77
Share of pop. of same sex (in %)	29.62	1.38	25.70	34.35
Share of pop. of same country (in %)	0.83	1.36	0	9.33
Share of asylum pop. (in %)	1.79	1.87	0.07	12.21
Share of foreigner pop. (in %)	12.42	10.51	0.08	53.99
Unemployment rate total pop. (in %)	6.43	2.77	1.4	15.1
Unemployment rate of foreigner (in %)	16.33	7.31	3.1	47.4
Unemployment rate of youth (in %)	5.52	2.76	1.4	13.1
Unemployment rate of same sex (in %)	6.46	2.83	1.3	15.6
Gross domestic product (in Euro)	38,068.48	15,695	15,135	131,760
Interest in politics among German (0–10)	3.94	0.72	1.04	7.33
Turnout BTW 2013 (in %)	70.86	4.14	57.75	79.02
Election result of right-wing parties (in %)	5.98	1.68	2.77	12.96
Election result of Parliament parties (in %)	84.68	2.49	77.63	90.50
Total population (in 1,000)	321	329.54	37	1,900
Density (in 1,000)	0.80	0.94	0.04	4.71

1- Number of individual obs. 2,273 (1,045 in the year 2017, and 1,228 in 2018) distributed among 289 districts. 2- The variable on sub-population and on economic indicators are from the Federal Statistical Office (Destatis): https://destatis.de/EN/Home/_node.html. 3- The Federal Office for Building and Regional Planning (BBSR): https://inkar.de/. 4- Socio-economic Panel (SOEP), data for the years 1984-2020, SOEP Core v37, EU edition, 2022, doi: 10.5684/soep.core.v37eu. 5- The Federal Election Commissioner. https://bundeswahlleiter.de/en.

policies and measurements). In addition, we control for a number of individual socioeconomic characteristics—such as age, gender, city of origin, religion, health, accommodation situation and pre-migration economic, and educational status—that could influence interest in German politics.

Our baseline estimation equation is as follows:

$$y_{ijt} = \alpha + \beta\ initial\_place_{ijt} + \theta X_{it} + \gamma Z_{jt} + \omega_{ij} + \varphi_t + \tau_t + \varepsilon_{ij}$$

where y_{ijt} is the outcome of interest, which in our case represents if refugee i in district j at the time t is interested in German politics or not. $initial\_place_{ijt}$ is our main vector of the explanatory variables and represents the initial place characteristics (ethnic social network, unemployment rate among foreigners and the level of political interest among locals). However, before we run our main equation, we test other different local characteristics and their correlations with the outcome. Therefore, we estimate our equation separately using: (1A) share of the same age group, (2A)

TABLE 2 F-tests of relationship between ethnic social network and individual characteristics in districts at the time of arrival.

	F-test	*P*-Value
Full set of variables	42.797	0.000
All variables except year of arrival	2.915	0.060
Year of arrival	87.148	0.000

No of observations = 2,273. We run the same test on the unemployment rate among foreigners as well as political interest among locals. The results are similar.

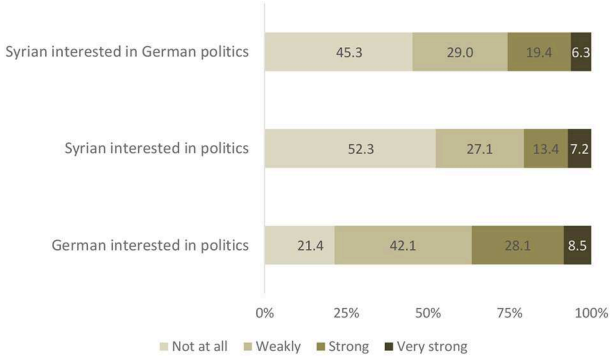

FIGURE 1
Interest in (German) politics, comparison between Syrian and German population 2017/2018. Source: SOEP, survey years 2017–2018, own calculation.

share of same sex group, (3A) share country of origin (Syria), (4A) share of asylum seekers and (5A) share of foreigners at the year of arrival. The second set includes economic indicators of the place of residence at the time of arrival such as different unemployment rates: (1B) among the total population, (2B) among both sex groups, (3B) foreigners, (4B) youth, and as another indicator we consider (5B) the GDP per capita at district level at the time of arrival. In the third set we look at the political environment in the initial district of residence. Here, we consider two indicators: (1C) interest in politics among the local population[15] in the initial district of residence at the time of arrival; (ii) we consider the federal parliament election "*Bundestagwahlen*" in 2013 also as a proxy that measures the political environment. Therefore, we take (2C) the turnout rate[16] in the district and (3C) the election results of extreme right-wing political parties (NPD, AFD) as well as (4C) the result of other parties which were elected into the parliament in 2013 (Union, SPD, Green party, and the Left party). The X_{it} represents a set of individual characteristics (age at the time of the interview and its square, age at the time of arrival and its square, sex, young children in the household) (no children | at least one child under 6 years old | at least one child 6 years old or older, but no children under 6), and the interaction between sex and children, legal status in Germany, level of education before migration (per ISCED 2011), level of income before migration, German skills before migration, the dummy for city of origin (takes the value 1 if a refugee comes from Damascus or Aleppo, 0 if otherwise), religion (a dummy takes 1 if Islam and 0 if otherwise), health (subjective estimation from the interviewee takes 1 if they feel to be in good health and 0 if otherwise), and accommodation situation (a dummy takes 1 if they live in a private accommodation and 0 if otherwise). Z_{jt} represents a set of control variables at the district level such as the population size and the density at the time of arrival (the value in 1,000). ω_i; φ_t ; τ_t are federal state fixed effects and time fixed effects of arrival year and year of survey. ε_{ijt} is the error term.

We use the high dimensional fixed effects regression model to estimate our equation. For that we apply the stata command "*reghdfe*"[17] which also allows us to cluster the standard error at the individual and district levels.

5. Results

5.1. Descriptive results

Before we answer our research question, we aim to provide a descriptive overview of the political interest among Syrian refugees in this section. Therefore, we provide a general comparison of the local population regarding their political interest and then we try to cluster the interest in German politics among Syrians by selected socioeconomic characteristics.

Compared to Germans, Syrian refugees have a significantly lower interest in politics. As Figure 1 shows, about half of the Syrian refugees in Germany answered "not at all" to the question of whether they are interested in politics in general or in German politics in particular.[18] The lack of interest in politics is also reflected in Figure 2, which shows that 59% of Syrian refugees in Germany never talk about politics in their daily lives, while less than a quarter of Germans have never discussed political issues. Furthermore, Figure 3 shows that the majority of Syrian refugees have no party preferences (81%). Those who lean toward a German political party are mainly distributed among the parties that formed the government at the time in 2017–2018 (CDU/CSU and SPD). However, Syrian refugees show more interest in German politics in comparison to political topics in general (see Figure 1).

Interest in German politics among Syrian refugees varies by socioeconomic characteristics. As Figure 4 shows: a large gap between Syrian female and male refugees in terms of their interest in (German) politics. Compared to 60% of female Syrian refugees, who are not at all interested in German politics and only 17% who are (very) interested, a significantly higher percentage of male

15 This variable comes from the SOEP dataset. We use the question "how are you interested in politics?" "1 Not at all, 2 Weakly, 3 Strong, 4 Very strong". We then transfer the 4 scale to 1–10 scale (to ease the interpretation) and we use the aggregated mean at district level as political environment indicator.

16 Depending on the election system in Germany Turnout rate is measured by the second vote [to a party and not to direct candidate (Zweitstimme)].

17 For more information see Correia (2014, revised 2019).

18 The more recent data on interest in politics (2019–2020) does not show significant difference.

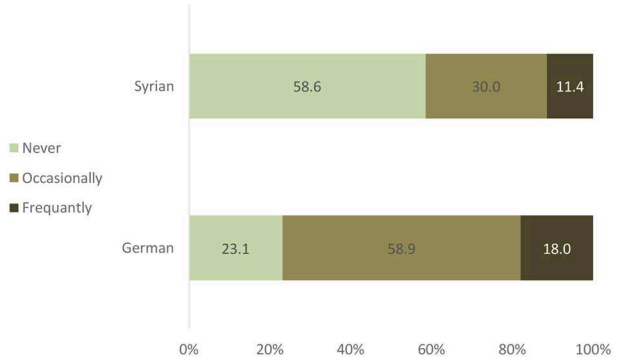

FIGURE 2
Discuss politics, comparison between the Syrian and German population 2017/2018. Source: SOEP, survey years 2017–2018, own calculation.

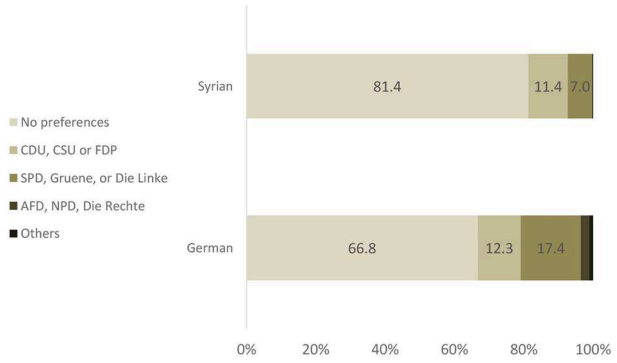

FIGURE 3
Party preferences, comparison between the Syrian and German population 2017/2018. Source: SOEP, survey years 2017–2018, own calculation.

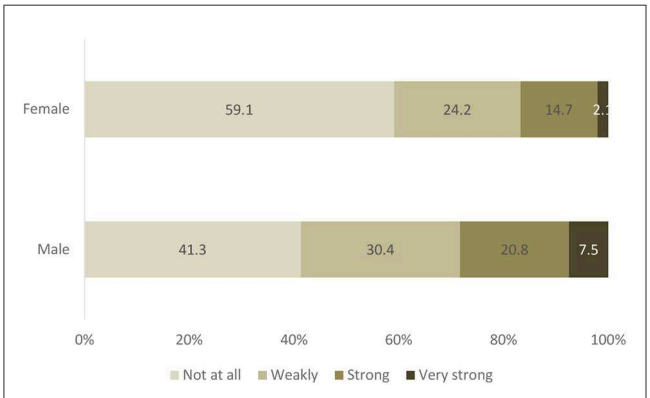

FIGURE 4
Interest in German politics among Syrian refugees, by gender 2017/2018. Source: SOEP, survey years 2017–2018, own calculation.

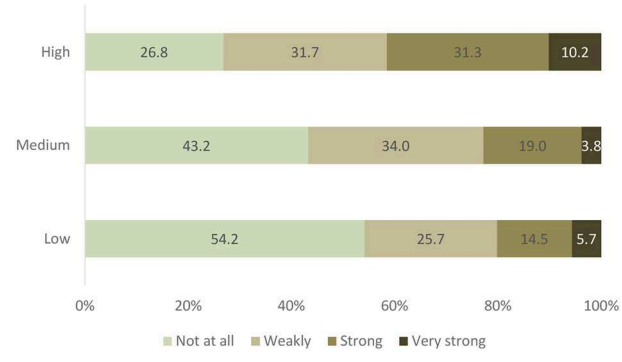

FIGURE 5
Interest in German politics among Syrian refugees, by education 2017/2018. Source: SOEP, survey years 2017–2018, own calculation.

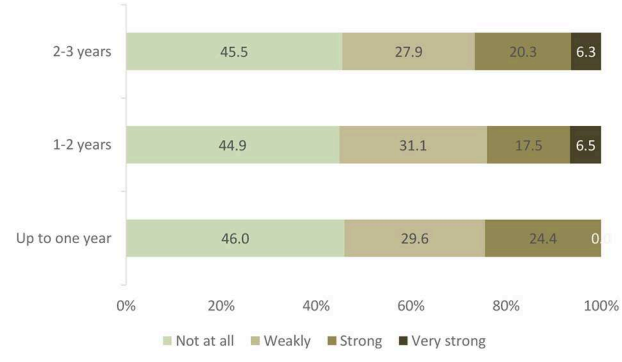

FIGURE 6
Interest in German politics among Syrian refugees, by duration of stay 2017/2018. Source: SOEP, survey years 2017–2018, own calculation.

Syrian refugees in Germany are (very) interested in German politics (about 28%) and only about 40% are not interested at all. Moreover, the differences in the level of interest in German politics are also clearly shown by the differences in educational backgrounds (see Figure 5). Syrian refugees with a higher level of education have significantly more interest in German politics than those with a lower level of education. About 41% of those with a high level of education are (very) interested in German politics, compared to only about 20% of those with a low educational background. Syrian refugees do not show a very strong interest in German politics in their first year in Germany (see Figure 6). However, in the second and third year the share of Syrian refugees who are very interested in German politics reaches 6%.

5.2. Empirical results

We explore the question of how local conditions at the time of arrival influence refugees' interest in German politics. We focus on three dimensions (social networks, economic situation, and political environment). We begin by examining each dimension in order to determine which factors correlate with interest in German politics among Syrian refugees. Then, we run our main regression with all three significant local variables on which our final results

are based. Finally, we conduct several sensitivity analyses to ensure the robustness of our results.

5.2.1. Social network

We first test the correlation between five different potential social networks for Syrian refugees and their interest in German politics. The results of the regressions can be seen in Table 3. The results indicate that the Syrian population share, (ethnic share), as a potential social network has a positive correlation with interest in German politics among Syrian refugees and is statistically significant. A 1% increase in the proportion of Syrians in the district is thus associated with a 6% higher probability of being interested in German politics, with a significance level of 0.001. In addition, the proportion of asylum seekers also shows a positive relationship, but it is less strong, i.e., a 1% increase in the proportion of asylum seekers is associated with a 2% increased likelihood of being interested in German politics. This may be related to the high proportion of Syrian asylum seekers in this group. However, all other types of social networks show no statistically significant correlation with the outcome.

5.2.2. Economic situation

Here we look at the impact of the economic situation of the initial placement of Syrian refugees on their interest in German politics. Unemployment rates, and GDP per capita are our main economic indicators. The results in Table 4 suggest that the unemployment rate has no significant explanatory power for Syrian refugees' interest in German politics. In fact, the only economic indicator that appears to have a statistically significant correlation with the dependent variable is the unemployment rate among the foreign population. In other words, a 1% increase in the unemployment rate among foreigners in a district is associated with a 2% increase in the probability of being interested in German politics. The income variables, as well as other unemployment rates, do not have statistically significant coefficients that could be interpreted in the context of the main outcome of interest.

5.2.3. Political environment

As a proxy for the political environment in the initial placement district, we consider three indicators: the turnout rate of the federal parliament election 'Bundestagwahl (BTW)' in 2013, the result of radical right-wing political parties, and the result of political parties which were elected in the Bundestag. In addition to that, we use the information on the political interest of the local population in the year of arrival at the district level. The regression results shown Table 5 suggest that the level of political interest among the local population has a significant positive correlation with the interests of Syrian refugees in German politics where a 10% increase in the level of political interest is associated with a 5% of probability of a Syrian refugee being interested in German politics. The turnout rate and election results show only a short-term and very weak association with the probability of being interested in German politics.

Variables in the first three models are interacted with the year of arrival. In the fourth model, there is no interaction term.

In a further step, we now add all three statistically significant local variables (share of Syrians, unemployment rate among foreigners, and interest in politics among locals in the district at the year of arrival) in one regression. In this way, we can ensure that we control for all potential influence factors of initial district placement on the interest in German politics among Syrian refugees. Table 6 shows the results of the main regression.

First, the findings of the regression suggest that the socioeconomic status of Syrian refugees has an undeniable relationship with the likelihood of being interested in German politics. A female Syrian refugee has a 10% lower probability of being interested in German politics than a male Syrian refugee. Moreover, the probability of being interested in German politics is further decreased by approximately 13% among women who have children in their household under 6 years old in comparison to women who do not have children at all. Syrian refugees with higher educational attainment have a significantly higher probability (24%) to be interested in German politics in comparison to those with a medium or low education level. Moreover, Syrian refugees who have a positive response on their asylum application, i.e., their legal status allows them a (temporary) residence permit in Germany are 11% less likely to be interested in German politics than refugees who do not have a residence permit.

Our findings regarding the initial placement could be interpreted in a way that the local characteristics do have an effect on the interest in German politics among Syrian refugees and through different channels. The probability of being interested in German politics will increase by about 6% if the share of the Syrian population in the district of initial placement increases by 1%. The unemployment rate among foreigners also shows a positive effect on political interest. Hence, we can say that the interest in German politics will increase by 2% if the unemployment rate increases by 1% (note that the coefficient of the square value of the unemployment rate among foreigners shows a non-linear relation, i.e., at some point of the relatively very high unemployment rate, the relation with probability with the interest in German politics, turns to be negative). Finally, the political environment in the initial placement among the local population has a non-negligible effect on the level of interest in German politics among Syrian refugees.

To illustrate this finding more clearly and get an even better sense of the effect, we calculate the predicted probability of being interested in German politics by the share of Syrian nationals, the level of unemployment rate among foreigners and the level of interest in politics among locals as shown in Figure 7 (it is based on the result shown in Table 6). The figure shows that the probability of being interested in German politics increases substantially as ethnic share increases. For example, a Syrian refugee has been placed in a district where the ethnic share (7 percent) is more than 1.5 times as likely to be interested in German politics than a similar individual living in a district, where ethnic share is at 3 percent. The same goes for the interpretation of the political environment. However, as Figure 7 shows the non-linear relation between the unemployment rate among foreigners and the likelihood of being interested in politics. Thus, refugees who are placed in a district with a higher unemployment rate among foreigners are more likely to be interested in German

TABLE 3 Linear probability model: networks.

	Age share	Sex share	Syrian share	Asylum share	Foreigner share
Share of subpopulation	0.001 (0.004)	−0.008 (0.011)	0.059*** (0.016)	0.021* (0.009)	−0.005 (0.005)
Individual control	Yes	Yes	Yes	Yes	Yes
Districts control	Yes	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes	Yes
Federal state fixed effects	Yes	Yes	Yes	Yes	Yes
N	2,273	2,273	2,273	2,273	2,273
R^2	0.124	0.125	0.127	0.126	0.125
Adj. R^2	0.108	0.108	0.111	0.109	0.109

Standard errors are clustered at individual and district level (in parentheses). $^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

TABLE 4 Linear probability model: economic situation.

	Unemp. rate total population	Unemp. rate among foreigner	Unemp. rate among youth	Unemp. rate by sex	GDP per capita
Economic indicators	0.035 (0.022)	0.022** (0.007)	0.023 (0.022)	0.031 (0.022)	0.047 (0.044)
Square value	Yes	Yes	Yes	Yes	No
Individual control	Yes	Yes	Yes	Yes	Yes
Districts control	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes
Federal state fixed effects	Yes	Yes	Yes	Yes	Yes
N	2,273	2,273	2,273	2,273	2,273
R^2	0.125	0.127	0.125	0.125	0.126
Adj. R^2	0.109	0.111	0.108	0.109	0.109

Standard errors are clustered at individual and district level (in parentheses). $^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

TABLE 5 Linear probability model: political environment.

	BTW turnout 2013	BTW radical right parties	BTW parliament parties	Political interest
Arrival year				
2014	−0.008* (0.007)	−0.029 (0.021)	0.036* (0.012)	0.046** (0.015)
2015	−0.005 (0.004)	−0.007 (0.014)	0.001 (0.009)	
2016	0.001 (0.007)	0.011 (0.016)	0.007 (0.011)	
Individual control	Yes	Yes	Yes	Yes
Districts control	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Federal state fixed effects	Yes	Yes	Yes	Yes
N	2,271	2,271	2,271	2,273
R^2	0.125	0.125	0.127	0.128
Adj. R^2	0.108	0.108	0.110	0.112

Standard errors are clustered at individual and district level (in parentheses). $^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

politics, but this effect is inverted after the unemployment rate hits 25%.

5.2.4. Robustness check

To ensure the validation of our results we run several sensitivity analyses with more sample restrictions or even extensions. One could assume a biased estimation by districts with too few observations. Therefore, we exclude all districts with less than 10 observations (they are 141 districts and 423 observations that we exclude). The results as shown in Appendix Table 2A still supports our main findings. On the other hand, it could be argued that the large districts, especially those that also represent a whole federal state (Bundesland), could bias our findings as well. Based on that, we run the regression after excluding Berlin, Hamburg, Bremen, and Saarland.[19] Again, our findings remain valid. Due to the differences between East and West Germany, we run our regression with East and West Germany separately. The result is driven mainly by West Germany, but the low number of Syrian refugees in the Eastern part could be the reason. Moreover, we check if the repeated observations in our sample bias our result. Therefore, we run our regression again, once with only the first occurrence in the survey (2017) and once with the last one (2018). The results remain robust.

Furthermore, we relax the sample restriction, in which we only consider Syrian refugees whose interview was during their first three years of residence in Germany. Thus, we include all Syrian refugees who arrive in Germany in 2013 or later. The results confirm our findings and ensure their robustness. However, caution must be exercised in interpreting causality because the random distribution no longer holds after the sample restriction is relaxed. Finally, we change the dependent variable to 'interested in politics in general' to test whether the characteristics of the initial location have an effect specifically on the interest in German politics or on politics in general. The result shown in the Appendix Table 1A suggests that initial location in Germany affects the probability of being interested in German politics rather than in politics in general.

Moreover, we run a logit regression model. An advantage of this model is that we can take the binary nature of our dependent variable into account. Furthermore, given that our dependent variable originally has a scale from 1 (not interested at all) to 4 (very strongly interested), recoding it as a dummy variable could cause a loss of information. Therefore, we run our regression again using multinomial logit regression as seen in Appendix Table 6A. Our results are valid. However, the effects at level 4 are not significant any more, which could be related to the small number of observations at this level. In a further step, we test the ability of generalization of our findings. Therefore, we try to apply our analysis to the sample of all refugees[20] in Germany. Looking at the results in Appendix Table 4A, we can, to some extent, apply our findings to the whole group of refugees in Germany.

19 Saarland has many districts but one Foreigner office, that's why we consider it as one district.

20 All refugees who provide information on their country of origin in the survey.

TABLE 6 Linear probability model: main model.

Syrian share	0.059*** (0.017)
Unemployment among foreigner	0.019** (0.007)
Unemployment square	−0.001** (0.000)
Interest in politics among German	0.050** (0.017)
Population size	0.000 (0.000)
Density	−0.023 (0.017)
Female	−0.102* (0.050)
Children under 6 years old in the household	−0.013 (0.035)
Children 6 years old or older in the household	0.025 (0.043)
Interaction term female # children under 6	−0.130* (0.054)
Interaction term female # Children 6 and over	−0.044 (0.072)
Age at time of survey	−0.087 (0.093)
Age square	0.001 (0.001)
Age at time of arrival	0.098 (0.090)
Age square	−0.001 (0.001)
Higher education level before migration	0.238*** (0.024)
(above) average income before migration	−0.017 (0.024)
Some German skills before migration	0.016 (0.054)
Lived in Damascus or Aleppo	0.027 (0.022)
(Temporary) residence permit	−0.116+ (0.063)
Islam	0.010 (0.031)
Private accommodation	−0.013 (0.042)
Healthy	−0.007 (0.027)
Time fixed effects	Yes
Federal state fixed effects	Yes
Observations	2,273
R^2	0.135
Adj. R^2	0.117

Standard errors are clustered at individual and district level (in parentheses). $^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

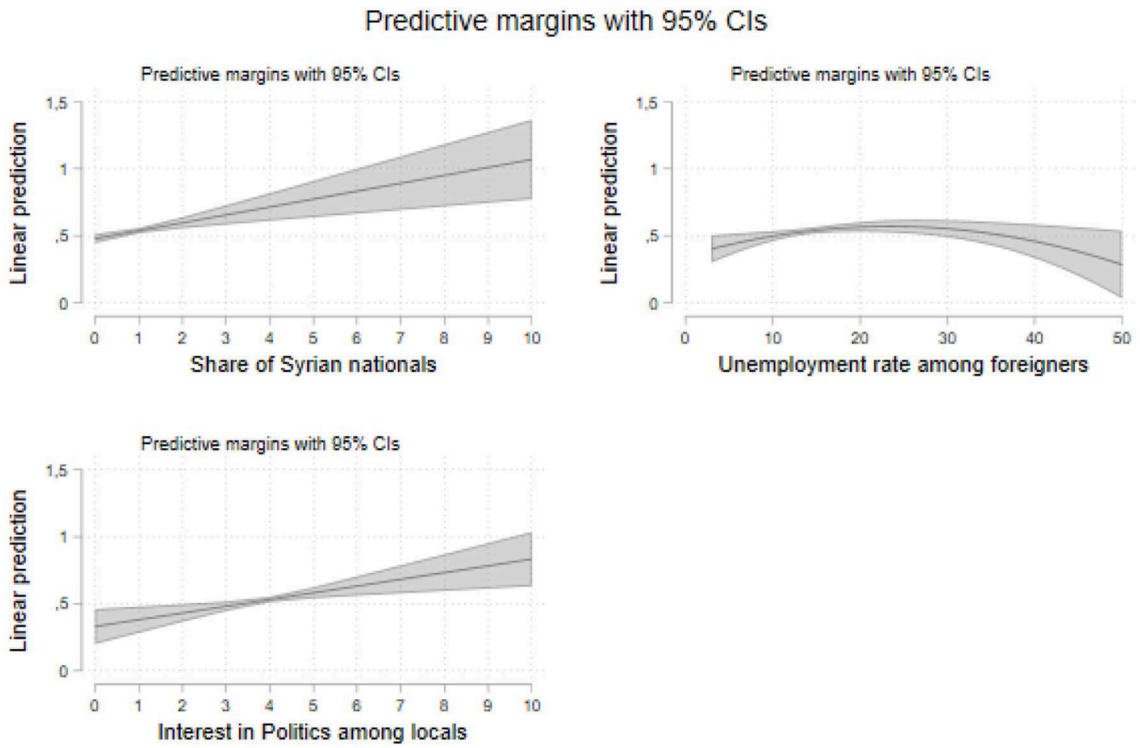

FIGURE 7
Predictive margins, based on the main regression (Table 6).

6. Discussion

In this article, we outline the interest of Syrian refugees in German politics and what impacts this interest.

Our key finding regarding the neighborhood context suggests that the ethnic social network plays a significant role in boosting the interest of new refugee arrivals in German politics. Common concerns and language skills are very decisive as a mechanism of this role. These results are in line with migration literature on the importance of the ethnic enclave as a source of information and motivation for political participation, particularly in the initial phase (Leighley and Matsubayashi, 2009; Nihad, 2018; Bratsberg et al., 2021; Lindgren et al., 2022). However, these findings challenge the group consciousness argument by Verba et al. (1995) which claims that belonging to a certain ethnic group—operationalized by ethnic group consciousness, experiences of discrimination and perceptions of commonly shared problems—has no independent influence on the extent of political participation once one controls for resource endowments and other conditions of participation. In fact, this study shows that ethnic share does indeed have an effect on the political interest of Syrian refugees if one controls for socio-demographic and socio-economic variables. A more thorough study is needed, however, in order to investigate which dimensions of the group consciousness model affects the political interest of Syrian refugees. In contrast to Bilodeau (2008) and in line with Lindgren et al. (2022), we find that a higher share of foreigners or the native population in the neighborhood in general does not affect the political interest of Syrian refugees.

When considering the economic situation of the neighborhood context theory our results cannot confirm traditional findings by Huckfeldt (1979), Cohen and Dawson (1993), or Marschall (2004), as the neighborhood unemployment rate and GDP per capita do not have an effect on the political interest of Syrian refugees. However, when considering unemployment rates among the foreign population, a positive effect on the political interest of Syrian refugees can be observed. This finding is consistent with Kern et al. (2015), i.e., rising unemployment is associated with an increase in (non)institutionalized political participation, which is to some extent applicable to Syrian refugees' political interest.

Our results can also confirm that political context has an effect on political motivational factors (Brown, 1981; Harrop et al., 1991; Jöst, 2021; Vasilopoulos et al., 2022), as high political interest among the local population in Germany leads to higher political interest among Syrian refugees. Electoral events and their voter turnout and election results show only very weak associations with the likelihood of being interested in German politics. This could conceivably stem from the fact that Syrian refugees were not yet eligible to vote, so that voter turnout does not yet affect them. However, further studies should investigate how this influence changes with a higher proportion of naturalized Syrians.

Regarding our descriptive results, we found that Syrian refugees are less interested in politics compared to the German population. Their lack of political interest is also reflected in the abundance of party preference as well as in the abundance of political discussions. Interestingly, the descriptive statistics also show that Syrian refugees are slightly more interested in German politics

compared to political topics in general. Looking at socio-economic and socio-demographic factors, it comes as no surprise that resources such as education have a big impact on political interest. This aligns with traditional political participation research as higher-educated people are more politically interested than those with lower education (Verba et al., 1995). Another unsurprising finding was that female refugees are less interested in German politics than male refugees. Considering traditional political and gender participation studies, women tend to be less politically active and less interested. Often "time" is the explaining factor, as many women care for children. Additionally, in this case female refugees with children under 6 years of age show lower political interest than women who do not have children at all.

Overall, our results show that the neighborhood context, in particular the ethnic share, does play an important role next to other traditional socio-economic and socio-demographic factors for political interest. With only a few studies shedding light on the neighborhood context within their national settings so far (Bratsberg et al., 2021; Lindgren et al., 2022), this study represents the first quantitative article relating neighborhood context theory to the political interest of Syrian refugees in a German setting.

We have to mention that our study does have some limitations as our data only represents Syrian refugees from the years 2017 and 2018. Since the database does not include variables concerning political participation, NGO membership or the political background of the family, we cannot link our political interest variable to political participation and therefore do not know whether political interest is translated into political engagement after all. Furthermore, more data regarding the origin country is needed to order to fully explain why some cities lead to a higher interest in politics than others.

Nevertheless, this study is significant for future policies regarding refugees, especially when it comes to their allocation since this article proves that the neighborhood context is not only relevant for social and economic integration, but also for political interest. While this article only focuses on Syrian refugees, future research should also focus on other refugee groups or take other countries as their setting. While our study focuses on a macro-perspective, future studies should also aim to go even more in-depth by looking at the mechanisms driving Syrian refugees' interest in German politics. This could be done by qualitative narrative interviews with either Syrian or other refugee groups in order to find out what factors influence the political interest and understand why they do so. Another option would be a survey experiment with a hypothetical situation and hypothetical action. This would allow for separately measuring the factors of influence without the problems of real-world correlations and even make measuring (hypothetical) political action possible. This dissection would also allow for deeper insights regarding policy recommendations.

Data availability statement

The datasets analyzed in this study can be found online via the following link: https://www.diw.de/de/diw_01.c.601584.de/datenzugang.html.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpos.2023.1100446/full#supplementary-material

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Non-cognitive skills and immigrant-native inequalities in the labor market in Europe

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Non-cognitive skills are increasingly essential in the labor market, especially given technological advances and evolving work environments. Unequal distribution of non-cognitive skills among various groups in the population may contribute to labor market inequalities. This article investigates the significance of non-cognitive skills for immigrant-native inequalities in the European labor market. Specifically, we examine the potential differences in non-cognitive skills between native and immigrant groups and how these differences may affect their income. Additionally, we explore whether equal levels of non-cognitive skills have comparable payoffs for native and immigrant groups in society. We use, comparative survey data from the Programme for the International Assessment of Adult Competencies and OLS regressions with country fixed effects. Our findings show that many immigrants exhibit lower levels of non-cognitive skills than native-born workers, despite differences between origin groups. This difference in non-cognitive skills explains part of the immigrant-native inequality in the labor market for most immigrant-origin groups. Moreover, our results indicate that immigrants, especially those from Central and Eastern European countries, benefit less from exercising comparable non-cognitive skills than native-born workers. Our study highlights the importance of non-cognitive skills in addressing the labor market disadvantage faced by immigrants, and emphasizes that policymakers and educators should recognize the significance of these skills when developing policies targeting immigrants.

KEYWORDS

immigrants, labor market inequalities, PIAAC, Europe, non-cognitive skills

Introduction

This study examines the importance of non-cognitive skills for explaining immigrant-native inequalities in the European labor markets. The Nobel laureate Heckman argued that non-cognitive skills, such as perseverance, sociability, and openness to experience, are important determinants of a wide range of life outcomes, including educational achievement, labor market outcomes, health, and criminality (Heckman and Kautz, 2012). Various authors claim that due to technological developments, non-cognitive skills have become increasingly important in the labor market (Heckman and Jora Stixrud, 2006; Deming, 2017; OECD, 2017; Fernandez and Liu, 2019). Deming (2017) illustrated this empirically by showing that among graduates with high levels of non-cognitive skills, the probability of full-time work increased more than fourfold between 1979 and 1997 in the United States. During the same period, the wage returns for non-cognitive skills almost doubled. Given the increasing importance of non-cognitive skills for labor market outcomes, a critical question is whether and to what extent these skills influence immigrant-native inequalities in the labor market.

This article extends and contributes to previous research by examining whether and to what extent self-reported non-cognitive skills can explain immigrant-native inequalities in the labor market. We answer three questions related to immigrants' skills and their role in the labor market. First, do immigrants have and exercise a lower level of non-cognitive skills than native-born workers? Second, are the economic returns on non-cognitive skills the same for immigrants as for native-born workers? Third, can differences in levels and returns on non-cognitive skills explain immigrant-native inequalities in income? We use the European Commission's definition of non-cognitive skills as "non-job specific skills that are related to individual ability to operate effectively in the workplace (…) and that are cross-cutting across jobs and sectors and relate to personal competences (confidence, discipline, and self-management) and social competences (teamwork, communication, and emotional intelligence)" (European Commission, 2011, p. 10).

We rely on human capital, discrimination, and immigrants' selectivity theories to develop hypotheses about the role of non-cognitive skills in immigrant-native inequalities in the labor market. While human capital and immigrants' selectivity theory point to immigrant-native differences in levels and portability of educational credentials and (unobservable) skills, discrimination theory emphasizes the "unequal treatment of otherwise equal workers" (Becker, 1957) as a possible explanation for immigrant-native inequality in the labor market. To test our hypotheses, we use data from the international PIAAC survey (the Programme for the International Assessment of Adult Competencies; OECD, 2012, 2013, 2016, 2019; Rammstedt et al., 2016). The survey covers over 39 countries, with data collected between 2011 and 2012 for most of the countries.[1] The key advantage of PIAAC data is that besides standard measures of educational and labor market outcomes, they provide information on different types of skills—literacy, numeracy, and problem-solving, as well as non-cognitive skills. In addition, the data include detailed immigrant-specific information on the place of education and age at migration—information not provided in most previous studies.

The focus on immigrants' non-cognitive skills is essential because, in addition to knowing the extent to which immigrant-native inequalities in the labor market can be explained by differences in formal education and training, it is also extremely important to know the roles of non-cognitive skills' levels and returns thereupon in generating income inequalities in Western labor markets (e.g., Deming, 2017; Fernandez and Liu, 2019). Such knowledge about levels and economic returns on non-cognitive skills among immigrants and natives is critical to designing suitable labor market policies targeting immigrants.

1 The countries where data collection took place between 2011 and 2012 are: Australia, Austria, Belgium (Flanders), Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Japan, Korea, Netherlands, Norway, Poland, Russian Federation, Slovak Republic, Spain, Sweden, United Kingdom (England and Northern Ireland), and United States. In nine countries (Chile, Greece, Indonesia, Israel, Lithuania, New Zealand, Singapore, Slovenia, and Turkey), data collection took place between 2014 and 2015. In six countries (Ecuador, Hungary, Kazakhstan, Mexico, Peru, and United States), data collection took place in 2017.

Previous research and theoretical framework

Considerable attention has been devoted to the study of immigrant economic outcomes. The main finding from previous research is that immigrants in European countries are at an economic disadvantage. After arrival in the host country, immigrants experience difficulties finding jobs, and when they are employed, they often have lower status and lower paid jobs than native-born workers with the same education and work experience (OECD, 2018, 2020).

Three theoretical approaches may explain the disadvantage of immigrants in the labor market. The first approach is the human capital theory, which suggests that human capital acquired in the country of origin does not pay off as much as that developed in the destination country (Chiswick, 1978; Chiswick and Miller, 2009; Kanas and Van Tubergen, 2009). There has been ample support in the literature that economic returns on foreign credentials and work experiences are lower than on credentials and experiences acquired in the host country (Friedberg, 2000; Bratsberg and Terrell, 2002; Zeng and Xie, 2004; Kanas and Van Tubergen, 2009). Because many immigrants to Europe come from economically less developed countries, their educational credentials and work experience are often of lower quality and more difficult to transfer than credentials and skills acquired in European countries (Bratsberg and Terrell, 2002; Zeng and Xie, 2004). Moreover, native employers may be reluctant to fully recognize foreign credentials and work experiences because they are often uncertain about their labor market value (Friedberg, 2000; Bratsberg and Ragan, 2002; Bratsberg and Terrell, 2002; Zeng and Xie, 2004; Kanas and Van Tubergen, 2009). In line with these arguments, Bratsberg and Terrell (2002) found that in the U.S. labor market, immigrants from countries with lower pupil-teacher ratios and expenditures per pupil received lower returns on their schooling. Likewise, Bratsberg and Ragan (2002) found that the returns on education acquired abroad are lower for immigrants from less developed countries and countries where English is not an official language. A similar pattern of findings has also been shown outside the U.S. context. Kanas and Van Tubergen (2009) have found that in the Netherlands, Caribbean immigrants from former Dutch colonies received higher schooling returns than immigrants from the Mediterranean region. Interestingly, these differential returns on education are less pronounced for employment, suggesting that the quality and transferability of educational credentials are less important for accessing the labor market than for the quality of employment. Friedberg (2000) has shown that education and work experiences acquired abroad were significantly less valued in the Israeli labor market than education and skills developed domestically. The returns on schooling obtained abroad were lowest among immigrants from Asia and Africa, while immigrants from Western countries received the highest returns relative to other immigrant groups. According to Friedberg (2000), these findings support the hypothesis that school quality in Asia and Africa is lower and less suited to the Israeli labor market. Still, they could also reflect higher levels of discrimination against Asians and Africans than Western immigrants.

In previous research, immigrants' human capital has been mainly measured by educational credentials, work experiences, and language skills. Only recently have authors extended this measurement to include cognitive skills (Kerckhoff et al., 2001; Ferrer et al., 2006; Fernandez and Smith, 2015; Hanushek et al., 2015; Lancee and Bol, 2017). The term cognitive skills, as used in the literature, refers to factors like IQ and other achievement tests in the main domains of the school curriculum (Heckman and Kautz, 2012). For example, Ferrer et al. (2006) examined the importance of literacy skills for immigrants' earnings in Canada. They found that literacy skill differences account for about two-thirds of the earnings disadvantage of immigrants compared to natives. However, they did not find evidence that returns on literacy skills were lower for immigrants than for native-born Canadians. Using PIAAC data from 11 countries, Lancee and Bol (2017) examined the role of foreign credentials and numeracy skills in explaining immigrant group differences in earnings. They found that while differences in numeracy skills explained one-third of the negative effect of non-western credentials on earnings, the limited transferability of non-Western diplomas also played a role.

Second, immigrant-native inequality in the labor market can also be affected by immigrants' self-selection into immigration and destination sorting (Chiswick, 1978; Feliciano, 2005; Schmidt and Cornelia Kristen, 2022). Those who decide to leave their country of origin may have specific characteristics that lead them to a migration decision. For instance, immigrants who decide to leave their country of origin may be more entrepreneurial and ambitious than the average population in their country of origin. If they are also relatively more entrepreneurial and ambitious in comparison with the population in the destination country, this may account for income differences that cannot be explained by formal training and education but may be related to non-cognitive skills. Or, conversely, if immigrants are less favorably selected on their non-cognitive skills, this may explain their economically vulnerable position in destination countries (Chiswick, 1978; Feliciano, 2005). However, detecting such patterns of self-selection is often challenging or even impossible without knowing the non-cognitive skills of natives and immigrants. Available PIAAC data can provide information on large samples of natives and immigrants about income determinants (i.e., cognitive and non-cognitive skills) that were considered until recently as "unobserved." These data allow us to empirically increase the "explained" and mitigate the "unexplained" portions of native-immigrant income gaps. Even though this article does not aim to test the "selection" hypothesis, selectivity theory might explain different distributions of non-cognitive skills between immigrants and natives within countries. Following human capital theory, these differences in their turn may explain native-immigrant income inequalities.

A third possible explanation for native-immigrant inequalities is offered by discrimination theory. This theory posits two main types of discrimination in the labor market: taste-based discrimination and statistical discrimination. According to taste-based discrimination, immigrant-native disparities in the labor market are due to the personal prejudices of customers, co-workers, or employers against associating with immigrants (Becker, 1957). In European countries, immigrants with non-Western backgrounds, particularly those with visible physical traits (e.g., skin color) or marked cultural differences (e.g., wearing a scarf), are exposed to taste-based discrimination (Midtbøen, 2013; Di Stasio et al., 2021). Statistical discrimination, on the other hand, emphasizes the role of the employer's uncertainty about foreign human capital (Pager et al., 2009). Because employers are less familiar with foreign educational systems, they often assume that immigrants lack the necessary human capital (Midtbøen, 2013) or that their human capital is incompatible with the host country's labor market (Friedberg, 2000; Damelang and Abraham, 2016). Using a factorial survey, Damelang and Abraham (2016) showed that applicants with a foreign vocational degree were less likely to be invited for a job interview as an office worker than those holding a German vocational degree. The country of origin mattered as well. Holding the place of education constant, immigrants from Bulgaria, Turkey, and Portugal had a significantly lower probability of being invited for a job interview than Germans, suggesting that besides concerns with the portability of foreign credentials, employers' preferences to work with natives are important as well. Empirically, taste-based and statistical discrimination have the same consequence: employers will pay immigrant workers less than equally productive native-born workers (Pager et al., 2009).[2]

A few recent studies have examined the importance of self-reported non-cognitive skills for immigrants' labor market outcomes (Lancee and Bol, 2017; Kosyakova and Laible, 2022; Laible and Brenzel, 2022). In their study using PIAAC international data and OLS regression, Lancee and Bol (2017), found that immigrants' self-reported readiness to learn was positively related to their hourly earnings, net of immigrants' cognitive skills. However, they did not examine other dimensions of non-cognitive skills or the relationship between skill differences and immigrant-native wage inequality. Laible and Brenzel (2022) studied the role of the self-reported "big five" personality traits (i.e., extroversion, neuroticism, agreeableness, conscientiousness, and openness to experience). Based on the OLS regression, they found that these traits explained ∼6% of immigrant-native wage inequality in Germany. Similarly, Kosyakova and Laible (2022), using the IAB-BAMF-SOEP Survey of Refugees in Germany and growth curve models, showed that certain self-reported personality traits (i.e., openness to new experiences, conscientiousness, risk appetite, locus of control, and resilience) were positively related to destination-language acquisition among refugee immigrants.

Drawing on existing theoretical frameworks and previous research, we have formulated two conflicting expectations about non-cognitive skills. Based on human capital and immigrants' selectivity theories, we expect immigrants and natives to differ in their levels of non-cognitive skills leading to immigrant-native inequality in income, net of educational credentials, work experience, and cognitive skills. In addition, we contend that non-cognitive skills are less susceptible to issues of limited observability ex-post (i.e., once an individual has been employed for a certain period) and at the intensive margin (i.e., in terms of income) when compared to foreign credentials. This may help alleviate concerns about the quality and portability of non-cognitive skills.

2 Since we focus on the income of employees with some job tenure and not on hiring decisions, we can argue that any evidence of differential treatment will be driven by employers' preference for discrimination rather than information asymmetry, which is often the case in hiring situations.

Hence, we expect that economic returns on non-cognitive skills will be similar for immigrants and natives and that discrepancies in non-cognitive skills levels will explain immigrant-native income inequality. In contrast, according to discrimination theory, we expect that economic returns on non-cognitive skills will be lower for immigrants than natives, net of educational credentials, work experience, and cognitive skills. Furthermore, we expect that differences in returns on non-cognitive skills will explain income inequality between immigrants and natives.

Data and methods

This study uses international data from the Programme for the International Assessment of Adult Competencies (Rammstedt et al., 2016). The purpose of the PIAAC survey is to measure adults' proficiency in key information-processing skills (literacy, numeracy, and problem-solving) and to gather information about how adults use their skills at home, at work, and in the wider community. The data have been collected in 39 countries: 24 countries participated in Round 1, with data collection taking place between August 2011 and March 2012; nine countries took part in Round 2 of the assessment, with data collection taking place between April 2014 and March 2015; and six countries participated in Round 3, with data collection taking place between July and December 2017.

The target population for PIAAC consists of all non-institutionalized adults between ages 16 and 65 (inclusive) who resided in the country at the time of data collection, regardless of citizenship, nationality, or language. Throughout the PIAAC data collection process, efforts were made to address non-response resulting from language barriers, reading, or writing difficulties, and learning or mental disabilities. To ensure the quality of the data, countries were encouraged to use translations and interpreters for the main questionnaire and to capture and monitor reasons for non-response (Van De Kerckhove and Leyla Mohadjer, 2013). Each participating country was required to produce a probability-based sample representative of the target population of the country. Of the 17 countries analyzed, Estonia had the highest percentage of the target population not covered (2.8%), while Denmark had the lowest (>0.1%). The interviews were carried out at home, in the official national language of the country. The response rate ranged from 45% (Sweden) to 71% (Ireland) in the examined countries (OECD, 2019).

The sample for this study consists of immigrants and native men and women between the ages of 16 and 65 in 17 European countries (Austria, Belgium, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Spain, Slovenia, Sweden, and the UK). Our selection of countries was motivated by the sample size of immigrant populations. Countries with <100 immigrants were excluded from the final sample. Immigrants are defined as those born abroad and who are at least 17 years old at the age of migration. In addition, based on geographic birth region, we further distinguish between immigrants from North America and Western Europe (including richer Pacific and Asian countries), Central and Eastern Europe, and Other Regions. Based on these pre-selections, we excluded individuals missing information on the main dependent and independent variables: monthly income variable (7,556 observations deleted), geographic region (137 observations deleted), numeracy skills (five observations deleted), readiness to learn scale (24 observations deleted), planning scale (3 observations deleted), and task discretion scale (24 observations deleted). Regarding control variables, missing values are accounted for by including dummy variables that indicate whether data for any specific control variable were missing. The sample size ranges from 52,619 (natives) to 1,221 (North America and Western Europe), 2,088 (Central and Eastern Europe), and 1,460 (Other Regions) with a total of 57,388.

Measures

Dependent variable

Our dependent variable is based on self-reported *monthly earned income*, including bonuses (wage and salary earners and self-employed), and converted into deciles by the data provider to make the measurement comparable across countries. We relied on the measures of income in deciles because this variable has been filled in in all countries and has the fewest missing observations. For example, alternative continuous measures of monthly income (or hourly earnings) were unavailable in the public-use files for several countries (in our sample for Austria, Germany, Hungary, and Sweden). The results are robust to an alternative specification of wages: hourly earnings (including bonuses) in deciles (see Supplementary Table 2 in the robustness analyses).

Independent variables

The main independent variable is a categorical variable differentiating between natives and immigrants from three geographic regions. Natives refer to those who were born in the destination country. Immigrants were born abroad and came at 17 or older from the following geographic regions: (1) North America and Western Europe, including rich countries in East Asia and the Pacific; (2) Central and Eastern Europe; (3) Other Regions.[3]

The other independent variables of interest are *non-cognitive skills*. Our measure of non-cognitive skills is based on self-reported measures of skills including those used at work.[4] These measures

3 The countries in the Western Europe category include: EU member states and other Western European countries (the UK, Norway, Iceland, and Switzerland). Rich countries in East Asia and the Pacific include: Australia, Japan, New Zealand, Korea, and New Caledonia. The countries in Eastern and Central Europe include: Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Ukraine, Russian Federation, Serbia, the former Yugoslavian Republic of Macedonia, Turkey, Republic of Moldova, and Montenegro. The public-use PIAAC data files only provide information on whether the respondent was born in the destination country, age at migration, and the aggregated categories of the birth region.

correspond to the European Commission's definition of non-cognitive skills (European Commission, 2011). Specifically, we use PIAAC's *Readiness to Learn* scale corresponding to the European Commission's personal effectiveness skill. The respondents were asked to rate the extent to which they related to six statements when dealing with problems and tasks they encountered, using a scale from 1 "not at all" to 5 "to a very high extent". The examples of statements are: "When I hear or read about new ideas, I try to relate them to real-life situations to which they might apply," and "I like learning new things," see Supplementary Table 1 for a complete list of items. Factor analysis revealed a one-factor structure, and the six items were subsequently averaged to form a reliable scale (alpha >0.78 across countries).

We utilize PIAAC's *Influencing Skills* scale to assess influencing skills, which aligns with the European Commission's impact and influence skills. Respondents were asked to indicate how frequently they use specific skills at work, with response options ranging from 1 "never" to 5 "every day." The examples of skills assessed are: "Instructing and teaching people," and "Giving presentations," see Supplementary Table 1. Factor analysis revealed one factor, and the six items were therefore averaged to create a reliable scale (alpha >0.72 across countries).

Finally, we use PIAAC's *Planning scale,* and *Task Discretion scale,* which correspond to the European Commission's achievement skills (i.e., planning, organization, and work autonomy). The *Planning scale* is measured by three items, with answer categories ranging from 1 "never" to 5 "every day." The examples of items assessed are: "Planning own activities," and "Planning others' activities," see Supplementary Table 1. Factor analysis showed a one-factor structure; the items were therefore averaged to form a reliable scale (alpha > 0.61 across countries). The *Task Discretion scale* is measured by four items, with answer categories varying between 1 "not at all" and 5 "to a very high extent." The examples of items are: "Own planning of the task sequences," and "Own planning of style of work," see Supplementary Table 1. Factor analysis indicated a one-factor solution, so we took an average of items to form a reliable scale (alpha > 0.72 across countries). While these scales are internationally comparable and validated, they may not reflect the accurate non-cognitive skills of workers. For example, people may possess specific non-cognitive skills but do not exercise them because they are not required on the job.

Control variable

The following individual-level variables are included as controls. *Formal education* is measured by the International Standard Classification of Education (ISCED-97). The six categories are (1) "Lower secondary or less (ISCED 1,2, 3C short or less)," (2) "Upper secondary (ISCED 3A-B, C long)," (3) "Post-secondary, non-tertiary (ISCED 4, A-B-C)," (4) "Tertiary—professional degree (ISCED 5B)," (5 "Tertiary—bachelor degree (ISCED 5A)," (6) "Tertiary—master/research degree (ISCED 5A/6)."

Cognitive skills are measured by PIAAC's numeracy and literacy skills. *Numeracy skills* are defined as "the ability to access, use, interpret and communicate mathematical information and ideas, to engage in and manage the mathematical demands of a range of situations in adult life." In contrast, *literacy skills* refer to "understanding, evaluating, using and engaging with written texts to participate in society, to achieve one's goals, and to develop one's knowledge and potential" (OECD, 2013). To measure cognitive skills, respondents were asked to perform a battery of tasks encompassing basic assignments and complex problems. The tasks were framed as real-life problems such as interpreting the election results (literacy) or filling the driver's logbook (numeracy skills). Respondents who passed short, low-difficulty tests were randomly assigned a subset of full tests. Those who "failed" short tests bypassed the full skills assessments and were redirected to a separate "reading components" assessment that tested basic reading skills. Because each respondent participated only in a subset of cognitive tests, PIAAC used multiple imputations (plausible values—PVs) to increase the accuracy of the cognitive measures. Ten PVs are drawn for each respondent per domain (OECD, 2016, 2019). Literacy and numeracy skills are measured on a 500-point scale. The scores are standardized in the subsequent regression analyses to have a within-country mean of zero and a within-country standard deviation of one. Given the importance of language skills for immigrants' labor market outcomes, it is important to note that the cognitive tests were presented to respondents in the official language of the host country. Thus, the scores on cognitive tests and literacy in particular will also reflect immigrants' difficulties in speaking the host-country language. We also control for *the total years of work experience* and *working hours.* Finally, we include two immigrant-specific variables: a dummy indicating whether one obtained the highest *education abroad* and *years since migration (YSM)*.[5] Among the sociodemographic variables, we account for being *female*, living with a *partner,* and *having children in the household*. Finally, all models also control for *country-fixed effects* to absorb any systematic differences related to countries.

4 It is common in previous research on noncognitive skills to rely on self-reported measures (see Heckman and Kautz, 2012; Deming, 2017 for an overview). An important critique of self-reported measures is that they are generally less reliable because of their subjectivity and social desirability bias. Furthermore, without a common metric, individual responses may not be interpersonally comparable (King et al., 2003; Van Soest et al., 2011). While objective measures of non-cognitive skills would be preferable, (internationally comparative) data on non-cognitive skills are scarce (Anghel and Balart, 2017).

5 Following Friedberg (2000), we set YSM = 0 for natives. In this specification, the coefficients on migrant geographical origin dummies represent the initial income disadvantage between newly arrived immigrant origin groups and natives, and the coefficient on YSM represents how this disadvantage changes over time since migration.

Method

Because our research questions are mainly descriptive, we rely on descriptive and associative methods for data analyses. We run ordinary least square regressions (OLS) with country-fixed effects to adjust for the clustering of respondents at the country level. The regression analyses can be represented in four equations:

$$Income_{i,c} = \beta_0^1 + \beta_1^1 Mig_{i,c} + \beta_5^1 C_{i,c} + \lambda_c + \varepsilon_{i,c} \quad (1)$$

$$Income_{i,c} = \beta_0^2 + \beta_1^2 Mig_{i,c} + \beta_2^2 Cog_{i,c} + \beta_5^2 C_{i,c} + \lambda_c + \varepsilon_{i,c} \quad (2)$$

$$Income_{i,c} = \beta_0^3 + \beta_1^3 Mig_{i,c} + \beta_2^3 Cog_{i,c} + \beta_3^3 NonCog_{i,c} + \beta_5^3 C_{i,c} + \lambda_c + \varepsilon_{i,c} \quad (3)$$

$$Income_{i,c} = \beta_0^4 + \beta_1^4 Mig_{i,c} + \beta_2^4 Cog_{i,c} + \beta_3^4 NonCog_{i,c} + \beta_4^4 Mig_{i,c}\, x\, NonCog_{i,c} + \beta_5^4 C_{i,c} + \lambda_c + \varepsilon_{i,c} \quad (4)$$

where the independent variables are *Mig*, geographic origin groups; *Cog*, literacy and numeracy skills, *NonCog*, non-cognitive skills, *C*, control variables, with *i* indexing individuals, *c* indexing countries, λ denoting country-fixed effects, and ε denoting the error term.

See Supplementary Table 1 for a list of all variables and their descriptions used in analyses. To account for weighted replicate samples in PIAAC international data and imputation error in plausible values, we used STATA module *repest* command in STATA developed by OECD (Keslair, 2020).

Results

Table 1 displays summary statistics of the main variables by geographical region of origin. A possible explanation for immigrant disadvantage in the labor market are differences in levels and portability of origin-country-specific human capital. Table 1 shows that this explanation holds particularly for immigrants from Other Regions. Other Regions immigrants are overrepresented in lower secondary education (28%) compared to immigrants from North America and Western Europe (13%) and immigrants from Central and Eastern Europe (17%) and natives (17%). They also have substantially fewer years of work experience (15 years) than other immigrant groups and natives, who have on average about 19.4 years of work experience. In contrast, immigrants from North America and Western Europe are overrepresented in tertiary education (45%), while the proportion of Central and Eastern European immigrants with a tertiary degree is comparable to natives (24 vs. 25%), with immigrants from Other Regions in-between (33%). This apparent advantage of all groups of immigrants in tertiary education only sometimes translates into jobs with higher skill requirements or incomes. While immigrants from North America and Western Europe have on average the highest monthly income and occupational status, immigrants from Central and Eastern European countries and Other Regions earn less and are underrepresented in skilled occupations than natives (25 and 32% vs. 46%). All immigrants, particularly those from Other Regions, have on average lower literacy and numeracy skills compared to natives. While lower scores of immigrants on numeracy and literacy tests indicate lower cognitive skills, they are also likely to reflect immigrants' difficulties with reading host-country language. Because it is impossible to disentangle these two factors in our analyses, we will interpret differences in cognitive skills as driven by both the cognitive and language skills of immigrants.

Regarding non-cognitive skills, immigrants from North America and Western Europe score significantly higher, while Central and Eastern European and Other Regions immigrants score significantly lower on openness to learning (Central and Eastern Europeans only), influence, planning and task discretion skills than natives (see Figure 1). This finding confirms previous research showing that the degree of immigrants' selectivity in terms of non-cognitive skills varies substantially by country of origin (Feliciano, 2005; Schmidt and Cornelia Kristen, 2022). Because three out of four scales measuring non-cognitive skills refer to skills exercised on a job, these results can point either to differences in levels of non-cognitive skills between immigrants and natives or to immigrants sorting into jobs requiring different usage of non-cognitive skills. To account for immigrants sorting into occupations with lower skill demands, we included aggregated measures of occupational classification in the robustness analyses presented in the next section.

Table 2 presents the regression results of monthly income. We first present the results without controlling for cognitive and non-cognitive skills (cf. Equation 1, Table 2, Model 1). This enables us to compare our results to standard specifications used in previous research and to closely examine the role of cognitive and non-cognitive skills in explaining immigrant-native inequality in income. In line with previous research, age, educational attainment, work experience, and working hours are associated with a higher monthly income (Chiswick and Miller, 1995; Hanushek et al., 2015). We also find that, all else being equal, time spent in the host country (YSM) reduces the income gap between immigrants and natives, while having education received abroad increases it (Friedberg, 2000; Zeng and Xie, 2004). Regarding socio-demographic variables, females have significantly lower monthly income than males. Having a partner is positively related to a higher monthly income, while there is no significant relationship between having children and monthly income. The latter finding is driven by the opposing association between having children and income for men and women, where having children is related to higher income for men and lower income for women (Adsera and Chiswick, 2007; Kanas and Steinmetz, 2021)—see also Supplementary Tables 3, 4. Even after controlling for basic human capital and sociodemographic variables, all geographic origin groups earn a significantly lower monthly income than natives.

Equation 2, Model 2 adds the cognitive skills variables. There is a small positive effect of numeracy and literacy skills on monthly income. A one standard deviation increase in numeracy skills is associated with a higher monthly income by a 0.01 income decile. The relationship between literacy skills and monthly income turns out to be even smaller ($b = 0.002$, $p = 0.000$). It should be mentioned that both skills are highly correlated ($r = 0.85$, $p = 0.000$) and in fact answering questions about numeracy

TABLE 1 Descriptive statistics by geographical region of origin.

Variables	Natives		North America, Western Europe, Rich Asia, and Pacific		Central and Eastern Europe		Other regions	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Monthly income (deciles)	5.59	2.90	5.77*	2.99	4.43***	2.48	4.45***	2.68
Female	0.50	0.50	0.50	0.50	0.53**	0.50	0.48	0.50
Partner	0.66	0.47	0.75***	0.44	0.71***	0.45	0.71***	0.45
Children	0.66	0.47	0.71***	0.46	0.76***	0.43	0.74***	0.44
Years since migration	NA	NA	26.90	8.54	23.96	8.55	27.31	7.46
Education (ISCED categories)								
Lower secondary or less	0.17	0.38	0.13***	0.33	0.17	0.38	0.28***	0.45
Upper secondary	0.40	0.49	0.24***	0.43	0.38	0.49	0.25***	0.43
Post-secondary, non-tertiary	0.06	0.23	0.06	0.24	0.08***	0.28	0.04***	0.19
Tertiary professional degree	0.12	0.33	0.13	0.33	0.12	0.32	0.11	0.31
Tertiary bachelor degree	0.10	0.30	0.15**	0.36	0.06***	0.25	0.13***	0.34
Tertiary master/research degree	0.15	0.36	0.30***	0.46	0.18***	0.38	0.20***	0.40
Education abroad	NA	NA	0.64	0.48	0.56	0.50	0.67	0.47
Work experience	19.58	12.26	20.13	11.35	18.62***	11.95	14.53***	9.95
Work hours	37.03	11.80	36.89	12.14	37.44	10.71	35.28***	11.92
Occupational classification								
Elementary occupations	0.08	0.26	0.07	0.25	0.21***	0.41	0.22***	0.41
Semi-skilled blue-collar occupations	0.20	0.40	0.13***	0.34	0.31***	0.46	0.15***	0.36
Semi-skilled white-collar occupations	0.27	0.45	0.24**	0.42	0.23***	0.42	0.31**	0.46
Skilled occupations	0.46	0.50	0.56***	0.50	0.25***	0.44	0.32***	0.47
Cognitive skills								
Numeracy	274.78	48.84	265.34*	59.41	238.55***	59.16	224.72***	58.13
Literacy	275.15	44.55	269.87	54.54	239.07***	52.59	230.05***	51.97
Non-cognitive skills								
Readiness to learn	3.70	0.66	3.91***	0.64	3.61***	0.73	3.74	0.71
Influence	2.68	1.10	2.90***	1.09	2.21***	1.10	2.28***	1.13
Task discretion	3.24	1.01	3.43***	0.98	2.87***	1.05	2.88***	1.09
Planning	3.52	1.23	3.72***	1.13	3.11***	1.33	3.03***	1.34
N observations	52,619		1,221		2,088		1,460	

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$ significant difference with natives.
Source: PIAAC (2012).

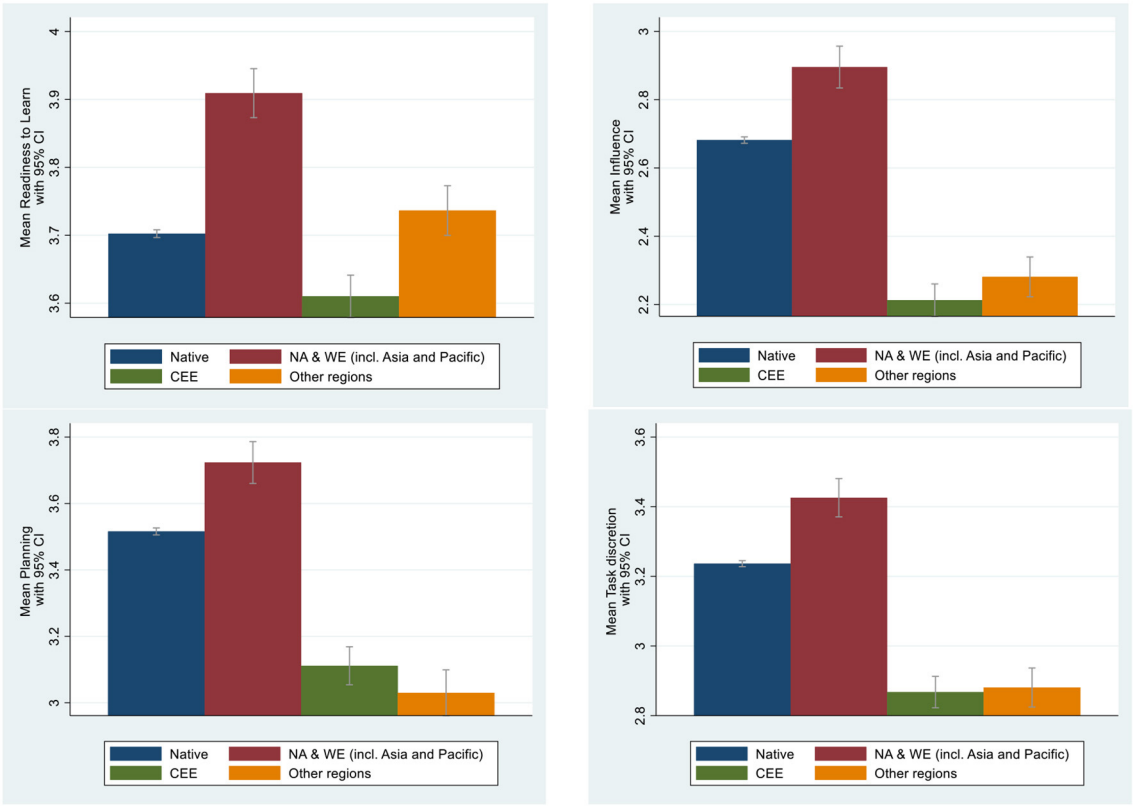

FIGURE 1
Average non-cognitive skills by geographical region of origin. Source: PIAAC (2012), own calculations.

skills also requires reading fluency from immigrants. Additional results show that excluding numeracy skills from Model 2, yields a larger and statistically significant association between literacy skills and income ($b = 0.01$, $p = 0.000$). Inclusion of literacy and numeracy skills explains 28% of the income gap between North America and Western Europe immigrants and natives. For Central and Eastern European immigrants, these skills explain 34% of the gap, and for Other Regions immigrants, the inclusion of literacy and numeracy skills accounts for a 42% of the income gap with natives.

Turning to the role of non-cognitive skills (cf. Equation 3, Model 3), we find that influence and planning are positively related to monthly income while the coefficients for readiness to learn and task discretion are not significant. More specifically, one standard deviation increase in influence and planning skills are associated with an increase in monthly income decile by 4 and 1%, respectively. Additional analyses, show that the coefficients of readiness to learn ($b = 0.09$, $p < 0.001$) and task discretion ($b = 0.07$, $p < 0.001$) turn out positive and statistically significant when entered separately in the model. These additional results suggest that being open to new experiences and the ability to work autonomously are related to higher income through their associations with influencing others and the ability to plan one's activities. Controlling for non-cognitive skills further explains the remaining income gap between immigrants and natives. Further analyses indicate that by prioritizing non-cognitive skills over cognitive skills, the income disparity between natives and immigrants from North America and Western Europe decreases by 11%. Moreover, the income gap between natives and immigrants from Central and Eastern Europe is reduced by 25%, while the income gap between natives and immigrants from Other Regions is reduced by 22%.

Equation 4, Models 4–7 include a series of interaction effects between non-cognitive skills and immigrant geographical origin variables. Our results support the expectation that the economic benefits from using non-cognitive skills are lower for immigrants than natives. More specifically, the associations between readiness to learn, planning, and task discretion skills on the one hand and monthly income on the other hand, are significantly lower for Central and Eastern European immigrants than for natives.[6,7]

6 Additional analyses, not presented here, further show that the returns on noncognitive skills are not significantly different across geographical origin groups.

7 To get a better view of the total effect of non-cognitive skills on migrants' income, we rerun our results focusing on an immigrant sample only. The regression coefficients for noncognitive skills are positive in three cases (in one case, influence, it is statistically significant at a 5% level) and insignificant negative in one case (task discretion skills).

TABLE 2 Linear regression of monthly earned income in deciles, including bonuses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
North America and Western Europe	−0.657*** (0.174)	−0.475** (0.181)	−0.427* (0.181)	−0.389* (0.174)	−0.417* (0.180)	−0.411* (0.177)	−0.411* (0.172)
Central and Eastern Europe	−1.078*** (0.138)	−0.713*** (0.136)	−0.531*** (0.136)	−0.558*** (0.132)	−0.603*** (0.135)	−0.605*** (0.139)	−0.643*** (0.141)
Other Regions	−1.042*** (0.149)	−0.602*** (0.144)	−0.472*** (0.140)	−0.442** (0.135)	−0.521*** (0.143)	−0.543*** (0.140)	−0.517*** (0.139)
Female	−0.820*** (0.032)	−0.748*** (0.033)	−0.786*** (0.033)	−0.783*** (0.033)	−0.786*** (0.033)	−0.785*** (0.033)	−0.783*** (0.033)
Partner	0.285*** (0.034)	0.238*** (0.034)	0.204*** (0.033)	0.205*** (0.033)	0.204*** (0.033)	0.204*** (0.033)	0.203*** (0.033)
Children	0.003 (0.042)	0.021 (0.042)	−0.002 (0.041)	−0.004 (0.041)	−0.003 (0.041)	−0.002 (0.041)	−0.003 (0.041)
Age	0.193*** (0.011)	0.187*** (0.011)	0.180*** (0.011)	0.180*** (0.011)	0.179*** (0.011)	0.179*** (0.011)	0.180*** (0.011)
Age squared	−0.003*** (0.000)	−0.002*** (0.000)	−0.002*** (0.000)	−0.002*** (0.000)	−0.002*** (0.000)	−0.002*** (0.000)	−0.002*** (0.000)
YSM	0.045** (0.017)	0.036 (0.019)	0.034 (0.019)	0.032 (0.018)	0.035 (0.018)	0.036 (0.019)	0.034 (0.019)
YSM squared	−0.001 (0.001)	−0.000 (0.001)	−0.000 (0.001)	−0.000 (0.001)	−0.000 (0.001)	−0.000 (0.001)	−0.000 (0.001)
Education	0.550*** (0.009)	0.453*** (0.010)	0.386*** (0.011)	0.386*** (0.011)	0.385*** (0.011)	0.385*** (0.011)	0.386*** (0.011)
Education abroad	−0.353** (0.119)	−0.331** (0.121)	−0.290* (0.120)	−0.313** (0.117)	−0.322** (0.119)	−0.321** (0.122)	−0.302* (0.121)
Work experience	0.060*** (0.003)	0.057*** (0.003)	0.052*** (0.003)	0.053*** (0.003)	0.052*** (0.003)	0.052*** (0.003)	0.053*** (0.003)
Working hours	0.089*** (0.002)	0.088*** (0.002)	0.081*** (0.002)	0.081*** (0.002)	0.081*** (0.002)	0.081*** (0.002)	0.081*** (0.002)
Cognitive skills							
Numeracy skills		0.006*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)
Literacy skills		0.002* (0.001)	0.002* (0.001)	0.002* (0.001)	0.002* (0.001)	0.002* (0.001)	0.002* (0.001)
Non−cognitive skills							
Readiness to learn, std			0.008 (0.017)	0.023 (0.017)	0.009 (0.017)	0.009 (0.017)	0.010 (0.017)
Influence, std			0.376*** (0.019)	0.375*** (0.019)	0.386*** (0.019)	0.374*** (0.019)	0.376*** (0.019)
Planning, std			0.072*** (0.020)	0.072*** (0.020)	0.073*** (0.020)	0.091*** (0.020)	0.073*** (0.020)
Task discretion, std			−0.032 (0.018)	−0.031 (0.018)	−0.031 (0.018)	−0.031 (0.018)	−0.016 (0.019)
Interactions							
Readiness to learn * NA and WE				−0.036 (0.108)			
Readiness to learn * CEE				−0.283*** (0.085)			
Readiness to learn * Other Regions				−0.082 (0.076)			
Influence * NA and WE					−0.128 (0.116)		

(Continued)

TABLE 2 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Influence * CEE					−0.164 (0.097)		
Influence * Other Regions					−0.140 (0.097)		
Planning * NA and WE						−0.198 (0.125)	
Planning * CEE						−0.210** (0.068)	
Planning * Other Regions						−0.171 (0.089)	
Task discretion * NA and WE							−0.154 (0.159)
Task discretion * CEE							−0.268** (0.085)
Task discretion * Other Regions							−0.125 (0.079)
Constant	−3.294*** (0.191)	−5.404*** (0.234)	−4.390*** (0.227)	−4.403*** (0.229)	−4.387*** (0.227)	−4.381*** (0.226)	−4.391*** (0.227)
R-squared	0.448*** (0.006)	0.462*** (0.006)	0.478*** (0.006)	0.478*** (0.006)	0.478*** (0.006)	0.478*** (0.006)	0.478*** (0.006)
N	57,388	57,388	57,388	57,388	57,388	57,388	57,388

Source: PIAAC (2012).
Standard errors in parentheses, *p < 0.05, **p < 0.01, ***p < 0.001. All models include country fixed-effects.

Robustness checks

We performed several sensitivity analyses to see whether our results are robust to different measures of income, gender differences, and additional controls. First, the monthly income in our baseline model refers to monthly earned income in deciles including bonuses of wage, salary, and self-employed earners. In the robustness analyses, we first checked whether our results remain the same when hourly rather than monthly wages are considered (including bonuses), as these are not affected by the number of hours worked in a week. In comparison to the baseline model, our analysis reveals a positive and statistically significant correlation between hourly earnings and task discretion. We also find that when hourly wages are considered, Central and Eastern European immigrants benefit less from exercising influence skills than natives. Other than that, our results remain robust to these alternative income specifications (see Supplementary Table 2).

Second, we also examined whether our findings are similar for men and women. Our analysis, as shown in Supplementary Tables 3, 4, reveals that replicating our baseline models separately for men and women does not significantly alter our conclusions regarding the role of non-cognitive skills. We find that influence and planning skills are positively associated with monthly income, while the coefficient of readiness to learn does not reach statistical significance. However, in the male sample, the coefficient of task discretion turns negative and significant, which is unexpected and implies that men with greater work autonomy receive lower monthly income, all else being equal. Similar to the baseline model, Central and Eastern Europeans benefit less from readiness to learn, planning (among females only), and task discretion skills compared to natives. Moreover, among females, non-cognitive skills appear to be less advantageous for immigrants from the Other Regions category, as the returns on readiness to learn and task discretion skills are significantly smaller for female immigrants from the Other Regions than for natives.

Third, to control for a potential confounding mechanism, we also replicate our results with nine one-digit Occupation (ISCO) categories and 21 one-digit industry (ISIC) categories included in the analyses (Supplementary Table 5). When we control for occupations and industries, our findings regarding the levels of non-cognitive skills remain consistent with the baseline model. Compared to the baseline model (cf. Table 2, Model 3), the coefficients of influence and planning skills remain relatively unchanged. At the same time, similar to the male sample, we find that task discretion skills are negatively related to monthly income. Notably, even after accounting for broad occupational and industry categories, most interactions between non-cognitive skills and Central and Eastern European immigrants remain significant.

Discussions and conclusions

Although human capital and immigrants' selection have been identified as a key factor determining immigrant-native inequalities in the labor market, previous research has focused on rather crude estimates of their importance. Most studies in the field of migration have measured human capital by language skills, education, and work experiences, assuming that these factors will capture other (unobserved) skills that influence the productivity of immigrant workers (Chiswick and Miller, 1995, 2002; Dustmann and Fabbri, 2003). More recently the authors have extended the measures of immigrants' human capital by focusing on direct measures of immigrants' cognitive skills (Kerckhoff et al., 2001; Farkas,

2003; Ferrer et al., 2006; Hanushek et al., 2015; Lancee and Bol, 2017) although, with a few exceptions, their findings have been limited to the U.S. context. This paper contributes to this line of research by examining the relationships between non-cognitive skills and immigrant-native inequalities in monthly income across 17 European countries. A growing body of research points to the increasing importance of non-cognitive skills in the contemporary labor markets but the evidence about their importance for foreign-born workers is missing. This paper addresses this gap by focusing on three questions about non-cognitive skills and immigrant-native inequalities in the labor market. First, do immigrants have a lower level of non-cognitive skills than native-born workers? Second, are the economic returns on skills the same for immigrants as for native-born workers? Third, can differences in levels and returns on skills explain immigrant-native inequalities in income?

Regarding the first question, we find that immigrants significantly differ in the level and usage of non-cognitive skills as compared to natives. Although immigrants from North America and Western Europe display significantly higher levels of non-cognitive skills than natives, those coming from Central and Eastern European origins exhibit significantly lower readiness to learn skills. Additionally, immigrants from Central and Eastern Europe as well as Other Regions tend to use influence, planning, and task discretion skills less frequently than natives. While our measure of readiness to learn indicates individual attitudes and ability to acquire new information and skills, the latter measures reflect skills exercised at work, namely, the impact on one's co-workers and supervisors, the ability to plan one's activities, and autonomy in one's work (European Commission, 2011; Fernandez and Liu, 2019). The relatively high score on readiness to learn skills among immigrants from North America and Western Europe and Other Regions is in line with previous research suggesting a more favorable selection among immigrants in European destinations particularly when they come from far away geographic regions (Feliciano, 2005). The fact that Central and Eastern European and Other Regions immigrants score significantly lower than natives on non-cognitive skills used at work could either reflect the lower level of such skills among immigrants compared to natives or immigrants sorting into jobs with lower opportunities for exercising such skills.

Our results show that even after we account for educational credentials, work experience, and cognitive skills, non-cognitive skills are positively related to higher monthly income, thus partially explaining immigrant-native income inequality. Further analyses have revealed that non-cognitive skills alone account for a range of 11% (North America and Western Europe immigrants) to 25% (Other Regions immigrants) of income disadvantage experienced by immigrants. The associations between non-cognitive skills and income are not only statistically significant but also economically meaningful. One standard deviation increase in influence and planning skills is associated with an increase in monthly income deciles by 4 and 1%, respectively. These associations are much larger than those between cognitive skills and income and comparable with 6 years of work experience or a one-unit increase in educational attainment. Interestingly, readiness to learn and task discretion are insignificant when entered together with other dimensions of non-cognitive skills. These findings suggest that openness toward learning and exercising work autonomy operate through other non-cognitive skills. For example, workers who are more open to learning are more likely to land jobs where they exercise other non-cognitive skills at work which in turn influences their income. Based on the U.S. PIAAC data and focusing on the same dimensions of non-cognitive skills (Fernandez and Liu, 2019) have found that only influence and planning were associated with U.S. workers' earnings and occupational status. These non-cognitive skills also interacted with a university degree in the way that they substituted for the lack of a degree among less-educated workers. In contrast, using the same data among immigrants in Western countries and focusing only on readiness to learn as a measure of non-cognitive skills, Lancee and Bol (2017) have shown that it is positively associated with the hourly earnings of immigrants.

Regarding the second question, our findings provide some support for discrimination theory as they show that immigrants from Central and Eastern European countries benefit less from using non-cognitive skills compared to native workers. Interestingly, with the exception of the female sample, we find little support that the returns on non-cognitive skills are significantly lower for the most discriminated groups at European labor market, namely Other Regions immigrants. The heterogeneity within the Other Regions immigrant group may be a possible explanation for this finding. Specifically, roughly one-third of immigrants in the Other Regions category have tertiary education and skilled occupations, while another third have less than lower secondary education, and one-fifth hold elementary occupations (as depicted in Table 1).

The answer to our third question is that it is mainly differences in levels of non-cognitive skills that explain immigrant-native inequality in income. In line with human capital and immigrants' selectivity theories, our results clearly show that immigrant-native inequality is substantially reduced by differences in cognitive and non-cognitive skills. Thus, immigrants' disadvantage in the labor market can be largely explained by differences in productivity due to lower levels of cognitive and non-cognitive skills. This is an important finding because previous research in the migration literature has paid little attention to cognitive and non-cognitive skills, mainly due to data limitations. However, we also find some evidence that observationally similar immigrants from Central and Eastern Europe benefit less from their usage of planning skills than do natives, contributing to immigrant-native income inequality. The lower returns on non-cognitive skills for these immigrants compared to natives align with the discrimination theory that predicts that equally productive workers are paid unequally (Becker, 1957). To the extent that our measures of cognitive skills control for immigrants' language proficiency, these findings are unlikely to be affected by immigrants' language difficulties with the host-country language. While a high score in cognitive skills reflects proficiency in reading skills, it could still be that those who scored high on cognitive tests experience difficulties in speaking and writing in the host-country language. Moreover, while our robustness analyses control for broad occupational and industry categories, we cannot exclude the possibility that our findings of differential returns on skills are (partly) influenced by immigrants sorting into jobs with lower demands and rewards for non-cognitive skills. More detailed measurement of industries and occupations (e.g., four-digit ISIC

and ISCO classifications instead of one-digit classifications) could address this limitation.

This study shows that non-cognitive skills play a role in the emergence and persistence of native-immigrant labor market inequalities. This highlights the need for more attention to non-cognitive skills in research, policy design, and in the implementation of training programs. Three strategies specifically may be beneficial for this. The first one aims at raising the overall level of non-cognitive skills. Whereas, active labor market policies tend to focus on job-specific or general cognitive skills, our article clearly shows the need for—and potential benefit of—developing programs for non-cognitive skills. We think a second strategy should further analyze the gap in the use of non-cognitive skills in practice. From this paper, we might infer that some immigrants end up in jobs where they do not fully use their skills. But to be more conclusive here, we would need more insight into immigrant-native differences in the gap between existing skills and applied skills. Finally, our article shows that it is important to raise awareness about the unequal returns on non-cognitive skills for migrants and natives. There are many examples of programs promoting gender-equal rewards for cognitive skills and experience; these may provide a source of inspiration. Greater attention to non-cognitive skills may not only help reduce immigrant-native inequalities in the labor market, but better equip employees—immigrants as well as natives—for the demands of the twenty-first-century labor market.

Data availability statement

The analyses of the present study are based on the German PIAAC dataset provided by the Research Data Center PIAAC at GESIS: Rammstedt, B., Martin, S., Zabal, A., Konradt, I., Maehler, D., Perry, A., Massing, N., Ackermann-Piek, D., & Helmschrott, S. (2016). Programme for the International Assessment of Adult Competencies (PIAAC), Germany – Reduced version. Data file version 2.2.0 [ZA5845]. Cologne: GESIS Data Archive. doi: 10.4232/1.12660.

Author contributions

AK and MF conceived the presented idea. AK developed the theoretical framework and conducted analyses. Both authors discussed the results and contributed to the final manuscript.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpos.2023.1091997/full#supplementary-material

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The impact of migrants' knowledge about their social rights on their subjective wellbeing

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Introduction: In this contribution I examine the role of migrants' knowledge about their social rights (system knowledge) for their subjective well-being. Based on the Social Production Function Theory, I expect system knowledge to be positively associated with migrants' well-being. Migrants who are well informed about their social rights are likely to have better access to resources that are crucial for their well-being such as healthcare or financial security. Moreover, I expect that knowledge in certain domains which affect daily life, such as healthcare, matter more than knowledge in other domains, which are life-course specific, such as childcare.

Methods: I make use of the Migrants' Welfare State Attitudes (MIFARE) data which includes the perspective on the welfare state of migrants from nine different origin countries across three receiving countries: Denmark, the Netherlands, and Germany. Linear regression analyses were applied.

Results: Results indicate that migrants differ extensively in their social rights knowledge. Moreover, migrants' knowledge about their social rights is indeed positively associated with subjective well-being, though the effect is not equally strong in all three receiving countries and differs by welfare domain (healthcare, childcare, unemployment benefits, social assistance, and state pensions).

Discussion: Knowledge about social rights matters for migrants' well-being. Policy advisors should therefore pay special attention to migrants' access to information about social right policies in order to increase their well-being.

KEYWORDS

system knowledge, social rights, wellbeing, migrants, MIFARE, welfare state

Introduction

European welfare systems are generally designed with the overall goal to reduce inequality within society. However, the extent to which people have access to welfare services and benefits differs tremendously between groups. Particularly first-generation migrants struggle with the navigation through a welfare system which is often unfamiliar to them. Recent studies have focused on this migrant-specific unfamiliarity with host country welfare systems and show that migrants lack knowledge of their social rights regarding a large variety of welfare domains including healthcare, childcare, but also pensions and unemployment security (Renema, 2018; Seibel, 2019). Migrants' lack of such-called "system knowledge" can be problematic for several reasons. For once, system knowledge is crucial to guarantee equal access to welfare state services and benefits. However, the relevance of system knowledge might go beyond its facilitating function in accessing the welfare state; by enabling participation in the welfare state, system knowledge might be a crucial component of migrants' wellbeing within the host society. Beyond that, system knowledge might also positively impact migrants' wellbeing by improving their agency and self-efficacy within the welfare state.

Drawing on the Social Production Function Theory (Ormel et al., 1999) and the Capability Approach (Sen, 1999; Nussbaum, 2011), I provide several theoretical explanations of a potential link between system knowledge and wellbeing among migrant populations. I argue that for migrant wellbeing, it not only matters to what extent migrants are aware of their social rights (hence, the quantity of their system knowledge); migrants' wellbeing might also depend the relevance of certain welfare domains for their general livelihood.

I examine the link between migrants' knowledge of the social rights of people from their country of origin living in the receiving country and their subjective wellbeing among nine different migrant groups (from origin countries USA, UK, Spain, Poland, Romania, Russia, Japan, China, and Turkey) within three receiving countries: Denmark, the Netherlands, and Germany. The focus lies on migrants' knowledge about the conditions under which people from their country of origin are eligible to the *same extent as natives* to access each of the following five social right domains: Healthcare, childcare, unemployment benefits, social assistance, and pension. The comparison to the native population is important as it reflects the extent to which migrants are experiencing civic inclusion of their rights or in other words: the conditions under which the state views migrants as equal to national citizens (Morris, 2002). By focusing on migrant groups that, to a very large extent, possess a residence permit and work permit in the receiving country, this study can be seen as a conservative test of the assumption that knowledge of social rights increases wellbeing. For more vulnerable groups, such as irregular migrants or refugees, knowledge about social rights might be even more important for their wellbeing, given their social position within society which is often characterized by high levels of social and institutional exclusion.

I employ unique data from the project Migrants' Welfare State Attitudes (MIFARE), which is the first representative and cross-national surveycontaining unique information about first-generation migrants' attitudes and knowledge about the welfare state (Bekhuis et al., 2018). Respondents could answer the survey either on hard-copy or online and additionally choose to answer either in their mother tongue or in the host-country's native language. The sample analyzed in this paper consists of a total of 5,732 first-generation migrants. In the following, I discuss existing literature, relevant theories and derive hypotheses regarding migrants' knowledge of their social rights and its effect on their subjective wellbeing. Thereafter, I present the empirical strategy, followed by the results. A discussion of the findings and implications for migrants' wellbeing concludes the article.

Background

With migrants constituting an growing part of European populations, their subjective wellbeing has received significant attention over the last years (Liebkind and Jasinskaja-Lahti, 2000; Carswell et al., 2011; Hadjar and Backes, 2013; Hendriks, 2015; Kogan et al., 2018; Heizmann and Böhnke, 2019; Hendriks and Bartram, 2019). Next to individual factors such as education and income, migrants' access to social rights matters. Comparative research demonstrates that an easier access to social rights, in terms of generous integration and welfare policies, increases migrants' wellbeing (Hadjar and Backes, 2013; Hendriks, 2015; Kogan et al., 2018; Heizmann and Böhnke, 2019). This raises the question to what extent migrants are aware of their social rights. Previous research demonstrates a large variation in knowledge about social rights among migrants (Renema, 2018; Seibel, 2019). Such system knowledge might be equally important in understanding migrants' subjective wellbeing than the actual legal framework shaping migrants' social rights. If knowledge about social rights indeed affects migrants' subjective wellbeing, than integration and welfare policies do not only work by providing "objective conditions" such as improving labor market access (Kogan et al., 2018, p. 1,786); but governments have to secure that these legal frameworks are also known by those who are targeted by such policies.

In this contribution, I examine migrants' knowledge about the conditions of receiving the *same social rights as natives* regarding five different welfare domains: Healthcare, childcare, unemployment benefits, social assistance, and pension. Since natives enjoy the fullest amount of social rights, migrants who receive the same social rights as natives experience full civic inclusion by the government (Morris, 2002). Asking about migrants' knowledge about social rights of the people from their country of origin living in the receiving country, in comparison to the native population, might reveal also another aspect, namely migrants' civic gain within the welfare system. In contrast to civic inclusion, which refers to the formal social rights granted by the government, civic gain depicts the actual realization of these formal rights (Morris, 2002). If migrants perceive their ethnic group as a part of the social policy's target group, they might be more likely to feel accepted and included, which is likely to impact their general wellbeing.

Both, subjective wellbeing as well as knowledge about social rights among migrants can differ between receiving countries as well as migrant groups (Hadjar and Backes, 2013; Renema, 2018; Seibel, 2021).

Social rights granted to migrants are complex, containing several specific regulations for different migrant groups (for example, EU vs. non-EU, salaried employed vs. self-employed, seasonal workers vs. blue-card holders, etc.) (Quinn et al., 2014; Römer et al., 2021). In this paper I focus on regular migrants holding a resident permit who origin either from other EU countries such as from Spain, the UK (still an EU member at the time of the survey), Poland and Romania and migrants from non-EU countries such as the USA, Turkey, Japan, China, and Russia. This project thereby covers both, migrants originating from Western spheres and from East Europe. Among non-EU migrants Turkish migrants are the most studied while other groups are hardly researched. The selection of these countries does not only reflect a variety of socialization in different welfare states, but also a variety of cultures likely to influence both, migrants' knowledge about social rights as well as their subjective wellbeing. Hence, similar to other studies (e.g., Hadjar and Backes, 2013) this paper is able to provide a general overview of migrants' subjective wellbeing while, unlike other studies, controlling for a variety of socialization in different welfare

states and cultures reflected in the origin of different migrant groups.[1]

Also, the three receiving countries Denmark, Germany, and Netherlands differ- with regards to the organization of their welfare states. For example, whereas Germany and the Netherlands rely on an insurance-based system to finance healthcare, Denmark's healthcare system is tax-based. However, with regards to migrants' eligibility to access the above mentioned welfare services and benefits, group and country differences are less prevalent. As a common denominator, the large majority of migrants' social rights within the European Union are tied to migrants' residence and work permit. As a consequence, the extent to which migrants enjoy the same social rights as natives largely depends on whether they have such a residence permit and a work permit. Whereas, Denmark, the Netherlands, and Germany differ quite extensively in migrants' possibility to acquire a residence and work permit, they differ little in the consequences of these permits for accessing other social rights. Since 2003, the European Commission has introduced provision of social security adopted at the Union level which grants both EU and non-EU migrants, who hold residence permits, equal treatment to nationals with regards to most social rights[2] (Quinn et al., 2014). This depicts the residence status as a main determinant for migrants to access social rights within the receiving country (Bruzelius, 2019). Next to residence status, the work permit is an important prerequisite for full social right acquisition. In order to receive unemployment benefits, for example, migrants living in one of the three welfare states studied here, must have worked in the residence country for a specific amount of time. With regards to these differences and similarities, all three countries are considered in this research design while taking into account the variety within the statistical models.

As shown in Table 1, only migrants with a work permit (and residence permit) are entitled to access unemployment benefits to the same extent as natives. Childcare and healthcare, on the other hand, is already accessible once migrants registered as resident in the receiving country. Also, social assistance is generally granted to most migrants with residence status. One exception are non-EU migrants in the Netherlands, who must have lived in the country for 5 years before being entitled to social assistance without endangering their residence permit (Vreemdelingenweet, 2020). Also in Germany and Denmark, certain conditions can apply for the access of social assistance. This overview shows migrants access to social benefits and services depends on the welfare domain in question, on their origin (EU vs. non-EU) and between receiving countries (Römer et al., 2021; sources of country policies can be found in Supplementary Table 1).

The theoretical link: knowledge about social rights and wellbeing

According to Social Production Function Theory (Ormel et al., 1999) "people produce their own wellbeing by trying to optimize achievement of universal goals, within the set of resources and constraints they face" (Ormel et al., 1999, p. 66). People with many resources in terms of, for example, income and education, are more likely to achieve a high level of subjective wellbeing than people with little resources. For migrants, their access to resources is strongly linked to their integration into the host society: The better migrants are integrated into the host society, the larger their pool of resources and the higher their subjective wellbeing (Hadjar and Backes, 2013). Migrants' integration chances are thereby strongly influenced by host countries' social rights which determine the "extent of support, rights, and freedom that the host society grants to the immigrant population" (Söhn, 2013; Kogan et al., 2018; p. 1,786). As described above, the extent to which social rights are granted to migrants depicts the scope of civic inclusion of migrants into the receiving country's welfare state. Migrants who enjoy the same rights as natives experience full civic conclusion (Morris, 2002). In practice this means that migrants have the same opportunities to apply for social assistance, for example, as natives and therefore enjoy the same level of social security. As argued by Hadjar and Backes (2013), full civic inclusion provides the best opportunities for migrant integration and thereby positively impacts their subjective wellbeing.

However, a focus on solely on the existence of de-jure social right policies (Hadjar and Backes, 2013; Hendriks and Bartram, 2016; Kogan et al., 2018; Heizmann and Böhnke, 2019) does not account for the possibility that migrants might differ in their awareness, or knowledge, about these rights. In the Netherlands, for example, over 80 percent of migrants do not possess correct knowledge about the legal conditions under which people from their country of origin living in the Netherlands would be eligible to receive social assistance (Renema, 2018). Also, knowledge about healthcare rights seems to be unevenly distributed among migrant groups in Europe (Seibel, 2019). We need to consider that migrants' actual knowledge and awareness of their social rights constitutes a crucial element of their ability to reach full civic gain within the process of integration (Morris, 2002; Mohr, 2005). In contrast to civic inclusion, which refers to the formal social rights granted by the government, civic gain depicts the actual realization of these formal rights (Morris, 2002). Such a realization of rights depends, among others, on migrants' knowledge of their social rights. Hence, knowledge about social rights is an important element needed to activate the effectiveness of social right policies.

Knowledge about social rights might thereby particularly facilitate migrants' integration chances by enabling them to access specific welfare benefits and services which improve living conditions and allow full participation within the host country society. For example, knowledge of the conditions under which migrants are entitled to use public healthcare is very likely to have a positive influence on migrants' health status, their ability to work, and their wellbeing (Mladovsky et al., 2012; Rechel et al., 2013). Similarly, migrant parents of small children who are familiar with the host-country childcare system might be

1 It should be noted that the very large majority of the nine migrant groups possess a residence permit and work permit within the three receiving countries. Hence, generalizations to more vulnerable groups, such as irregular migrants, refugees, or temporary migrants should be drawn with caution.

2 Exceptions regard for example, non-EU migrants who have been unemployed for longer than six months.

TABLE 1 Same access as natives to social rights for EU and non-EU migrants in Denmark, the Netherlands, and Germany.

	Denmark	Netherlands	Germany
Healthcare	Immediately after registration as resident	Immediately after registration as resident	Immediately after registration as resident
Childcare	Immediately after registration as resident	Immediately after registration as resident	Immediately after registration as resident
Unemployment benefits	After having lived and worked in Denmark for a certain amount of time	After having lived and worked in the Netherlands for a certain amount of time	After having lived and worked in Germany for a certain amount of time
Social assistance	Immediately after registration as resident	Immediately after registration as resident for EU migrants; After lived in the Netherlands for several years for non-EU migrants	Immediately after registration as resident
Pension	After having lived and worked in Denmark for a certain amount of time	After having lived and worked in the Netherlands for a certain amount of time	After having lived and worked in Germany for a certain amount of time

For a full overview of the individual sources, please refer to Supplementary Table 1.

more likely to use formal childcare, which is likely to improve migrant mothers' labor market participation (Boeckmann et al., 2014; Ballarino and Panichella, 2018) and migrant children's host-country language skills (Waldfogel, 2006; Drange and Telle, 2015; Becker and Schober, 2017). Also, welfare benefits such as unemployment benefits, social assistance, and pensions impact migrants' integration chances by providing a safety-net in insecure times and older age which prevents migrants from isolation, poverty (Sarvimäki and Hämäläinen, 2016) and the risk of taking on precariat work in the informal sector (Sabates-Wheeler and Koettl, 2010). Hence, migrants who possess knowledge about their rights regarding such welfare services are assumed to be better able to provide for their livelihood in times of crisis. Despite the importance of these welfare benefits and services for migrants' integration, studies repeatedly show that migrants make significantly less use of most of their social rights than natives[3] (see, for example, Karoly et al., 2018, for childcare; Rechel et al., 2013 for healthcare; Zorlu, 2013 for unemployment benfits) and that part of this ethnic gap is likely due to migrants' unfamiliarity with the system and their social rights within it.

Following this line of argument, system knowledge can be interpreted as a crucial component of migrants' agency and self-efficacy needed in order to mobilize their social rights. This theoretical consideration goes in line with Sen's capabilities approach (CA) (Sen, 1999), which stresses the importance of agency for people's capability to access resources (Yerkes et al., 2019). System knowledge can work as a facilitator of migrants' agency, by providing the necessary tool to access welfare state's services and benefits. However, system knowledge can also work through an alternative path to increased capability, namely via self-efficacy. Self-efficacy refers to people's confidence to successfully complete a task or goal (Luthans et al., 2000). Migrants might be therefore more likely to access welfare state services and benefits if they believe that they will be successful in doing so. System knowledge can increase migrants' self-efficacy and thereby their chances of equal access to the welfare state. Following the arguments provided above we can hypothesize that:

H1: Migrants' system knowledge is positively associated with their wellbeing.

However, one can argue that the effect of such system knowledge differs depending on the extent to which migrants are affected by these social rights within their daily life. Healthcare, for example, is considered as a fundamental right with the European Union (European Union, 2000). Having the ability to visit doctors in case of sickness and to receive adequate treatment is crucial for people's health and wellbeing. Hence, possessing the knowledge that one is entitled to visit the doctor, independently of whether it is because of a cold or cancer, and to receive predominantly low-cost treatment can have a tremendous effect on migrants' wellbeing (Prilleltensky, 2008). Similarly, unemployment is a general risk most employees face today due to the decreasing numbers of fixed contracts, particularly if these workers have a migration background (Kogan and Shen, 2019). Already the general knowledge of their rights with regards to unemployment benefits can lead to integrative measures such as investing in time- and money consuming language courses instead of immediately entering the low-skilled labor market, which promises quick money but often leads to dead-end jobs. Knowledge about such rights which affect migrants on a more daily basis therefore provide important resources for fulfilling basic physical and social needs, and thus contribute to sound social production functions and thus to the general wellbeing. Other social rights regarding childcare and retirement pensions are very life-course dependent (de Jong and de Valk, 2018; De Jong, 2019) and might be perceived less relevant by the majority of migrants. Hence, I hypothesize that:

H2: Migrants' wellbeing might be most affected by knowledge about social rights regarding their daily life such as healthcare and unemployment benefits (in contrast to pension, and childcare).

Data and measurements

Data

To answer my research question I make use of the data from the survey Migrants' Welfare State Attitudes (MIFARE), which was collected in the years 2015/2016 and surveyed 9 different migrant groups plus a respective native control group in three receiving countries: Denmark, the Netherlands, and Germany. Migrants

3 An exception is migrants' use of social assistance which is on average higher than among the native population (see, for example Zorlu, 2013).

originate from Eastern Europe (Russia, Poland, Rumania), Western Europe (Great Britain, Spain), Asia (Japan, China), Turkey, and USA. All migrants surveyed were born in their country of origin and where 18 years or older at the time the survey was conducted (Bekhuis et al., 2018). In addition, all respondents have been registered as residents in the receiving countries. Refugees or irregular migrants are not included in the data. Representative samples were drawn based on the distribution of these migrant groups within the respective receiving country. Respondents were approached with a written invitation letter containing the questionnaire as well as a link to webpage, where the survey could be filled out online. Moreover, respondents had the choice to answer the questionnaire either in their main language of the origin country or in the main language of the receiving country. This provided all migrants (who were literate at least in the main language of their country of origin) the opportunity to participate in the survey.

As mentioned above, respondents had the opportunity to fill out a written questionnaire (hard copy) or answer the questions online. In all three receiving countries and among all migrant groups, the majority of respondents opted for answering the questionnaire handwritten on the hard copy. An incentive in the form of a gift card for 10 euros was used in order to boost response rates. Since this contribution is interested in migrants' wellbeing and their knowledge about their social rights, natives were dropped from the sample. After list-wise deletion the final sample contains of 5,732 first-generation migrants.

Measurements

The dependent variable, subjective wellbeing, was measured with the following question "when you take all things together, how happy would you say you are?" with answer categories ranging from 0 (extremely unhappy) to 10 (extremely happy). This question comprises of a measurement of general happiness which combines, both, the cognitive and affective components of wellbeing (Hendriks, 2015).

The independent variable *knowledge social rights* captures the extent to which migrants know about their rights regarding their access to unemployment benefits, social assistance, pension, healthcare, and childcare. For each of these social rights, it was asked: "At which point after arrival do migrants from [country of origin] have the same rights as natives in [host country] to:" a) "use the public healthcare system?", b) "receive public pension from [host country]?", c) "receive unemployment benefits from [host country]?", d) "use the public childcare facilities?", e) "receive social assistance?". For each of these items the answer categories contain "after registering as resident in [RC]" (1), "after residing in [RC] for an extended period of time, whether or not they have worked" (2), "only after they have worked and paid taxes and insurances for an extended period of time" (3), "once they have become a [RC] citizen (obtained nationality)" (4), "they will never get the same rights" (5). Which answer is correct depends on the benefit/service in question, the host country, and whether the migrant group is from the European Union or not. Regarding healthcare and childcare, the correct answer is for all three receiving countries and all migrant groups is "after registering as resident." Access to social assistance can be read in two ways. The very large majority of migrants in Germany and Denmark, both EU and non-EU, have access to social assistance immediately after registering as residents. In the Netherlands, non-EU migrants have to have lived for 5 years in the Netherlands before being eligible for social assistance. However, the German and Danish law has a specific regulation that can also indicate the second answer (after residing in [RC] for an extended period of time, whether or not they have worked) as correct. In Germany, the condition for access to social assistance is conditioned by an intention to stay for a longer period in Germany and not solely for the reason to acquire social assistance ("habitual residence," see Bruzelius, 2019). However, this regulation most likely does not affect the majority of migrants living in Germany and for that reason one could also argue that respondents answering with the first answer category are also correct. In Denmark, a new legislation implemented in 2015 requires for a 7 year residency (of the last 8 years) which is similar to the Dutch legislation. However, since the survey was collected in 2015 I expect most respondents base their knowledge on previous legislations. For that reason, the main analysis refers to the following coding: For Germany and Denmark, answer category 1 is correct, for the Netherlands answer category 2. However, I also estimated all models with allowing both, answer category 1 and 2 as correct as a robustness check (see Supplementary Table 6). The regulations for unemployment benefits and pensions are again equal within all three receiving countries and for all migrant groups: migrants must have worked paid taxes and insurances for an extended period of time in the receiving country.

Each item was recoded into a dichotomous variable with "not provided correct answer" (0) and "provided correct answer" (1). Finally, the variable "total knowledge" was created by taking the share of correctly provided answers to these five questions, thereby capturing the extent of knowledge migrants possess about their social rights.

Control variables

Human capital factors such as *Education*, *employment, language skills* and *income* positively impact both, knowledge about social rights (Berry and Hou, 2016; Renema and Lubbers, 2019) and wellbeing (Hadjar and Backes, 2013). Education was measured by the highest educational level achieved (either in the country of origin or receiving country). The answer categories vary between origin groups as educational systems differ between countries. Following standardized international surveys such as the ISSP, responses were therefore recoded according to the ISCED-97 scale and vary from "no formal education [ISCED 0]" (0) to "upper tertiary education [ISCED 6]" (6). I regrouped the variable into three categories: "Low level education—ISCED 0-2" (1), "medium level education—ISCED 3-4" (2), and "high level education—ISCED 5-6" (3). Employment is a binary variable with two outcomes: employed (1) and not employed (0).

Respondents also had to report their ability to both write and speak the receiving country's language, from "very well" (1) to "not at all" (5). I reversed the scale and took the mean of both measures,

hence the higher the value the better the *subjective language skills* of the respondent.

Household income after tax and compulsory deductions, was measured on a scale between 1 and 11 (resembling the wave 2008 of the ISSP's family income variable), with 1 indicating an income of <600€/4.500 Danish kroner and 11 an income of 5.000€ /37.300 Danish kroner or more per month.

Because the meaning of household income depends on the number of household members and their age, I also estimated the *equivalent household size* following the OECD-modified equivalence scale. This scale values a 1 to the first household member aged 14 years or older; a value of 0.5 is attributed to any additional household member aged 14 years or older; finally a value of 0.3 is attributed to each child under the age of 14 living in the household. A direct measurement of the equivalent household income using this household size measurement is not possible, unfortunately, since household income was only measured in categories.

Also, social relations matter for people's wellbeing. For migrants, particularly contact to the native population has been found to increase their sense of belonging and therefore their wellbeing (Correa-Velez et al., 2010). *Contact to natives* was measured by asking respondents about the share of native friends in the host country via the question "Please think about all friends you have who live in [host country]. We would like to know how many friends who live in [host country] are originally from [host country]?" Answer categories ranged from "all" (1) to "none" (5). I reversed the scale so that a higher number indicates a higher share of native friends. Respondents were also asked about their *sense of belonging* to native people living in the host country. Answer categories ranged from "not at all" (1) to "very close" (5).

The models also control for other factors linked to wellbeing such as subjective health status ["very good" (1) to "very bad" (5)] and age (Hadjar and Backes, 2013; Steptoe et al., 2015), gender [male (0), female (1)] (Hadjar and Backes, 2013; Meisenberg and Woodley, 2015). Because research shows that migrants' wellbeing decreases over time (Erlinghagen, 2011; Mähönen et al., 2013), length of stay (in years) in the host country is added to the model.

Last, but not least the models control for all nine migrant groups and the three receiving countries. Chi^2 tests indicate that migrant groups indeed differ significantly in their knowledge about social rights; this holds for all three receiving countries [Pearson $chi^2(45)_{Germany} = 294{,}23$, $p < 0.000$; Pearson $chi^2(45)_{TheNetherlands} = 197{,}99$, $p < 0.000$; Pearson $chi^2(40)_{Denmark} = 102{,}56$, $p < 0.000$].

Results

Figure 1 shows the overall distribution of wellbeing and knowledge about social rights. We see that migrants who gave the correct answer to only 40 percent of the knowledge questions score very low on the wellbeing scale ranging from 0 to 10. Migrants, on the other hand, who know between 50 and 60 percent of the answers score very high on the wellbeing scale.

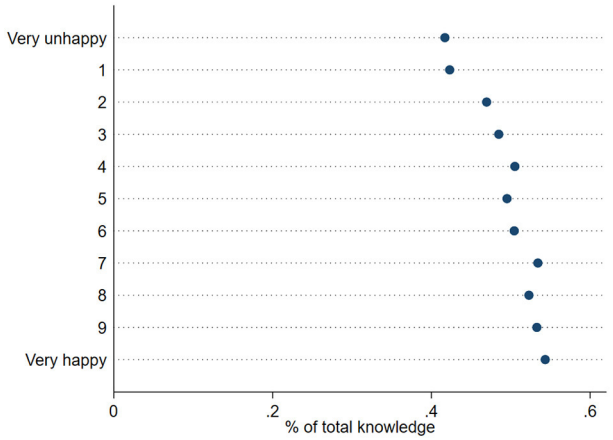

FIGURE 1
Descriptives of % of total knowledge about social rights, by wellbeing.

In a second step, multivariarate regression analyses were used in order to assess the impact of migrants' knowledge about their social rights on their subjective wellbeing (Table 2, non-standardized coefficients, *p*-values presented in parentheses). The first model (model A) tests whether an increase in knowledge about social rights is associated with higher levels of subjective wellbeing. Migrants were asked about their knowledge about five welfare domains: healthcare, childcare, unemployment benefits, social assistance, and pensions. Migrants who provided the correct answer to all five knowledge questions are expected to perceive 100 percent knowledge within these domains, migrants who could, for example, provide only one correct answer are expected to possess knowledge of only 20 percent of these welfare domains.

Model A therefore depicts a positive and significant effect of the total share of knowledge (b = 0.232, $p = 0.026$). Hence, the more knowledge migrants possess about their social rights, the higher their subjective wellbeing. This supports the general notion of this contribution, that migrants' wellbeing is not only dependent on the legal factors and de-jure access to social rights; it also matters that migrants are actually aware of these rights. Moreover, the data suggests that it is not enough to possess knowledge about just one welfare dimension, but that a broad knowledge of several welfare dimensions is relevant to increase migrants' wellbeing.

Whereas, model A focuses on the quantity of knowledge, the following models (B-G) differentiate between the different welfare dimensions. I hypothesized that for migrants' wellbeing it might be more relevant to possess knowledge about social rights which affect their daily life or which serve as a very important safety net such as healthcare rights and unemployment benefits. The following models therefore estimate the effects of migrants' knowledge about each of the following social rights: healthcare, childcare, unemployment benefits, social assistance, and pensions. Model B shows that indeed, knowledge about healthcare rights significantly increases migrants' subjective wellbeing by 0.119 units ($p = 0.048$). Similarly, knowledge about unemployment rights and pensions increase wellbeing significantly by 0.111 (p =0 .044) and 0.127 ($p = 0.011$) units, respectively. Knowledge, about childcare

TABLE 2 Linear regressions: impact of knowledge of social rights on subjective-wellbeing (beta-coefficient; standard error in parentheses).

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Share total knowledge	0.232* (0.028)						
Knowledge healthcare		0.119* (0.049)					0.148* (0.022)
Knowledge childcare			−0.007 (0.891)				−0.041 (0.447)
Knowledge unemployment benefits				0.111* (0.044)			0.070 (0.227)
Knowledge social assistance					−0.053 (0.332)		−0.042 (0.452)
Knowledge pension						0.127* (0.011)	0.104* (0.047)
Controls							
Level of education	−0.032 (0.117)	−0.031 (0.126)	−0.030 (0.147)	−0.031 (0.129)	−0.029 (0.150)	−0.030 (0.147)	−0.031 (0.125)
Income	0.135*** (0.000)	0.135*** (0.000)	0.136*** (0.000)	0.135*** (0.000)	0.136*** (0.000)	0.136*** (0.000)	0.134*** (0.000)
Equivalized household size	0.013 (0.781)	0.017 (0.710)	0.019 (0.669)	0.018 (0.698)	0.020 (0.665)	0.018 (0.694)	0.019 (0.683)
Employed	−0.089 (0.104)	−0.084 (0.126)	−0.085 (0.120)	−0.091+ (0.096)	−0.086 (0.115)	−0.096+ (0.080)	−0.098+ (0.074)
Language skills	−0.058* (0.033)	−0.057* (0.035)	−0.053* (0.049)	−0.057* (0.034)	−0.053* (0.049)	−0.053* (0.048)	−0.059* (0.029)
Share of native friends	0.101*** (0.001)	0.101*** (0.000)	0.102*** (0.000)	0.102*** (0.000)	0.102*** (0.000)	0.099*** (0.001)	0.100*** (0.001)
Belonging to RC	0.326*** (0.000)	0.326*** (0.000)	0.325*** (0.000)	0.325*** (0.000)	0.325*** (0.000)	0.328*** (0.000)	0.328*** (0.000)
Health status	0.563*** (0.000)	0.565*** (0.000)	0.565*** (0.000)	0.564*** (0.000)	0.565*** (0.000)	0.563*** (0.000)	0.563*** (0.000)
Gender: female	0.116* (0.018)	0.116* (0.018)	0.119* (0.015)	0.116* (0.018)	0.120* (0.015)	0.122* (0.013)	0.118* (0.016)
Age	−0.002 (0.502)	−0.002 (0.506)	−0.002 (0.482)	−0.002 (0.428)	−0.002 (0.472)	−0.002 (0.557)	−0.002 (0.531)
Length of stay in years	0.001 (0.826)	0.001 (0.793)	0.001 (0.807)	0.001 (0.815)	0.001 (0.781)	0.001 (0.761)	0.001 (0.722)
Migrant group: Japan	ref.	ref.	ref.	ref.	ref.	ref.	ref.
China	−0.348*** (0.000)	−0.349*** (0.000)	−0.361*** (0.000)	−0.353*** (0.000)	−0.360*** (0.000)	−0.355*** (0.000)	−0.338*** (0.000)
Poland	−0.561*** (0.000)	−0.538*** (0.000)	−0.553*** (0.000)	−0.558*** (0.000)	−0.544*** (0.000)	−0.568*** (0.000)	−0.546*** (0.000)
Russia	−0.087 (0.373)	−0.101 (0.300)	−0.092 (0.345)	−0.071 (0.469)	−0.093 (0.343)	−0.071 (0.466)	−0.064 (0.513)
Spain	−0.333*** (0.000)	−0.320*** (0.000)	−0.325*** (0.000)	−0.329*** (0.000)	−0.319*** (0.000)	−0.338*** (0.000)	−0.329*** (0.000)
Great Britain	−0.361*** (0.000)	−0.362*** (0.000)	−0.356*** (0.000)	−0.342*** (0.000)	−0.347*** (0.000)	−0.369*** (0.000)	−0.362*** (0.000)
Turkey	−0.730*** (0.000)	−0.744*** (0.000)	−0.740*** (0.000)	−0.724*** (0.000)	−0.740*** (0.000)	−0.721*** (0.000)	−0.718*** (0.000)
Romania	−0.110 (0.263)	−0.104 (0.291)	−0.101 (0.302)	−0.106 (0.281)	−0.100 (0.310)	−0.115 (0.243)	−0.117 (0.233)
USA	−0.460*** (0.000)	−0.464*** (0.000)	−0.466*** (0.000)	−0.456*** (0.000)	−0.465*** (0.000)	−0.471*** (0.000)	−0.464*** (0.000)
Host country: Denmark	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
The Netherlands	0.214*** (0.000)	0.209*** (0.000)	0.197*** (0.000)	0.205*** (0.000)	0.196*** (0.000)	0.203*** (0.000)	0.215*** (0.000)
Germany	0.245*** (0.000)	0.260*** (0.000)	0.231*** (0.000)	0.235*** (0.000)	0.230*** (0.000)	0.213*** (0.000)	0.246*** (0.000)
N	5,732	5,732	5,732	5,732	5,732	5,732	5,732
R^2	0.178	0.177	0.177	0.177	0.177	0.178	0.178

$^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

rights and social assistance, however, does not affect migrants' subjective wellbeing positively. On the contrary, knowledge in these dimensions even lowers the odds of higher wellbeing, though the effects are not significant. The last model (model G) includes all factors of interest. We observe, that whereas the effect of healthcare knowledge (b = 0.148, $p = 0.023$) remain significant, the effects of knowledge about unemployment and pension rights decrease and become insignificant. This is partly due to the strong correlation between migrants' knowledge about unemployment benefits and pension rights (person's correlation = 0.47). Both benefits are tied to individuals' employment status and it is likely that people getting acquainted with their unemployment benefits are also more likely to assess information about their pension benefits (or vice versa).

Before making a final conclusion about the specific hypotheses, each model was also estimated separately for the three receiving countries Denmark, the Netherland and Germany (see Supplementary Tables 3–5). Results vary depending on country context. First, we see that the total share of knowledge is only significant for the Netherlands, but not for Germany and Denmark. This suggests that institutional differences, potentially in implementing migrants' social rights, might influence the relationship between knowledge and wellbeing. It also means that the first hypothesis is only true for the Netherlands. However, this does not mean that in the other countries knowledge about social rights does not matter for migrants' wellbeing, at least not for Denmark. In Denmark, migrants who know about their rights with regards to healthcare are significantly more happy than migrants who do not know about their healthcare rights. However, knowledge about the other welfare domains does not matter in the Danish context and might also explain, why the effect of total knowledge is not significant. Knowledge about healthcare rights is simply not strong enough to drive this main effect. In Germany, knowledge about social rights does not matter at all for migrants' wellbeing, independently of the welfare domain. Hence, there is not enough support for a general mechanism assumed in hypothesis 2. While in the main model, with all three receiving countries, knowledge about healthcare and unemployment benefits indeed matter for wellbeing, while knowledge about childcare and social assistance does not (as assumed in hypothesis 2) this is not the case for every country. Rather, healthcare knowledge is more important in Denmark, whereas knowledge about unemployment benefits is relevant in the Netherlands. In addition, in the Netherlands, wellbeing is also associated with knowledge about state pensions, which contradicts hypothesis 2.

Robustness checks

Several additional analyses were conducted in order to test the robustness of the results presented above. A relevant argument provided by de Jong and de Valk (2018) is that certain welfare benefits and services are mainly relevant within specific phases within the life course. One could therefore also assume that certain life-course events influence the effect of knowledge about specific certain social rights on wellbeing. For most migrants (and natives), the issue of childcare, for example, becomes only relevant once they become parents themselves. Similarly, the issue of pension security might be more relevant for older migrants than for younger migrants. I therefore tested two additional models with estimating interaction effects between childcare knowledge and having small children and between pension knowledge and age (not presented here). Knowledge about childcare rights remains insignificant, also for parents of small children. Knowledge of pension rights, however, loses its impact on migrants' subjective wellbeing the older migrants become. This is an interesting finding as it contradicts the initial assumption, that pension knowledge might be particularly important for older migrants who are at a higher risk of relying on their pension. One explanation could be that whereas younger migrants view the comparatively generous pension systems within Denmark, the Netherlands, and Germany as positive, older migrants are often also confronted with the fact that their pension is comparably lower than that of natives (due to lower contributions throughout their life course). In this case, knowledge about pension rights can even have a negative impact on older migrants' wellbeing.

Further, in accordance with other studies, I find that whereas household income increases migrants' subjective wellbeing, education and language skills decrease migrants' wellbeing (though the effects are not significant in each model). This might seem counterintuitive at first as one could think of education and communication being key to wellbeing; however, literature on the integration-paradox also finds that particularly well-integrated migrants often do feel less included, exactly because their human capital leads to lower perceived acceptance and higher perceived group discrimination, both detrimental to migrants' wellbeing (ten Teije et al., 2013). In order to exclude any confounding effect of language skills and education on the relationship between knowledge and wellbeing, I also estimated the models without these human capital factors. However, the main relationship between knowledge and wellbeing hardly changes.

A strong feeling of belonging with the native population and a higher share of native friends indeed increases migrants' wellbeing. Also, migrant women are significantly happier than migrant men and better health is also associated with higher levels of subjective wellbeing, findings consistent with previous research (Hadjar and Backes, 2013; Kogan and Shen, 2019). Age and length of stay, however, do not have a significant effect on migrants' wellbeing. We also observe strong differences between migrants' origin groups: Compared to migrants from Japan, all other migrant groups are significantly less happy though the effect is not significant for migrants from Russia and Romania. One explanation could be found in the Japanese culture of Buddhism and Shinto which are both associated with high levels of wellbeing. However, this would not explain the large difference to migrants from China who follow similar religious believes.

Last but not least, all models were estimated with an adjusted measurement of knowledge of access to social assistance, where for Germany and Denmark, the first answer categories were coded as correct (Supplementary Table 6, see explanation above). These results still show a significant effect of total knowledge on wellbeing, however in smaller size and less significant (b = 0.194, $p = 0.058$) than in the model with the original measurement of knowledge about access social assistance (b = 0.232, $p = 0.026$). Interestingly, the coefficient is negative, though not significant. With reference to the alternative measurement that also values access to social

assistance as valid if migrants have lived in the receiving country for a longer period of time, this finding could also be interpreted that migrants' awareness of the restrictiveness of this policy, particularly in comparison to the native case, lead to a perception of unfairness.

Conclusion

Previous research has emphasized the importance of integration and welfare policies for migrants' subjective wellbeing, implicitly assuming that migrants possess knowledge of given policies and their social rights, which facilitate or hinder their integration (Hadjar and Backes, 2013; Hendriks and Bartram, 2016; Kogan et al., 2018; Heizmann and Böhnke, 2019). In this study I test to what extent migrants are actually aware of their social rights and whether this knowledge influences their subjective wellbeing. Based on the Social Production Function Theory (Ormel et al., 1999) and the Capabilities Approach (Sen, 1999) I hypothesized that knowledge about social rights, so-called "system knowledge" is positively associated with migrants' subjective wellbeing. In addition, I expected that knowledge in domains that affect migrants daily life such as healthcare is more important than knowledge in domains that are only relevant for certain groups (e.g., childcare).

I make use of the recent MIFARE data (Migrants' Welfare State Attitudes) which covers nine different migrant groups in three receiving countries (Denmark, the Netherlands, and Germany), providing novel information on migrants' subjective wellbeing and knowledge about five social rights dimensions: healthcare, childcare, unemployment benefits, social assistance, and pensions (Bekhuis et al., 2018). First results indicate that indeed, the more migrants know about their social rights, the higher their subjective wellbeing. However, further analyses reveal that this is only the case for Denmark and not for the Netherlands and Germany. I also find that particularly knowledge about healthcare, unemployment benefits and pensions are relevant for migrants' wellbeing. However, again, the country differences were found. While in Denmark, knowledge about healthcare rights is relevant, in the Netherlands knowledge about unemployment benefits and state pensions is crucial for migrants' wellbeing. Interestingly, in Germany knowledge about social rights is not relevant at all, independently of the welfare domain. Knowledge about childcare rights and social assistance, however, does not appear to be relevant for migrants' subjective wellbeing in any of the three receiving countries. Social assistance is only relevant for small minority of migrants and similarly, childcare affects mainly migrants in specific life-situations, but might be less considered as crucial for general social protection.

For now, we can conclude the following: For policy makers these results implies that migrants' wellbeing is not only depended on their access to social rights, but that governments should also invest in facilitating migrants' knowledge about their social rights. However, it depends on the receiving country, on which welfare domain the focus should be. Further research should investigate the reasons for these country differences. For example, one reason why knowledge about healthcare rights matters in Denmark, but not in the Netherlands, could be that migrants' healthcare coverage and access to healthcare services is better in the Netherlands than in Denmark (MIPEX, 2020), not only in terms of regulations (as discussed in Table 1), but also with regards to implementation. Hence, in Denmark knowledge about healthcare rights might be more important to navigate the healthcare system than in the Netherlands. Similar mechanisms might be at play with regards to unemployment benefits or state pensions, which need further attention.

Nevertheless, this study contributes to the existing literature by showing that, next to the inclusiveness and exclusiveness of existing social right policies, it is important to take into account that migrants differ in their knowledge about these social rights and that this impacts their wellbeing significantly. Policy advisors should therefore pay attention to migrants' access to information about regulations and social right policies which might affect their integration chances and thereby their wellbeing.

Of course, this study also faces some limitations. The cross-national structure of the data leave only room for assumptions about potential causal effects. It is also likely that migrants with a high level of wellbeing are better able to make the effort to acquire knowledge about their social rights. While previous research and the theory provides convincing arguments for the relation assumed in this paper, namely that knowledge affects wellbeing, the causality can only be confirmed with longitudinal data. Similarly, the research design covers three receiving countries (Denmark, Germany, and the Netherlands) that are considerable inclusive with regards to the social rights granted to immigrants. It would be very interesting to study the same research question within restrictive welfare states in order to examine if knowledge of excluding welfare policies (e.g., limited access to healthcare or unemployment benefits) might actually lower the subjective wellbeing of immigrants since it reflects awareness of exclusion and not inclusion. In addition, the data does not reveal migrants' sources of information about knowledge rights. This would be necessary in order to assess which channels (e.g., informal vs. formal) are most important to spread knowledge over migrants' social rights among migrant communities. Moreover, as this article provides a first overview of the effect of knowledge on migrants' subjective wellbeing, no further differentiation between different migrant groups (for example, EU vs. non-EU migrants) was made. There is good reason to believe that EU and non-EU migrants, for example, react differently to the social rights they are granted. Similarly, this study does not take into account the most vulnerable groups such as refugees or undocumented migrants, for whom knowledge about their social rights might be particularly relevant. I therefore encourage further research to look at these group differences in more detail. Last, but not least the robustness checks show that the effect of knowledge of social rights differs strongly between receiving countries. Future research should therefore take variation of policy implementations across countries into account, when examining the impact of system knowledge on migrants' wellbeing. Future research should also take into consideration that for migrants' wellbeing not only knowledge might mater, but also if their lack of knowledge means an overestimation of their social rights or an underestimation.

For example, migrants who perceive unemployment benefits as more accessible than their actually are, might express higher wellbeing than migrants who believe that their social rights are more restricted than they actually are. Still, this study is one of the first contributions showing that knowledge about social rights is crucial for migrants' wellbeing and that policy makers should take into account how they communicate policy regulations to migrant populations.

Data availability statement

Publicly available datasets were analyzed in this study. This data can be found here: https://easy.dans.knaw.nl/ui/datasets/id/easy-dataset:97037.

Ethics statement

The study was reviewed and approved by Utrecht University. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

Author contributions

VS is the sole author of this article. She has participated in the data collection, written the introduction, theory section, data and methods section, results and conclusion, and conducted all statistical analyses.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpos.2023.1067258/full#supplementary-material

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Unequal access to protection? Selection patterns over arrival cohorts of Syrians seeking refuge in Lebanon, Turkey, and Germany

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Introduction: An ample scholarly literature on voluntary migration has shown that migration is a highly selective process, resulting in migrant populations that often differ significantly from their respective population of origin in terms of their socio-demographic characteristics. The literature attributes these differences to either migrants' active choice and agency in the migration decision (i.e., self-selection), or to selectively applied external constraints. Although the socio-demographic make-up of forced migrant populations has received significant attention in public discourses in receiving countries such as Germany and Turkey, the literature on migrant selection largely focuses on voluntary migration and self-selection mechanisms. As a result, the selection mechanisms of forcibly displaced persons are less well-understood. Particularly in the context of forced migration, the conditions for migration fluctuate heavily within a relatively short time span, e.g., regarding immigration policies and border controls. In this study we contribute to that literature by exploring the changing conditions under which Syrians sought international humanitarian protection between 2013 and 2017 and linking them to the selection outcomes in three major receiving countries: Lebanon, Turkey, and Germany.

Methods: Based on novel household survey data, we compare age, gender, socio-economic background, and family context of the Syrian populations in Lebanon, Turkey, and Germany by arrival cohort (2013–2017). In a narrative approach, we combine the cohort analysis of Syrians in Lebanon, Turkey, and Germany with contextual analyses of the (changing) frameworks governing refugee migration in transit and destination countries and descriptive analyses of changing risk levels along migration routes into Europe.

Results: Our analyses reveal that higher external barriers coincide with a stronger selection in migrants' socio-demographic make-up. In particular, riskier routes and higher entry barriers are associated with a lower share of female migrants, a lower share traveling with family members, and a higher socio-economic background.

Discussion: In this study, we describe differences in forced migrants' selection outcomes in countries of first refuge neighboring the origin country, relative to a reception country in the global north. By establishing legal and political frameworks as well as the accessibility of routes as external barriers to forced migration we expand on the existing theoretical approaches to selection effects and identify a need for policy intervention to ensure equitable access to humanitarian protection.

KEYWORDS

refugees, forced migration, selection, migration processes, mobility, individual-level data, fatality data

1 Introduction

According to the UNHCR, the number of forcibly displaced persons reached the landmark of 100 million for the first time in May 2022, including 53.2 million people displaced inside their borders. In other words, more than one percent of the global population was forced to flee war, violence, human rights violations, or persecution on political, ethnic, or religious grounds [United Nations High Commissioner of Refugees (UNHCR), 2022a]. With 149 signatory states to the 1951 Geneva Convention relating to the Status of Refugees or the related Protocol from 1967, most countries currently recognize access to peace and security as a fundamental right inherent to all human beings, regardless of race, gender, nationality, ethnicity, language, religion, or any other status. However, only a few of the 193 UN Member States bear the largest share of responsibility for refugees–either by hosting large refugee populations or by contributing financially to humanitarian efforts. Three in four refugees are hosted by low and middle-income countries such as Lebanon (UNHCR, 2022c), i.e., by countries that only have limited resources and often face internal political or economic challenges of their own. Hence, with the demand for humanitarian protection rising globally, the imbalance between the required and the available resources to provide humanitarian protection increases.

Although contexts of civil war, violence, terror, and persecution affect most societal groups simultaneously, people in vulnerable situations are equipped unequally with the resources and abilities to reach safe ground (Buber-Ennser et al., 2016; Guichard, 2020). In other words, access to peace, security, and fundamental rights depend on people's individual resource endowments to move and undertake journeys with uncertain outcomes. This concerns financial means as well as social capital (e.g., family networks abroad) and physical resources (e.g., health and fitness) required to embark on long and risky escape routes that are particularly penalizing for women, children, elderly, and disabled persons. Given the commitment of many countries to provide protection to those in need and the rising number of individuals seeking international protection (United Nations High Commissioner of Refugees (UNHCR), 2022a), it is crucial to examine the unequal selection into humanitarian protection by socio-demographic groups and its determinants. In our study, we focus on refugee migration out of Syria into neighboring countries and Europe, with the Syrian civil war representing one of the largest displacement events of the past decade (UNHCR, 2022c).

The literature on migrant selection outcomes is typically based on utility maximization frameworks in which the cost and benefit considerations of potential migrants predict their migration decisions (Roy, 1951; Borjas, 1987). This literature typically refers to voluntary migration and considers individual resources (such as human capital) and contextual factors (e.g., labor market or economic conditions in destination countries) in shaping migrant selection. While these mechanisms may apply to forced migrants as well (Guichard, 2020; Aksoy and Poutvaara, 2021; Brücker et al., 2021), the mobility of forced migrants needs further exploration for at least two reasons. Firstly, additional contextual factors apply to the mobility choices of forced migrants: border and immigration policies as well as risks and threats at home and on the route represent external constraints to the mobility of individuals seeking humanitarian refuge (Guichard, 2020; Spörlein et al., 2020). This reactive character of refugee migration derives from a lack preparation and limited legal pathways (Richmond, 1993). Secondly, these external conditions can be highly time-sensitive given the fluidity of wars and conflicts as well as the policy responses of receiving countries, particularly in times of vast international displacement. In the context of the recent refugee migration from Syria, Afghanistan and Iraq into Europe, transit and destination countries have adapted their immigration policies and border practices various times, changing the accessibility of countries and the permeability of borders within relatively short time spans. Like most refugee populations, a large share of displaced Syrians initially moved across borders without valid travel documentation such as visas. Hence, the available options to claim asylum were strongly influenced by the ability to overcome barriers to mobility.

In this paper, we investigate how the selection outcomes among Syrians seeking refuge in Lebanon, Turkey, and Germany relate to the changing conditions governing their migration during the peak of Syrian migration between 2013 and 2017. We argue that national entry regulations and policy decisions governing migration and asylum as well as the level of endangerment on travel routes substantially shape the group compositions of refugees in different destinations and at different points in time. More restrictive immigration policies and higher risk en route represent external barriers that are more permeable to men, those of higher fitness (usually younger of age), those with a higher socioeconomic background and solo travelers (in contrast to those traveling with family members). To evaluate these assumptions, we analyze historical fatality data on the main migration routes as well as contextual information on relevant policy regulations and policy changes in host and transit countries and relate the findings to the selective mobility of Syrians in the three destination countries under study.

From a quantitative perspective, studying the intertwined role of external barriers and individual factors is challenging: it requires comparable information on the characteristics of several migration cohorts displaced by the same conflict but residing in different locations. In this study, we take advantage of novel survey data on Syrian refugees collected in Lebanon, Turkey, and Germany to conduct a comparative analysis of different arrival cohorts between 2013 and 2017 in the three host countries. To assess the socio-demographic make-up of Syrians in Lebanon and Turkey, we rely on ongoing longitudinal surveys of Syrian nationals in both countries, jointly collected by the Berlin Institute for Empirical Integration and Migration Research (BIM, Humboldt University Berlin, Germany) and the Institute for Employment Research (IAB, Nuremberg, Germany). Information on Syrians in Germany stem from the longitudinal IAB-BAMF-SOEP survey of refugees. Employing a narrative approach, we furthermore describe the changing external conditions governing migration based on qualitative sources and descriptively explore changing levels of risk over time on major migration routes in the period under study (2013–2017). Our analyses show highly selective Syrian migrant cohorts in Germany compared to Turkey and Lebanon. The results suggest that immigration policy frameworks and endangerment

levels on routes represent external barriers that are more exclusive to women, family migrants and those with a lower socioeconomic status. Our analysis of cohort differences both between destination countries and over time not only contributes to the academic literature on mechanisms of forced migrant selection but also bears important policy implications.

2 Literature review: selection under constrained agency

The contemporary empirical literature on migrant selectivity, i.e., on the question whether and how migrants systematically differ from non-migrants, dates back to the seminal work of Borjas (1987). His theoretical framework is in turn based on the Roy-Model (Roy, 1951). This discourse is firmly situated in what de Haas (2021) has described as the functionalized paradigm of migration theory. Within this paradigm, the migration decision is typically modeled as a utility-maximization process such that a potential migrant only engages in migration if the expected gains from migration (e.g., higher returns on education, better living standards) outweigh the pecuniary and non-pecuniary costs of migration (travel costs, loss of social networks) (Sjaastad, 1962). While this distinctly neoclassical theory with its focus on labor market outcomes has been gradually refined to incorporate more nuanced aspects of the migration decision such as household and family decision-making (e.g., Stark, 1991), social networks (e.g., Munshi, 2020), health status (e.g., Riosmena et al., 2017), or cultural preferences (e.g., Docquier et al., 2020), the assumption that migrants represent a selective sub-sample of the population of origin has been consistently confirmed across a variety of geographic contexts. Despite this breadth in theoretical and empirical advancements on the causes and nature of migrant selection, refugees and displaced populations remained long absent from this literature.

This absence can in part be attributed to the dichotomization of forced and voluntary migration and the fact that the migration decision of refugees was long assumed to be void of agency and thus rarely conceptualized at all (Kunz, 1973). Gradually though, it was recognized that, while highly constrained by external factors (exposure to conflict, asylum and border regimes, physical accessibility and danger of flight routes), refugees do retain some level of proactive planning and decision-making capacity (Richmond, 1993; McAuliffe and Jayasuriya, 2016). Rather than aligning with a forced-voluntary dichotomy, refugees, like all migrants, find themselves somewhere along a continuum between forced and voluntary migration. Refugees often react to strong push factors that leave little choice in the timing of outmigration. Nevertheless, refugees retain agency in the choice of destination when several options are available. Consequently, the same mechanisms that have been identified as influencing the migration decision of voluntary and labor migrants may also apply to refugee populations. Within this constrained agency, the expected gains from migration may feature in the migration decision-making of refugees, including in their destination choice. Highly educated refugees may, for instance, prefer to seek asylum in a country with relatively higher returns to education, resulting in self-selection outcomes of refugee cohorts. Refugees, however, face additional constraints, such that not all individuals are able to act on their preferences. For the majority seeking refuge, no legal pathways into sheltering countries exist. Irregular migration is costly, both in monetary and physical terms, constraining refugees' agency. It is thus plausible to expect some self-selection effects among refugees in economically relevant characteristics (such as education and age) albeit less pronounced than for other forms of migration - depending on the degree to which their agency is constrained (Chiswick, 1999; Chin and Cortes, 2015).

But external constraints may not only dampen selection effects among refugees. Since constraints and enabling factors affect different sub-groups of a heterogenous refugee population to a different degree (McAuliffe, 2017), they may also amplify selection outcomes. The often-substantial financial cost of (irregular) migration may for instance be more manageable for highly educated members of elevated social strata (Buber-Ennser et al., 2016; Guichard, 2020). Moreover, female refugees, the elderly and those traveling with families are more exposed to physical dangers during transit. They may thus have to abstain from migration or their migration attempts remain unsuccessful (Spörlein et al., 2020; Aksoy and Poutvaara, 2021). As access to asylum is considered a basic human right that is not to be applied selectively, selective refugee migration resulting from external constraints (such as deliberate policy decisions) have important normative implications. Distinguishing between selection outcomes that result from self-selection based on utility maximization motives and those resulting from external constraints is thus of importance both on theoretical as well as humanitarian grounds.

We argue that framing the migration decision of refugees as either void of agency or a result of unconstrained utility maximization bears the risk of overlooking essential political, legal, and economic conditions associated with displacement that limit access to asylum for selected sub-groups of refugees. We understand the concepts of migrant self-selection and selective external constraints as complementary rather than competing in explaining forced migrant selection patterns. Specifically, previous research mostly focused on structural factors of benefits and costs of migration that evolve slowly over time, such as income differences, cultural aspects, distance, ethnic networks, etc. In contrast, external constraints (such as border policies) can change quickly over a short time period in reaction to political or environmental factors. They determine the number of possible choices as well as the conditions and costs to reach a destination. Therefore, alongside the established expectations on costs and benefits, we investigate the role of (1) legal and political frameworks in transit and destination countries at the time of migration and (2) risk levels on main migration routes in shaping refuge migration outcomes.

In line with the theoretical literature described above, the otherwise broad empirical literature on selection rarely features refugees. The relatively scarce existing empirical evidence on selection outcomes among forced migrants aligns with the theoretical assumption of positive selection of refugees along economically relevant factors. Studies consistently show refugees to have higher educational attainment than the average member of their population of origin (Chin and Cortes, 2015; Buber-Ennser et al., 2016; Birgier et al., 2018; Blum and Rei, 2018; Lange and Pfeiffer, 2019; Guichard, 2020; Spörlein et al., 2020; Aksoy and

Poutvaara, 2021; Welker, 2022). Some studies suggest that this selection effect is less pronounced than among labor migrants in the same arrival context (Chin and Cortes, 2015; Blum and Rei, 2018), while others find mixed results (Spörlein et al., 2020). Spörlein et al. (2020) further provide evidence on selection on gender, with the refugee population under study (Afghans, Eritreans, Iraqis, and Syrians) being disproportionately male.

These post-migration comparisons of the composition of refugee populations relative to their respective populations of origin can provide evidence on the existence of selection effects among refugees. They are, however, limited in their ability to shed light on the underlying mechanisms at play. The selection outcomes reported in the literature are compatible with both self-selection on the basis of utility maximization and selection based on external constraints. One option to overcome this limitation is to add further variation to the analysis by comparing selection outcomes between refugees in different destination countries. Multiple studies have shown that asylum seekers in Germany are younger on average, are more likely to be male and have a higher average educational attainment than their compatriots seeking asylum in countries neighboring their country of origin (Guichard, 2020; Spörlein et al., 2020; Welker, 2022). Yet, once more the authors discuss but do not test that the more pronounced selection may be attributable not only to higher returns on education in Germany, but also to higher costs, risks and barriers associated with the long journey to Germany (Guichard, 2020; Spörlein et al., 2020; Welker, 2022).

We seek to add to this strain of literature by adding another dimension to the comparison of selection outcomes: In addition to studying three key asylum countries of the Syrian diaspora, we also compare selection outcomes over time, studying different arrival cohorts in Lebanon, Turkey, and Germany. This approach allows us to focus on the impact of short-term changes in context factors. Many of the factors that have been proposed as influencing individual migration decisions and thus potentially self-selection outcomes, such as expected return to education, social networks, welfare systems or gender and religious norms are unlikely to change significantly in relative magnitude during our relatively short observation period we study (2013 to 2017). Meanwhile, changes in the border and asylum policy framework governing the migration of Syrians changed substantially over this same time span in response to the unfolding displacement crisis. Studies have shown that such short-term policy changes can have a significant impact on the overall size of refugee arrival cohorts in a country (Hatton, 2017; Bertoli et al., 2022). Given that external constraints tend to affect members of a heterogenous refugee population differently (McAuliffe, 2017), it is plausible that such short-term shifts could also be reflected in the selection of the different arrival cohorts we study. To our knowledge, no study has investigated these external selection mechanisms empirically. By comparing selection outcomes across both country of residence and arrival cohort we address this important gap in the migrant selection literature.

Based on the framework of constrained refugee agency and the existing empirical literature we assume that less accessible escape routes induce more severe selection patterns in terms of physical and financial resources. Specifically, on routes that require higher levels of physical fitness and involve more risks, we expect to observe higher shares of young and male migrants traveling without their families. We further assume that Lebanon was the most accessible destination for Syrian refugees: entry barriers at the border were relatively low during the first 4 years of the Syrian civil war. Also, with Arabic as a common language, Syrians face no language barriers in Lebanon. Among the three destinations under study, all routes to Germany were by far the longest in distance, most expensive, and most risky, as will be discussed in more detail in section Syrian refugee migration: paths into Lebanon, Turkey and Germany.

Based on these assumptions, we thus expect

1) Syrians in Germany to be on average younger, to display a higher socioeconomic background, more likely to be males, and more likely to have arrived without their families than Syrians in Lebanon and Turkey.

With regard to the variation over arrival cohorts, we expect a more pronounced selection in terms of age, gender, socio-economic background and family context at arrival.

2) for arrival cohorts who arrived in either of the countries at times of more restrictive legal and policy frameworks, and

3) for arrival cohorts in Germany (vis-à-vis Lebanon and Turkey) whose routes into Europe were characterized by a higher risk of death.

3 Data and method

3.1 TRANSMIT Turkey and Lebanon surveys

In order to identify correlations between selectivity patterns among the displaced Syrian population and macro-structural changes in border and immigration policy as well as risk levels on migration routes, we firstly employ a descriptive analysis of individual-level demographic data by arrival cohort combined with secondary aggregated data on border crossings and migrant fatality data. Secondly, in a narrative approach, we offer a contextual analysis of the (changing) frameworks governing humanitarian migration to Lebanon, Turkey, and Germany. We focus on elusive factors that are usually overlooked in quantitative approaches due to measurement challenges, namely geographical access, border permeability, immigration regimes and policy enforcement. The strength of a narrative approach lies in its ability to consider qualitative sources (such as government statements and news articles) in an empirical framework when comprehensive quantitative indicators are not available (see Romer and Romer, 2023; for an exemplary overview on the narrative approach applied in macroeconomics). We furthermore provide a descriptive analysis of the changing levels of risk for life and health on major routes into Europe based on fatality data and data on border crossing activities. Finally, we interpret the selective mobility of Syrians in the three countries under study in the context of the (varying) legal and political frameworks as well as changing risk levels. This descriptive approach, which does not establish causality in an econometric sense, enables us to shed light on factors that are often overlooked but can induce substantial changes in selection patterns within short time frames.

For the cohort analysis of Syrians in Lebanon, Turkey, and Germany, we rely on an ongoing longitudinal survey of Syrian nationals in Turkey and Lebanon, collected by the BIM and the IAB in a joint research project on Transnational Migration and Integration (TRANSMIT). The survey targets a stratified sample of Syrian nationals and non-Syrian nationals in both Turkey and Lebanon. For our analysis, we use a subsample of Syrians in the first wave of data collection in Turkey and in the second wave of data collection in Lebanon, carried out simultaneously between September 2020 and February 2021. The computer-assisted face-to-face interviews (CAPI) were carried out in Arabic and cover a large battery of items on the respondents' migration biography, employment and education, living conditions, wellbeing and health, as well as family context and household composition. Wherever possible, the items were designed to match those in the IAB-BAMF-SOEP survey of refugees in Germany. Aiming to achieve nationally representative samples of Syrians in the absence of registry data, the surveys rely on stratified area sampling and random walk techniques. In Lebanon, the sampling frame consists of a list of regions on three levels: the 16 administrative regional units (states), divided into several Primary Sampling Units (PSUs), each again divided into several blocks. On the highest level, all administrative units were selected. From there, multi-stage proportional stratified sampling was applied. From all available PSUs, only those with an assumed Syrian presence as indicated by UNHCR data (including informal settlements) were selected.[1] Within the PSUs, the blocks were selected randomly.

Since Turkey is 75 times larger than Lebanon, the sampling frame in Turkey entails four regional levels: the administrative NUTS1 regions, the cities therein, districts within cities and neighborhoods within districts. All NUTS1 regions as well as the two biggest cities within each region are selected, because the relative regional presence of Syrians is highest in the largest cities in all regions [Directory General of Migration Management (DGMM), 2019]. Districts and neighborhoods are chosen by random draw. The number of interviews per federal state is determined by the regional share of Syrians to the overall Syrian population size in Turkey as recorded by Directory General of Migration Management (DGMM) (2019). The number of interviews per city is assigned according to the city's estimated Syrian population size. In the selected units, interviewers in both country surveys perform random walks to recruit respondents. While the representativity of samples with random walk design is discussed ambiguously in the literature (e.g., Himelein et al., 2016), random route procedures combined with area sampling still represent the second-best procedure when sampling hard-to-reach populations in the absence of accessible population registries (see e.g., Gallup, 2022; Pew Research Center, 2022; Alrababa'h et al., 2023).

To account for the higher non-response of females, we apply sampling weights. The TRANSMIT surveys collected basic demographics of all household members, which are less likely to be skewed than respondent data. From the household data, we estimate the overall gender share of Syrians in Lebanon and Turkey, respectively, and apply them as probability weights to the individual survey interviews. In sum, TRANSMIT survey data of Syrians in Lebanon and Turkey targets representativity for Syrians living in areas for which Syrian residence is known.

3.2 IAB-BAMF-SOEP survey of refugees in Germany

The IAB-BAMF-SOEP survey of refugees is a longitudinal survey of refugees and asylum seekers who have recently migrated to Germany (Brücker et al., 2016). The sample was drawn from the Central Register of Foreigners (AZR) of the Federal Office for Migration and Refugees (BAMF). The target group corresponds to asylum seekers who (i) arrived in Germany between January 1, 2013, and January 31, 2016, and (ii) were registered in the AZR by June 30, 2016. Individuals coming from countries with a high prospect of staying in Germany at the time of sampling (i.e., Afghanistan, Iraq, and Syria), women, and persons aged over 30 were over-sampled. The 2017 survey included a refresher sample to account for asylum seekers who were listed in the AZR by January 1, 2017. Sampling weights provided with the survey data allow to produce statistics that are representative for asylum seekers arriving in Germany between January 1, 2013, and January 1, 2017. We use the survey wave 2019, version 37 of the SOEP dataset that includes the IAB-BAMF-SOEP survey. Given that all our outcome variables are measured at arrival and therefore do not change over time, the specific survey year we use does not have a substantial influence on results of our data analysis by arrival cohort.[2] Respondents were asked a large set of questions related to their lives in Germany, their socio-economic characteristics before migration as well as on their migration biographies. We make use of detailed survey questions on the used migration routes. Applying the definition of Frontex, the survey distinguishes between five main routes, three of which are relevant in the Syrian context: the Eastern Mediterranean sea route, the Eastern Mediterranean land route, and the Central Mediterranean route (see Figure 1).

3.3 Survey data harmonization

All survey data is restricted to arrival cohorts between 2013 and 2017, determined by the maximum time span available in the Germany survey, and to respondents at the age of 15 or older. The absence of registry data in Turkey and Lebanon renders it possible that (a) the surveys cover non-refugees and (b) that area sampling combined with random walk as an alternative sampling strategy did not produce a representative sample. Given the intense conflict

1 Given that the Lebanese government stopped the systematic refugee registration by UNHCR in 2015, data from 2015 is used.

2 Our results hold when using any survey wave between 2017 and 2020. Results are available upon request from the authors. Although the 2020 wave is closer to the data collection time of the TRANSMIT surveys, we prefer using the 2019 wave because the sample size is substantially higher than the sample size of the 2020 wave. The reason is that the severe lockdowns and mobility restrictions in Germany following the outbreak of the COVID-19 pandemic in 2020 seriously impacted data collection activities.

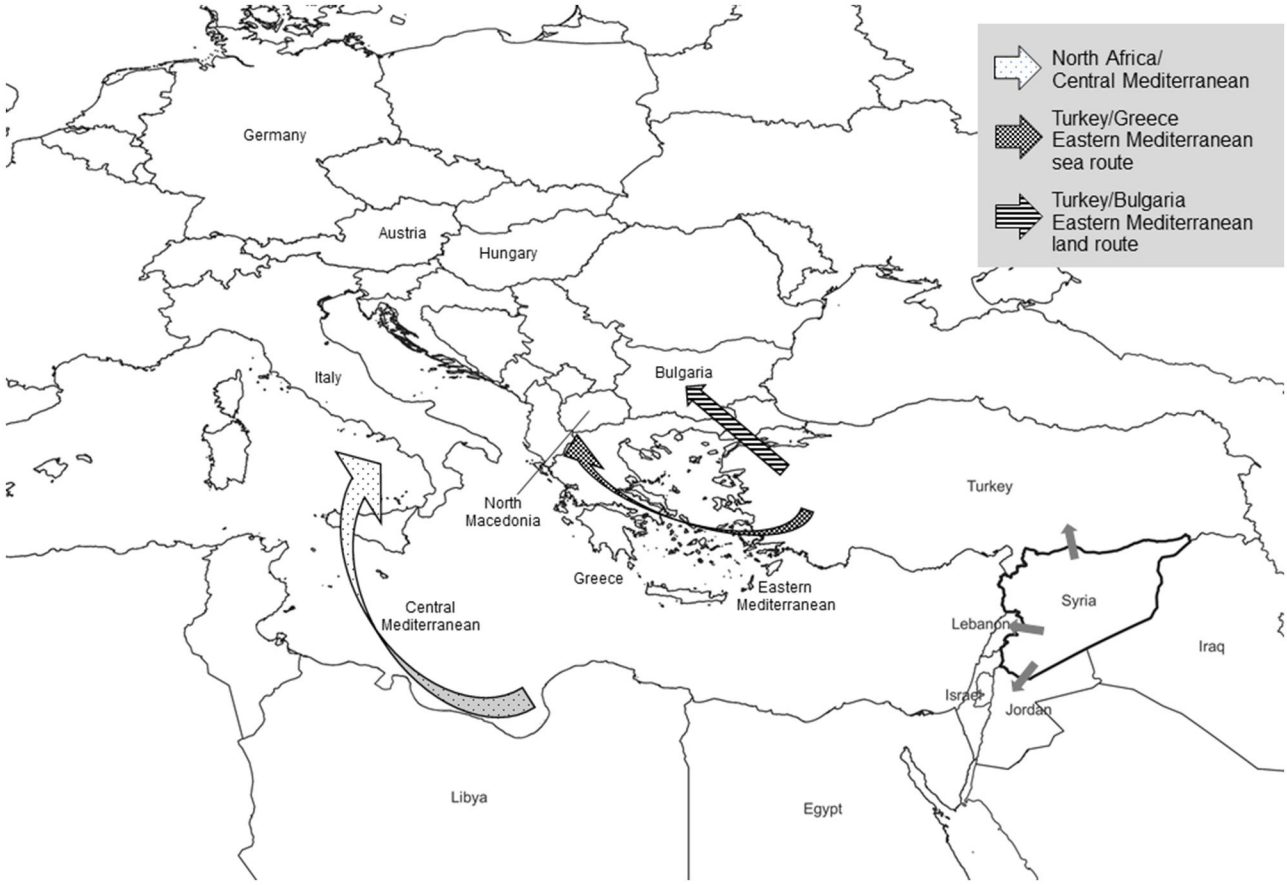

FIGURE 1
Major routes of Syrian migrants into Europe. Sources: OpenStreetMaps, Frontex (2022), own illustration.

in Syria in the period of study we assume the volume of non-refugees in the studied arrival cohorts (2013–2017) to be negligible. Regarding representativity concerns, the chosen sampling strategy is recognized as the second-best procedure to cost-effectively reach the targeted number of observations when the population of interest represents only a small fraction of the society or is hard to reach (Lynn et al., 2018; Watson and Lynn, 2021).

As the TRANSMIT surveys were designed to resemble the IAB-BAMF-SOEP survey of refugees wherever possible, harmonized items allow for comparison of the Syrian populations in the three countries under study. We restrict the analysis to variables that we are able to construct following the same definition in the three countries of destination. Specifically, gender is measured in two categories (male or female) in all surveys, and age is measured at the time of arrival in the destination country. For education, we distinguish between people who completed high school education or more, and people who did not achieve high school education. We furthermore construct a dummy for individuals who indicate to have arrived with family members at the respective destination country. This includes spouses, children, parents, and an open category for other family members.

Despite their strengths, the datasets we use in this study also come with some limitations. First, we only observe Syrian refugees in Lebanon, Turkey, and Germany at the time of the survey. We do not observe asylum seekers who set off to these host countries but did not make it. The data at hand therefore suffers from a potential selection bias we cannot quantify. Moreover, the survey data does not include information on outward migration. The fieldwork of the TRANSMIT surveys was conducted in 2020 and 2021, 9 years after the conflict in Syria erupted. We thus do not capture those individuals who passed Lebanon and Turkey and migrated onwards, for example to continue to Europe. This introduces survival bias in the sample and limits the generalizability of our results to those refugee populations that remained in the host countries. We are therefore unable to assess any results related to short term mobility or circular migration patterns.

Second, as described above, the sampling strategy varies between surveys. This could reduce the comparability of aggregate figures obtained for the different host countries. In particular, the lack of registry data to construct sampling weights and account for varying participation probabilities in the surveys in Lebanon and Turkey could generate some uncertainty around the estimated sociodemographic characteristics. We are, however, confident that our approach of comparing cohorts over time is less prone to these weaknesses, as we

expect systematic differences due to sampling to stay constant over cohorts.

3.4 Border crossings and fatalities on migration routes

To measure border crossing activity, we use monthly cases of illegal border crossings into member states of the EU and Schengen associated countries collected by Frontex (2022). This dataset provides monthly aggregates classified for several migration routes, including the Central Mediterranean route, the Eastern Mediterranean sea route, and the Eastern Mediterranean land route. The numbers represent counts of illegal border crossings rather than the number of unique individuals who actually crossed the border in a given location. The same person may thus have crossed the border several times, which implies that we cannot establish the exact number of individuals who have illegally entered Europe at the various crossing points. As we intend to capture border crossing activities, this is not of concern in our analysis.

To assess the risks involved with specific routes, we rely on data from the Missing Migrants Project collected and published by the International Organization for Migration (IOM) since 2014 [International Organization of Migration (IOM), 2022]. The project tracks deaths of migrants, including refugees and asylum-seekers, who have died or gone missing in the process of migration toward an international destination. Information is gathered from official records, including coast guards and medical examiners, media reports, NGOs, social media, and interviews with migrants and survivors. In the Mediterranean region, data are relayed from relevant national authorities to IOM field missions. Data are also obtained by IOM and other organizations that receive survivors at landing points in Italy and Greece. Moreover, the Missing Migrants Project uses social and traditional media reports on migrant deaths which are then verified by local IOM staff whenever possible. All new entries are checked against existing records to prevent double-counting. IOM and UNHCR also regularly coordinate to validate data on missing migrants in the Mediterranean. Note that numbers are not provided separately for the Eastern Mediterranean sea and land route. Since many deaths during migration go unrecorded, the data represent minimum estimates.

4 Syrian refugee migration: paths into Lebanon, Turkey, and Germany

According to the latest figures, more than 6.8 million Syrians have been registered by the United Nations High Commissioner for Refugees (UNHCR) as refugees as of 2021, following the outbreak of the Syrian conflict in 2011 (UNHCR, 2022c). The vast majority of the displaced population found refuge in neighboring countries, mostly in Lebanon, Jordan and Turkey. As the Syrian conflict escalated and capacities for refuge within the region became increasingly strained, a growing number of displaced Syrians sought asylum in Europe, contributing to Germany's largest influx of refugees since World War II in 2015 and 2016 (Brücker et al., 2020).

4.1 Lebanon: location of first refuge

Located at Syria's Western border and at 30 kilometers distance to Damascus, Lebanon was among the first countries to receive significant numbers of Syrian refugees (see Figure 2). In 2022, the UNHCR counted over 800.000 officially registered refugees in Lebanon (UNHCR, 2022b). The real figure is likely much higher, rendering the small Mediterranean country the state with the highest refugee-to-population ratio in the world. Lebanon is no signatory state to the 1951 Refugee Convention and until today does not have an asylum law in place, such that Syrian entry to Lebanon is governed by the domestic regulations on the entry of foreigners. Until 2014, Syrian entry was largely unrestricted: based on the 1993 Lebanese-Syrian free movement agreement, Syrians with valid ID documents were granted legal residency for 6 months upon entry which could be renewed every 6 months without financial cost (Janmyr, 2016). Overall, Lebanon and Syria share a "long porous border history" (Carpi and Senoguz, 2018) including a common colonial past, the Syrian occupation of Lebanon until 2005, as well as a long history of labor migration and cross-border ties of families and businesses (Chatty et al., 2013; Krafft et al., 2022).

Starting in September 2014, a set of restrictions was gradually introduced. The changes had the explicit goal to limit the number of Syrians in Lebanon through restricted entry, new residence renewal regulations, as well as incentives to return (Janmyr, 2016, 2018). Among others, the largely unrestricted entry for Syrians was abolished and replaced with visa restrictions requiring different sets of documents and, in some cases, the proof of financial means or property [Norwegian Refugee Council and International Rescue Committee (NRC/IRC), 2015; Janmyr, 2016]. The visa category to seek protection from displacement was introduced but restricted to individuals who were accepted to international resettlement schemes as well as to unaccompanied minors and persons with medical needs, conditional on these persons having a relative already residing in Lebanon [Norwegian Refugee Council and International Rescue Committee (NRC/IRC), 2015]. The legal reforms furthermore introduced a set of new requirements for the issuance and renewal of residence permits. Syrians now require either registration with the UNHCR (which comes with an employment ban) or a sponsorship commitment by a Lebanese citizen, employer or institution, and they now need to present a housing commitment. The new framework also restricts circular migration between Lebanon and Syria, a common scheme before 2015 (Janmyr, 2016). To obtain a work permit, a Lebanese sponsor is now required (Janmyr and Stevens, 2020). In sum, the 2014/2015 reforms substantially raised the requirements and associated costs for entering Lebanon as well as for staying in the country.

At the same time, the ability and will of the Lebanese government to enforce the policy and border measures has been limited. Sanyal (2018) describes the Lebanese migration policy enforcement as *ad hoc* and arbitrary, for example regarding the carrying out of border controls, the erection of checkpoints by different public and private actors, or the introduction of mobility restrictions for Syrians in some municipalities. The large-scale involvement of local public and private actors has led to a fragmented and decentralized management of Syrian immigration

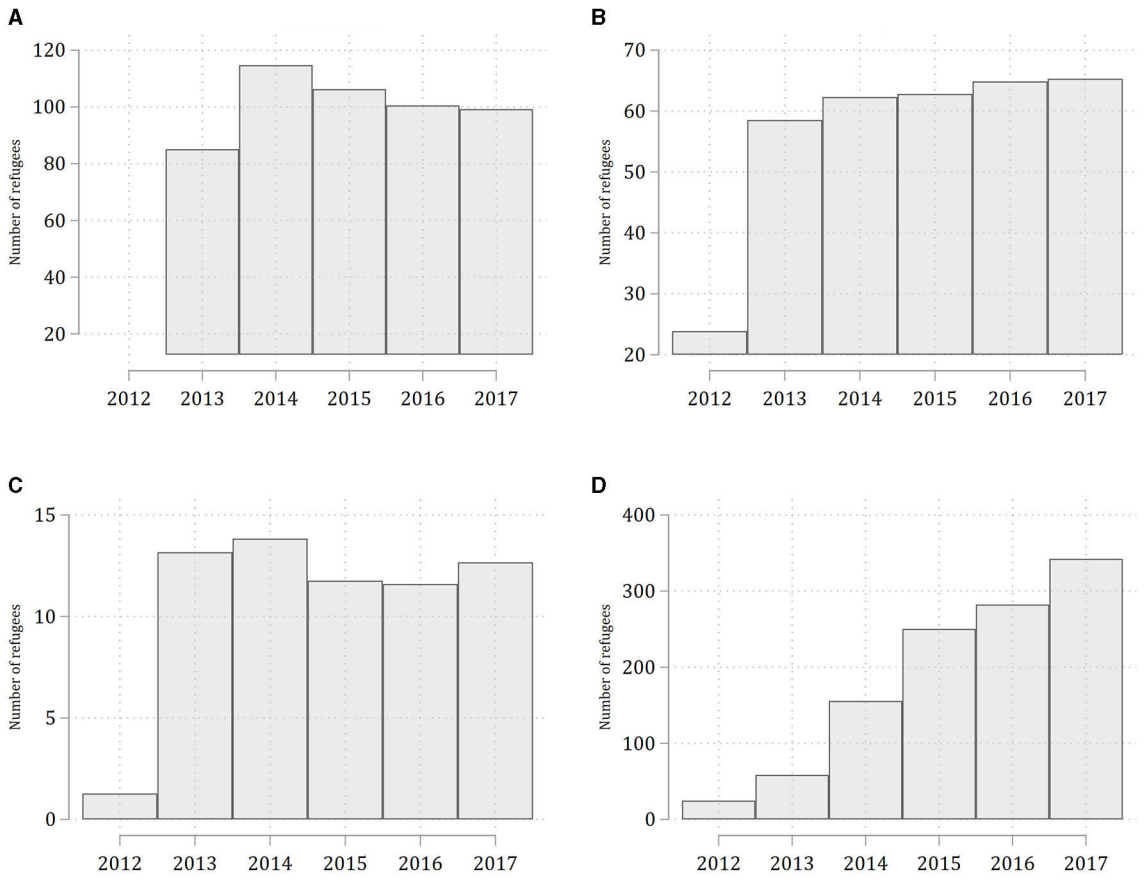

FIGURE 2
Syrian population (in 10,000) in countries neighboring Syria, by year. Source: UNHCR (2022b), own illustration. **(A)** Lebanon. **(B)** Jordan. **(C)** Egypt. **(D)** Turkey.

(Carpi and Senoguz, 2018). This is partly due to the complex sectarian political setup and the political uncertainty the country has been facing for several years, and in parts stems from Lebanon's continued "policy of no-policy" toward refugees (Geha and Talhouk, 2018, p. 651). The arbitrary policy enforcement is particularly burdensome to the more vulnerable and those with little resources (Sanyal, 2018). In line with this argument, from 2014 onwards, we expect stronger selection effects for Syrians migrating to Lebanon: most importantly, we hypothesize that in the context of the novel restrictions, migrant cohorts show on average higher educational attainment, signaling a higher socioeconomic status (cf. hypothesis 2, Section Literature review: selection under constrained agency). Given the fragmented and arbitrary enforcement of the policies, we expect the selection effects to be low in magnitude.

4.2 Turkey as the second major destination

The 2014/15 legal reforms in Lebanon coincided with the rise of the Islamic State in 2014, an escalation of the civil conflict in Syria and an intensification of violence in Iraq, such that the number of individuals seeking humanitarian refuge remained at historically high levels. With Egypt, Jordan, and Lebanon becoming more hesitant to accept Syrian refugees, Turkey increasingly became a major destination: the number of registered Syrian refugees increased from 500,000 in 2013 to 1,5 million in 2014 and 2,8 million in 2016 (UNHCR, 2022b).

With 3.3 million today, Turkey is currently host to the largest population of displaced Syrians (UNHCR, 2023). The 2009 visa-free travel agreement with Syria was officially upheld until 2016 and was widely lauded as an open-door policy for Syrians fleeing the conflict. As early as 2014, however, partial border closures and denied entrances for Syrians were reported (Amnesty International, 2014). By 2019, despite opposite public claims, the Turkish government had shifted to a closed-door policy, cemented by the construction of an 899-kilometer wall along the Turkish-Syrian border (Gokalp Aras and Sahin Mencutek, 2019).

The legal residency of Syrians in Turkey and their prospects in the country were characterized by legal uncertainty from the start. Although a signatory state to the 1951 Geneva Convention of Refugees, Turkey only recognizes those individuals as refugees who flee from Europe. In 2014, the Turkish government introduced the legal category of Temporary Protected Status (TPS) designed exclusively for displaced Syrians (Yildirim et al., 2019). While TPS grants Syrians access to healthcare, education and other social services (Yildirim et al., 2019), it does not represent a permanent

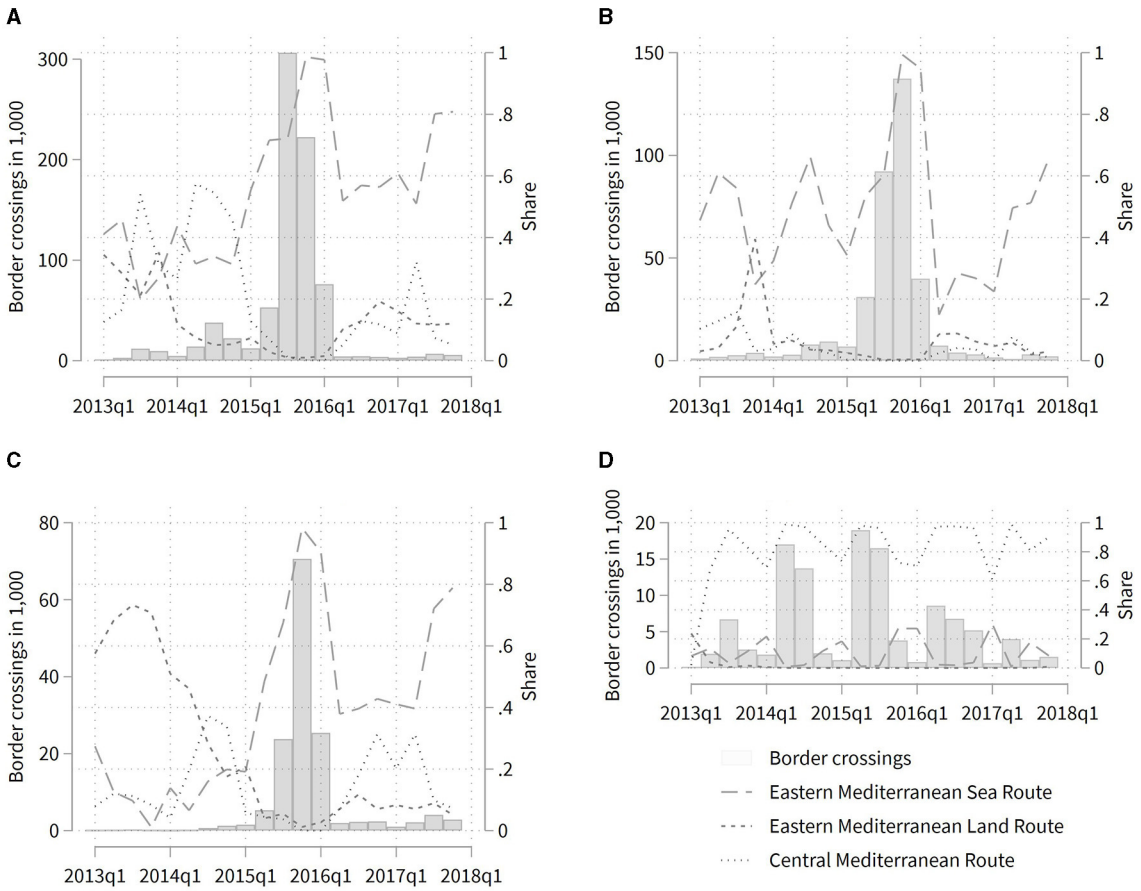

FIGURE 3
Undocumented border crossings by year and routes of Syrians, Afghans, Iraqis and Eritreans. Source: Frontex (2022), own illustration. **(A)** Share of Syrians. **(B)** Share of Afghans. **(C)** Share of Iraquis. **(D)** Share of Eritreans.

residence permit and offers no path into regular citizenship (Kutlu-Tonak, 2016). At the same time, public and political opposition to the presence of Syrians and other refugees increased over time (Erdogan, 2020). A range of studies attribute the onward migration of Syrians toward Europe to the conditions and policies governing their lives in Turkey, including the lack of a long-term perspective and the perceived hostility (e.g., Hudson, 2018; Ilcan et al., 2018).

Several effects are therefore simultaneously at play: Lebanon and Turkey both tightened entry and residency for Syrians at a point in time when the conflict in Syria escalated into a war with several international actors involved. This resulted in increased internal displacement within Syria, but potentially also motivated migration attempts toward Europe. These were demotivated by the EU-Turkey deal aimed at reducing irregular migration from Turkey to Europe (Haferlach and Kurban, 2017). While border enforcement and return measures outlined in the deal decreased incentives to enter Turkey with hopes of onward migration to Europe, the 6 billion Euros in refugee support promised by the EU in the agreement may have rendered Turkey a more attractive destination for vulnerable groups. Our expectation for the net-effect of the EU-Turkey deal on the selectivity of Syrian migration into Turkey is therefore ambivalent.

In sum, due to its geographical location, Turkey finds itself in the complex situation of being a destination country as well as a transit country to Europe while serving as a buffer state to prevent irregular migration to Europe, in a period of skyrocketing displacement from Syria. The newly restricted policy framework presumably led to a stronger migrant selection in terms of their sociodemographic characteristics, but the rising displacement pressure from Syria (including migrants with intentions to migrate onwards) may have counteracted this effect. Overall, migration pressure on Turkey increased but entry conditions tightened. Hence, in line with hypothesis 2, we expect some selection in terms of gender, age, socioeconomic status and family context compared to Syrians in Lebanon, but small in magnitude.

4.3 Risky routes into Germany

Between 2013 and 2017, Syrian refugee migration to Germany surged. The peak of arrivals was reached in 2015 with 327,000 Syrian entries [(Bundesamt für Migration und Flüchtlinge (BAMF), 2016)]. While both Lebanon and Turkey border Syria, migration to Europe is more complex, both in terms of geography and immigration policies. Entering EU countries with valid travel documentation was not a viable option to most refugees and many relied on smuggling services to bypass border controls. The uncertain access to asylum in Western Europe resulted in substantial costs, both financially and in terms of health and

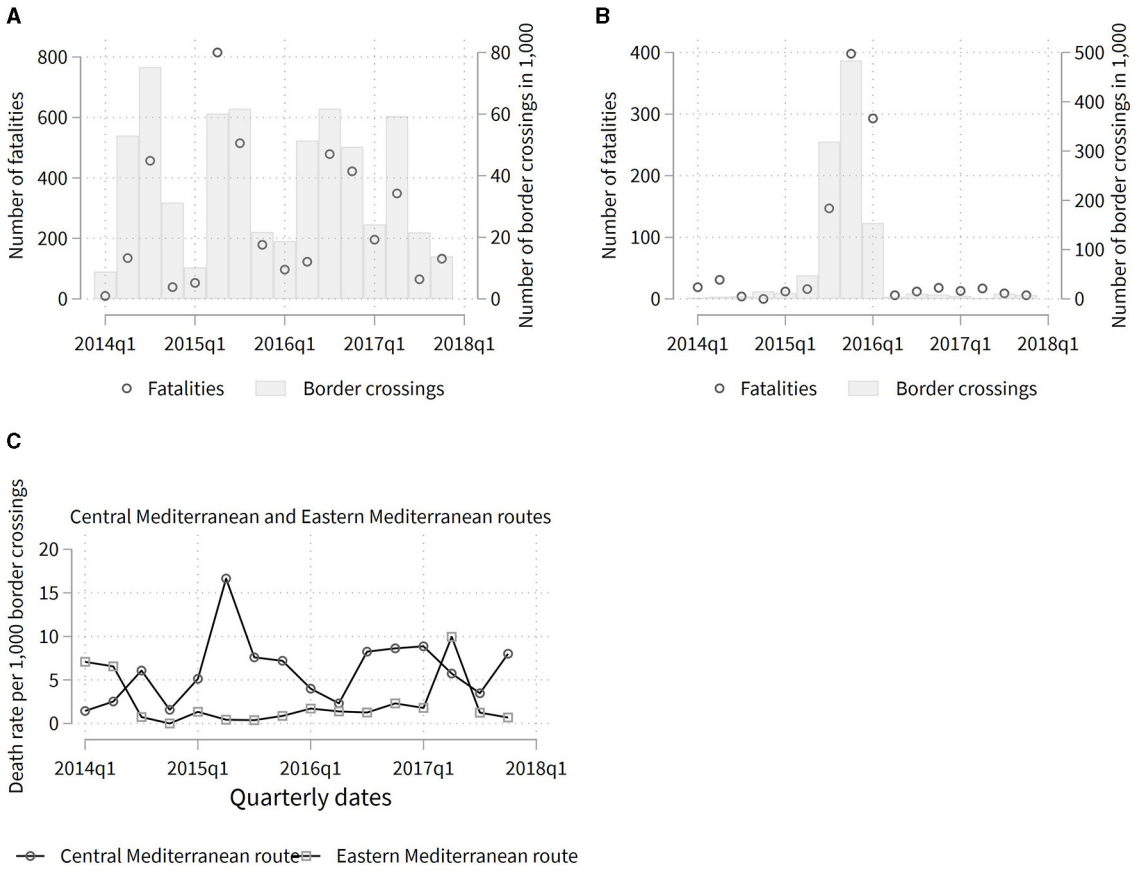

FIGURE 4
Quarterly number of deaths and quarterly death rates on the main routes toward EU countries. Sources: Frontex (2022), International Organization of Migration (IOM) (2022), own illustration. **(A)** Central Mediterranean route. **(B)** Eastern Mediterranean route. **(C)** Quarterly death rates.

TABLE 1 **Death rates per 1,000 border crossings by route and year.**

	Central Mediterranean	Eastern Mediterranean
2014	3.0	3.5
2015	9.1	0.7
2016	5.8	1.7
2017	6.5	2.4
Total	6.2	2.0

Sources: Frontex (2022), International Organization of Migration (IOM) (2022), own illustration.

safety risks. We argue that, overall, costly and risky migration routes led to unequal opportunities to claim asylum for different groups in need of humanitarian protection: the more vulnerable and those with fewer resources at hand were underrepresented. In line with hypothesis 1, we expect that, overall, the dangerous routes into Europe led to an overrepresentation of young men, solo travelers and those with a higher socioeconomic status among Syrian migrants in Germany.

However, health and safety risks as well as accessibility of the major travel routes toward Germany changed over time. From the Middle East, two main routes into Europe were available for refugees: either via North Africa and the Central Mediterranean or via Turkey. Syrians intensively used the Central Mediterranean route until 2014, embarking boats in Libya or Egypt directed to Italy or Greece. When Egypt introduced visa requirements in July 2013, crossing the Mediterranean Sea from Libya became the main migration option.

Toward the end of 2014, the routes via Turkey gained in relevance: from Turkey, borders into the European Union could be crossed either by land to Bulgaria or by crossing the Eastern Mediterranean to the Greek islands near the Turkish coastline (see Figure 1). Both routes then crossed the Western Balkans to reach Germany. In May 2014, the Bulgarian government started erecting a barrier covering more than half of the Bulgarian-Turkish border.[3] In June 2015, North Macedonia as a transit country to Western Europe for migrants arriving from Grece or Bulgaria introduced a paper entitling asylum seekers to legally transit the country. In September 2015, Austrian Chancellor Faymann and German Chancellor Merkel allowed migrants to cross the border

3 The Greek-Turkish border was fenced as early as 2012.

TABLE 2 Age, gender, education and family context at arrival of Syrian migrants in Germany, Lebanon, and Turkey (2013–2017).

	Share with high school education or higher	Mean age at arrival	Female share	Share arriving with family
Germany				
2013	34.0	33.1	42.2	56.2
2014	62.7	29.8	21.3	45.1
2015	46.6	29.5	24.4	58.7
2016	33.8	29.5	42.1	70.8
2017	39.4	35.2	67.1	66.0
Total	43.3	31.4	39.4	59.4
Lebanon				
2013	10.5	26	52.5	89.9
2014	10.6	27.4	44.0	81.8
2015	17.1	26.7	62.8	83.3
2016	17.7	26.7	60.9	81.3
2017	13.3	25.7	51.5	77.3
Total	13.8	26.5	54.4	82.7
Turkey				
2013	34.9	25.7	51.8	92.5
2014	23.1	29.0	53.9	91.8
2015	29.8	26.9	54.6	89.6
2016	25.6	28.0	49.3	92.0
2017	28.2	28.1	43.7	83.9
Total	28.3	27.5	50.7	90.0
Total				
2013	26.5	28.3	48.9	79.5
2014	32.1	28.7	39.7	72.9
2015	31.2	27.7	47.3	77.2
2016	25.7	28.1	50.8	81.4
2017	27.0	29.6	54.1	75.7
Total	28.5	28.5	48.1	77.3

Sources: TRANSMIT survey (2020/2021) and IAB-BAMF-SOEP survey of refugees (SOEP, v37, 2020), own illustration.

from Hungary into Austria and onward to Germany, and buses with migrants began crossing the Austro-Hungarian border.[4]

The sum of these changes substantially reduced the need for smuggler services and the risks and costs of reaching Western Europe via Greece and the Western Balkans, largely redirecting migrants to the Eastern Mediterranean Sea route in 2015 (Zaragoza-Cristiani, 2017). Figure 3 depicts this route shift of Syrian migrants.[5] This coincided with a rapid increase in the total number of illegal border crossings, peaking in the second half of 2015.[6] Importantly, this development also represented a shift toward a much less risky route: throughout the observation period, the Eastern Mediterranean routes were commonly associated with lower risks of death compared to the Central Mediterranean route (Figure 4). In 2015, when migration attempts peaked, one death per 1,000 border crossings was registered on the Eastern Mediterranean route, compared to a ratio of 9 to 1,000 on the Central Mediterranean route (Table 1).

In line with hypotheses 2 and 3 presented in Section Literature review: selection under constrained agency, we expect the 2015 shift toward a less dangerous route as well as the less restrictive

4 For an analysis of the effect of Merkel's announcement on migratory developments toward Germany (see Jasper Tjaden and Heidland, 2021). They could not confirm a measurable effect.

5 Note that this shift is also observable for migrants from Afghanistan and Iraq, but not for migrants from Eritrea (Figure 3).

6 Interestingly, a similar peak is visible for migrants from Iraq and Afghanistan, who also used the Eastern Mediterranean route, but not for Eritreans.

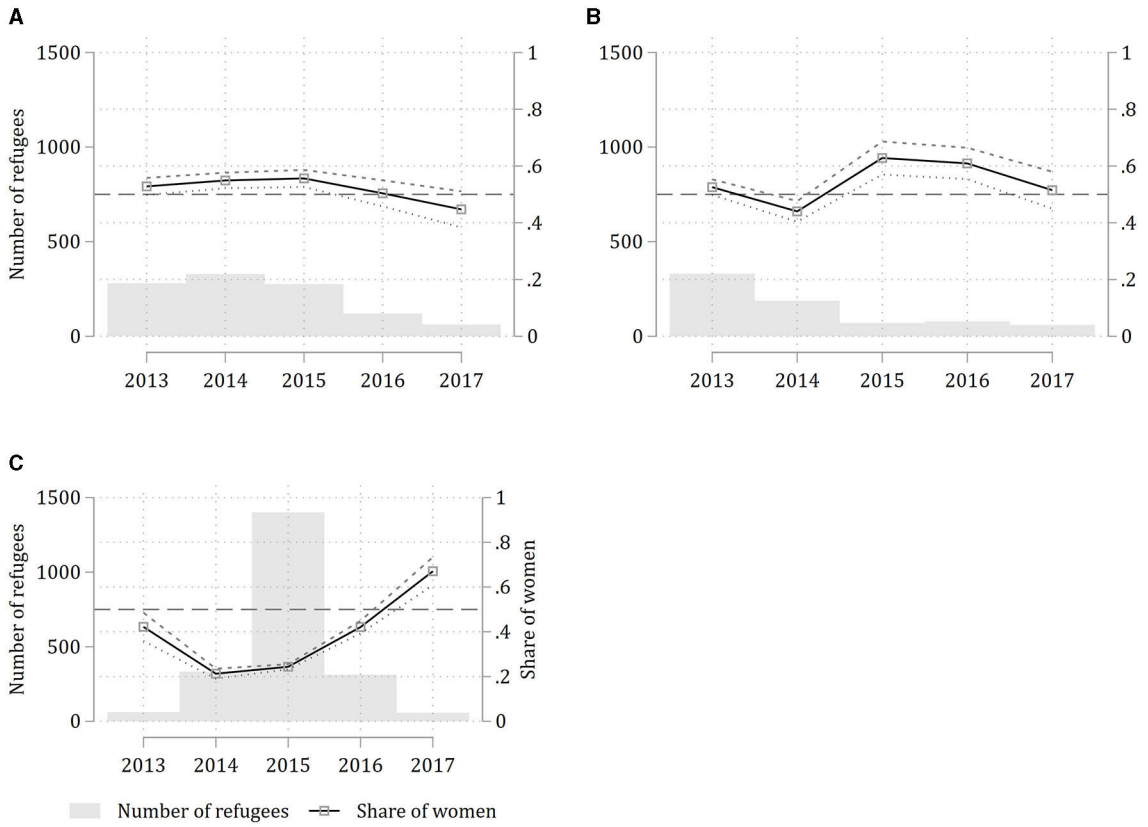

FIGURE 5
Arrival cohorts by gender: Number of refugees and share of female refugees by year of arrival. Sources: TRANSMIT survey (2020/2021) and IAB-BAMF-SOEP survey of refugees SOEP (v37, 2020), own illustration. Dotted and dashed lines indicate the upper and lower bound of the standard error of the mean, respectively. **(A)** Turkey, N = 1068. **(B)** Lebanon, N = 728. **(C)** Germany, N = 2169.

policy and legal frameworks on the Eastern Mediterranean route to be associated with less severe selection patterns for Syrians in Germany, i.e., we expect a higher number of females and family migrants, a higher average age and a lower average socioeconomic background from 2015 onwards as compared to earlier cohorts.

5 Selection patterns of refugees in Lebanon, Turkey, and Germany

We first focus on the gender composition of different arrival cohorts. In Lebanon, where most Syrians arrived in 2012 and 2013 shortly after the onset of the civil war in Syria, women constitute the majority share of the Syrian population (54 women vs. 46%men, see Table 2, also see Figure 5). Neighboring Syria, migration to Lebanon was relatively straightforward, with lower risks, lower financial costs, and relatively little entry restrictions until 2014, such that Lebanon represented a relatively accessible destination (compared to Turkey and especially Germany). Refugee arrivals in Turkey follow slightly different patterns. On average, displaced Syrians arrived in Turkey later than in Lebanon (Figure 2). The largest cohorts arrived in 2013, 2014, and 2015 (see Figures 1, 5). The Syrian population in Turkey is close to gender parity in the observation period (51 percent females), but the time trend is reversed: women constitute the majority of arrivals in until 2015, then the female share decreases.

Refugee migration to Germany took off much later than in Turkey and Lebanon (Figure 5). The overall share of female migrants arriving in Germany amounted to 39% between 2013 and 2017 (Table 2) and thus was considerably smaller than for the arrival cohorts in Lebanon and Turkey. This likely reflects the fact that migration routes to Germany were much costlier and associated with higher risks. The yearly figures show, however, a substantial increase in the female share of Syrians reaching Germany, from <25 % in 2014 and 2015 to 42 and 67 per cent in 2016 and 2017, respectively (Table 2).[7] This period is characterized by a major shift toward a less risky migratory route leading to Germany as well as eased travel conditions on the Eastern Mediterranean routes (see Section Syrian refugee migration: paths into Lebanon, Turkey, and Germany). It can be assumed that

7 By design, the IAB-BAMF-SOEP survey data includes mostly refugees who arrived between 2014 and 2016. To confirm the gender composition of refugees in Germany over a longer period of time, we resort to the corresponding administrative data from the German federal statistical office (Destatis, 2021). Figure A1 in the Appendix shows a pronounced drop in the female share for the 2015 arrival cohort and a drastic increase to 45 and 50% in 2016 and 2017, respectively, confirming our main findings.

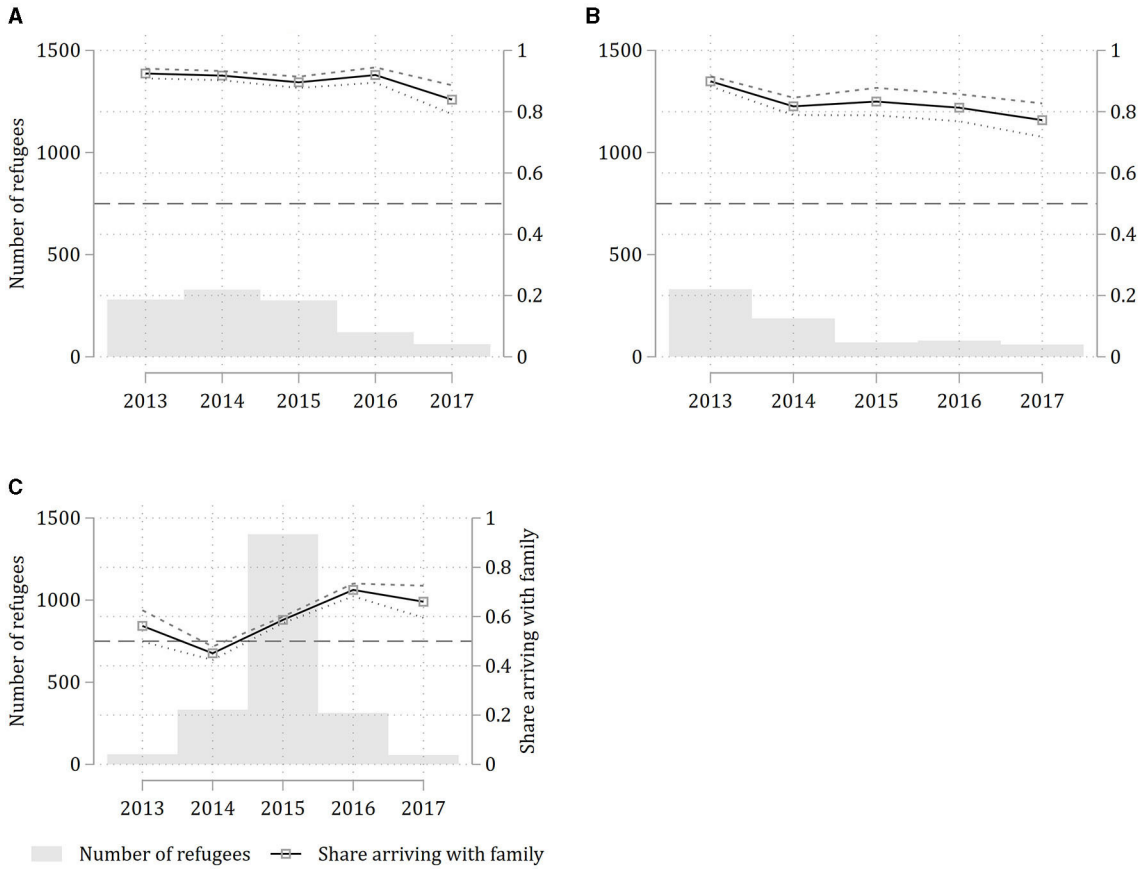

FIGURE 6
Arrival cohorts by family context: Number of refugees and share of refugees who arrived with family members, by year of arrival. Sources: TRANSMIT survey (2020/2021) and IAB-BAMF-SOEP survey of refugees SOEP (v37, 2020), own illustration. Dotted and dashed lines indicate the upper and lower bound of the standard error of the mean, respectively. **(A)** Turkey, N = 1068. **(B)** Lebanon, N = 728. **(C)** Germany, N = 2169.

the overall less risky and less costly travel conditions from 2015 onwards could have encouraged more women to undertake the journey to seek protection in Germany.

A closer look at the family composition of arrival cohorts supports this interpretation. Figure 6 shows the share of refugees arriving with their family members by destination and year. Consistent with lower barriers to entry, the share of refugees arriving with their family members is higher in Turkey and in Lebanon compared to Germany. The share in Lebanon and Turkey on average equals 83 and 90%, respectively, and is relatively stable over time (Table 2). In contrast, the share of refugees arriving with their family members in Germany was considerably lower, ranging at 45% in the 2014 cohort. This coincides with the timing when the riskier and more demanding Central Mediterranean route was the main corridor of access. In 2015, when the less dangerous Eastern Mediterranean route established, the share of refugees arriving with family in Germany increased to 59% and reached 71% in 2016 (Table 2).

Figure 7 compares the mean ages of different migration cohorts across the three destination countries under study. On average, Syrians in Lebanon and Turkey are slightly younger than in Germany (with mean ages of 27, 28 and 31 years, respectively), with little variation over time (Table 2). We thus find moderate selection patterns by age. Considering age percentiles 25, 50, and 75 instead of mean values, which are more sensitive to outliers, Figure A2 confirms this observation. Overall, the distribution in terms of age at arrival seems to be similar across destination countries. This figure also confirms the limited variation in the distribution over time.

Concerning socioeconomic background, Figure 8 shows the share of Syrian refugees having completed high school or having entered higher education, which we employ as an indicator of socioeconomic background. Syrians in Lebanon have the lowest high school completion rate with 14 percent, followed by Turkey with 28 percent (see Table 2). In Germany, 43 percent of all Syrian refugees in the observation period hold a high school degree or higher. In line with hypothesis 1, Syrians in Germany thus show the highest socioeconomic background on average, followed by Turkey. The share of Syrians in Lebanon and Turkey with a higher socioeconomic background seems to slightly increase for the cohorts arriving after 2014 when immigration conditions became less favorable in both countries, corroborating hypothesis 2. The opposite is the case for Germany: the educational level is highest among the 2014 cohort when Syrian migrants still used the risky Central Mediterranean route. Educational attainment drops for later cohorts, possibly reflecting eased immigration conditions,

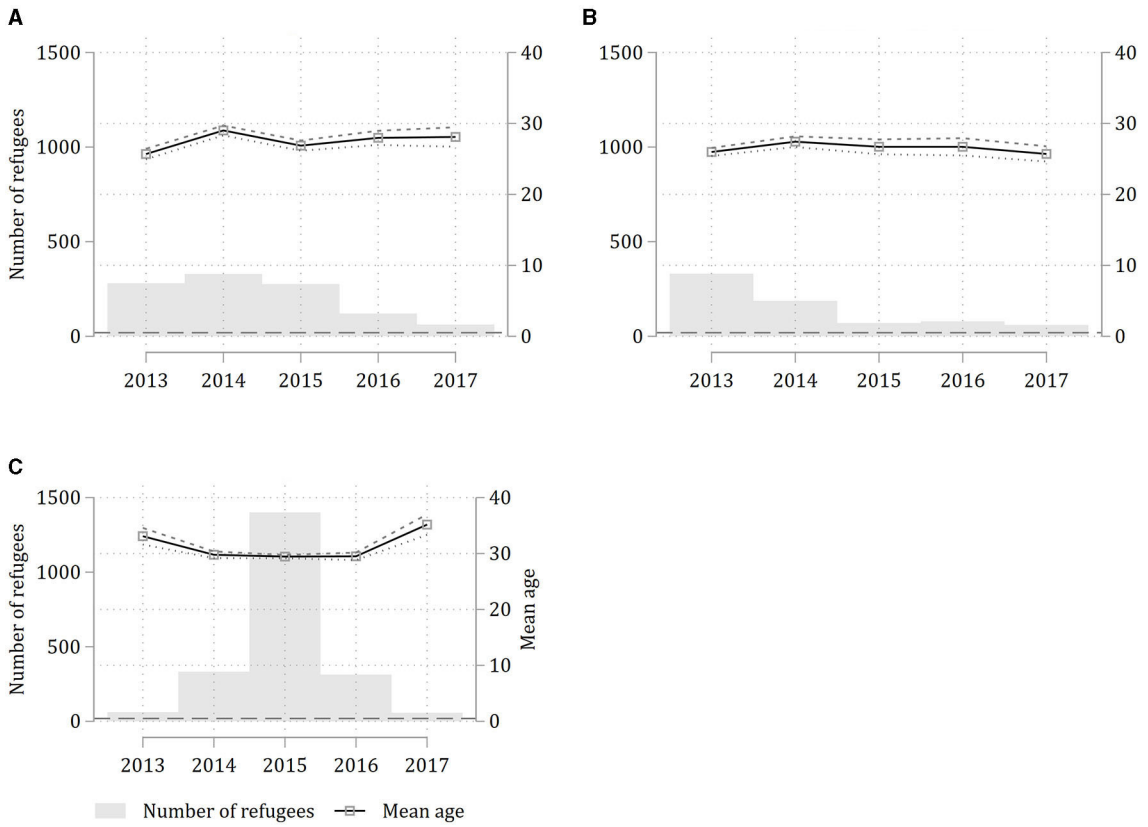

FIGURE 7
Mean age of refugees in Turkey, Lebanon, and Germany by year of arrival. Sources: TRANSMIT survey (2020/2021) and IAB-BAMF-SOEP survey of refugees SOEP (v37, 2020), own illustration. Dotted and dashed lines indicate the upper and lower bound of the standard error of the mean, respectively. **(A)** Turkey, N = 1068. **(B)** Lebanon, N = 728. **(C)** Germany, N = 2169.

including enhanced access to information, and lower risks of death on the routes toward Western Europe. This finding is in line with hypotheses 2 and 3. Note that this cannot be attributed to changes in the gender composition: the educational levels of males only, as shown in Figure A3 in the Appendix, confirm similar patterns to the overall samples. It should be noted that the lower average educational attainment of Syrians arriving in Lebanon could also reflect the geographic variation of educational attainment within Syria prior to the conflict, as the Syrian population in areas closer to the Lebanese border historically displayed lower education levels (Krafft et al., 2022).

6 Discussion and outlook

Global asylum policy, as outlined in the Global Compact on Refugees, formally aims to offer protection to the most vulnerable populations and the victims of conflict and violence. With the resurgence of armed conflicts and violence against civilians as well as the eruption of environmental disasters the question of access to security is becoming increasingly urgent. In general, most countries subscribe to the goals of the 1951 Refugee convention and the Global Compact on Refugees. However, safe territories are often only accessible via risky and costly routes, and the lack of formal options to seek refuge from abroad introduces the risks and barriers associated with irregular migration.

In this study, we show that refugee migration is a selective process and the composition of refugee cohorts is not independent of the individual resource endowment. We compare socio-demographic characteristics of different arrival-cohorts of Syrian refugees living in Lebanon, Turkey, and Germany. In combination with contextual information on changing border policies, asylum policies, and route characteristics, we outline the varying socio-demographic characteristics of refugee cohorts across destinations and over time within the framework of theories on migrant selection. We find that riskier routes and higher entry barriers are associated with a lower share of female and family migrants, a higher mean age and a higher socio-economic background. Consistent with the outlined theoretical considerations and existing empirical literature, selection patterns were strongest among the Syrian refugee population in Germany. Our narrative approach suggests that less accessible and more dangerous routes imply more severe selection outcomes in terms of migrants' socio-demographic make-up. This holds for cohort differences both between destination countries and over time. The findings from our analysis can be integrated within a theoretical framework of constraint choice predicting that higher external barriers increase migration costs and lead to a stronger refugee selection.

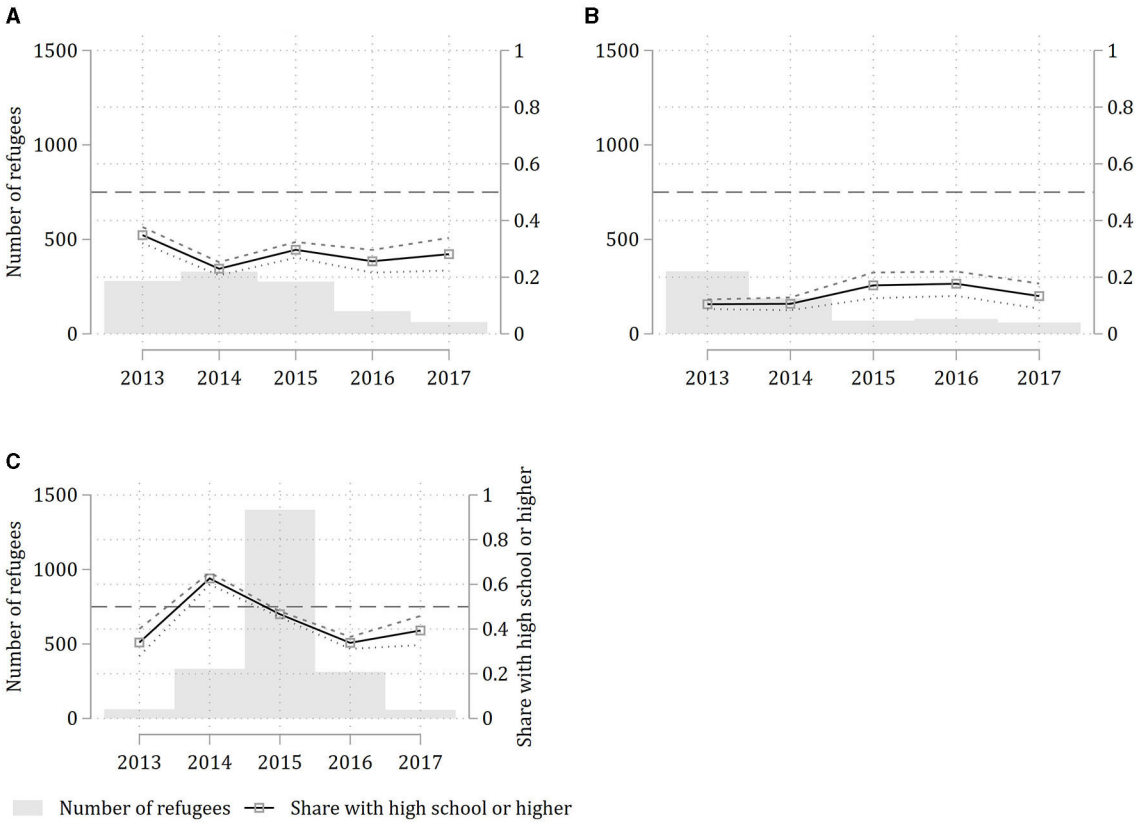

FIGURE 8
Share of refugees in Turkey, Lebanon, and Germany with high school degree or higher. Sources: TRANSMIT survey (2020/2021) and IAB-BAMF-SOEP survey of refugees SOEP (v37, 2020), own illustration. Dotted and dashed lines indicate the upper and lower bound of the standard error of the mean, respectively. **(A)** Turkey, N = 1068. **(B)** Lebanon, N = 728. **(C)** Germany, N = 2169.

We conclude that, firstly, the theoretical frameworks on migrant selection which were designed to explain voluntary migrant selection patterns are also helpful in explaining sorting in forced migration. Our empirical analysis shows, however, that external barriers are particularly crucial in determining forced migration patterns and that the observed selection outcomes are thus unlikely to be a result of utility-maximizing self-selection alone. We thus secondly conclude that the literature on forced migrant selection would strongly benefit from exploring and establishing selectively applied external constraints as a major potential mechanism in forced migrant selection. This refers in particular (but is not limited to) to the (varying) legal and geographical accessibility of countries. Thirdly, a growing body of research shows that both individual and structural characteristics including institutional regulations determine the integration prospects of refugees (Kosyakova and Kogan, 2022). By shaping the characteristics of migration cohorts, external barriers to migration could therefore lay the foundations of medium and long-term integration prospects of refugees in host countries. However, the exact mechanisms through which selection patterns influence the integration of refugees are not yet sufficiently understood. Importantly, the consequences of external barriers on integration prospects depend on how they shape selection patterns both on observable and on unobservable characteristics. Theoretical models applicable to voluntary migration have shown that migration conditions such as uncertainty about one's prospects or selective policies induce significant self-selection among migrants on unobservable criteria, well beyond the selection on observable criteria (Bertoli, 2010; Bertoli et al., 2016). To what extent such findings are applicable to forced migration remains a promising avenue of future research that can build on the evidence on observable characteristics we present in this study.

The results from our analysis also bear significant implications for policy. Given the cohort differences we found, access to peace and security is not equally distributed. Rather, only a selected set of people in vulnerable situations equipped with the necessary resources are capable of reaching safe places. Our results thus, firstly, highlight the need for improved possibilities to claim asylum in a given country without having to enter it illegally, e.g., through offering valid travel documents to this country tied to the purpose to claim asylum, in order to meet the objective of a needs-based asylum policy. Our results indicate that the ability to embark on risky routes without formal visa and to fund expensive travel arrangements substantially contribute to shaping the composition of cohorts in different countries. As a consequence, the probability of obtaining asylum in Western European countries is not need-based but rather shaped by the ability to overcome long distances and the obstacles involved with irregular migration.

The study results, secondly, call for a coordinated asylum policy between host countries at the global level. Since the countries neighboring conflict areas often represent the first points of refuge due to short distances and more permeable borders, they bear the main burden of accommodating refugees. Given limited resources and greater displacement pressure in these countries, the distribution of resources available for protection and integration of refugees is currently not optimal: comparatively little resources are devoted to vulnerable population groups who are unable to escape over long distances to wealthier countries.

Thirdly, improving family reunification options for refugees who made it to a safe country could be a possible avenue to mitigate the selection effects of restricted access to escape routes and to prevent the death of irregular migrants en route. Expanded family reunification procedures would particularly improve access to security to spouses and children whose family members reached a safe country. In Germany, family reunification for accepted asylum seekers involves lengthy procedures and high requirements. As a consequence, spouses (mostly women), elderly, and disabled persons in protracted situations may remain in danger longer than necessary.

Data availability statement

The data analyzed in this study is subject to the following licenses/restrictions: This study uses the factually anonymous data of wave 2019 of the IAB-BAMF-SOEP Survey of Refugees version 37. Access to this data can be requested at: SOEP Research Data Center: https://www.diw.de/en/diw_01.c.601584.en/data_access.html. The study furthermore uses wave 2 of the TRANSMIT survey in Lebanon and wave 1 of the TRANSMIT survey in Turkey. For data protection reasons in this ongoing longitudinal data collection, these data are currently not public but will be available once the data collection is finalized and the data fully anonymized in 2025. Requests to access these datasets should be directed to LG, lidwina.gundacker@iab.de. Border crossings data from Frontex are available at: http://frontex.europa.eu/we-know/migratory-map/. Data from the missing migrants project on fatalities are available at: http://missingmigrants.iom.int.

Ethics statement

Ethics approval for the TRANSMIT surveys was not required by the funders nor by the hosting institution. However, for the follow-up data collections in the longitudinal study this data is drawn from in 2022, ethics approval was sought voluntarily. Operating with the same procedure, similar questionnaires and equivalent data protection and consent measures, the research was approved by the Ethics Commission of Faculty of Humanities and Social Sciences at Humboldt Universität zu Berlin (HU-KSBF-EK_2022_0023). Informed consent for participation in this study was provided by particpants or their legal guardian/next of kin.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fhumd.2023.1171885/full#supplementary-material

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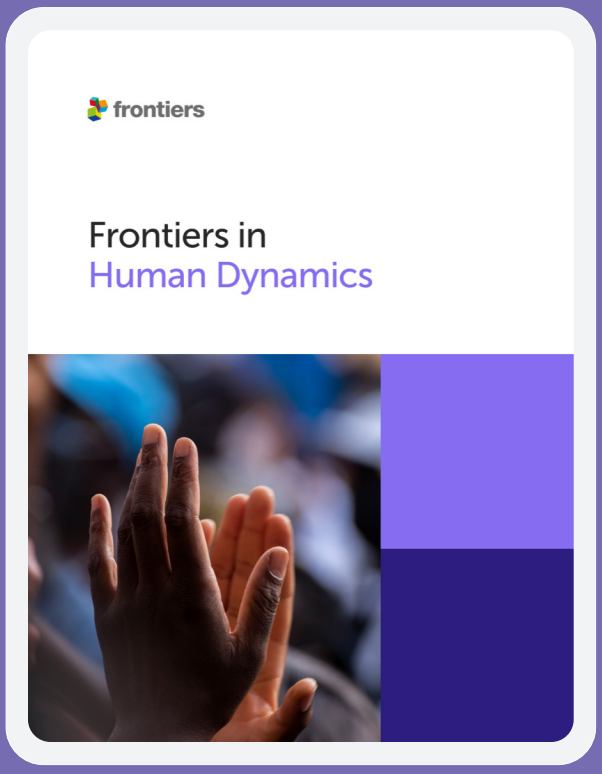

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