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Occupational trajectories among refugees in Austria: The role of co-ethnic and austrian social networks in job search

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Occupational Trajectories Among Refugees in Austria:

The Role of Co-ethnic and Austrian Social Networks in Job Search

Sandra M. Leitner



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Abstract

This paper analyses occupational trajectories of refugees from their last job in the home country to their first and current jobs in Austria and the role of co-ethnic and Austrian social networks in job search, using data from a large-scale survey of recognised refugees from Syria, Afghanistan, Iraq and Iran who have predominantly come to Austria since 2010, thereby covering the strong refugee wave of 2015-2016. The results corroborate a U-shaped pattern, with a sharp initial occupational loss followed by a rather moderate occupational recovery. Although native social networks play no role for occupational changes, co-ethnic social networks – particularly when used as a stand-alone job search strategy – prove detrimental along the entire trajectory. However, co-ethnic social networks are beneficial if used in combination with the Austrian labour market service or NGOs. Some refugees prove particularly vulnerable, such as older refugees or highly educated refugees who undergo more pronounced initial occupational downgrading, with subsequent occupational upgrading either limited or absent.

Keywords: Refugees, labour market integration, occupational trajectories, social capital

JEL classification: J15, J24, J62

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1. Introduction

Immigrants, and in particular refugees, have great difficulty in finding and sustaining employment that is commensurate with their skills and experience. Initially, they often end up unemployed or underemployed (Dustmann and Fabbri, 2005; Amuendo-Dorantes and de la Rica, 2007; Kogan, 2006), or in occupations for which they are overqualified (Lindley and Lenton, 2006; Fernández and Ortega, 2008; Sanromá et al., 2008; Visintin et al., 2015). This leaves their human capital underutilised ('brain waste') and detrimentally affects their wages (Chiswick, 1978; Borjas, 1985 and 1995; Barth et al., 2004; Constant and Massey, 2003 and 2005). However, as more time is spent in the destination country, their prospects of ascending the occupational ladder seem to improve.

Conceptually, this process of occupational mobility is commonly explained by the assimilation hypothesis (Chiswick et al., 2005) which suggests that immigrants' occupational trajectory follows a U-shaped pattern, characterised by a decrease in occupational status from the last job in the country of origin to the first job in the destination country and an increase in occupational status as time is spent in the destination country. The initial drop in occupational status is the result of the limited transferability of immigrants' human capital acquired prior to migration across countries (Chiswick, 1978; Chiswick and Miller, 2009). The lower the transferability of skills, the more pronounced the initial loss in occupational status. The subsequent occupational improvement occurs as time is spent in the host country, as immigrants improve their human capital over time (Chiswick et al., 2005).

The limited empirical evidence tends to support the assimilation hypothesis and the associated U-shaped pattern of occupational mobility for several advanced immigration countries, such as Australia (Chiswick et al., 2005), Canada (Green, 1999), the US (Akresh, 2008), and, in the European context, Germany (Bauer and Zimmerman, 1999), the Netherlands (Zorlu, 2013) and Sweden (Rooth and Ekberg, 2006). However, it finds little empirical support in highly regulated and segmented labour markets, such as Spain, Italy or France, where immigrants tend to concentrate in the secondary (low-pay, unstable and unskilled) segment of the labour market and therefore undergo high initial occupational downgrading but very limited subsequent recovery (Fernández-Macías et al., 2015; Simón et al., 2014; Fellini and Guetto, 2018). This L-shaped pattern is in line with segmented assimilation.

This literature also shows that occupational trajectories differ according to immigrants' personal characteristics, with a more pronounced U shape for those with higher levels of education that are more difficult to transfer than basic education but then allow for faster subsequent human capital accumulation and occupational upgrading (Bauer and Zimmerman, 1999; Chiswick et al., 2005; Akresh, 2008); for women, because of occupational segregation (Crespo et al., 2014); for older immigrants who find it more difficult to adapt to a new environment (Fellini and Guetto, 2018; Fellini et al., 2018); for immigrants who are culturally and linguistically very different from the destination country (Zorlu, 2013; Simón et al., 2014; Fernández-Macías et al., 2015) and lack skills in the local language (Chiswick et al., 2005; Akresh, 2008; Fellini and Guetto, 2018).

However, in this context, little is known about refugees who are forced to leave their home countries (and who may therefore prioritise different criteria than economic migrants), or the transferability of their human capital, including language and job skills. This may lead to worse labour market outcomes (Jackson and Bauder, 2014; Dustmann et al., 2017; Mata and Pendakur, 2017; Kanas and Steinmetz, 2021), including more pronounced initial occupational downgrading (Chiswick et al., 2005; Akresh, 2008). The subsequent occupational recovery is strongly incentive-driven as refugees may have a strong incentive to invest in human capital accumulation at potentially low costs (such as foregone wages) with high returns. Conversely, the high uncertainty surrounding their asylum status and potentially strong wish to return to their home country may deter investments in host-country-specific human capital (Brell et al., 2020). Furthermore, refugees may also be at a disadvantage when it comes to social networks in the form of ties and interactions with friends, family members and acquaintances, as these are an important source of information about job offers (Granovetter, 1995) and enjoy great popularity as the most efficient and least costly job search strategy (Holzer, 1988). At least initially, refugees tend to rely strongly on their co-ethnic social networks, which in many cases are small – because of limited previous immigration from their country of origin – and expand simultaneously with their arrival; this can be detrimental for newcomers if many network members are looking for a job at the same time (Beaman, 2012).

In view of this, the paper contributes to the literature in several ways. First, it analyses occupational trajectories of refugees. Little is known about the occupational trajectories of refugees, who face unique circumstances as they are forced to leave their home countries – often without much preparation – and usually no longer have the possibility of returning there. Unlike labour immigrants, whose decision to migrate may be part of a career process, refugees tend to have less opportunity to choose their destination country, including in terms of the transferability of their human capital (Chiswick, 1999), which not only affects their labour market integration in general (Bevelander, 2011; Bakker et al., 2017; Brell et al., 2020; Fasani et al., 2022), but also their occupational mobility (Chiswick et al., 2005; Akresh, 2008; Zorlu, 2013). In this context, we not only test the validity of the assimilation hypothesis but also shed light on the specific characteristics and factors that determine refugees' occupational mobility. The latter has received little attention so far, except for Rooth and Ekberg (2006), who studied a small and very specific group of refugees – male refugees from Ethiopia/Eritrea, Chile, Iran and Romania in Sweden who had high-status occupations in their home countries – and showed that country of origin, previous occupation, foreign and Swedish higher education, and good Swedish language skills played a role. This allows us to identify which characteristics are conducive or detrimental to occupational mobility and which groups of refugees are left behind and require particular attention and policy support.

Second, it focuses on the role of social networks – co-ethnic social networks as well as social networks with the native population – in job search across the entire occupational trajectory: (i) from the last job in the home country to the first job in Austria; and (ii) from the first to the current job in Austria. Although co-ethnic networks prove important for immigrants to find employment (see, for example, Patacchini and Zenou, 2012), their impact on job quality is less clear and often also negative (Kazemipur, 2006; van Tubergen, 2011; Kalter and Kogan, 2014; Alaverdyan and Zaharieva, 2022) as information about job opportunities from co-ethnic networks is limited and determined by the labour market situation and success of its tenured members (i.e. previous migrants) (Yamauchi and Tanabe, 2006) – often anchored in the secondary segment of the labour market (Simón et al., 2014) – and therefore often unrelated to immigrants' previous experience or training (Ottaviano and Peri, 2006).

Third, it uses detailed information on different job search strategies. In addition to co-ethnic and native social networks, these include the Public Employment Service, NGOs, private agents, social networks on the internet, advertisements in printed media or online, and direct applications – for the first and the current job, and exploits the fact that job search strategies are used not only as stand-alone strategies but often also in combination with other strategies – in our sample of refugees particularly as strategy pairs – which then allows us to identify more complex patterns and draw a more nuanced picture of what differentiates a beneficial from a detrimental strategy or strategy pair.

Finally, it exploits a unique dataset of refugees and beneficiaries of subsidiary protection (refugees, henceforth) from the Middle East who mainly arrived in Austria in 2015-2016 during the escalation of the war in Syria, when Europe experienced one of the largest refugee inflows per capita. Owing to its geographical position between the blocs, Austria was for decades the most important reception country for refugees and emigrants in Europe. It has experienced several refugee waves, mainly from neighbouring countries in Europe, such as Hungary in 1956, Czechoslovakia and Poland in 1968 and 1981, and Yugoslavia during the Balkan crisis of the 1990s. However, the refugee wave in 2015-2016 was one of the largest since WWII. Together with Germany and Sweden, Austria has taken in the largest number of asylum seekers per capita in the EU: in 2015, 17 asylum applications per 1,000 inhabitants were filed in Sweden, 10 per 1,000 in Austria and six per 1,000 in Germany. Furthermore, the refugee wave of 2015-2016 was also the first significant refugee inflow from outside Europe – Afghans, Syrians, Iraqis and Iranians lodged the most applications for asylum, together accounting for 76% of all applications in Austria in 2015 (BMI, 2016). This has important implications for the role of co-ethnic social networks for job search outcomes, as social networks from their countries of origin hardly existed in Austria prior to 2015¹ and became established only with these refugees' arrival in the country. The tenure of network members is highly relevant to labour market outcomes as competition between network members for job information and jobs in the same job market segment – when larger networks are formed by new arrivals – can be detrimental for newcomers if many network members are looking for a job at the same time (Beaman, 2012).

Our results show that occupational trajectories among refugees in Austria follow a U-shaped pattern, with strong occupational downgrading during the first transition and very moderate occupational recovery during the second transition. Although social networks with Austrians play no role, co-ethnic social networks are associated with stronger occupational downgrading during the first transition and no effect during the second transition. However, once we take into account that job search strategies can be used either as a stand-alone strategy or in combination with other strategies, we find that co-ethnic social networks used as a stand-alone strategy have adverse effects in both transitions. Co-ethnic networks prove beneficial only in combination with the Austrian Public Employment Service or NGOs. We also identify particularly vulnerable groups, such as older refugees who have difficulties adjusting to new environments; the highly educated whose human capital is difficult to transfer and is then unable to facilitate a subsequent upgrading; and those who completed some education in Austria, for which they seem to be penalised as they miss out on on-the-job training and learning compared with those who enter the labour market sooner.

¹ According to Statistik Austria, there were 17,535 persons from Afghanistan, 16,313 from Iran, 11,143 from Syria and 6,028 from Iraq in Austria in 2014 out of a total foreign population of almost 1.5 million. The majority lived in the capital city, Vienna. See <https://www.statistik.at/statistiken/bevoelkerung-und-soziales/bevoelkerung/bevoelkerungsstand/bevoelkerung-nach-staatsangehoerigkeit/-geburtsland>

The rest of the paper is structured as follows: Section 2 describes the data and the key variables used in the analysis to capture occupational status and status change over three points in time. Section 3 discusses the methodological approach and the variables used in the empirical analysis, while Section 4 provides results from a descriptive analysis of occupational trajectories. Section 5 presents and discusses results from the empirical analysis, with Sections 5.1 and 5.2 focusing on the first and second transitions, respectively. Section 5.3 examines in more detail the role of combinations of strategies – specifically strategy pairs – relative to stand-alone strategies for both occupational transitions. Finally, Section 6 summarises the results and sets out conclusions.

2. Data

The analysis uses data from a large-scale survey of recognised refugees and persons with subsidiary protection status, mostly from Syria, Afghanistan, Iraq and Iran, between 15 and 64 years of age, and resident in Austria. It is a unique survey dataset designed as a longitudinal dataset with a one-year re-interview interval. Currently, five survey waves are available. Owing to the very small number of persons with any employment record in wave 1, we use waves 2 to 5 for this analysis.

The surveys generally draw on three sources. First, most of the interviewees were reached by a random sampling of asylum seekers and beneficiaries of subsidiary protection who are or were previously registered with the Austrian Public Employment Service (henceforth, AMS), which was based on AMS client data. Interviewees were selected through random sampling, stratified by province and citizenship. The dataset captures the bulk of refugees who have obtained asylum status, as recognised refugees are obliged by law to register with the AMS to access support services, such as initial accommodation support, financial support, and support via labour market policies. Depending on available contact information, participants were invited via text message, email or regular mail, all of which contained a personalised link to the online questionnaire.

Second, further refugees participated in the survey through face-to-face interviews (to also capture persons who would not respond online), self-administered questionnaires or online questionnaires. Face-to-face interviews were conducted by trained interviewers (native speakers) in German, Arabic and Farsi on tablets at various refugee organisations and NGOs in some of the capital cities of Austria's provinces (Bundesländer). The online questionnaires were also available in German, Arabic and Farsi. A helpline was set up and staffed with native speakers to assist interviewees in completing the online questionnaires.

Third, respondents from the previous survey waves who had agreed to be contacted again were invited to participate online. Interviewees received a shopping voucher of EUR 5-10 (its value depended on whether they were participating for the first time or had taken part in previous surveys).

The questionnaire is largely based on the German IAB-SOEP refugee survey 2016 (TNS Infratest Sozialforschung 2016) and covers topics such as employment, social and cultural integration, health, education, and family and living conditions.

The second survey wave was conducted between December 2017 and April 2018 in five Austrian provinces: Vienna, Upper Austria, Styria, Salzburg and Tyrol. The third, fourth and fifth survey waves were conducted in all nine Austrian provinces between March and May 2019, October and December 2020, and January and March 2022, respectively.

These four surveys comprise samples of 1,640, 2,403, 3,650 and 2,839 recognised refugees and beneficiaries of subsidiary protection, respectively. Panellists (those who responded to at least two surveys) numbered only around 100 in the second wave, over 300 in the third wave, over 700 in the fourth wave and over 800 in the fifth wave.

The analysis uses weights. Although the number of refugees and beneficiaries of subsidiary protection resident in Austria is unknown, an estimate was calculated based on asylum decision statistics from Eurostat, and population statistics as well as migration statistics from Statistik Austria. Post-stratification weights for the total sample were calculated and calibrated based on the distribution of the respondents to the estimated full population of refugees according to citizenship, gender and age groups in the survey waves examined.

Among other things, the surveys collect detailed information on the socioeconomic characteristics of the refugees, and also on the characteristics of their jobs and how they were found. A key variable in the analysis is the International Socio-Economic Index (ISEI) (Ganzeboom et al., 1992; Ganzeboom and Treiman, 1996), which we assigned to the three-digit ISCO-08 codes of respondents' occupation in the four waves. It is a continuous measure of occupational status derived from information on educational attainment and income that has several advantages: first, it facilitates quantitative comparison of the occupational status of persons from different countries of origin; second, it avoids subjective and arbitrary choices of what constitute occupational gains or losses; third, it allows the capture of occupational mobility over short time periods; fourth, as a one-dimensional continuous measure, it is more amenable to multivariate analyses than are categorical variables (such as the ISCO classification).

For the analysis, the information of refugee occupational status at three different points in time is used, namely the occupational status of (i) the *last* job in the country of origin, (ii) the *first* job in Austria and (iii) the *current* job in Austria. The information on occupational status regarding these (potentially) three employments is collected within the same survey – the person is asked in each of the survey waves, i.e. at the same point in time – for retrospective information regarding past jobs and then about their current job.

In order not to select for the analyses only recognised refugees and beneficiaries of subsidiary protection who changed occupation in Austria, the characteristics of the first job after migration were reconstructed for some persons in the sample who were employed at the time of the interview. In particular, for those who stated that their current job was also their first (paid) job in Austria, the current job was considered to correspond to their first job and coded accordingly. For those whose current job was different from their first job, both surveys provide the characteristics of both the first and current job and no further recoding was necessary.

In general, the analysis focuses on persons with occupational information for all three points in time.

For our analysis, we focus on respondents from Afghanistan, Syria, Iraq or Iran and further excluded respondents who had arrived in Austria before 2011, were younger than 18 years or did not have formal access to the labour market. The final sample used in our analyses comprises 3,320 respondents, of whom 1,161 have full employment information on the last job in their home country as well as the first and the current job in Austria. As concerns sampling mode, 71% of respondents had been contacted based on the AMS random sample, 9% were interviewed on-site and 20% had participated in one of the previous survey waves. The latter group – i.e. panellists – were included only when they first appeared in a survey wave. Treating them as if they only participated once is reasonable as there is little reason to assume that they were planning on participation in future waves at the time of the interview and therefore pre-self-selected into responding again.

3. Methodological approach

From the information on refugee occupational status at three different points in time, we specified two separate transitions: the first transition – from the last job in the home country to the first job in Austria; and the second transition – from the first to the current job in Austria.

The *first transition* from the last job in the host country to the first job in Austria is modelled as follows:

$$ISEI_i^{first} - ISEI_i^{home} = \alpha_0 + X_i\beta + Y_i\gamma + e_i, \quad (1)$$

where $ISEI_i^{first} - ISEI_i^{home}$ refers to the difference between refugee i 's ISEI score of first job in Austria and his/her last job in the home country and captures the extent of the associated occupational gain (if positive) or loss (if negative).

X_i is a vector of individual time-invariant or pre-arrival characteristics including the log of the *time elapsed between arrival and first job in Austria* (in months), the log of the *age on arrival*, *gender* (i.e. dummy equal to one for females, and zero otherwise), *pre-migration education* (according to the ISCED-11 classification, whether a person has no formal education, low (levels 0-2, reference), medium (levels 3-4) or high education (levels 5-8)), self-assessed *German language proficiency on arrival* (none (reference), low to medium, or good to very good), *country of birth* (i.e. Afghanistan, Syria, Iran or Iraq (reference)), *province of residence* (dummy for one of the nine Austrian provinces, with the two westernmost provinces –Vorarlberg and Tyrol – as reference), and *residential status* that allows access to the labour market (i.e. either granted asylum, subsidiary protection (reference) or another residential status, such as a residence permit on humanitarian grounds or permanent residence EU).

Y_i is a vector of *job search strategies* used to find the *first job*, which is based on the following question: '*How did you find your first job in Austria?*'. The answer options are (i) the AMS, (ii) help through NGOs, clubs, refugee shelter, language school, and (iii) private agents as *institutional actors*; (iv) social network on the internet (e.g. Facebook, Twitter, Xing, LinkedIn), (v) advertisement in the newspaper or on the internet, and (vi) direct/blind applications to potential employers without advertising as different *media*; (vii) family, friends or acquaintances from your country of origin, and (viii) friends or acquaintances from Austria as the *social context*; and (ix) other – as open question – which was recoded to fit one of the other options, if possible. Multiple answers were possible. In this way, we test whether family, friends or acquaintances from their own country of origin (co-ethnic social networks) and friends or acquaintances from Austria (Austrian social networks) contribute – possibly also differentially – to refugees' occupational change during the first transition. Dummies were generated for each of the eight answer options that were equal to one if that particular strategy – either alone or in combination with one or more other strategies – was used to find the first job. Moreover, to make full use of the nature of this multiple response variable, we further take into account that each job search strategy can be used alone as well as in combination with one or more other strategies. Specifically, our data show that 85% of all respondents only used one strategy, 11% used two strategies, 2% used three strategies, 0.5% used more than three strategies, while the remaining 1.5% indicated that they used none of the listed

strategies to find their first job. Hence, in view of the prevalence of multiple strategies – especially combinations of two strategies – we also generated dummies for different pairs of job search strategies, in addition to dummies for the exclusive use of only one strategy. Specifically, for each of the eight job search strategies, we specify: (i) a dummy for exclusive use, if that strategy was used as stand-alone strategy; (ii) separate dummies for individual strategy pairs, in the case of two strategies – together with which of the other seven strategies it was used; (iii) a dummy for multiple strategies, when it was used together with two or more other strategies; or (iv) a dummy if it was not used at all (as reference). Given the high multicollinearity between job search strategy pairs, equation (1) is calculated separately, with each block of strategy dummies entered separately.

We also include wave fixed effects, a dummy for panellists, and a set of dummy variables for the year in which a person started the first job in Austria (with 2019 as reference) to take account of the specific economic conditions of the respective year. The latter is important as the data used in our analysis also cover the Covid-19 pandemic years (2020-2022), when the Austrian government implemented five strict or light sector-specific, and partly also region-specific, lockdowns that significantly affected its economy, in terms of GDP contractions, and its labour markets, in terms of decreases in employment and increases in unemployment, which were, however, buffered by a generous short-term working scheme (Ragacs and Reiss, 2021). In addition to women and younger employees, non-Austrian citizens were affected the most as they tended to work in industries more affected by the crisis.

The *second transition* from the first to the current job in Austria is modelled as follows:

$$ISEI_i^{cur} - ISEI_i^{first} = \alpha_0 + \alpha_1 (ISEI_i^{home} - ISEI_i^{first}) + X_i\beta + Y_i\gamma + Z_i\delta + e_i \quad (2)$$

where $ISEI_i^{cur} - ISEI_i^{first}$ is the difference between refugee i 's ISEI score of the current and first job in Austria and captures the extent of the associated occupational gain (if positive) or loss (if negative) during the second transition. $ISEI_i^{home} - ISEI_i^{first}$ measures the extent of the occupational loss experienced during the first transition and is included to determine its role for the subsequent occupational change, specifically whether a stronger occupational decline during the first transition is followed by a stronger occupational recovery during the second transition.

X_i is a vector of individual time-invariant (as defined above) or current characteristics including the log of the *length of stay* (in years), the log of *age on arrival*, *gender*, *pre-migration education*, *highest level of education attained in Austria* (no education attained in Austria (reference), low (levels 0-2), medium (levels 3-4) or high (levels 5-8), according to the ISCED-11 classification), *knowledge of the German language* (based on the Common European Framework of Reference for Languages (CEFR): none (reference), A1 and A2 together (beginner/elementary), B1 and B2 together (intermediate/upper-intermediate German), and C1 and C2 together (advanced/proficient German)), *country of birth*, *province of residence*, *residential status*, plus a set of dummies for the type of job including *part-time*, *marginally employed*, and *volunteering* (with full-time as reference group).

Y_i is a vector of job search strategies used to find the *current* job. It is based on the question '*How did you find your current job in Austria?*' and comprises the same answer options as for the first job, with multiple answers possible. The open question was again recoded to fit one of the other options, if possible. In this context, we again test the potentially differentiated contribution of co-ethnic social networks (family, friends or acquaintances from their own country of origin) and Austrian social networks

(friends or acquaintances from Austria) to refugees' occupational change during the second transition. We again generated separate dummies for each of the eight job search strategies that were equal to one if that particular strategy was used – either alone or in combination with other strategies – and zero otherwise. Similarly, given the non-negligible prevalence of multiple strategies to find the current job (13.5% of respondents used two strategies, 3.5% used three or more strategies, while 83% only used a single strategy) we generated dummies for different combinations of job search strategies (i.e. (i) a dummy for exclusive use, (ii) dummies for individual strategy pairs (with separate dummies for each pair), (iii) a dummy for multiple strategies, and (iv) a dummy if it was not used at all (as reference)) and estimated equation (2) separately, with each block of strategy dummies entered separately.

Furthermore, Z_i is a vector of interaction terms between the extent of the occupational loss experienced during the first transition ($ISEI_i^{home} - ISEI_i^{first}$) and various refugee characteristics, such as length of stay in Austria, age upon arrival, gender, pre-migration educational attainment, residential status and country of birth. It is included to determine which of these groups experiences the strongest subsequent occupational recovery and which group is left behind and requires particular attention and policy support.

We again include wave fixed effects, a dummy for panellists and a set of dummy variables for the year in which a person started the current job in Austria (with 2019 as reference) to take the specific economic conditions of the respective year into account, which could also refer to one of the Covid-19 years (2020-2022).

We proceed in stages and first estimate equations (1) and (2). In a second step, we also include the occupational status of the last job in the home country ($ISEI_i^{home}$) in equation (1) to take into account that the change in occupational status also depends on the status of the last job in the home country. Similarly, we include the occupational status of the first job in Austria ($ISEI_i^{first}$) in equation (2) to also take ceiling effects into account, in the sense that a higher occupational status in the first job restricts further occupational upgrading.

Methodologically, we apply a standard two-equation Heckman selection model with robust standard errors to address the selection issue in our model as occupational information is only observable for refugees who are employed and may (self-)select into employment. We use transition-specific and frequently invoked exclusion restrictions for the probability of holding a job, namely the number of children in the household for the first transition and whether a person had children for the second transition. This allows us to choose the most relevant and strongest exclusion restriction for each transition. The intuition behind this exclusion restriction is that persons (especially women) with (young) children are less likely to provide labour owing to time constraints associated with raising children. The negative correlation between fertility and labour supply found in empirical studies corroborates this assertion (see, for example, Heckman, 1974; Maasoumi and Wang, 2019). Although the use of this 'instrument' is not undisputed, empirical studies show that its validity cannot be refuted (see, for example, Huber and Mellace, 2014; Mulligan and Rubinstein, 2008; Chang, 2011).

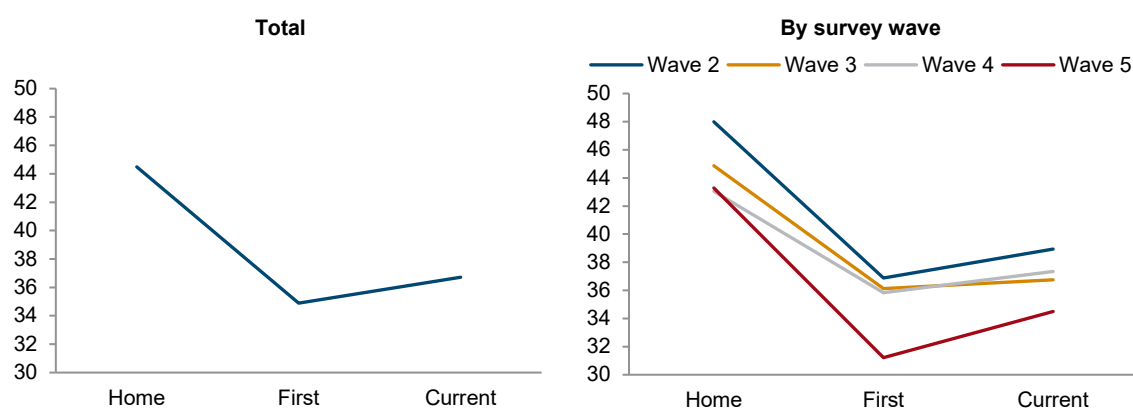
Summary statistics of all variables used in the analysis are reported in Table A.1 in the Annex. Furthermore, Figure A.1 in the Annex depicts the frequency of combinations of job search strategies by transition period. It shows that, irrespective of transition period considered, social networks with Austrians, co-ethnic social networks and the AMS were the three most frequently used job search strategies, while NGOs were used least frequently. Between the first and second transitions, the

frequency of social networks with Austrians dropped substantially. Nonetheless, it remained one of the three most common job search strategies. Moreover, strategy pairs were most common for social networks with Austrians and direct applications during the first transition and for co-ethnic social networks and the AMS during the second transition.

4. Descriptive analysis

Figure 1 shows average population-weighted ISEI scores² at three points in time: *home* for the last job in the home country, *first* for the first job in Austria and *current* for the current job in Austria. The left-hand panel refers to all respondents in the final sample and highlights that occupational trajectories of refugees in Austria generally follow the expected U-shaped pattern with a pronounced initial loss between the last job in the home country and the first job in Austria of around 10 ISEI score points and a mild recovery of around two ISEI score points between the first and the current job in Austria.

Figure 1 / Occupational trajectory



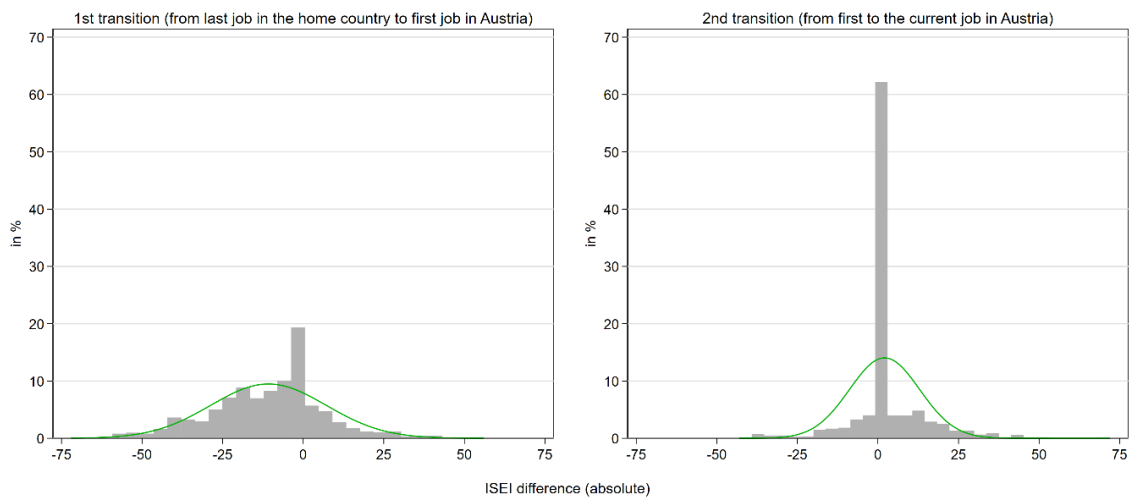
Note: Unconditional, weighted values are reported. Wave 2 refers to FIMAS+INTEGRATION conducted between 12/2017 and 04/2018, wave 3 to FIMAS+INTEGRATION² conducted between 03/2019 and 05/2019, wave 4 to FIMAS+YOUTH conducted between 10/2020 and 12/2020, and wave 5 to FIMAS+Women conducted between 01/2022 and 03/2022. Source: FIMAS+INTEGRATION, FIMAS+INTEGRATION², FIMAS+YOUTH, FIMAS+Women, own calculations.

As the final sample consists of respondents from four different survey waves that were conducted in four consecutive years – including the Covid-19 years of 2020–2022 – the right-hand panel shows average population-weighted ISEI scores by survey wave to shed light on potential survey-specific trajectories. It shows that except for respondents in the fourth wave, which was conducted in 2020, a year in which Austria experienced two strict lockdowns (March–May 2020 and November 2020–February 2021), occupational trajectories follow similar U-shaped patterns that mainly differ by the level of ISEI scores. Specifically, ISEI scores of respondents from the second wave are highest for all three points in time, while occupational trajectories of respondents from all subsequent waves not only lie below it but also below one another, suggesting that the average occupational status declines at all three points in time with each subsequent wave of the survey. However, occupational trajectories of respondents from the fourth wave differ somewhat as the first transition between the last job in the home country and the first job in Austria is flatter, particularly compared with the second and the fifth survey waves.

² These refer to gross scores, not controlling for compositional differences in basic sociodemographic characteristics (such as gender, age on arrival and level of education etc.).

Figure 2 depicts histograms and density functions of the change in occupational status of all respondents in the final sample between the last job in the home country and the first job in Austria (left panel) and the first and current job in Austria (right panel). It shows that the changes during the first transition – from the last job in the home country to the first job in Austria – range between -75 and +50 score points. Furthermore, 64% of refugees experienced a loss in occupational status during the first transition, 16% maintained their status and 20% improved their occupational status. During the second transition – from the first to the current job in Austria – changes range between -43 and +72 score points. Although 14% of refugees and beneficiaries of subsidiary protection in the final sample experienced a loss in occupational status, 60% maintained their status and 26% improved their occupational status.

Figure 2 / Occupational change from the last job in the home country to the first job in Austria (left panel) and from the first to current job in Austria (right panel)



Note: Histograms and kernel density plots of the distribution of the difference in occupational status of the first and second transitions. The width of the bin is set to 4.3.

Source: FIMAS+INTEGRATION, FIMAS+INTEGRATION², FIMAS+YOUTH, FIMAS+Women, own calculations.

5. Results

Results are presented separately for the two occupational transitions. Section 5.1 presents the results for the first transition from the last job in the home country to the first job in Austria, while Section 5.2 presents the results for the second transition, from the first to the current job in Austria. Furthermore, Section 5.3 takes a closer look at each job search strategy and discusses the role of each of the eight strategies tested in our analysis – used either individually or in pairs – for both occupational transitions.

5.1. FIRST TRANSITION FROM THE LAST JOB IN THE HOME COUNTRY TO THE FIRST JOB IN AUSTRIA

Table 1 presents the results from Heckman selection models for the first transition from the last job in the home country to the first job in Austria, specified as $ISEI_i^{first} - ISEI_i^{home}$, among refugees resident in Austria. Positive numbers refer to occupational gains, while negative numbers refer to occupational losses. Columns (2) and (4) report results for the probability of being in employment with the number of children as exclusion restriction, while columns (1) and (3) report results from the second stage of the Heckman selection model (as specified in equation (1) above), where column (3) also includes the occupational status of the last job in the home country as additional control variable and therefore sheds light on the determinants of the occupational status of the first job in Austria.

Regarding the probability of being in employment, our results show that refugees who, upon arrival, are older, better educated (as measured by the level of their pre-migration educational attainment), possess good or very good German language skills upon arrival (relative to those without any German language skills), as well as panellists, are more likely to be in employment. Conversely, women, and also persons living in Styria or the capital city Vienna (which is related to the structurally more problematic Viennese labour market, characterised by the considerably higher unemployment rate) are less likely to be employed. Moreover, the exclusion restriction – the number of children – proves to be strong.

As concerns occupational changes between the last job in the home country and the first job in Austria, results in column (1) show that, as suggested by the assimilation theory (Chiswick et al., 2005), the time elapsed between arrival in Austria and the first job in Austria is beneficial and associated with lower occupational downgrading among refugees.

Furthermore, although social networks matter for the occupational change during the first transition, this is the case only for co-ethnic social networks. Specifically, in line with the literature (Mahuteau and Junankar, 2008; Simón et al., 2014; Fernández-Macías et al., 2015), co-ethnic social networks have an adverse effect and are associated with more pronounced occupational downgrading (at the 5% level of statistical significance). By contrast, the use of social networks with natives (i.e. Austrians) has no effect, measured at standard levels of statistical significance. A positive, albeit only marginally, significant effect is also observable for advertisements in newspapers or on the internet, which suggests that the use of advertisements is associated with lower occupational downgrading.

Conversely, refugees who are older on arrival experience stronger occupational downgrading. This is in line with other empirical studies (see, for example, Fellini and Guetto, 2018; Fellini et al., 2018) and corroborates the notion that it is more difficult for older persons to adapt to new environments and labour market contexts.

Importantly, occupational trajectories differ by the level of pre-migration education. Particularly, refugees with low educational attainment and those without any formal education, and whose pre-migration occupational status was therefore low to start with, experience lower occupational downgrading (possibly even upgrading), whereas refugees with higher levels of education – either medium or high – experience higher occupational downgrading. Overall, the relative occupational downgrade is most pronounced among the highly/tertiary educated (by almost 11 ISEI points). This finding points to the limited transferability of higher education that is well documented in the literature (see, for example, Akresh, 2008; Bauer and Zimmerman, 1999; Chiswick et al., 2005).

Our results also show that the timing of the start of the first job in Austria matters. Refugees who started their first job in 2022 – when there were no further lockdowns and the Austrian economy rebounded and labour markets recovered – experienced lower occupational downgrading relative to those who started their first job in Austria before the start of the Covid-19 pandemic, with 2019 as reference year.

However, contrary to what is usually found in the related literature for the broader group of immigrants, the first occupational transition among refugees in Austria does not differ by gender, the level of German language skills upon arrival, residential status, country of birth or province of residence in Austria, measured at standard levels of statistical significance.

Results in column (3) also confirm above the observation that the transferability of the occupational status between the last job in the home country and the first job in Austria is limited. This can be seen from the coefficient for the ISEI index of the last job in the home country which, in the context of the general occupational downgrade observable during the first transition, can lie between 0 and -1. While the former indicates zero change in occupational status and, consequently, perfect transferability of the occupational status of the last job in the home country to the first job in Austria, the latter indicates a total loss of the occupational status of the last job in the home country. We observe a coefficient of -0.818, which suggests that 81.8% of each ISEI point of the last job in the home country is lost in transition, while only the remaining 18.2% can be transferred to the first job in Austria. This is comparable to what is found in the literature. For instance, Akresh (2008) looks at legal immigrants in the US aged 18 and over, and points to similar but gender-specific effects. Although male immigrants can transfer around 25% of their pre-migration occupational status to the US, female immigrants can transfer only 18%. Similarly, Simón et al. (2014) find for foreign-born immigrants aged 16 and over that around 15% of each ISEI point of the last job in the home country can be transferred to Spain.

Furthermore, the time spent in Austria before starting the first job is also important and associated with a significantly higher level of occupational status of the first job in Austria.

Table 1 / Determinants of the occupational change between the last job in the home country and the first job in Austria

	(1) ΔISEI	(2) Prob. empl.	(3) ΔISEI	(4) Prob. empl.
ISEI home			-0.818*** (0.043)	
Log time elapsed between arrival and first job in Austria	2.775** (1.116)		2.654*** (0.895)	
Log age on arrival	-13.526*** (2.192)	0.181*** (0.047)	-6.164*** (2.010)	0.083** (0.042)
Female	-3.663 (2.734)	-0.358*** (0.021)	-14.638*** (2.170)	-0.342*** (0.021)
Pre-migration educational attainment (Ref: low)				
ISCED-none	7.810** (3.097)	-0.027 (0.063)	2.340 (3.576)	-0.024 (0.057)
ISCED-medium	-4.853*** (1.746)	0.088*** (0.029)	3.852** (1.690)	0.096*** (0.026)
ISCED-high	-10.788*** (1.787)	0.145*** (0.030)	9.835*** (1.886)	0.193*** (0.027)
German language skills on arrival (Ref: none)				
Good or very good	-8.209 (5.974)	0.202*** (0.078)	0.861 (3.805)	0.161** (0.067)
Medium or low	0.614 (2.150)	-0.050 (0.041)	-0.922 (2.504)	-0.022 (0.041)
Residential status (Ref: subsidiary protection)				
Recognised refugee	1.107 (1.594)	-0.035 (0.033)	-0.460 (1.731)	-0.037 (0.030)
Other	-0.056 (2.290)	0.025 (0.043)	1.102 (2.464)	0.027 (0.041)
Country of birth (Ref: Iraq)				
Iran	-0.118 (2.832)	0.032 (0.049)	-0.885 (2.636)	0.029 (0.047)
Afghanistan	-5.046* (3.016)	0.084* (0.048)	-3.069 (2.769)	0.072 (0.047)
Syria	-1.140 (2.540)	-0.002 (0.039)	-1.309 (2.362)	-0.003 (0.038)
Job search strategies				
Co-ethnic networks	-4.533** (1.806)		-1.568 (1.467)	
Austrian networks	-0.241 (1.488)		0.568 (1.086)	
AMS	0.059 (1.555)		0.558 (1.180)	
NGOs	0.338 (2.037)		1.378 (1.306)	
Private agents	0.404 (1.790)		2.463* (1.378)	
Social media	2.418 (2.005)		1.914 (1.254)	
Advertisements	3.898* (2.276)		2.558 (1.579)	
Direct application	-0.047 (1.705)		1.018 (1.234)	

contd.

Table 1 / Contd.

	(1) Δ ISEI	(2) Prob. empl.	(3) Δ ISEI	(4) Prob. empl.
First job started in (ref: 2019):				
2012	8.685 (5.815)		6.139 (5.064)	
2013	-2.824 (5.291)		2.698 (2.688)	
2014	-0.924 (3.259)		-0.675 (2.752)	
2015	5.446 (3.335)		1.416 (3.048)	
2016	3.324 (2.557)		3.481* (1.934)	
2017	0.518 (2.262)		0.934 (1.700)	
2018	-2.246 (2.188)		-0.991 (1.689)	
2020	-1.138 (2.464)		1.067 (1.734)	
2021	-2.193 (3.095)		-3.936** (1.878)	
2022	9.012*** (2.581)		-1.290 (3.129)	
Province of residence (Ref: Tyrol or Vorarlberg)				
Burgenland	2.492 (3.806)	-0.090 (0.084)	-5.040 (3.952)	-0.088 (0.073)
Carinthia	-0.314 (2.780)	-0.037 (0.062)	-1.202 (2.745)	-0.015 (0.053)
Lower Austria	0.408 (2.203)	-0.036 (0.046)	-1.764 (2.305)	-0.024 (0.043)
Upper Austria	1.950 (2.022)	-0.024 (0.041)	0.625 (2.047)	-0.027 (0.038)
Salzburg	-1.724 (2.378)	-0.054 (0.043)	-2.191 (2.573)	-0.033 (0.042)
Styria	1.118 (2.023)	-0.114*** (0.038)	-2.660 (2.190)	-0.101*** (0.035)
Vienna	-0.534 (2.304)	-0.284*** (0.029)	-8.490*** (1.914)	-0.260*** (0.029)
Panelist	-0.097 (1.437)	0.064** (0.028)	2.091 (1.555)	0.056** (0.026)
No. of children		-0.054*** (0.010)		-0.027*** (0.008)
athrho		0.290 (0.197)		1.900*** (0.198)
Insigma		2.764*** (0.043)		2.978*** (0.053)
Wave FEs	yes	yes	yes	yes
Constant	26.164*** (9.578)		17.203** (8.072)	
No. of obs.	3,320	3,320	3,320	3,320

Note: Results stem from Heckman selection models, with the number of children as exclusion restriction. Δ ISEI is the difference between the occupational status of the first job in Austria and the last job in the home country. Prob. empl. refers to the probability of being in employment. The coefficients for the missing categories of the variables pre-migrational attainment before arrival in Austria and German language skills on arrival are not shown. athrho is the Fishers' z transformation of the correlation between the error terms of the outcome and selection equations, while Insigma refers to the standard deviation of the residual of the outcome equation. For the probability of being in employment, marginal effects are reported. Robust standard errors in parentheses. Weights are applied. *** p<0.01, ** p<0.05, * p<0.1

Source: FIMAS+INTEGRATION, FIMAS+INTEGRATION², FIMAS+YOUTH, FIMAS+Women.

However, in contrast to the above results, the job search strategy is unrelated to the occupational status of the first job. Except for private agents, whose effect is only marginally significant at the 10% level, none of the coefficients turns out to be significant. The absence of a significant coefficient for co-ethnic social networks suggests that even though those who used co-ethnic social networks to find their first job in Austria experienced a sharper occupational downgrade (see column (1)), the occupational status of their first job is not significantly different from those who did not avail themselves of co-ethnic social networks.

The now positive coefficients for both medium and high pre-migration educational attainment levels suggest that, even though better educated refugees experience significantly stronger occupational downgrading than low educated refugees (see column (1)), their first jobs in Austria are nonetheless of higher occupational status than those of low-educated refugees (by between four and nine ISEI points), also implying that their last job in their home country was also of higher occupational status.

Moreover, our results point to negative status-effects for female refugees as well as refugees who live in the capital city, Vienna: the first job of female refugees is of around 16 ISEI points lower occupational status than that of male refugees; refugees who live in Vienna have first jobs with occupational status around eight ISEI points lower than the first jobs of refugees who live in the two westernmost provinces of Vorarlberg or Tyrol (as reference).

The timing of the start of the first job in Austria is also relevant for the job's occupational status. Refugees who started their first job in 2021, characterised by a lockdown at the beginning and the end of the year, held jobs of significantly lower occupational status (of around four ISEI points) than those who started their first job before the pandemic, i.e. 2019 as reference. However, this is very likely to be related to the emergence during the pandemic of new employment opportunities of lower occupational status, such as delivering food and packages, stacking shelves in warehouses and supermarkets, etc.

5.2. SECOND TRANSITION FROM THE FIRST TO THE CURRENT JOB IN AUSTRIA

Table 2 presents the results from Heckman selection models for the second transition from the first to the current job in Austria among refugees and beneficiaries of subsidiary protection, specified as $ISEI_i^{cur} - ISEI_i^{first}$. It is positive in the case of occupational upgrades and negative in the case of occupational downgrades. Column (1) reports results from the second stage of the Heckman selection model, as specified in equation (2), while column (2) reports results for the selection equation (probability of being employed). Columns (3)-(8) report results when different interaction terms between the extent of the occupational loss experienced during the first transition and various refugee characteristics are included. Because the results for the selection equation are very similar across specifications, they are reported only once.³

Similar to the findings noted above, our results show that refugees who are older or better educated upon arrival, have completed upper secondary (ISCED-medium) education in Austria, possess better German language skills (CEFR-based) are more likely to be employed, while female refugees and also refugees resident in Styria or Vienna are less likely to be employed. Moreover, the exclusion restriction (i.e. whether

³ The results for the probability of being in employment for the other specifications are available from the author upon request.

a person has children) is significant at the 1% level of statistical significance and therefore proves to be strong.

As concerns occupational changes between the first and current job in Austria, the results in column (1) show that the greater the occupational downgrade in the first transition, the larger the subsequent recovery. This is another confirmation of the assimilation hypothesis. However, as already shown in the descriptive analysis (see Section 4, above), the effect is limited: our results imply that for each ISEI point of occupational downgrade during the first transition, there is a subsequent recovery of only around 0.2 ISEI points.

Interestingly, in contrast to the first transition, where co-ethnic social networks had a negative impact, they do not play a role for the second transition (a more nuanced picture emerges, however, when we also take into account combinations of job search strategies – especially strategy pairs; see Section 5.3, below). The only job search strategy that matters in this context is the use of advertisements (either in newspapers or on the internet), which is associated with stronger occupational upgrading.

Furthermore, similar to the first transition, age upon arrival is important also for the second transition. Older refugees experienced lower upward mobility during the second transition. This finding indicates a lower age-related adaptability to new working conditions and contexts, which hinders upward mobility.

Educational attainment in Austria is of relevance for the second transition. Refugees who had already completed upper secondary education (i.e. ISCED-medium) in Austria undergo lower occupational upgrading during the second transition than those who have not yet completed any education in Austria. The time spent in education and away from the labour market may be an explanation for their inferior performance as these refugees have missed out on human capital accumulation from 'learning and training on the job' compared with those who entered the labour market more quickly. In contrast, there are no differences by pre-migration educational attainment, measured at standard levels of statistical significance. Our findings are therefore contrary to what is typically found in the literature in terms of both the importance of pre-migration education as well as the relative value of domestic to foreign education for the second transition (see, e.g., Rooth and Ekberg, 2006; Akresh, 2008; Simón et al., 2014; Fellini and Guetto, 2018).

Furthermore, the type of job matters also for the second transition. Refugees who hold a part-time job experience a lower upgrade than those in full-time employment.

Finally, the province of residence and the particular year in which the current job was taken up are relevant for occupational mobility during the second transition. Specifically, although refugees who live in Upper Austria undergo a lower occupational upgrade, those who started their job in either 2015 or 2022 experience a higher occupational upgrade. The significant effect for 2015 refers to refugees who came to Austria before the large refugee wave of 2015-2016. The marginally significant coefficient for 2022 relates to the Covid-19 pandemic when, in the absence of further lockdowns and the quick recovery of labour markets, those who started their current job in Austria experienced occupational upgrading.

Interestingly, the results for interactions between the extent of the occupational loss experienced during the first transition and various refugee characteristics in columns (3)-(8) suggest that there are no differentiated effects by length of stay, age, gender, pre-migration education, residential status or country of birth of the previous occupational downgrade on subsequent occupational mobility.

Table 2 / Determinants of the difference between the first and the current job in Austria

	(1) ΔISEI	(2) Prob. empl.	(3) ΔISEI	(4) ΔISEI	(5) ΔISEI	(6) ΔISEI	(7) ΔISEI	(8) ΔISEI
Occup. downgrade	0.203*** (0.024)		0.413*** (0.148)	0.207*** (0.025)	0.217*** (0.027)	0.209*** (0.043)	0.276*** (0.074)	0.336*** (0.086)
Log length of stay (LOS)	-2.352 (1.626)	0.270*** (0.033)	-3.356* (1.766)	-2.425 (1.619)	-2.434 (1.650)	-2.398 (1.599)	-2.404 (1.673)	-2.733* (1.582)
Log age on arrival (AOA)	-3.502** (1.416)	0.468*** (0.139)	-3.462** (1.406)	-2.679* (1.440)	-3.574** (1.414)	-3.375** (1.390)	-3.740*** (1.447)	-3.511** (1.402)
Female	1.868 (1.524)	-0.338*** (0.023)	1.931 (1.507)	1.853 (1.524)	2.763 (1.841)	1.792 (1.496)	1.811 (1.576)	2.094 (1.528)
Educational attainment in Austria (Ref: none)								
AT-ISCED: low	0.341 (1.396)	0.001 (0.045)	0.198 (1.411)	0.398 (1.390)	0.397 (1.393)	0.323 (1.407)	0.453 (1.390)	0.310 (1.415)
AT-ISCED: medium	-2.839** (1.342)	0.144*** (0.040)	-2.635** (1.331)	-2.712** (1.334)	-2.729** (1.321)	-2.778** (1.347)	-2.699** (1.363)	-2.873** (1.359)
AT-ISCED: high	-2.811 (3.066)	0.121 (0.034)	-2.583 (3.126)	-2.774 (3.100)	-2.877 (3.094)	-3.167 (3.048)	-3.051 (3.096)	-2.928 (3.132)
Pre-migration educational attainment (Ref: low)								
ISCED-none	1.497 (2.110)	0.001 (0.065)	1.599 (2.117)	1.725 (2.107)	1.488 (2.088)	1.537 (2.236)	1.876 (2.100)	1.515 (2.098)
ISCED-medium	-0.680 (1.075)	0.088*** (0.030)	-0.786 (1.077)	-0.793 (1.073)	-0.682 (1.069)	-0.761 (1.249)	-0.617 (1.081)	-0.769 (1.086)
ISCED-high	-1.292 (1.093)	0.113*** (0.030)	-1.359 (1.095)	-1.310 (1.094)	-1.279 (1.091)	-1.258 (1.137)	-1.216 (1.099)	-1.437 (1.098)
Current German language skills (Ref: none)								
Beginner/elementary	1.058 (1.246)	-0.009 (0.037)	0.958 (1.240)	0.979 (1.237)	1.116 (1.239)	1.088 (1.231)	1.022 (1.237)	1.060 (1.232)
Intermediate/upper-intermediate	1.029 (1.069)	0.092*** (0.033)	0.967 (1.076)	1.044 (1.062)	1.045 (1.060)	1.089 (1.058)	1.067 (1.074)	1.012 (1.062)
Advanced/proficient	-0.090 (1.864)	0.237*** (0.063)	-0.066 (1.867)	-0.100 (1.875)	-0.110 (1.855)	-0.053 (1.839)	0.045 (1.862)	-0.178 (1.834)
Residential status (Ref: subsidiary protection)								
Recognised refugee	0.489 (1.159)	-0.029 (0.032)	0.543 (1.154)	0.436 (1.166)	0.434 (1.164)	0.470 (1.146)	1.230 (1.068)	0.641 (1.161)
Other	1.739 (1.507)	-0.020 (0.044)	1.739 (1.502)	1.714 (1.506)	1.719 (1.505)	1.722 (1.504)	2.296 (1.425)	2.217 (1.542)
Country of birth (Ref: Iraq)								
Iran	0.764 (1.670)	0.023 (0.047)	0.797 (1.671)	0.601 (1.667)	0.776 (1.671)	0.744 (1.647)	1.063 (1.631)	2.169 (1.681)
Afghanistan	-0.923 (1.948)	0.025 (0.048)	-0.778 (1.958)	-0.964 (1.950)	-0.902 (1.948)	-0.887 (1.891)	-0.746 (1.920)	0.724 (1.807)
Syria	-1.609 (1.409)	0.017 (0.039)	-1.589 (1.416)	-1.700 (1.413)	-1.615 (1.410)	-1.583 (1.393)	-1.444 (1.368)	0.367 (1.429)
Job search strategies								
Co-ethnic networks	-0.691 (1.317)		-0.717 (1.302)	-0.747 (1.306)	-0.820 (1.292)	-0.508 (1.327)	-0.739 (1.299)	-0.910 (1.325)
Austrian networks	-0.566 (1.050)		-0.565 (1.041)	-0.515 (1.041)	-0.581 (1.040)	-0.468 (1.038)	-0.546 (1.056)	-0.554 (1.047)
AMS	-0.476 (0.997)		-0.531 (0.993)	-0.498 (1.000)	-0.448 (1.003)	-0.369 (1.008)	-0.450 (1.000)	-0.534 (0.982)
NGOs	-1.295 (1.236)		-1.294 (1.235)	-1.239 (1.244)	-1.328 (1.224)	-1.225 (1.257)	-1.124 (1.250)	-1.092 (1.210)
Private agents	0.981 (0.989)		0.918 (0.988)	0.909 (0.990)	0.978 (0.986)	1.050 (0.992)	0.870 (0.968)	0.940 (0.977)
Social media	-0.199 (1.044)		-0.146 (1.033)	-0.248 (1.044)	-0.223 (1.041)	-0.010 (1.025)	-0.081 (1.060)	-0.022 (1.047)
Advertisements	2.710** (1.329)		2.719** (1.328)	2.734** (1.326)	2.680** (1.338)	2.751** (1.313)	2.569** (1.305)	2.672** (1.275)
Direct application	1.001 (1.240)		1.058 (1.216)	0.977 (1.233)	1.041 (1.226)	1.092 (1.244)	0.941 (1.253)	0.840 (1.241)

contd.

Table 2 / Contd.

	(1) ΔISEI	(2) Prob. empl.	(3) ΔISEI	(4) ΔISEI	(5) ΔISEI	(6) ΔISEI	(7) ΔISEI	(8) ΔISEI
Job types								
Part-time	-3.106*** (0.954)		-3.166*** (0.950)	-3.129*** (0.958)	-3.125*** (0.946)	-3.220*** (0.963)	-3.133*** (0.955)	-3.143*** (0.952)
Marginally employed	-1.392 (1.529)		-1.278 (1.534)	-1.222 (1.543)	-1.109 (1.471)	-1.364 (1.541)	-1.451 (1.539)	-1.306 (1.491)
Volunteer	1.647 (1.497)		1.606 (1.470)	1.818 (1.452)	1.856 (1.459)	1.600 (1.508)	1.603 (1.495)	1.515 (1.464)
Current job started in (Ref: 2019)								
2013	-1.111 (2.442)		-1.216 (2.481)	-1.130 (2.484)	-1.109 (2.438)	-1.240 (2.456)	-1.109 (2.440)	-0.999 (2.507)
2014	1.559 (2.736)		1.960 (2.726)	1.404 (2.684)	1.599 (2.716)	1.615 (2.711)	1.320 (2.737)	1.416 (2.743)
2015	6.749** (3.326)		6.837** (3.288)	6.684** (3.283)	6.638** (3.308)	6.785** (3.377)	6.435* (3.348)	6.499** (3.299)
2016	0.100 (1.441)		0.187 (1.465)	0.107 (1.449)	0.074 (1.445)	-0.160 (1.385)	0.063 (1.432)	0.003 (1.441)
2017	1.070 (1.212)		1.178 (1.221)	0.970 (1.206)	1.100 (1.213)	1.041 (1.204)	1.101 (1.208)	1.013 (1.213)
2018	1.195 (1.238)		1.274 (1.245)	1.095 (1.226)	1.232 (1.236)	1.234 (1.240)	1.172 (1.237)	1.134 (1.232)
2020	-0.043 (1.245)		0.020 (1.250)	-0.066 (1.241)	-0.017 (1.244)	-0.170 (1.248)	0.032 (1.245)	-0.230 (1.273)
2021	2.329 (1.943)		2.135 (1.940)	2.189 (1.965)	2.263 (1.939)	2.629 (1.943)	2.201 (1.948)	2.185 (1.916)
2022	2.799* (1.597)		2.649* (1.567)	2.910* (1.545)	2.704* (1.574)	2.728* (1.608)	2.847* (1.586)	2.544 (1.712)
Province of residence (Ref: Tyrol or Vorarlberg)								
Burgenland	-1.376 (2.752)	-0.060 (0.080)	-1.352 (2.741)	-1.588 (2.710)	-1.206 (2.718)	-1.415 (2.782)	-1.335 (2.750)	-1.485 (2.759)
Carinthia	-1.521 (2.093)	0.011 (0.053)	-1.616 (2.083)	-1.640 (2.078)	-1.540 (2.100)	-1.500 (2.089)	-1.562 (2.094)	-1.719 (2.146)
Lower Austria	-0.417 (1.611)	-0.045 (0.045)	-0.531 (1.609)	-0.460 (1.601)	-0.394 (1.615)	-0.420 (1.588)	-0.397 (1.614)	-0.313 (1.631)
Upper Austria	-2.734** (1.375)	-0.015 (0.042)	-2.733** (1.367)	-2.802** (1.376)	-2.734** (1.364)	-2.619* (1.371)	-2.788** (1.386)	-2.802** (1.403)
Salzburg	-2.198 (1.586)	0.019 (0.042)	-2.315 (1.585)	-2.349 (1.594)	-2.329 (1.597)	-2.114 (1.622)	-2.242 (1.578)	-2.333 (1.600)
Styria	-1.581 (1.401)	-0.096** (0.038)	-1.562 (1.399)	-1.726 (1.393)	-1.571 (1.400)	-1.509 (1.394)	-1.658 (1.405)	-1.551 (1.413)
Vienna	-0.846 (1.548)	-0.269*** (0.030)	-0.887 (1.538)	-0.993 (1.550)	-0.797 (1.538)	-0.695 (1.543)	-0.877 (1.572)	-0.631 (1.543)
Panellist	-0.100 (0.854)	0.044* (0.027)	-0.096 (0.853)	-0.067 (0.855)	-0.133 (0.855)	-0.116 (0.856)	-0.069 (0.853)	-0.168 (0.874)

contd.

Table 2 / Contd.

	(1) ΔISEI	(2) Prob. empl.	(3) ΔISEI	(4) ΔISEI	(5) ΔISEI	(6) ΔISEI	(7) ΔISEI	(8) ΔISEI
Province of residence (Ref: Tyrol or Vorarlberg)								
Log LOS*occup. downgrade			0.075 (0.049)					
Log AOA*occup. downgrade				-0.094 (0.073)				
Female*occup. downgrade					-0.065 (0.059)			
ISCED-none*occup. downgrade						-0.047 (0.151)		
ISCED-medium*occup. downgrade						0.005 (0.066)		
ISCED-high*occup. downgrade						-0.006 (0.055)		
Rec. refugee*occup. downgrade							-0.088 (0.078)	
Other*occup. downgrade							-0.072 (0.088)	
Iran*occup. downgrade								-0.114 (0.111)
Afghanistan*occup. downgrade								-0.129 (0.103)
Syria*occup. downgrade								-0.169* (0.090)
Children		-0.084*** (0.027)	-0.266*** (0.089)	-0.265*** (0.089)	-0.266*** (0.089)	-0.263*** (0.089)	-0.263*** (0.089)	-0.265*** (0.088)
athrho		-0.434** (0.195)	-0.437** (0.192)	-0.436** (0.194)	-0.453** (0.198)	-0.431** (0.193)	-0.440** (0.205)	-0.473** (0.193)
Insigma		2.301*** (0.062)	2.300*** (0.062)	2.300*** (0.063)	2.304*** (0.063)	2.299*** (0.062)	2.301*** (0.064)	2.305*** (0.065)
Wave FEs	yes	yes	yes	yes	yes	yes	yes	yes
Constant	19.778*** (6.693)		6.707 (6.729)	8.981** (4.376)	20.174*** (6.700)	19.140*** (6.516)	20.006*** (6.793)	19.021*** (6.624)
No of obs	3,320	3,320	3,320	3,320	3,320	3,320	3,320	3,320

Note: Results stem from Heckman selection models, with a dummy for children as exclusion restriction. ΔISEI is the difference between the occupational status of the first job and the current job in Austria. Prob. empl. refers to the probability of being in employment. The coefficients for the missing categories of the variables educational attainment in Austria, pre-migrational attainment before arrival in Austria and current German language skills are not shown. athrho is the Fishers' z transformation of the correlation between the error terms of the outcome and selection equations, while Insigma refers to the standard deviation of the residual of the outcome equation. Marginal effects are reported for the probability of being in employment. Robust standard errors in parentheses. Weights are applied. *** p<0.01, ** p<0.05, * p<0.1

Source: FIMAS+INTEGRATION, FIMAS+INTEGRATION², FIMAS+YOUTH, FIMAS+Women.

The results for the second transition hardly change when the occupational status of the first job in Austria (ceiling effect) is controlled for, where the negative coefficient suggests that refugees whose first job in Austria was of higher occupational status undergo lower occupational upgrading (see Table A.2 in the Annex). Specifically, the coefficient suggests that the occupational upgrade during the second transition is 0.264 ISEI points lower for each ISEI point higher occupational status in the first job in Austria, which is only half of what is found, for instance, by Simón et al. (2014) for immigrants in Spain. As a result of the inclusion of the ceiling effect, coefficients change only for pre-migration educational attainment and the type of job. Specifically, once the ceiling effect is controlled for, the results show that highly educated refugees upon arrival, as well as those who work as volunteers, experience occupational upgrading.

5.3. COMBINATIONS OF JOB SEARCH STRATEGIES AND OCCUPATIONAL MOBILITY

As highlighted above (see Section 3), multiple responses were possible for the various job search strategies for both the first and the current job. This resulted in a non-negligible number of multiple-strategy responses. Hence, in a next step we also take combinations of strategies into account. In view of the prevalence of two strategies, we take a closer look at *all* 'strategy pairs' – i.e. pairwise combinations – occurring in our sample and determine their respective role for both occupational transitions, alongside single/exclusive strategies as well as triple and more strategies. The latter are combined into a common measure.

Table 3 provides the results for the first transition, separately for each job search strategy in columns (1) to (8).⁴ It shows that the specific strategy pair strongly matters for refugees' occupational change between their last job in the home country and their first job in Austria. Specifically, social networks and certain institutions prove to be beneficial when used together. Co-ethnic social networks, when used exclusively, are associated with higher occupational downgrading, but when they are used together with either the AMS or NGOs, they are associated with less pronounced occupational downgrading. Similarly, Austrian social networks used together with the AMS are also associated with lower occupational downgrading. These findings suggest that both types of institutions – the AMS and NGOs – generate important additional value added to job search strategies that are otherwise solely based on social networks. The AMS, for instance, provides information and advice, job referrals, German language courses, training and further education courses; many NGOs offer job counselling services and help in learning German, adapting skills, or finding jobs. With the additional support and resources from both institutions, social network-based search strategies are beneficial in terms of lower occupational downgrading.

Conversely, certain institutions, when used together with certain media, turn out to be detrimental to occupational changes. For instance, the AMS in combination with advertisements is associated with higher occupational downgrading, and so are NGOs in combination with both advertisements and direct applications. This may be due to the fact that those who strongly rely on support from the AMS and NGOs in their job search have lower chances of labour market integration, but are requested by both institutions to intensify their job search by looking for and responding to job advertisements as well as by sending out direct applications to potentially interesting firms.

Interestingly, combinations with private agents result in lower occupational downgrading. When used together with the AMS, advertisements or direct applications, private agents are associated with lower occupational downgrading.⁵ This is most likely related to the nature of private agents who, unlike public employment services, maximise revenues (fees) or profits and whose selection policies require higher standards from applicants (Zweifel and Zaborowski, 1996). As a consequence, private agents may well

⁴ The results in each column stem from separate estimations of equation (1) using Heckman, and also include all other controls (the number of children as exclusion restriction, log time elapsed between arrival and first job in Austria, log age, female dummy, pre-migration education, German language proficiency on arrival, residential status, country of birth, year of the first job, province of residence, and wave fixed effects).

⁵ The combination of private agents and either advertisements or direct applications is very common, as many job seekers either apply unsolicited to private agents or respond to advertisements placed by private agents in newspapers or on the internet.

therefore prove successful in the placements of their applicants, and this limits the extent of refugees' occupational downgrading between the last job in the home country and the first job in Austria.

By contrast, social media only matter if used exclusively, in which case they are associated with lower occupational downgrading. Social media tools allow users to participate in multiple networks and to generate expansive, often loosely-knit, social circles that facilitate information sharing (Mowbray et al., 2017), also related to employment opportunities, that are important for successful job search outcomes (Garg and Telang, 2018).

Table 3 / Different job search strategies – exclusively as well as in pairs: first transition

	Social context		Institutions			Media		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Co-ethnic NW	Austrian NW	AMS	NGOs	Agents	Social media	Advertise- ments	Direct
	Δ ISEI	Δ ISEI	Δ ISEI	Δ ISEI	Δ ISEI	Δ ISEI	Δ ISEI	Δ ISEI
Only	-6.346*** (1.824)	-1.533 (1.465)	-0.349 (1.466)	-0.434 (2.236)	-1.369 (2.071)	4.775** (2.101)	5.759* (3.077)	-0.717 (1.852)
plus co-ethnic NW		2.672 (5.556)	7.293*** (2.736)	11.277*** (3.892)	2.423 (8.280)	3.066 (7.910)	N/A (N/A)	-1.759 (8.005)
plus Austrian NW	1.705 (5.515)		16.840*** (2.792)	0.591 (5.954)	0.127 (4.824)	2.843 (5.443)	5.923 (5.728)	5.264* (2.788)
plus AMS	6.703** (2.737)	16.940*** (2.871)		-2.892 (5.919)	11.887** (5.299)	-14.641 (11.470)	-16.287*** (4.553)	4.039 (2.625)
plus NGOs	9.551** (3.734)	0.623 (5.914)	-3.053 (5.896)		N/A (N/A)	24.798 (17.759)	-11.389*** (2.524)	-27.312* (13.988)
plus agents	1.309 (8.393)	0.361 (4.847)	11.668** (5.375)	N/A (N/A)		N/A (N/A)	14.920*** (5.659)	20.886*** (3.983)
plus social media	2.295 (8.037)	2.302 (5.590)	-15.102 (11.854)	24.568 (18.214)	N/A (N/A)		4.724 (6.374)	-15.850* (9.329)
plus advertisements	N/A (N/A)	5.529 (5.816)	-17.125*** (4.435)	-12.100*** (2.509)	14.937*** (5.615)	5.086 (6.326)		7.786 (8.615)
plus direct	-2.697 (7.598)	5.153* (2.825)	4.052 (2.651)	-27.175** (13.849)	20.494*** (3.923)	-15.310* (9.207)	8.627 (8.648)	
Comb. of 3 and more	1.149 (4.242)	0.354 (3.657)	3.972 (3.032)	6.798 (4.355)	2.928 (2.857)	1.938 (3.673)	1.670 (3.530)	2.833 (3.770)
Constant	28.324*** (9.723)	27.630*** (9.778)	25.444*** (9.724)	27.681*** (9.723)	26.122*** (9.769)	26.765*** (9.470)	24.812** (9.671)	28.371*** (9.678)
No. of obs.	3,320	3,320	3,320	3,320	3,320	3,320	3,320	3,320

Note: Results stem from Heckman selection model estimations of equation (1), with the difference between the first job in Austria and the last job in the home country (Δ ISEI) as dependent variable and the number of children as exclusion restriction. All estimations also include a constant as well as all other variables specified in equation (1): log time elapsed between arrival and first job in Austria, log age, female dummy, pre-migration education, German language proficiency on arrival, residential status, country of birth, year of the first job, province of residence, and wave fixed effects. Weights are applied. Robust standard errors in parentheses.

Source: FIMAS+INTEGRATION, FIMAS+INTEGRATION², FIMAS+YOUTH, FIMAS+Women.

Table 4 / Different job search strategies – individually as well as in pairs: second transition

	Social context		Institutions			Media		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Co-ethnic NW	Austrian NW	AMS	NGOs	Agents	Social media	Advertise- ments	Direct
	Δ ISEI	Δ ISEI	Δ ISEI	Δ ISEI	Δ ISEI	Δ ISEI	Δ ISEI	Δ ISEI
Only	-2.145** (1.061)	-0.583 (0.972)	-1.299 (1.089)	-2.952** (1.286)	0.673 (0.923)	-0.430 (1.021)	2.829* (1.541)	1.811 (1.249)
plus co-ethnic NW		-1.894 (4.896)	9.722** (4.706)	-1.890 (3.003)	3.297 (2.160)	5.386 (4.678)	NA (N/A)	-14.726*** (2.172)
plus Austrian NW	-2.020 (4.860)		-5.018 (4.019)	-4.803*** (1.350)	0.273 (1.831)	-4.219 (2.760)	6.556 (5.181)	1.732 (1.839)
plus AMS	9.954** (4.882)	-5.010 (3.980)		9.225** (3.663)	0.866 (2.822)	-5.549 (4.952)	-8.779* (4.569)	1.122 (3.689)
plus NGOs	-2.226 (3.032)	-4.548*** (1.357)	9.023** (3.532)		-0.938 (3.129)	5.131 (4.855)	-7.265*** (1.831)	-14.457*** (1.957)
plus agents	3.145 (2.189)	0.025 (1.837)	0.516 (2.830)	-1.028 (3.212)		-0.498 (2.242)	5.657 (5.344)	17.527*** (5.138)
plus social media	5.164 (4.607)	-4.375 (2.721)	-5.749 (5.138)	5.049 (4.901)	-0.458 (2.249)		6.628*** (1.674)	NA (N/A)
plus advertisements	NA (N/A)	6.085 (5.218)	-9.277** (4.391)	-7.575*** (1.869)	5.520 (5.349)	6.022*** (1.703)		0.276 (2.066)
plus direct	-14.900*** (2.296)	1.284 (1.810)	0.889 (3.640)	-14.838*** (1.992)	17.791*** (5.043)	NA (N/A)	0.601 (2.172)	
Comb. of 3 and more	-0.547 (3.781)	-0.670 (3.338)	1.208 (1.853)	2.540 (3.479)	-0.305 (2.432)	-0.431 (2.649)	1.413 (2.791)	-6.131 (4.797)
Constant	19.751*** (6.760)	20.941*** (6.638)	20.687*** (6.798)	21.006*** (6.749)	20.454*** (6.551)	20.940*** (6.708)	19.534*** (6.694)	19.337*** (6.952)
No. of obs.	3,320	3,320	3,320	3,320	3,320	3,320	3,320	3,320

Note: Results stem from Heckman selection model estimations of equation (2), with the difference between the current and the first job in Austria (Δ ISEI) as dependent variable a dummy for children as exclusion restriction. All estimations also include a constant as well as all other variables specified in equation (2): occupational downgrade during the first transition, log length of stay, log age, female dummy, educational attainment in Austria, pre-migration education, German language proficiency (CEFR-based), residential status, country of birth, year of the current job, type of job, province of residence, and wave fixed effects. Weights are applied. Robust standard errors in parentheses.

Source: FIMAS+INTEGRATION, FIMAS+INTEGRATION², FIMAS+YOUTH, FIMAS+Women.

Columns (1)-(8) in Table 4 provide the results for the second transition, where each column refers to one of the eight job search strategies.⁶ Similar to the first transition, it points to the importance of specific job search strategies – used either exclusively or in pairs – for refugees' occupational change between the first and the current job in Austria. Although there are some similarities with the first transition, there are also important differences.

For instance, as far as similarities are concerned, the exclusive use of co-ethnic social networks is detrimental also for the second transition, in terms of lower occupational upgrading, whereas used together with the AMS it again proves beneficial, in terms of higher occupational upgrading.

⁶ The results in each column stem from separate estimations of equation (2) using Heckman, and also include all other controls (a dummy for children as exclusion restriction, the extent of occupational downgrade during the first transition, log length of stay, log age, female dummy, educational attainment in Austria, pre-migration education, German language proficiency (CEFR-based), residential status, country of birth, year of the current job, type of job, province of residence, and wave fixed effects).

Furthermore, combinations of certain institutions and media again prove unfavourable also for the second transition. Specifically, the AMS in combination with advertisements, and also NGOs in combination with both advertisements and direct applications, are associated with lower occupational upgrading. Similarly, higher occupational upgrading is also observable for combinations between private agents and direct applications.

As for differences with the first transition, co-ethnic social networks in combination with direct applications, but also Austrian social networks in combination with NGOs, are detrimental and associated with lower occupational upgrading.

Similarly, the exclusive use of NGOs is associated with lower occupational upgrading. This may suggest that refugees who, after time spent in Austria, still rely on NGOs to find a job generally have greater difficulties adjusting to the labour market, which hinders their climb back up the occupational ladder. However, when used in combination with the AMS, a higher occupational upgrading is observed, which is again suggestive of the AMS's additional value in terms of the provision of information, training and job referrals.

Finally, social media are beneficial and associated with stronger occupational upgrading, but only in combination with advertisements in newspapers or on the internet.

6. Summary and conclusion

This paper analyses the occupational trajectories of refugees from their last job in the host country to their first and current jobs in Austria, distinguishing two transitions: (i) the first transition – from the last job in the host country to the first job in Austria; (ii) the second transition – from the first to the current job in Austria. It focuses on the role of social networks (i.e. family, friends, or acquaintances) – differentiated by co-ethnic social networks and Austrian social networks – in job search across the entire occupational trajectory and analyses their impact on occupational changes during both transitions. It also considers that job search strategies are used differently, either as a stand-alone strategy or in combination with other strategies, which helps to identify more complex patterns and nuanced inter-relationships. Occupational status and (status) change is measured by the International Socio-Economic Index (ISEI), developed by Ganzeboom et al. (1992) and Ganzeboom and Treiman (1996). It uses data from a large-scale survey of recognised refugees and persons with subsidiary protection status, from Syria, Afghanistan, Iraq and Iran, resident in Austria who have predominantly come to Austria since 2010, thereby covering the strong refugee wave of 2015-2016. For Austria, this was the first significant refugee wave from outside Europe.

Generally, the results show that occupational trajectories among refugees in Austria follow a U-shaped pattern, with a strong occupational downgrading between the last job in the home country and the first job in Austria, followed by a moderate occupational recovery between the first and the current job in Austria. Specifically, for every ISEI point lost between the last job in the home country and the first job in Austria, there is an improvement of only 0.2 ISEI points between the first and the current job in Austria. However, there are no differentiated effects of the previous occupational downgrade on subsequent occupational mobility by either length of stay, age, gender, pre-migration education, residential status or country of birth of the previous occupational downgrade on subsequent occupational mobility.

Furthermore, social networks in job search play a differentiated role. During the first transition, co-ethnic social networks are associated with stronger occupational downgrading, while native social networks have no effect. Hence, although probably helpful in finding employment, co-ethnic networks lead to a significant loss in refugees' occupational status. During the second transition, however, neither of the two social networks has any impact. Taking into consideration that job search strategies can be used either as a stand-alone strategy or in combination with other strategies, a slightly different pattern emerges: when used exclusively, co-ethnic social networks have adverse effects, with the already observed occupational downgrading during the first transition as well as lower occupational upgrading during the second transition. However, in combination with the AMS (in both transitions) or NGOs (only during the first transition), co-ethnic social networks prove to be beneficial, with lower occupational downgrading during the first transition and higher occupational upgrading during the second transition.

The analysis also helped to identify some particularly affected and vulnerable groups: For instance, arriving at an older age adversely affects occupational trajectories, probably owing to a slower ability to adapt to new environments, such that older refugees not only undergo stronger occupational downgrading during the first transition but also weaker occupational upgrading during the second

transition. Furthermore, higher education proves difficult to transfer and, as expected, is associated with stronger occupational downgrading during the first transition. In contrast to the typical findings in the literature, however, it does not facilitate subsequent occupational upgrading. Equally unexpected is the lower occupational upgrade associated with education completed in Austria during the second transition, which is probably a consequence of absence from the labour market and deficits in human capital resulting from less on-the-job training.

Conversely, however, we do not find any differences in occupational trajectories by gender, German language skills (on arrival as well as attained in Austria), residential status, or country of birth as typically found in related empirical studies.

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Annex

Table A.1 / Summary statistics by transition period

First transition				Second transition			
Variable	Code	Mean	Std	Variable	Code	Mean	Std
ISEI difference between first and home		-11.03	18.02	ISEI difference between current and first		2.17	10.89
ISEI of the last job in the home country		46.70	15.87	ISEI of the first job in Austria		35.17	14.91
Log age on arrival		3.26	0.35	Log age at arrival		3.34	0.46
Log time elapsed between arrival and first job		5.60	1.82	Log length of stay in Austria		4.39	17.17
				ISEI downgrade of first transition		11.03	18.02
Gender				Gender			
Male (ref)	0	0.59	0.49	Male	0	0.61	0.49
Female	1	0.41	0.49	Female	1	0.39	0.49
				Educational attainment in Austria			
				ISCED-AT-none (ref)	1	0.68	0.47
				ISCED-AT-low	2	0.09	0.29
				ISCED-AT-medium	3	0.06	0.24
				ISCED-AT-high	4	0.02	0.15
				ISCED-AT-missing	5	0.14	0.35
Pre-migration educational attainment				Pre-migration educational attainment			
ISCED-none	2	0.04	0.19	ISCED-none	2	0.04	0.20
ISCED-low (ref)	1	0.41	0.49	ISCED-low (ref)	1	0.40	0.49
ISCED-medium	3	0.24	0.43	ISCED-medium	3	0.24	0.43
ISCED-high	4	0.29	0.45	ISCED-high	4	0.29	0.45
ISCED-missing	5	0.02	0.15	ISCED-missing	5	0.03	0.18
German language skills on arrival				Current German language skills: CEFR-based			
None (ref)	3	0.89	0.32	None (ref)	1	0.18	0.38
Low or medium	2	0.08	0.28	A1 & A2: beginner	2	0.22	0.41
Good or very good	1	0.01	0.11	B1 & B2: intermediate	3	0.53	0.50
Language-missing	4	0.02	0.13	C1 & C2: proficient	4	0.04	0.20
				CEFR-missing	5	0.04	0.20
Residential status				Residential status			
Subsidiary protection (ref)	1	0.16	0.37	Subsidiary protection (ref)	1	0.72	0.45
Recognised refugee	2	0.73	0.45	Recognised refugee	2	0.16	0.37
Other	3	0.11	0.31	Other	3	0.12	0.32
Country of birth				Country of birth			
Iraq (ref)	1	0.09	0.28	Iraq (ref)	1	0.09	0.29
Iran/other	2	0.17	0.38	Iran/other	2	0.17	0.37
Afghanistan	3	0.15	0.35	Afghanistan	3	0.16	0.37
Syria	4	0.59	0.49	Syria	4	0.58	0.49

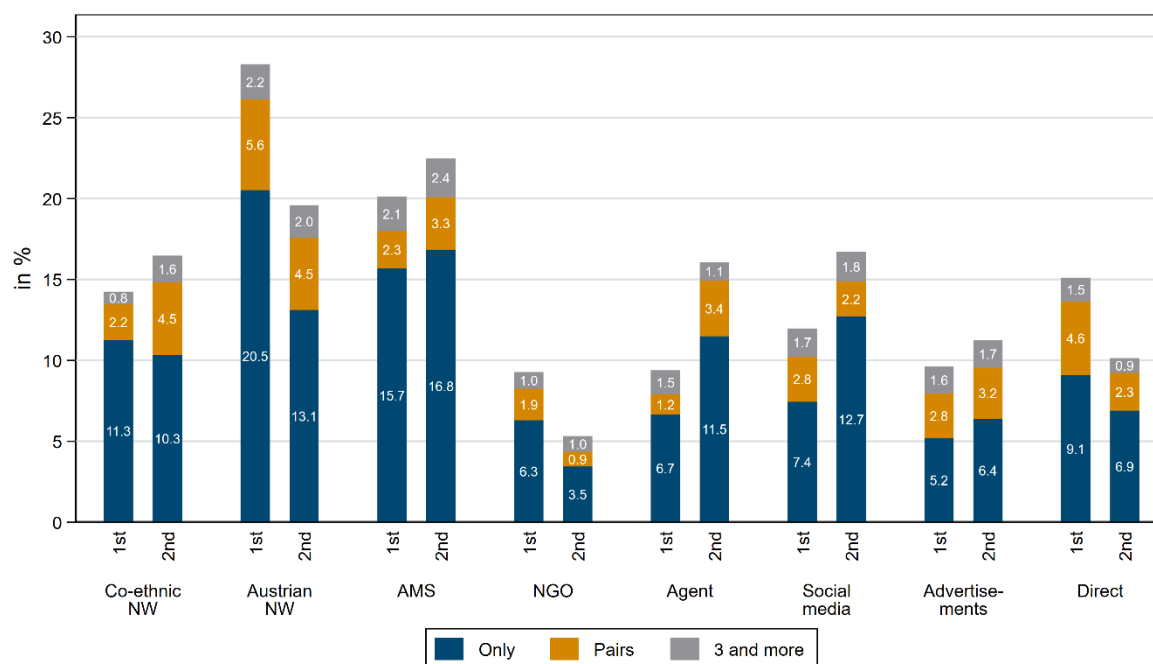
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Table A.1 / Contd.

First transition				Second transition			
Variable	Code	Mean	Std	Variable	Code	Mean	Std
Job search strategies				Job search strategies			
Co-ethnic social networks	6	0.15	0.35	Co-ethnic social networks	6	0.16	0.37
Austrian social networks	7	0.30	0.46	Austrian social networks	7	0.19	0.40
AMS	1	0.21	0.41	AMS	1	0.26	0.44
NGOs	2	0.11	0.31	NGOs	2	0.06	0.24
Private agents	3	0.08	0.27	Private agents	3	0.15	0.36
Social media	5	0.08	0.28	Social media	5	0.15	0.36
Advertisements	4	0.08	0.28	Advertisements	4	0.10	0.30
Direct/blind application	8	0.15	0.36	Direct/blind application	8	0.09	0.29
Province of residence				Province of residence			
Tyrol/Vorarlberg (ref)	1	0.12	0.33	Tyrol/Vorarlberg (ref)		0.12	0.33
Burgenland	2	0.01	0.11	Burgenland	1	0.01	0.11
Carinthia	3	0.03	0.18	Carinthia	2	0.03	0.16
Lower Austria	4	0.08	0.27	Lower Austria	3	0.08	0.26
Upper Austria	5	0.08	0.27	Upper Austria	4	0.08	0.28
Salzburg	6	0.07	0.25	Salzburg	5	0.07	0.25
Styria	7	0.12	0.33	Styria	6	0.12	0.33
Vienna (capital)	8	0.48	0.50	Vienna (capital)	7	0.49	0.50
				Job type			
				Standard (ref)		0.73	0.30
				Part-time		0.15	0.36
				Marginal		0.06	0.23
				Volunteer		0.06	0.24
Panellist				Panellist			
No (ref)	0	0.79	0.41	No (ref)	0	0.80	0.40
Yes	1	0.21	0.41	Yes	1	0.20	0.40
Wave FEs				Wave FEs			
Wave 2 (ref)	1	0.23	0.42	Wave 2 (ref)	1	0.29	0.45
Wave 3	1	0.30	0.46	Wave 3	1	0.28	0.45
Wave 4	1	0.27	0.44	Wave 4	1	0.25	0.43
Wave 5	1	0.21	0.41	Wave 5	1	0.19	0.39
Exclusion restriction				Exclusion restriction			
No. of children		1.47	2.68	Children: yes	1	0.51	0.64

Note: Summary statistics refer to the sample used in the analysis. Variables ending with 'missing' refer to dummies included for missing categories (that are not shown in the result tables above).

Source: FIMAS+INTEGRATION, FIMAS+INTEGRATION², FIMAS+YOUTH, FIMAS+Women, own calculations.

Figure A.1 / Frequency of combinations of job search strategies by transition period

Note: 'Only' refers to individually used strategies only, 'pairs' to pairwise use, and '3 and more' to combinations of strategies involving 3 or more job search strategies. The difference to 100% indicates the frequency of 'not used'. Moreover, 1st and 2nd refer to the first and second transition, respectively. Weights were used.

Source: FIMAS+INTEGRATION, FIMAS+INTEGRATION², FIMAS+YOUTH, FIMAS+Women, own calculations.

Table A.2 / Determinants of the difference between the first and the current job in Austria – accounting for the ceiling effect

	(1) ΔISEI	(2) Prob. empl.	(3) ΔISEI	(4) ΔISEI	(5) ΔISEI	(6) ΔISEI	(7) ΔISEI	(8) ΔISEI
ISEI of the first job in Austria	-0.264*** (0.040)		-0.266*** (0.040)	-0.262*** (0.040)	-0.265*** (0.040)	-0.266*** (0.040)	-0.262*** (0.041)	-0.263*** (0.040)
Occup. downgrade	0.059* (0.031)		0.302** (0.145)	0.063* (0.033)	0.074** (0.033)	0.058 (0.049)	0.109 (0.083)	0.179* (0.094)
Log length of stay (LOS)*	-2.388* (1.393)	0.269*** (0.033)	-3.427** (1.746)	-2.317 (1.658)	-2.391 (1.664)	-2.297 (1.616)	-2.289 (1.697)	-2.641 (1.617)
Log age on arrival* (AOA)	-2.272 (1.664)	0.149*** (0.044)	-2.330* (1.378)	-1.813 (1.396)	-2.470* (1.388)	-2.199 (1.377)	-2.545* (1.441)	-2.352* (1.381)
Female	1.417 (1.568)	-0.338*** (0.023)	1.470 (1.522)	1.400 (1.565)	2.481 (1.833)	1.256 (1.515)	1.406 (1.599)	1.604 (1.570)
Educational attainment in Austria (Ref: none)								
AT-ISCED: low	0.405 (1.357)	0.009 (0.045)	0.239 (1.366)	0.445 (1.358)	0.469 (1.359)	0.375 (1.375)	0.509 (1.361)	0.333 (1.369)
AT-ISCED: medium	-2.482* (1.354)	0.145*** (0.040)	-2.237* (1.347)	-2.390* (1.349)	-2.364* (1.327)	-2.408* (1.348)	-2.381* (1.362)	-2.533* (1.348)
AT-ISCED: high	-0.175 (2.532)	0.121 (0.076)	0.114 (2.585)	-0.163 (2.555)	-0.249 (2.561)	-0.504 (2.508)	-0.332 (2.548)	-0.297 (2.571)
Pre-migration educational attainment (Ref: low)								
ISCED-none	1.086 (1.917)	0.001 (0.065)	1.198 (1.920)	1.249 (1.931)	1.073 (1.890)	1.033 (2.074)	1.363 (1.939)	1.093 (1.925)
ISCED-medium	0.516 (1.035)	0.088*** (0.030)	0.407 (1.030)	0.430 (1.034)	0.515 (1.025)	0.156 (1.178)	0.553 (1.035)	0.421 (1.044)
ISCED-high	2.491** (1.190)	0.112*** (0.030)	2.448** (1.189)	2.455** (1.191)	2.518** (1.185)	2.683** (1.276)	2.520** (1.192)	2.320* (1.201)
Current German language skills (Ref: none)								
Beginner/elementary	0.274 (1.218)	-0.009 (0.037)	0.153 (1.212)	0.224 (1.213)	0.337 (1.207)	0.334 (1.203)	0.290 (1.209)	0.270 (1.203)
Intermediate/upper-intermediate	1.371 (1.023)	0.091*** (0.033)	1.306 (1.025)	1.382 (1.021)	1.382 (1.006)	1.492 (1.008)	1.391 (1.026)	1.355 (1.014)
Advanced/proficient	0.852 (1.943)	0.236*** (0.064)	0.896 (1.941)	0.844 (1.951)	0.813 (1.919)	0.972 (1.922)	0.956 (1.938)	0.802 (1.914)
Residential status (Ref: subsidiary protection)								
Recognised refugee	0.371 (1.119)	-0.029 (0.032)	0.430 (1.114)	0.333 (1.128)	0.310 (1.124)	0.331 (1.108)	0.810 (1.029)	0.475 (1.108)
Other	1.508 (1.450)	-0.019 (0.044)	1.505 (1.441)	1.491 (1.455)	1.486 (1.451)	1.469 (1.449)	2.104 (1.403)	1.904 (1.470)
Country of birth (Ref: Iraq)								
Iran	-0.119 (1.677)	0.023 (0.047)	-0.085 (1.672)	-0.227 (1.676)	-0.112 (1.679)	-0.160 (1.656)	0.146 (1.622)	0.947 (1.764)
Afghanistan	-1.606 (1.940)	0.024 (0.048)	-1.444 (1.941)	-1.631 (1.942)	-1.586 (1.939)	-1.566 (1.892)	-1.453 (1.903)	-0.052 (1.884)
Syria	-1.897 (1.450)	0.017 (0.039)	-1.876 (1.451)	-1.959 (1.453)	-1.906 (1.451)	-1.892 (1.435)	-1.714 (1.397)	-0.087 (1.567)
Job search strategies								
Co-ethnic networks	-0.310 (1.273)		-0.335 (1.253)	-0.353 (1.264)	-0.456 (1.248)	-0.158 (1.274)	-0.349 (1.259)	-0.494 (1.286)
Austrian networks	-0.588 (1.003)		-0.588 (0.993)	-0.552 (0.995)	-0.606 (0.994)	-0.487 (0.984)	-0.571 (1.007)	-0.558 (1.003)
AMS	-0.554 (0.991)		-0.619 (0.989)	-0.570 (0.992)	-0.522 (0.997)	-0.470 (1.002)	-0.531 (0.993)	-0.571 (0.975)
NGOs	-1.036 (1.188)		-1.034 (1.183)	-1.000 (1.196)	-1.073 (1.169)	-0.983 (1.206)	-0.902 (1.199)	-0.785 (1.160)
Private agents	0.872 (0.993)		0.799 (0.990)	0.822 (0.994)	0.869 (0.991)	0.932 (0.995)	0.803 (0.970)	0.859 (0.982)
Social media	-0.811 (1.014)		-0.754 (1.006)	-0.842 (1.016)	-0.839 (1.010)	-0.633 (0.996)	-0.736 (1.036)	-0.617 (1.021)
Ads	2.957** (1.344)		2.970** (1.345)	2.973** (1.342)	2.924** (1.351)	2.952** (1.330)	2.867** (1.313)	2.916** (1.285)
Direct application	1.105 (1.258)		1.176 (1.234)	1.089 (1.253)	1.154 (1.245)	1.220 (1.251)	1.053 (1.266)	0.960 (1.260)

contd.

Table A.2 / Contd.

	(1) ΔISEI	(2) Prob. empl.	(3) ΔISEI	(4) ΔISEI	(5) ΔISEI	(6) ΔISEI	(7) ΔISEI	(8) ΔISEI
Job types								
Part-time	-3.100*** (0.929)		-3.170*** (0.923)	-3.117*** (0.931)	-3.123*** (0.918)	-3.195*** (0.934)	-3.105*** (0.929)	-3.143*** (0.925)
Marginally employed	-1.226 (1.447)		-1.089 (1.465)	-1.105 (1.465)	-0.897 (1.393)	-1.195 (1.461)	-1.254 (1.452)	-1.157 (1.402)
Volunteer	3.301** (1.602)		3.270** (1.565)	3.412** (1.568)	3.556** (1.570)	3.341** (1.616)	3.301** (1.616)	3.119** (1.566)
Panellist	-0.164 (0.810)	0.045* (0.027)	-0.156 (0.808)	-0.139 (0.811)	-0.205 (0.809)	-0.209 (0.811)	-0.142 (0.810)	-0.216 (0.824)
Log LOS*occup. downgrade			0.087* (0.048)					
Log AOA*occup. downgrade				-0.066 (0.072)				
Female*occup. downgrade					-0.075 (0.058)			
ISCED-none*occup. downgrade						-0.047 (0.151)		
ISCED-med*occup. downgrade						0.035 (0.065)		
ISCED-high*occup. downgrade						-0.009 (0.054)		
Rec. refugee*occup. downgrade							-0.056 (0.079)	
Other*occup. downgrade							-0.073 (0.092)	
Iran*occup. downgrade								-0.082 (0.111)
Afghanistan*occup. downgrade								-0.124 (0.104)
Syria*occup. downgrade								-0.154* (0.093)
Children		-0.085*** (0.028)	-0.270*** (0.090)	-0.269*** (0.090)	-0.270*** (0.090)	-0.267*** (0.090)	-0.267*** (0.090)	-0.268*** (0.090)
athrho		-0.330 (0.224)	-0.330 (0.216)	-0.331 (0.222)	-0.358 (0.218)	-0.319 (0.216)	-0.336 (0.230)	-0.365* (0.222)
Insigma		2.243*** (0.057)	2.241*** (0.056)	2.242*** (0.056)	2.246*** (0.057)	2.239*** (0.055)	2.243*** (0.058)	2.245*** (0.059)
Wave FEs	yes	yes	yes	yes	yes	yes	yes	yes
Constant	24.263*** (7.000)		11.099* (6.672)	16.836*** (4.749)	24.832*** (6.933)	23.424*** (6.795)	24.212*** (7.036)	23.415*** (6.912)
No. of obs.	3,320	3,320	3,320	3,320	3,320	3,320	3,320	3,320

Note: Results stem from Heckman selection models, with a dummy for children as exclusion restriction. ΔISEI is the difference between the occupational status of the first job and the current job in Austria. Prob. empl. refers to the probability of being in employment. athrho is the Fishers' z transformation of the correlation between the error terms of the outcome and selection equations, while Insigma refers to the standard deviation of the residual of the outcome equation. Marginal effects are reported for the probability of being in employment. Robust standard errors in parentheses. Estimations also include dummies for the year in which a person started the first job as well as for different provinces.

Weights are applied. *** p<0.01, ** p<0.05, * p<0.1

Source: FIMAS+INTEGRATION, FIMAS+INTEGRATION², FIMAS+YOUTH, FIMAS+Women.

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