

LABOUR MARKET INTEGRATION OF REFUGEES DURING THE COVID-19 CRISIS IN AUSTRIA

Evaluation of the FIMAS Refugee Panel

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Key findings

The aim of the **FIMAS project series** is to track and depict the integration processes of refugees and beneficiaries of subsidiary protection living in Austria. The series of projects is designed as a **longitudinal survey** in order to observe integration processes over time and identify causalities. The project focuses on **labour market integration** along with any factors and other aspects of integration (i.e. social integration, education/training integration, housing integration, etc.). The sample group is made up of beneficiaries of protection from the **main countries of origin of refugees from Syria, Afghanistan, Iraq and Iran**.

The report presents findings from the **special panel analysis**, based on the subsample of survey participants who took part in both the third wave (in spring 2019) and the fourth wave (in autumn 2020) of the survey. Comparing the labour market situation of this group in spring 2019 – before the COVID-19 crisis had begun – with the situation in autumn 2020 – during the COVID-19 crisis – makes a precise analysis possible of the **effects of the COVID-19 crisis on the labour market integration of refugees and beneficiaries of subsidiary protection living in Austria**.

In this context, **three different aspects** were examined: First, the **change in labour market status** – between employment, unemployment and inactivity – between the year before the start of the COVID-19 crisis and the year during the crisis. In addition to general, complex labour market dynamics, other underlying factors that help to explain the change in status were identified and analysed. Second, the **change from unemployment before the COVID-19 crisis to atypical employment during the crisis** was analysed. This provides information on the quality of work found during the COVID-19 crisis. Once again, factors were identified that promote the change to atypical employment or help to prevent such a change. Third, the process of **occupational mobility** between the last employment in the country of origin, the first employment in Austria and the current employment in Austria, both before and during the COVID-19 crisis. The occupational trajectories were documented on the basis of occupational status and are presented broken down by gender, educational level and country of origin.

Change in labour market status between employment, unemployment and inactivity

- Before the start of the COVID-19 crisis, 45% of all refugees included in the FIMAS panel were employed, 41% unemployed and 14% inactive.
- In the course of the COVID-19 crisis, labour market dynamics were quite positive among refugees (those included in the FIMAS panel). 80% of all refugees who were employed before the start of the COVID-19 crisis continued to be **employed** during the crisis, with 13% becoming unemployed and the remaining 7% becoming inactive; 51% of all refugees who were **unemployed** before the COVID-19 crisis began took up employment, with 35% remaining unemployed and 14% changing to inactivity; only 30% of all refugees who were **inactive** before the COVID-19 crisis started remained inactive and 70% changed to active status.
- Two groups experienced adverse labour market developments, however, which was predominantly manifested by a **lack of labour market participation**. **Female refugees** and



refugees with a high (tertiary) level of education displayed a greater tendency to change from unemployment to inactivity or they remained in inactivity.

- Furthermore, there is a **negative “Vienna effect”**: refugees who lived in Vienna before the start of the COVID-19 crisis were less likely to change from unemployment to employment and were more likely to change from inactivity to unemployment.
- Various elements of the **social integration** of refugees play a major role in observable labour market dynamics:
 - Refugees with greater **social capital** (resources and social support at their disposal in certain situations) are more likely to change from unemployment to inactivity.
 - Refugees with larger **social networks** are more likely to change from inactivity to unemployment.
 - Another important factor is the **ethnic composition of social networks**, and above all the percentage of people from third countries. Refugees with a larger percentage of people from third countries in their social networks are more likely to change from employment to unemployment, remain unemployed or change from unemployment to inactivity, but also to change from inactivity to unemployment.
- **German language proficiency** has an important, but nuanced, effect. Refugees with better German **speaking and comprehension skills** are more likely to change to inactivity from both employment and unemployment. This reflects the overall worse performance of refugees with a high level of education, who more frequently changed to inactivity or remained in inactivity. On the other hand, refugees with better **reading and writing skills** and **speaking and comprehension skills** are more likely to change from inactivity to employment.

Change from unemployment to atypical employment

- In roughly 60% of all refugees who changed from unemployment to employment, this involved changing to atypical employment.
- Among refugees who changed to atypical employment, the **most common form of atypical employment** was the **temporary employment contract**, followed by part-time employment, freelance service contracts and contracts to produce a work.
- The likelihood of changing from unemployment to atypical employment is **greater** among older refugees, and also among refugees with larger social networks and with a higher percentage of migrants – particularly people from third countries – in their social networks.
- Conversely, the likelihood of changing to atypical employment is **lower** among refugees with a higher (tertiary) level of education, with a longer length of stay in Austria and better German language skills, in terms of both reading and writing skills and speaking and comprehension skills.

Occupational trajectories

- The **occupational trajectories** (measured on the basis of a compiled employment status indicator) from the last employment in the country of origin to the current employment in



Austria before the start of the COVID-19 crisis have a **U-shaped pattern**, with a sharp downturn between the last employment in the country of origin and the first employment in Austria, followed by a recovery between the first and the current employment before the start of the COVID-19 crisis. This catching-up process was, however, interrupted by the **COVID-19 crisis** and instead of a further improvement in the occupational status as expected, there was a **another downturn**.

- Occupational trajectories differ by gender, with **male refugees** following a **path with a more pronounced U-shaped curve**. As a consequence of the COVID-19 crisis, both genders experienced a drop in their occupational status, but this was slightly more pronounced among male refugees.
- Occupational trajectories differ by the level of education before immigration, with **refugees with a high (tertiary) level of education** showing a **more pronounced U-shaped pattern**. The **COVID-19 crisis** only caused a **downturn in occupational status** for **refugees with a high level of education**, while refugees with a low or medium level of education were able to maintain the occupational status they had before the start of the COVID-19 crisis.
- Occupational trajectories also differ on the basis of the refugees' country of origin. Refugees from Iran show an **occupational trajectory with a very pronounced U-shaped pattern**. During the COVID-19 crisis, refugees from Iran and Afghanistan experienced a second downturn in their occupational status, while refugees from Syria and Iraq saw their occupational status improve.



Introduction

The COVID-19 crisis has affected all countries globally, subjecting them to an experiment of an almost unprecedented nature that has already had a major impact on labour markets in the short, medium and longer term, and this is set to continue. This applies to developing and newly industrialised countries and also to the richer industrialised countries. The latter and the situation in Austria are the subject of the following analysis. On the one hand, there were selective lockdowns which hit certain sectors of industry particularly hard and, on the other hand, unprecedented measures were put in place to protect jobs. Because of the lockdown measures and also behavioural changes in the population (reduced social interaction, more working from home), new niches of activity developed (or increased) (food and parcel delivery, greater demand for storage) that may be particularly relevant for more marginal groups in the labour market, which often include recent immigrants.

In the medium and long term, one question of particular importance for the integration of refugees in the labour market is whether the COVID-19 crisis will have a lasting impact and whether integration processes (including those that play an indirect role for labour market integration, such as social interaction with the local population and language acquisition) have undergone a “shock” that may take some time to recover from and/or may perpetuate social and economic segmentation.

The following study attempts to use longitudinal data extracted from the repeated FIMAS surveys to measure the direct effects of the COVID-19 crisis on the refugee groups that were covered in the FIMAS survey waves in terms of their labour market status (employment, unemployment, inactivity) and also with regard to changes in their “occupational status”. The analysis will also show the effects of the COVID-19 crisis on various groups (broken down by age, gender, country of origin, level of education, etc.), so as to highlight the vulnerability of specific subgroups, for which social and labour market policy measures are accordingly of particular importance.

Features of the FIMAS panel

The following analysis is based on the new FIMAS panel, made up of the last three of the four surveys previously carried out among refugees and beneficiaries of subsidiary protection living in Austria, namely FIMAS+INTEGRATION, which was carried out between September 2017 and May 2018; FIMAS+INTEGRATION², carried out between March and May 2019; and FIMAS-YOUTH, carried out between October and December 2020.

Details on the surveying methodology (target group, sample, research tool used, data collection phase, data cleaning and weighting) are available in the corresponding research reports of the three named surveys (Hosner and Palinkas, 2020; Baumgartner et al., 2020; Baumgartner and Palinkas, 2021).



Size of the FIMAS panel

The **FIMAS panel** is a smaller subsample of refugees who repeatedly participated in the FIMAS survey. It is made up of those groups of individuals who provided their contact details in one of the surveys they participated in previously, explicitly for the purpose of a repeat survey and who then also participated in one of the following surveys.

As the present analysis concerns the effects of the COVID-19 crisis, the panel sample only includes those respondents who participated in the fourth FIMAS survey in autumn 2020 (FIMAS+YOUTH). Persons who were surveyed in the previous waves but who were not contacted again in the last survey wave during the COVID-19 crisis have therefore not been included in the FIMAS panel used in this study.

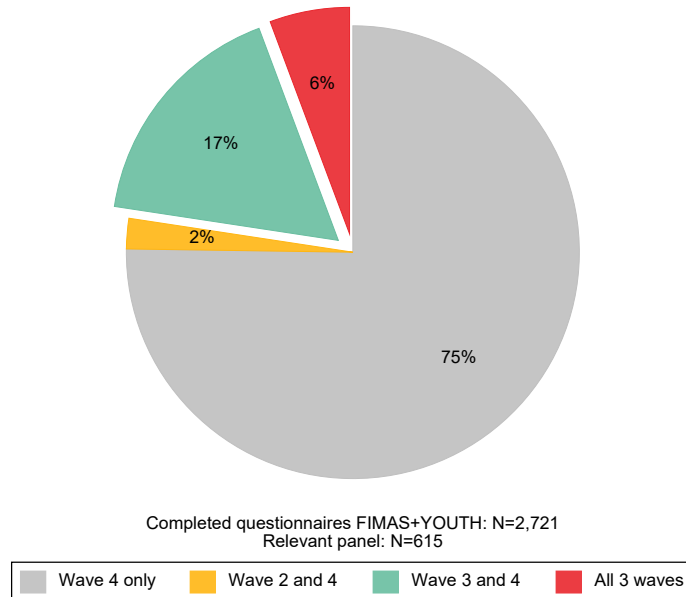
The analysis of the FIMAS panel data is based on weighted data. The weighting of the data serves to balance out different sampling probabilities and participation rates of individual (panel) subgroups and prevent any resulting distortions that could otherwise occur. The weighting variable takes into account the original drawing probability for each individual respondent in the (panel) sample, and performs a calibration – in a post-stratification process – of the distribution of the respondents to the estimated full population of refugees according to citizenship, gender and age groups in the survey waves examined.

Interviews that were not completed (approximately 1,000) were excluded from further data analysis. Accordingly, a total of 2,721 of the 3,650 interviews performed in autumn 2020 were available for further analysis.

As Graph 1 shows, 75% of all survey participants only took part in the last FIMAS survey (the fourth wave), while the remaining 25% also took part in at least one of the previous FIMAS surveys. Given that the following analysis focuses primarily on the problems of the labour market integration of refugees living in Austria during the COVID-19 crisis, it only includes people who took part in both the survey directly before the start of the COVID-19 crisis (the third FIMAS wave) and the survey carried out during the COVID-19 crisis (the fourth FIMAS wave). The 2% whose initial survey took place earlier than this (i.e. all participants who took part in the second FIMAS wave and the fourth FIMAS wave) are therefore excluded from further considerations. The FIMAS panel analysed here therefore contains 23% of all the participants in the fourth survey, i.e. 615 refugees.



Graph 1: Composition of panellists



Source: FIMAS+YOUTH, authors' calculations.

Probit estimate of FIMAS panel participation

People who repeatedly participated in the FIMAS survey – referred to as panellists – may differ from those who only participated in the last FIMAS survey in certain characteristics. For example, refugees with certain characteristics and easier access to digital media may be more willing and more inclined to participate in the survey more than once. In an initial step, it was therefore determined whether the panellists systematically differed from the people who solely took part in the last survey (the fourth wave) and if so how. For this purpose, the probability of the refugees being included in the group of panellists was identified in a regression model. The following characteristics were considered as regressors, i.e. explanatory factors:

- Age
- Gender
- Marital status
- Level of education before immigration
- Family reunification
- Country of origin
- Province of residence
- Intention to remain in Austria
- Intensity of contact with family, friends or acquaintances in country of origin
- Length of stay



- Labour market status
- Social integration
 - Social capital measured as an index calculated on the basis of a series of questions regarding potential assistance in various circumstances (such as moving house, looking for work, filling out official forms, financial supports and talking about personal problems).
 - Size of social networks (in total) and their ethnic composition in terms of the percentage of (i) people from country of origin, (ii) Austrians and (iii) people from third countries in the overall social network
- Reading and writing skills: Native language and German

Table A.1 in the appendix shows the results of this analysis for various specifications. The analysis starts with an extensive base specification and then adds various language skills in the form of reading and writing skills in the native language and in German. The reading and writing skills in the native language and in German are, however, highly correlated, so they were only added individually and separately. As the reading and writing skills in the native language and in German correlate with the level of education before immigration, however, the information on the level of education before immigration was removed from the model to guarantee undistorted results.

The results show that panellists differ from non-panellists in some essential characteristics. Panellists are on average older, have a lower level of education (before immigration) and predominantly come from Iran, Iraq and Syria, with refugees from Afghanistan being less common. They are less likely to live in Vienna or Upper Austria and more likely to live in Salzburg, and be in employment. Furthermore, panellists have better reading and writing skills in both their native language and in German. Interestingly, the calculated coefficients suggest that the level of reading and writing skills is similar in both languages. Breaking down the overall reading and writing skills variable into the two separate subcomponents of reading skills and writing skills reveals, however, that the primary difference between panellists and non-panellists is that the panellists have considerably better reading skills.

Conversely, there are no significant differences in terms of gender, marital status, mode of entry, intention to remain in Austria, intensity of contact with family, friends or acquaintances in the country of origin, length of stay or various components of social integration.

In the following analyses, some of these differences are taken into account through the use of panel weightings that assist in correcting differences in citizenship, gender and age in according with their underlying stratification.

Labour market dynamics: status changes between employment, unemployment and inactivity

The employment status is a key indicator of a target group's labour market integration, and it can change as the result of the COVID-19 pandemic and its far-reaching effects on labour markets.



Using the approach taken by the International Labour Organization (ILO), the employment or labour market status of refugees was recorded on the basis of three groups, namely employment, unemployment and inactivity.

The employed group includes all people who did at least one hour of paid work in the reference week of the survey. This also includes people who are marginally employed or working part-time. People who are normally in employment but who did not work in the reference week because they were on holiday, sick or on parental leave are also considered employed.

The unemployed group is made up of people who are not employed but who had actively looked for a job in the past four weeks and who are potentially available to start working within two weeks.

Finally, the inactive group includes all those who are not deemed employed or unemployed. This includes housewives and househusbands, people not in paid employment as they are attending school, degree studies or (AMS) courses, people exclusively doing voluntary work and people not looking for work or not available to the labour market because of sickness, not having a work permit, too little knowledge of German or other reasons.

On this basis, refugees' labour market movements between the different labour market statuses of employment, unemployment and inactivity during the COVID-19 crisis are examined.

Markov chain approach

To analyse the complex labour market dynamics between the three labour market statuses employment, unemployment and inactivity, a Markov chain approach was adopted. The principal idea behind this approach is illustrated by the transition matrix in Table 1. Accordingly, for each person in the FIMAS panel, the labour market status both before the start of the COVID-19 crisis (wave 3: W3) and the during the COVID-19 crisis (wave 4: W4) was identified and status transitions were thus determined. For example, refugees who were employed before the start of the COVID-19 crisis may still be employed during the COVID-19 crisis, but could also be unemployed or inactive. The same logic applies for the two remaining groups, i.e. for refugees who were either unemployed or inactive before the start of the COVID-19 crisis. This information can then be used to determine the transition probabilities, which are explained in a further step (see below) on the basis of various factors and characteristics.

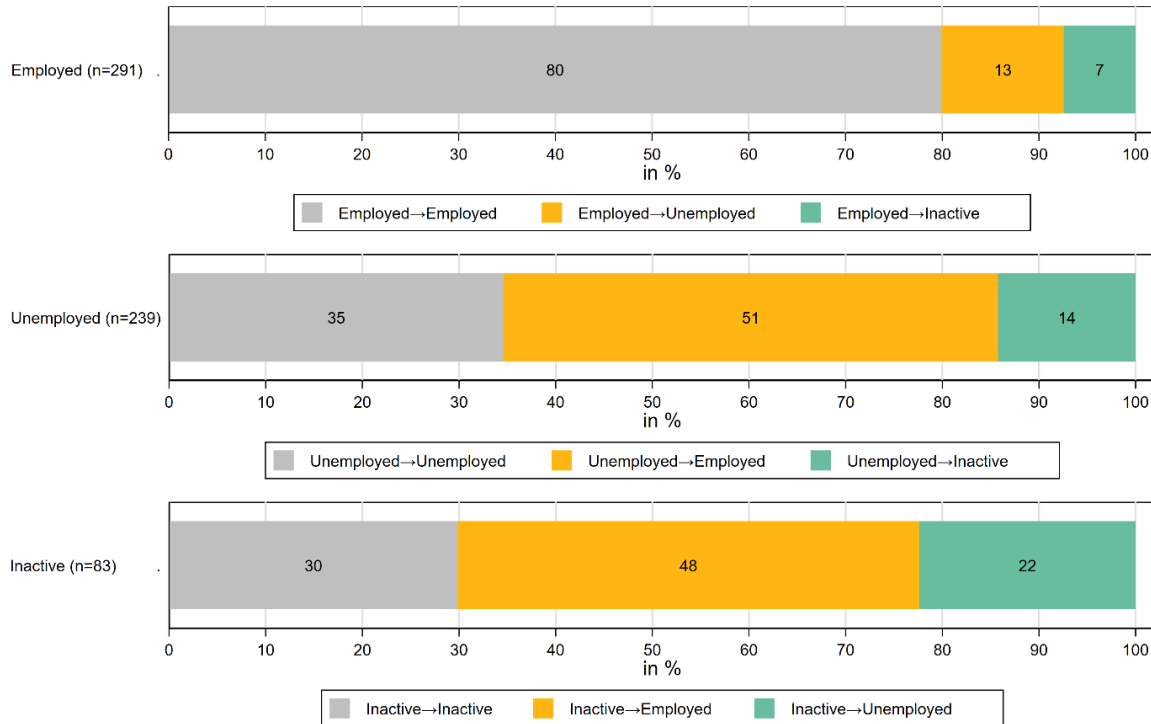
Table 1: Transition matrix

		W4		
		Employed	Unemployed	Inactive
W3	Employed	Employed → Employed	Employed → Unemployed	Employed → Inactive
	Unemployed	Unemployed → Employed	Unemployed → Unemployed	Unemployed → Inactive
	Inactive	Inactive → Employed	Inactive → Unemployed	Inactive → Inactive

Note: authors' depiction.



Graph 2: Change in labour market status between the year before the start of the COVID-19 crisis and the year during the crisis



Source: FIMAS panel (data collections 2019 and 2020), authors' calculations.
Note: Weighted data.

The labour market situation of all refugees included in the FIMAS panel was highly heterogeneous before the start of the COVID-19 crisis: 45% were employed, but 41% were unemployed and 14% were inactive. The complex labour market dynamics and movements that took place in the course of the COVID-19 crisis among the refugees included in the FIMAS panel are shown in Graph 2. The graph shows fundamentally very positive developments. 80% of all refugees who were employed before the start of the COVID-19 crisis continued to be employed during the crisis, with 13% becoming unemployed and the remaining 7% becoming inactive (top panel). Furthermore, 51% of all refugees who were unemployed before the COVID-19 crisis began took up employment, with 35% remaining unemployed and 14% changing from unemployment to inactivity (middle panel). And only 30% of all refugees who were inactive before the COVID-19 crisis remained inactive, while 70% changed to activity (bottom panel). Of this 70%, 75% changed to employment while the remaining 25% became unemployed, thus starting to actively look for employment on the labour market.



Multivariate analysis of the change in labour market status

To identify the factors that would help to explain these complex labour market dynamics and movements, a multivariate analysis was performed in a subsequent step. Specifically, a multinomial logit model was applied separately to all three labour market status situations (i.e. employed, unemployed, inactive), with the group of people who did not experience a change in status serving as the reference group in each group. This model determines the probability of a people with a certain labour market status before the start of the COVID-19 crisis changing to a different labour market status during the COVID-19 crisis.

The following characteristics were taken into account in the statistical models as explanatory variables:

- Age
- Gender
- Marital status
- Level of education before immigration
- Training/education completed in Austria
- Mode of entry
- Country of origin
- Province of residence
- Length of stay
- Social integration
 - Social capital
 - Size of social networks and their ethnic composition
- Reading and writing skills: German
- Speaking and comprehension skills: German

In the analysis, explanatory variables from the previous period (i.e. before the start of the COVID-19 crisis) were used to identify causal effects.¹

Tables A.2 to A.4 in the appendix show the results of this analysis for various specifications. Table A.2 shows the results for the change in status from employment to either unemployment (odd column numbers) or inactivity (even column numbers), Table A.3 shows the results for the change in status from unemployment to either employment (odd column numbers) or inactivity (even column numbers) and Table A.4 shows the results for the change in status from inactivity to either employment (odd column numbers) or unemployment (even column numbers).

The analysis once again starts with an extensive base specification and then adds various language skills in the form of reading and writing skills and speaking and comprehension skills in German and the completion of training/education in Austria. In view of the multi-collinear relationships, all

¹ The variables of the previous period are marked with an “L.” in front of the variable name.



language skills and the completion of training/education in Austria were considered separately, excluding the level of education before immigration, to guarantee undistorted results.

Change from employment to unemployment or inactivity

The results in Table A.2 in the appendix show only a few statistically significant determinants of the change from employment before the start of the COVID-19 crisis to either unemployment or inactivity during the COVID-19 crisis.

There is a certain difference on the basis of the refugees' country of origin, with refugees from Afghanistan being less likely to change from employment to inactivity than refugees from the reference group (from Iran plus other countries of origin).

An important, but nuanced, role is played by the ethnic composition of social networks in this context, with refugees with a larger percentage of people from third countries in their social networks being more likely to change from employment to unemployment than to remain in employment. According to the calculated coefficient, this probability increases by roughly 0.05 percentage points for each additional percentage point increase in the share of people from third countries. Conversely, refugees with a larger share of people from the same country of origin in their social networks are less likely to change from employment to inactivity. The calculated coefficient quantifies this probability as being 0.1 percentage point less for each additional percentage point of people of the same country of origin.

German language skills also play a key role in this context. In particular, refugees with better German speaking and comprehension skills are more likely to change from employment to inactivity. Conversely, German reading and writing skills do not play a significant role, measured on the basis of the standard levels of statistical significance (1%, 5% or 10%).

Change from unemployment to employment or inactivity

The results in Table A.3 in the appendix show that female refugees, unlike male refugees, are more likely (13 to 19 percentage points) to change from unemployment before the start of the COVID-19 crisis to inactivity during the COVID-19 crisis. This gender-specific effect is robust and highly significant (at the 1% level) and highlights the major problem of a lack of labour market participation among female refugees.

The level of education before immigration plays a nuanced role. While refugees with a medium (secondary) level of education are more likely (20 to 21 percentage points) to change from unemployment to employment, refugees with a high (tertiary) level of education are more likely (7 to 10 percentage points) to change from unemployment to inactivity. This shows that it was easier for refugees with a medium level of education to find employment during the COVID-19 crisis, while refugees with a high level of education had the problem of a lack of labour market participation because of the greater change to inactivity.



Furthermore, a regional and province-specific difference can be seen. There is namely a significant “Vienna effect”: refugees who lived in Vienna before the start of the COVID-19 crisis were less likely (17 to 20 percentage points) to change from unemployment to employment. This can be explained by Vienna’s labour market being structurally more problematic, which is reflected in a considerably higher unemployment rate.

Social integration also plays a key role, both in the form of social capital and the ethnic composition of refugees’ social networks. Refugees with greater social capital are more likely (0.2 to 0.3 percentage points) to change from unemployment to inactivity. On the other hand, as the percentage of people from third countries in refugees’ social network increases, they become more likely to remain in unemployment or to change from unemployment to inactivity.

German language skills are once again seen to play a major role. Refugees with better German speaking and comprehension skills are more likely to change from unemployment to inactivity. On the other hand, however, German reading and writing skills do not play a significant role, measured on the basis of the standard levels of statistical significance.

Change from inactivity to employment or unemployment

The results in table A.4 in the appendix show, as expected, that older refugees are less likely to change from inactivity before the start of the COVID-19 crisis to employment during the COVID-19 crisis.

A gender-specific difference can once again be observed. Female refugees are more likely to remain inactive. This gender-specific effect is robust and highly significant (at the 1% level) and highlights once again the major problem of a lack of labour market participation (in this case under the specific conditions of the COVID-19 crisis) among female refugees.

Furthermore, there are differences on the basis of marital status. Unlike single refugees, married refugees are more likely (18 to 26 percentage points) to change from inactivity to employment.

The level of education before immigration also plays a nuanced role. While refugees with a medium (secondary) level of education are less likely (22 to 27 percentage points) to change from inactivity to unemployment, refugees with a high (tertiary) level of education are less likely (17 to 22 percentage points) to change from inactivity to employment.

There are also differences according to the refugee’s country of origin. Refugees from Afghanistan are more likely to change from inactivity to employment and less likely to change from inactivity to unemployment. In contrast, refugees from Iraq are less likely to change from inactivity to employment but considerably more likely to change from inactivity to unemployment.

A “Vienna effect” can once again be observed: refugees who lived in Vienna before the start of the COVID-19 crisis were more likely (13 to 17 percentage points) to change from inactivity to unemployment. However, this effect has a low level of significance (10%) and is not particularly robust



in comparison with all specifications. This shows that inactive refugees living in Vienna primarily return to the labour market as unemployed people and not as employees.

On the other hand, social integration plays a key role, in the form of both the size and the ethnic composition of social networks. It can be seen that refugees with larger social networks are also more likely to change from inactivity to unemployment. This finding indicates that larger social networks help to return inactive refugees to the labour market, even if this is only (initially) as job seekers. Furthermore, the ethnic composition of social networks is of importance. Refugees with a larger percentage of migrants (i.e. people either from the same country of origin or a third country) in their social networks are less likely to change from inactivity to employment but more likely to change from inactivity to unemployment. Differentiating further between people from the same country of origin and people from third countries indicates that the percentage of people from third countries predominantly helps to bring inactive refugees back to the labour market, where they actively look for employment. This differentiated effect is demonstrated by the different sizes of the calculated coefficients.

German language skills are also seen to play a key role. Refugees with better reading and writing skills and speaking and comprehension skills are considerably more likely to change from inactivity to employment. This effect has a high level of significance (1%) and indicates that German language skills are of crucial importance for the transition from inactivity to employment.

Change to atypical employment

The percentage of atypical employment provides insight into the quality of the work found and is also an indicator of elevated risk of finding oneself in potentially precarious working and living conditions (Keller, 2011).

Atypical work refers to employment that does not constitute the standard or “typical” model of regular, permanent full-time employment with one single employer over a prolonged period of time. The latter, on the other hand, is defined as permanent full-time employment with social benefits and regular working hours, guaranteeing regular income and providing pension payments and protection from sickness and unemployment through wage-related social security systems.

The definition of atypical employment used in this study is based on the approach taken by Statistics Austria in its microcensus (Knittler, 2016). The following forms of atypical employment were collected in the FIMAS questionnaire: part-time work, marginal employment, temporary work², freelancer service contracts / contracts to produce a work (newly self-employed persons) and the lack of a work

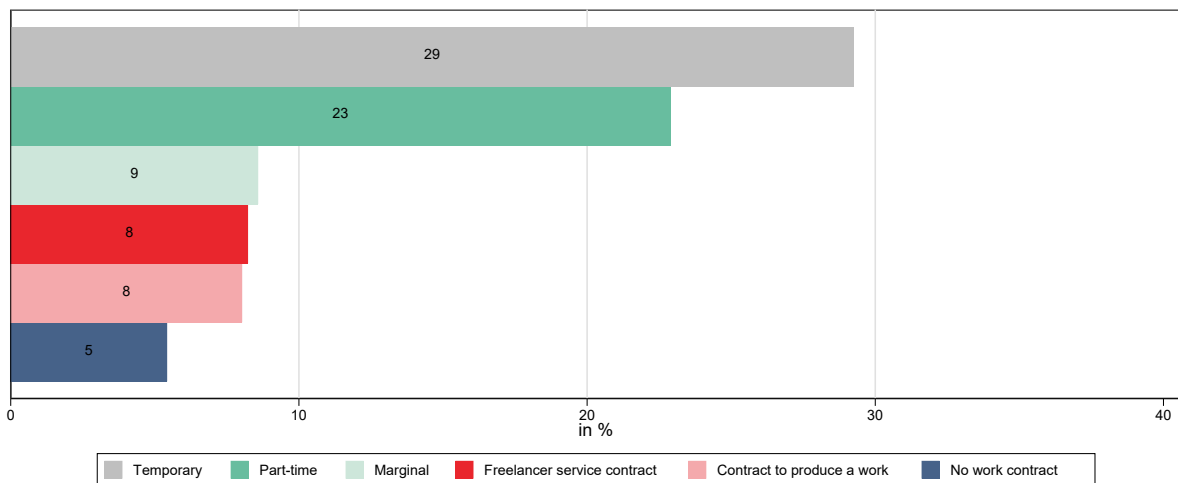
² Apprentices are not included here: apprentices with fixed-term contracts are not considered atypically employed.



contract.³ Consequently, atypical employment is assumed when at least one of the named forms of atypical employment applies.

The main focus is once again on the change in labour market status between the year before the start of COVID-19 crisis and the year of the COVID-19 crisis, with only the change from unemployment before the start of COVID-19 crisis to atypical employment during the COVID-19 crisis being analysed.⁴

Graph 3: Percentage of atypical employment forms among refugees who change from unemployment to atypical employment



Source: FIMAS panel (data collections 2019 and 2020), authors' calculations.
Note: Weighted data.

It can in general be observed that for roughly 60% of all refugees who changed from unemployment to employment, this involved changing to atypical employment. It is particularly interesting and informative to consider the various forms of atypical employment (Graph 3). This is where the largest differences can be seen. The most common atypical employment form among refugees who changed to atypical employment is the temporary work contract (29%), followed by part-time employment (23%) and freelancer service contracts / contracts to produce a work (newly self-employed persons) (16% in total). Marginal employment (9%) and the lack of a work contract (5%) are far rarer.

³ In contrast to the microcensus performed by Statistics Austria, temporary agency work and temporary work were not recorded, so they cannot be used to define atypical employment.

⁴ Because of the low number of observations in the inactive group, an additional analysis of the change from inactivity (before the start of the COVID-19 crisis) to atypical employment (during the COVID-19 crisis) is not possible.



Probit estimate of the change to atypical employment

In an additional step, the factors and characteristics were determined in statistical, quantitative context that could help to explain the change to atypical employment. For this purpose, a regression model was used to determine the likelihood of refugees changing from unemployment (before the start of COVID-19 crisis) to atypical employment (during the COVID-19 crisis), relative to a change to typical employment. The following characteristics were used as explanatory variables:

- Age
- Gender
- Marital status
- Level of education before immigration
- Training/education completed in Austria
- Mode of entry
- Country of origin
- Province of residence
- Length of stay
- Social integration
 - Social capital
 - Size of social networks and their ethnic composition
- Reading and writing skills: German
- Speaking and comprehension skills: German

To obtain information on the causal relationships, the explanatory variables from the year before the change in status occurred were used in the statistical calculations.⁵

Table A.5 in the appendix shows the results of this analysis for various specifications. Once again, the starting point was an extensive base specification, and various language skills in the form of reading and writing skills and speaking and comprehension skills in German and the completion of training/education in Austria were then added. Because of the multi-collinear relationships, all language skills and completed training/education in Austria were considered separately, excluding the level of education before immigration, to guarantee undistorted results.

The results show that certain characteristics and circumstances are associated with a greater likelihood of changing from unemployment to atypical employment during the COVID-19 crisis. Specifically, older people are significantly more likely to change to atypical employment. This effect is, however, not particularly robust across the specifications.

Moreover, the size and the ethnic composition of refugees' social networks can be seen to play a key role. Refugees with larger social networks are also more likely to change to atypical employment. The

⁵ The variables of the previous period are marked with an "L." in front of the variable name.



level of statistical significance is, however, relatively low (10%). In addition, refugees with a larger percentage of migrants (i.e. people from their country of origin and from third countries) in their social networks are also significantly more likely to change to atypical employment. Further breaking down migrants' social network by (i) people from the country of origin and (ii) people from third countries indicates that people from third countries play a significantly stronger role in this context.⁶

Conversely, certain characteristics and factors can be identified that are associated with a lower likelihood of changing to atypical employment. In comparison with single refugees, married refugees were between 20 and 22 percentage points less likely to change to atypical employment during the COVID-19 crisis. This marital status effect is, however, not robust across all specifications.

Furthermore, the probability of changing to atypical employment among refugees with high (tertiary) education is also considerably lower (by between 18 and 24 percentage points) compared with refugees with a low level of education.

A similar effect can be seen for refugees with longer lengths of stay in Austria, whose likelihood of changing to atypical employment during the COVID-19 crisis drops by roughly 5 percentage points with each additional year spent in Austria.

German language skills once again play a key role. Better reading and writing skills and speaking and comprehension skills result in a lower likelihood of changing to atypical employment. Comparing the calculated coefficients also reveals that reading and writing skills play a slightly more important role than speaking and comprehension skills.

In contrast, no significant effects can be found for the remaining factors. The gender, the country of origin, the place of residence and whether education/training has been completed in Austria do not play any significant role in the change to atypical employment from a statistical perspective.

Occupational trajectories on the basis of occupational status

Migrants, and refugees in particular, typically have great difficulties in finding and keeping employment that corresponds to their skills and experience. They often, at least at the beginning of their migrant status, end up in jobs for which they are overqualified. As they spend more time in the target country, their prospects for occupational advancement also increase.

Conceptually, this process of occupational mobility is normally explained by the assimilation hypothesis, which proposes that the occupational mobility of immigrants takes the form of a U-shaped curve, with a drop in the occupational status from the last job in the country of origin to the first job in the target country followed by a rise in the occupational status in the target country. The initial drop in occupation status is the result of the immigrant's skills, education and experience acquired before

⁶ While a 1 percentage point increase in the people from third countries increases the likelihood of atypical employment by 0.58 percentage points, the figure for an equivalent increase in people from the country of origin was only 0.28 percentage points (i.e. less than half).



fleeing their country of origin not being fully transferable and this leads to the under-utilisation of skills, education and experience. After fleeing the country of origin, however, and as more time is spent in the host country, investments are made in additional human capital (in the form of formal education or learning the local language), social networks are established and experience is acquired, which promotes an improvement in the occupational status and enables a catching-up process in occupational status (Chiswick et al., 2005).

For the analysis of occupational mobility and for testing the U-shaped occupational trajectory hypothesis, the “International Socio-Economic Index of Occupational Status” (ISEI) was used. The ISEI is an internationally standardised measure of the occupational status developed by Ganzeboom et al. (1992) and Ganzeboom and Treiman (1996) using international weighted information on income, education and occupation. The idea behind this index is that each occupation calls for a certain level of education, for which a certain income level can be expected. These three information components can be used to determine the *hierarchical* ISEI index, which was ⁷between 10 and 90⁸ in the last edition.

This index is a continuous measure, with several important advantages: first, it facilitates a quantitative comparison of the occupational status of persons from different countries of origin; second, it avoids subjective and arbitrary decisions regarding how to define occupational advancements or declines; third, it makes it possible to record occupational mobility across very brief intervals.

Information on the occupational status of refugees at four different points in time was used, namely the occupational status of (i) the last job in the country of origin, (ii) the first job in Austria, (iii) the current job in Austria before the start of COVID-19 crisis, and (iv) the current job in Austria during the COVID-19 crisis.⁹ This information can be used to identify three different occupational transitions:

- *First transition:* from the last job in the country of origin to the first job in Austria
- *Second transition:* from the first job in Austria to the current job in Austria before the start of the COVID-19 crisis
- *Third transition:* from the current job in Austria before the start of COVID-19 crisis to the current job in Austria during the COVID-19 crisis

For reasons of consistency and comparability of the results, the analysis is only based on observations for which occupational information (ISCO-08) was available for the four points in time mentioned above. This means that people were excluded if they were unemployed or inactive at any of these

⁷ The ISEI was initially developed on the basis of the ISCO-68 classification and later also adjusted to suit the ISCO-88 and ISCO-08 classifications.

⁸ The lowest value of 10, for example, corresponds to subsistence farmers or kitchen help, and the highest value of 90 to doctors.

⁹ Information on the occupational status in relation to the first three occupations mentioned was collected within the same survey – all participants were asked for retrospective information on previous employment and then for information on their current activity in each wave of the survey, i.e. at the point of time when the survey was taken. This information is encoded on the basis of the three-digit International Standard Classification of Occupations (1988) (ISCO-08) and then assigned to the ISEI Index.

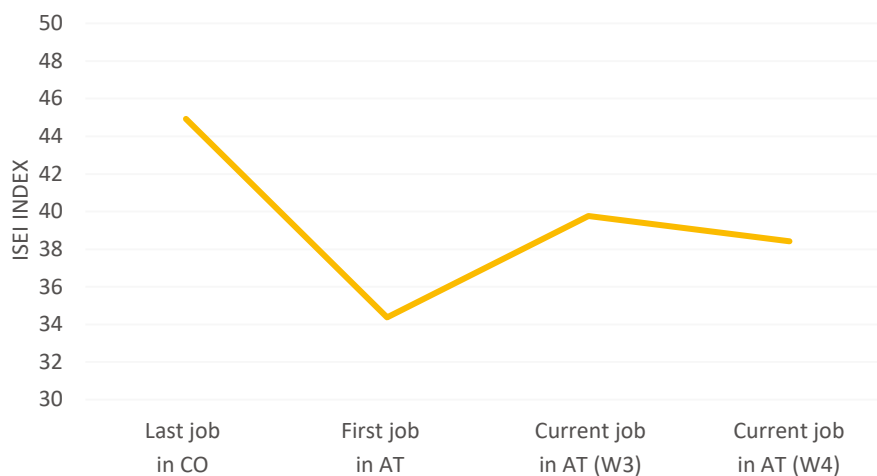


points in time or if they were employed but had not provided any usable information regarding their employment. The following analysis is based on 92 observations (after excluding one clear outlier).

Occupational trajectories in total

Graph 4 depicts the occupational trajectories from the last job in the country of origin (CO) to the current job during the COVID-19 crisis for the entire sample. The results fundamentally confirm the U-shaped occupational trajectory hypothesis: between the last job in the country of origin and the first job in Austria (AT), a strong downturn in occupational status can be seen, amounting to roughly 11 ISEI points. However, a recovery can be seen between the first and the current job before the start of COVID-19 crisis, corresponding to roughly 5 ISEI points. Subsequently, however, this catching-up process is interrupted by the COVID-19 crisis and instead of a further improvement in the occupational status as expected, a downturn of roughly 2 ISEI points can be seen.

Graph 4: Occupational trajectories from the last job in the country of origin to the current job during the COVID-19 crisis



Source: FIMAS panel (data collections 2019 and 2020), authors' calculations.

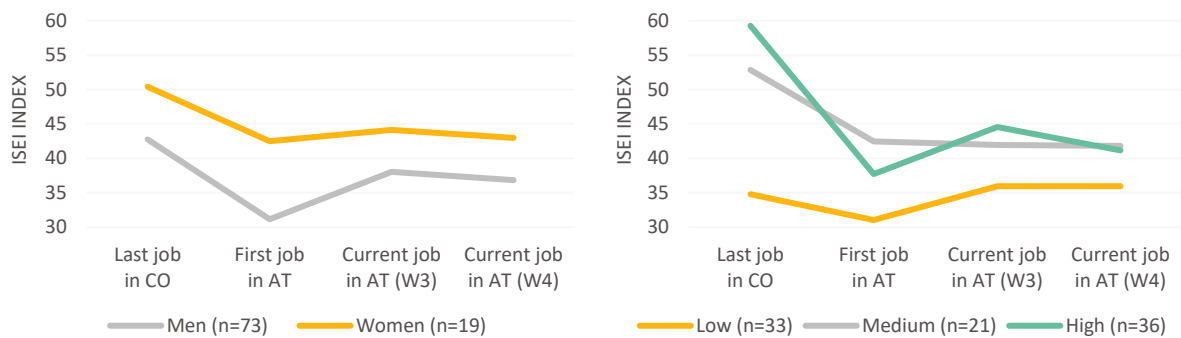
Note: Weighted data, n=92.

Occupational trajectories by gender and level of education before immigration

To highlight any additional differences, in Graph 5 occupational trajectories are broken down by gender and level of education before immigration. The differentiation on the basis of gender shows that women in employment are in general working in jobs associated with a higher occupational status than men in employment. This is shown by the higher position of the occupational trajectory curve for women than for men. On the other hand, paths also differ within gender-specific occupational paths. The first downturn from the last job in the country of origin to the first job in Austria and the first recovery between the first and the current job in Austria before the start of COVID-19 crisis were

significantly larger among men. However, both genders experienced a drop in their occupational status as a consequence of the COVID-19 crisis, but this was marginally more pronounced among men.

Graph 5: Occupational paths by gender (left) and level of education before immigration (right)



Source: FIMAS panel (data collections 2019 and 2020), authors' calculations.

Note: A low level of education corresponds to primary education (no formal education, ISCED-1 and ISCED-2), a medium level of education to secondary education (ISCED-3 and ISCED-4) and a high level of education to tertiary education (ISCED-5 to ISCED-8). Weighted data. n=92.

Further breaking down the occupational trajectories by level of education before immigration – low, medium and high – reveals considerable differences. The first downturn in the occupational trajectories is stronger for higher levels of education. For refugees with a high (tertiary) level of education, this means a drop in occupational status of almost 22 ISEI points and for refugees with a medium level of education a loss of 10 ISEI points, while refugees with a low level of education experienced only a drop of 4 ISEI points. The recovery of the occupational status during the second transition from the first to the current job before the start of COVID-19 crisis was strongest for refugees with a high (tertiary) level of education, followed by refugees with a low level of education. Conversely, the occupational status for refugees with a medium level of education stagnated. Accordingly, the COVID-19 crisis only had a negative impact on refugees with a high level of education, causing a drop in occupational status of roughly 3 ISEI points. By contrast, refugees with either a low or a medium level of education did not experience any drop in occupational status. This remained unchanged at the same level as before the outbreak of the COVID-19 pandemic.

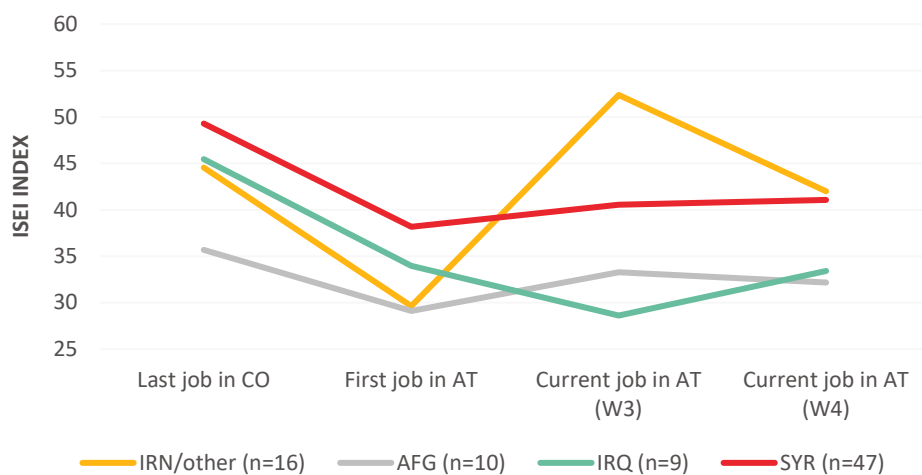
Occupational trajectories by country of origin

Lastly, Graph 6 depicts the occupational trajectories by refugee country of origin. It shows a downturn for refugees from all four countries of origin during the first transition from the last job in the country of origin to the first job in Austria. The drop in occupational status is largest among refugees from Iran (with almost -15 ISEI points), followed by those from Iraq and Syria, while refugees from Afghanistan experienced the smallest drop in status with only -6 ISEI points. With the exception of refugees from Iraq, whose occupational status dropped further, refugees from the remaining countries of origin were subsequently able to improve their occupational status. Refugees from Iran experienced the most



pronounced improvement in status in this context (almost 23 ISEI points), while refugees from Afghanistan and Syria experienced a relatively moderate status improvement. In the course of the COVID-19 crisis, the occupational status of refugees from Iran and Afghanistan fell. Once again, the drop was greatest among refugees from Iran, who had highly erratic occupational trajectories overall. Conversely, the occupational status of refugees from Iraq and Syria rose. For refugees from Syria, this meant a further continuation of their occupational catching-up process, despite the COVID-19 crisis, although this was overall very moderate. For refugees from Iraq, this meant the first improvement after two consecutive drops, starting, however, from a relatively low level (in this case it is important to be cautious with regard to any interpretations because of the very low number of cases).

Graph 6: Occupational trajectories by country of origin



Source: FIMAS panel (data collections 2019 and 2020), authors' calculations.

Note: Weighted data, n=92. To maximise the data sample, two refugees from other countries of origin were integrated into the Iran group.

Summary

The main findings of this study were summarised at the beginning of this report; below we will therefore limit ourselves to picking out certain interesting aspects and interpreting them briefly.

The relevance of social networks and the risk of perpetuating labour market segmentation: the analysis of both the change in labour market status resulting from the COVID-19 crisis and the transition from unemployment to atypical employment showed some interesting findings relating to the relevance of social networks with migrants from third countries or from the country of origin. The findings indicate that greater levels of networking with migrants – both with people from the country of origin and with people from third countries – gave rise to greater segmentation of the labour market during the COVID-19 crisis. This emerges from the evidence of significantly greater movement from employment to unemployment, longer periods spent in unemployment and more pronounced movement from unemployment to inactivity, and also less movement from inactivity to employment, in the case of



stronger social networking with migrants from third countries. Furthermore, greater networking with migrants from the country of origin also led to a significantly higher change from unemployment to inactivity. On the other hand, there was a significantly higher change from unemployment to atypical employment in the event of greater networking with migrants from third countries. This means that strong social networking with migrants both from third countries and the country of origin makes refugees more vulnerable to being negatively affected on the labour market overall in a crisis situation (i.e. becoming unemployed or remaining unemployed, or becoming inactive), and also makes them more likely to find new atypical employment that arises in a crisis (delivering food and packages, stacking shelves in warehouses and supermarkets, etc.).

For the longer-term labour market integration of refugees, it is especially important to counter the perpetuation of labour market segmentation, and this panel study indicates that language learning and social networking outside of migrant communities (from third countries and the country of origin) are particularly important.

The analysis found a negative impact of the COVID-19 crisis on two groups in particular: women and refugees with a high (tertiary) level of education. For women, this involved in particular the greater likelihood of changing to inactivity and, in turn, the lower likelihood of changing from inactivity to employment as a result of the COVID-19 crisis. This has also been identified in other studies relating to the impact of the COVID-19 crisis on female employment (see Eurofound, 2020; OECD, 2021; ILO, 2021). Whether this will have longer-term effects that could be particularly pronounced for refugees (since labour market access has only recently been achieved, language learning has been interrupted and so has social and occupational integration resulting from interaction on the labour market) will have to be covered by subsequent studies following the situation after the COVID-19 crisis.

The problem group of refugees with a high (tertiary) level of education has also been identified in previous studies (see Shirmohammadi et al., 2019; Irastorza and Bevelander, 2021; Riemsdijk and Axelsson, 2021): the problem of degrees being recognised is a major factor here, along with the specific hurdle of a higher level of skill in the local language being needed in potential jobs than is the case for other occupational groups, and also formal and informal barriers to work entry that may also be higher for the relevant occupational classes, etc. On top of this, a drop in occupational status is not easy to accept, and this drop is greater for refugees with a high level of education than for those with a lower level of education. This also leads to longer search processes for finding a (more) adequate job. Lastly, the statistical category of “inactivity” includes people pursuing additional or complementary education/training steps in the target country and not being in employment or looking for work in these phases.

In the COVID-19 crisis – as this analysis shows – additional factors come into play, resulting in refugees with a high level of education having significant differences in how they are affected by the crisis: they are more likely to change from unemployment to inactivity and less likely to change from inactivity to employment. Furthermore, there was a sharp “downward bend” in the occupational status indicator for those who remained in employment, although a U-shaped pattern could be seen before the crisis,



representing a recovery in status. One particular reason why this group was more greatly affected by the crisis is revealed by analysing the differentiated movement from unemployment to atypical employment. It showed that people with a high level of education made less use of the atypical employment options available during the crisis (as mentioned earlier, there were some employment possibilities that were positively affected by the crisis, such as parcel and food delivery). The crisis made it particularly difficult to find options for labour market integration in line with qualifications, which is particularly important for people with a high level of education. These difficult conditions relate to language learning and complementary (formal and informal) education/training, and to the general situation on the labour market making recruitment particularly difficult in “professional jobs” (in these jobs permanent employees already had much better options for retaining their job and changing to working from home).

The analysis of the impact of the COVID-19 crisis on the labour market integration of refugees that could be performed with this data set only represents the beginning, as these observations are only a snapshot in time of the situation during the crisis (in comparison to the previous period(s)) and longer-term effects can only be identified by continuing to pursue this longitudinal analysis. In particular, it is especially important to observe the situation of the two problem groups (women and people with a high level of education) over the longer term. Special attention should be given to the group of young people, which could not be examined separately because of their low levels of representation in the panel. The impact on other persons who benefited from the dynamics of particular labour market sectors during the crisis needs to be pursued further, as it is not yet possible to estimate how their employment situation will develop after the crisis. There is a need to examine, for example, whether certain labour market and social segmentation effects will be perpetuated or whether it will be possible to counter-act these and assist in a process of convergence in employment structures and employment options with the local population. The analysis also showed a relatively strong dynamic of certain groups from unemployment to inactivity, and from unemployment to atypical employment: in this regard, further studies should investigate whether these movements caused by the COVID-19 crisis are short-term in nature or whether there is a risk of “hysteretic” (i.e. prolonged) persistence in the labour market situation that refugees face, which would have to be countered with targeted policies. This relates not only to inactivity and unemployment but also to the loss of temporary employment in atypical employment and the need to upgrade into more stable employment options.



Appendix

Table A.1: Probit results of FIMAS panel participation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log age	0.138*** (5.166)	0.137*** (5.147)	0.093*** (3.781)	0.122*** (4.404)	0.094*** (3.931)	0.092*** (3.915)	0.121*** (4.435)	0.105*** (4.076)
Female (ref: male)	0.018 (1.328)	0.018 (1.308)	0.016 (1.352)	0.015 (1.216)	0.016 (1.359)	0.016 (1.371)	0.015 (1.224)	0.016 (1.284)
Marital status (ref: single)								
Married	-0.014 (-0.897)	-0.016 (-0.996)	-0.013 (-0.991)	-0.010 (-0.690)	-0.013 (-0.933)	-0.013 (-0.938)	-0.011 (-0.794)	-0.011 (-0.819)
Divorced/widowed	0.008 (0.281)	0.010 (0.355)	0.012 (0.485)	0.017 (0.622)	0.013 (0.515)	0.012 (0.483)	0.015 (0.570)	0.015 (0.561)
Entry via family reunification (ref: no family reunification)	-0.020 (-1.081)	-0.020 (-1.100)	-0.011 (-0.697)	-0.015 (-0.935)	-0.011 (-0.702)	-0.010 (-0.703)	-0.013 (-0.820)	-0.013 (-0.867)
Level of education before immigration (ref: low)								
Medium	-0.072*** (-4.474)	-0.073*** (-4.584)						
High	-0.033** (-2.077)	-0.032** (-2.083)						
Country of origin (ref: Afghanistan)								
Iran	0.038* (1.786)	0.037* (1.793)	0.014 (0.757)	0.019 (1.006)	0.016 (0.885)	0.016 (0.926)	0.019 (1.019)	0.021 (1.157)
Iraq	0.093*** (3.753)	0.093*** (3.778)	0.062*** (2.696)	0.067*** (2.818)	0.064*** (2.847)	0.065*** (2.954)	0.067*** (2.846)	0.069*** (2.985)
Syria	0.048*** (2.623)	0.046** (2.563)	0.022 (1.348)	0.022 (1.372)	0.023 (1.486)	0.025 (1.596)	0.022 (1.381)	0.028* (1.698)
Other	0.062 (1.573)	0.058 (1.482)	0.028 (0.829)	0.030 (0.848)	0.030 (0.906)	0.032 (0.965)	0.027 (0.762)	0.035 (1.008)



Table A.1: continued

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Place of residence (ref: Vorarlberg/Tyrol)								
Upper Austria	-0.056** (-2.217)	-0.055** (-2.216)	-0.047** (-2.067)	-0.047** (-2.062)	-0.046** (-2.072)	-0.046** (-2.121)	-0.049** (-2.124)	-0.049** (-2.175)
Salzburg	0.056** (2.146)	0.057** (2.204)	0.051** (2.164)	0.053** (2.233)	0.050** (2.188)	0.049** (2.168)	0.050** (2.123)	0.051** (2.155)
Styria	-0.040 (-1.623)	-0.039 (-1.608)	-0.031 (-1.440)	-0.032 (-1.475)	-0.029 (-1.409)	-0.031 (-1.474)	-0.034 (-1.542)	-0.033 (-1.495)
Vienna	-0.048** (-2.534)	-0.048*** (-2.599)	-0.045*** (-2.671)	-0.049*** (-2.809)	-0.044*** (-2.692)	-0.044*** (-2.718)	-0.049*** (-2.815)	-0.047*** (-2.777)
North-eastern Austria	-0.004 (-0.173)	-0.004 (-0.163)	-0.005 (-0.279)	-0.003 (-0.171)	-0.005 (-0.253)	-0.005 (-0.266)	-0.006 (-0.322)	-0.004 (-0.227)
Intention to remain in Austria (ref: return/third country)	-0.025 (-1.177)	-0.025 (-1.203)	-0.021 (-1.145)	-0.025 (-1.338)	-0.018 (-1.022)	-0.019 (-1.080)	-0.023 (-1.228)	-0.022 (-1.178)
Labour market status (ref: inactive)								
Employed	0.086*** (4.948)	0.085*** (4.968)	0.069*** (3.966)	0.066*** (3.785)	0.068*** (4.130)	0.068*** (4.161)	0.066*** (3.850)	0.071*** (4.098)
Unemployed	-0.012 (-0.827)	-0.012 (-0.833)	-0.010 (-0.820)	-0.010 (-0.794)	-0.010 (-0.798)	-0.010 (-0.839)	-0.010 (-0.802)	-0.010 (-0.757)
Contact intensity: daily/1x per week (ref: less often)	0.008 (0.608)	0.006 (0.473)	0.006 (0.536)	0.006 (0.486)	0.007 (0.599)	0.006 (0.574)	0.007 (0.557)	0.006 (0.485)
Length of stay: in years	-0.002 (-1.404)	-0.002 (-1.413)	-0.001 (-0.665)	-0.002 (-1.562)	-0.001 (-0.832)	-0.001 (-0.755)	-0.002 (-1.510)	-0.001 (-1.108)
Social capital	0.007 (0.314)	-0.000 (-0.007)	0.006 (0.339)	0.000 (0.011)	0.006 (0.314)	0.006 (0.329)	0.002 (0.084)	0.003 (0.179)
Network size: Total	-0.000 (-0.691)		-0.000 (-0.604)	-0.000 (-0.637)	-0.000 (-0.583)	-0.000 (-0.595)	-0.000 (-0.699)	-0.000 (-0.592)



Table A.1: continued

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Network composition (ref: third country)								
Network share: Country of origin		0.020 (0.607)						
Network share: Austria		-0.005 (-0.153)						
Reading and writing skills: Native language			0.012** (2.460)					
Reading and writing skills: German				0.013*** (3.541)				
Reading skills, native language (ref: medium/very poor)								
Reading skills, native language: very good/good					0.076** (2.320)			
Writing skills, native language (ref: medium/very poor)								
writing skills, native language: very good/good						0.043* (1.869)		
Reading skills, German (ref: medium/very poor)								
Reading skills, German: very good/good							0.048*** (3.439)	
Writing skills, German (ref: medium/very poor)								
Writing skills, German: very good/good								0.017 (1.469)
Number of observations	2576	2576	2576	2576	2576	2576	2576	2576

Note: The level of significance is marked with ***(1%), **(5%) and *(10%). T-values in brackets. Average marginal effects

Table A.2: Multinomial logit model for the change from employment before the start of COVID-19 crisis to unemployment or inactivity during the COVID-19 crisis

Variables	(1) Un- employed	(2) Inactive	(3) Un- employed	(4) Inactive	(5) Un- employed	(6) Inactive	(7) Un- employed	(8) Inactive	(9) Un- employed	(10) Inactive	(11) Un- employed	(12) Inactive
Log age	0.178 (1.343)	-0.112 (-1.004)	0.103 (0.793)	-0.118 (-1.202)	0.169 (1.165)	-0.139 (-1.147)	0.144 (1.419)	-0.102 (-1.055)	0.142 (1.390)	-0.080 (-0.888)	0.211* (1.697)	-0.114 (-1.163)
Female (ref: male)	0.058 (1.174)	0.048 (1.258)	0.070 (1.278)	0.034 (1.135)	0.073 (1.258)	0.041 (1.225)	0.052 (1.022)	0.031 (0.828)	0.054 (1.045)	0.029 (0.801)	0.053 (0.940)	0.041 (0.996)
Marital status (ref: single)												
Married	-0.004 (-0.084)	-0.016 (-0.385)	-0.009 (-0.191)	-0.013 (-0.399)	-0.004 (-0.078)	-0.009 (-0.232)	-0.008 (-0.174)	-0.021 (-0.556)	-0.011 (-0.250)	-0.023 (-0.644)	-0.018 (-0.361)	-0.015 (-0.377)
Divorced/widowed	-0.054 (-0.647)	0.066 (1.145)	-0.041 (-0.542)	0.080* (1.924)	-0.051 (-0.625)	0.071 (1.417)	-0.060 (-0.798)	0.060 (1.161)	-0.059 (-0.796)	0.063 (1.308)	-0.089 (-0.958)	0.068 (1.239)
Entry via family reunification (ref: no family reunification)	-0.085 (-0.991)	-0.068 (-0.618)	-0.144 (-1.548)	-0.049 (-0.752)	-0.107 (-1.184)	-0.053 (-0.593)	-0.087 (-1.173)	-0.059 (-0.678)	-0.087 (-1.188)	-0.061 (-0.792)	-0.104 (-1.056)	-0.058 (-0.606)
Level of education before immigration (ref: low)												
Medium	0.044 (0.475)	0.022 (0.436)	0.038 (0.457)	0.037 (0.856)	0.040 (0.433)	0.013 (0.286)						
High	0.008 (0.133)	-0.012 (-0.315)	0.016 (0.304)	0.002 (0.071)	0.015 (0.259)	-0.018 (-0.518)						
L.Training/education completed in AT.: Yes											0.097 (1.338)	-0.007 (-0.116)
Country of origin (ref: Iran & others)												
Afghanistan	0.073 (0.523)	-1.274*** (-3.831)	-0.011 (-0.099)	-1.066*** (-3.681)	0.042 (0.282)	-1.188*** (-2.693)	0.067 (0.550)	-1.235*** (-4.141)	0.057 (0.473)	-1.184*** (-4.261)	0.091 (0.525)	-1.292*** (-3.711)
Iraq	-0.151 (-1.509)	-0.024 (-0.359)	-0.115 (-1.347)	-0.051 (-0.872)	-0.145 (-1.551)	-0.029 (-0.493)	-0.116 (-1.286)	-0.040 (-0.595)	-0.113 (-1.258)	-0.050 (-0.790)	-0.130 (-1.219)	-0.031 (-0.480)
Syria	-0.111* (-1.716)	0.028 (0.444)	-0.103* (-1.843)	0.016 (0.353)	-0.109* (-1.793)	0.021 (0.403)	-0.078 (-1.321)	0.023 (0.348)	-0.078 (-1.334)	0.002 (0.040)	-0.091 (-1.389)	0.031 (0.502)



Table A.2: continued

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Un- employed	Inactive	Un- employed	Inactive	Un- employed	Inactive	Un- employed	Inactive	Un- employed	Inactive	Un- employed	Inactive
L.Vienna (ref: not Vienna)	0.030 (0.459)	-0.029 (-0.667)	0.005 (0.082)	-0.020 (-0.550)	0.025 (0.414)	-0.022 (-0.543)	0.019 (0.317)	-0.024 (-0.556)	0.022 (0.361)	-0.023 (-0.564)	0.042 (0.585)	-0.029 (-0.704)
L.Length of stay: in years	-0.032 (-1.336)	0.006 (0.538)	-0.024 (-1.195)	0.007 (0.736)	-0.030 (-1.216)	0.007 (0.773)	-0.026 (-1.432)	0.005 (0.480)	-0.025 (-1.407)	0.002 (0.247)	-0.036* (-1.653)	0.007 (0.595)
L.Social capital	0.071 (0.868)	-0.021 (-0.254)	0.110 (1.439)	-0.035 (-0.547)	0.080 (0.995)	-0.002 (-0.028)	0.090 (1.265)	-0.031 (-0.406)	0.092 (1.317)	-0.023 (-0.340)	0.105 (1.145)	-0.037 (-0.539)
L.Network size: Total	-0.001 (-0.711)	0.000 (0.084)					-0.001 (-0.490)	-0.000 (-0.231)	-0.001 (-0.444)	-0.001 (-0.368)	-0.001 (-0.681)	-0.000 (-0.005)
Network composition (ref: Austria)												
L.Network share: Country of origin			0.101 (1.129)	-0.099* (-1.664)								
L.Network share: Third country			0.051** (2.319)	-0.030 (-0.392)								
Network composition (ref: Austria)												
L.Network share: Migrant					0.047 (0.551)	-0.086 (-1.344)						
L.Reading and writing skills: German							-0.005 (-0.421)	0.014 (1.644)				
L.Speaking and comprehension skills: German									-0.006 (-0.416)	0.030*** (2.744)		
Number of observations	291	291	291	291	291	291	291	291	290	290	291	291

Note: The level of significance is marked with ***(1%), **(5%) and *(10%). T-values in brackets. Average marginal effects L. refers to the value before the start of COVID-19 crisis.



Table A.3: Multinomial logit model for the change from unemployment before the start of COVID-19 crisis to employment or inactivity during the COVID-19 crisis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Employed	Inactive	Employed	Inactive	Employed	Inactive	Employed	Inactive	Employed	Inactive	Employed	Inactive
Log age	-0.131 (-0.793)	0.038 (0.285)	-0.195 (-1.063)	-0.012 (-0.095)	-0.154 (-0.817)	0.002 (0.015)	-0.009 (-0.052)	0.074 (0.445)	0.019 (0.108)	0.129 (0.850)	-0.015 (-0.093)	0.053 (0.346)
Female (ref: male)	-0.106 (-1.134)	0.159*** (4.293)	-0.172* (-1.943)	0.185*** (4.177)	-0.151 (-1.629)	0.187*** (4.570)	-0.125 (-1.349)	0.167*** (4.441)	-0.122 (-1.347)	0.131*** (3.293)	-0.115 (-1.185)	0.166*** (4.740)
Marital status (ref: single)												
Married	0.043 (0.469)	0.032 (0.406)	0.037 (0.369)	0.052 (0.633)	0.018 (0.184)	0.044 (0.506)	0.015 (0.165)	0.055 (0.655)	0.016 (0.174)	0.051 (0.719)	0.014 (0.141)	0.050 (0.558)
Divorced/widowed	0.014 (0.096)	0.020 (0.201)	-0.002 (-0.010)	0.055 (0.549)	-0.035 (-0.234)	0.045 (0.425)	-0.052 (-0.356)	0.009 (0.078)	-0.052 (-0.377)	-0.029 (-0.285)	-0.029 (-0.205)	0.023 (0.217)
Entry via family reunification (ref: no family reunification)	0.027 (0.203)	-0.068 (-1.080)	0.043 (0.361)	-0.075 (-1.139)	0.044 (0.358)	-0.082 (-1.197)	0.022 (0.166)	-0.047 (-0.737)	0.015 (0.118)	-0.022 (-0.395)	0.015 (0.112)	-0.056 (-0.868)
Level of education before immigration (ref: low)												
Medium	0.201* (1.827)	-0.057 (-0.762)	0.202* (1.851)	-0.046 (-0.601)	0.208* (1.817)	-0.047 (-0.593)						
High	0.084 (1.086)	0.071* (1.648)	0.089 (1.068)	0.101** (2.122)	0.094 (1.157)	0.090* (1.920)						
L.Training/education completed in AT.: Yes											-0.020 (-0.193)	0.005 (0.074)
Country of origin (ref: Iran & others)												
Afghanistan	-0.136 (-1.047)	0.083 (1.150)	-0.084 (-0.633)	0.079 (1.013)	-0.074 (-0.551)	0.087 (1.033)	-0.162 (-1.251)	0.080 (1.171)	-0.123 (-0.982)	0.075 (1.353)	-0.157 (-1.183)	0.066 (1.101)
Iraq	-0.066 (-0.489)	0.088 (1.131)	-0.027 (-0.188)	0.093 (1.295)	-0.011 (-0.080)	0.104 (1.313)	-0.070 (-0.516)	0.109 (1.370)	-0.062 (-0.483)	0.101 (1.281)	-0.058 (-0.423)	0.076 (1.101)
Syria	-0.115 (-1.051)	0.048 (0.695)	-0.082 (-0.735)	0.043 (0.609)	-0.085 (-0.739)	0.057 (0.779)	-0.124 (-1.105)	0.051 (0.754)	-0.126 (-1.230)	0.021 (0.373)	-0.118 (-1.038)	0.050 (0.787)
L.Vienna (ref: not Vienna)	-0.191*** (-2.697)	0.012 (0.266)	-0.169** (-2.139)	0.007 (0.140)	-0.196*** (-2.723)	-0.004 (-0.069)	-0.185** (-2.541)	0.013 (0.236)	-0.175** (-2.487)	0.000 (0.008)	-0.197*** (-2.735)	0.027 (0.509)



Table A.3: continued

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Employed	Inactive	Employed	Inactive	Employed	Inactive	Employed	Inactive	Employed	Inactive	Employed	Inactive
L.Length of stay: in years	-0.015 (-0.721)	0.004 (0.533)	-0.005 (-0.248)	0.003 (0.385)	-0.004 (-0.217)	0.004 (0.452)	-0.019 (-0.896)	0.003 (0.374)	-0.019 (-0.961)	-0.004 (-0.433)	-0.019 (-0.916)	0.003 (0.360)
L.Social capital	-0.084 (-0.655)	0.227*** (3.703)	-0.057 (-0.378)	0.225*** (3.418)	-0.004 (-0.026)	0.232*** (3.645)	-0.062 (-0.461)	0.259*** (3.792)	-0.063 (-0.487)	0.230*** (3.207)	-0.075 (-0.538)	0.237*** (3.388)
L.Network size: Total	0.004 (0.943)	-0.005 (-1.240)					0.003 (0.711)	-0.005 (-1.174)	0.002 (0.527)	-0.005 (-1.360)	0.003 (0.775)	-0.005 (-1.161)
Network composition (ref: Austria)												
L.Network share: Country of origin			-0.014 (-0.103)	0.091 (1.438)								
L.Network share: Third country			-0.287* (-1.654)	0.214* (1.866)								
Network composition (ref: Austria)												
L.Network share: Migrant					-0.041 (-0.322)	0.100 (1.581)						
L.Reading and writing skills: German							-0.001 (-0.039)	0.023 (1.538)				
L.Speaking and comprehension skills: German									0.014 (0.567)	0.059*** (3.535)		
Number of observations	239	239	239	239	239	239	238	238	238	238	239	239

Note: The level of significance is marked with ***(1%), **(5%) and *(10%). T-values in brackets. Average marginal effects L. refers to the value before the start of COVID-19 crisis.



Table A.4: Multinomial logit model for the change from inactivity before the start of COVID-19 crisis to employment or unemployment during the COVID-19 crisis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Employed	Un- employed	Employed	Un- employed	Employed	Un- employed	Employed	Un- employed	Employed	Un- employed	Employed	Un- employed
Log age	-0.529** (-2.463)	-0.122 (-0.717)	-0.526** (-2.534)	-0.113 (-0.827)	-0.416** (-2.133)	-0.029 (-0.216)	-0.435** (-2.246)	0.015 (0.101)	-0.534** (-2.503)	0.039 (0.195)	-0.668*** (-2.940)	0.026 (0.142)
Female (ref: male)	-0.315*** (-3.479)	-0.152* (-1.917)	-0.440*** (-4.454)	-0.289*** (-3.983)	-0.351*** (-3.728)	-0.199** (-2.516)	-0.318*** (-3.280)	-0.129 (-1.628)	-0.367*** (-3.866)	-0.141 (-1.536)	-0.326*** (-3.207)	-0.160* (-1.841)
Marital status (ref: single)												
Married	0.225*** (2.687)	0.040 (0.535)	0.246*** (2.646)	-0.020 (-0.261)	0.180* (1.960)	-0.008 (-0.097)	0.115 (1.152)	-0.033 (-0.372)	0.195** (2.125)	-0.030 (-0.339)	0.258*** (3.196)	-0.029 (-0.336)
Divorced/widowed	0.441** (2.185)	0.085 (0.500)	0.463** (2.437)	0.018 (0.131)	0.342 (1.557)	-0.042 (-0.260)	0.216 (0.884)	-0.028 (-0.173)	0.313 (1.410)	-0.044 (-0.243)	0.409* (1.907)	-0.039 (-0.222)
Entry via family reunification (ref: no family reunification)	0.081 (0.714)	-0.112 (-1.313)	0.045 (0.505)	-0.061 (-0.834)	0.062 (0.555)	-0.054 (-0.699)	0.062 (0.619)	-0.036 (-0.453)	0.132 (1.243)	-0.021 (-0.290)	0.066 (0.555)	-0.034 (-0.361)
Level of education before immigration (ref: low)												
Medium	-0.007 (-0.069)	-0.272*** (-3.121)	0.027 (0.313)	-0.223*** (-3.310)	-0.005 (-0.054)	-0.254*** (-3.235)						
High	-0.221*** (-2.923)	0.007 (0.106)	-0.186** (-2.353)	0.002 (0.022)	-0.173** (-1.992)	-0.037 (-0.516)						
L.Training/education completed in AT.: Yes											-0.046 (-0.421)	0.160 (1.340)
Country of origin (ref: Iran & others)												
Afghanistan	1.638*** (6.942)	-2.216*** (-6.518)	1.360*** (5.359)	-1.811*** (-6.412)	1.324*** (4.910)	-1.970*** (-6.483)	1.716*** (5.586)	-2.494*** (-7.000)	1.652*** (4.854)	-2.498*** (-6.659)	1.940*** (6.393)	-2.727*** (-7.075)
Iraq	-0.310* (-1.922)	0.164 (1.398)	-0.376*** (-2.725)	0.195** (2.334)	-0.324*** (-2.902)	0.260** (2.386)	-0.406*** (-2.654)	0.158 (1.402)	-0.369** (-2.212)	0.215** (1.967)	-0.282* (-1.909)	0.201 (1.610)
Syria	0.006 (0.052)	0.146 (1.447)	-0.039 (-0.253)	0.060 (0.571)	-0.053 (-0.469)	0.134 (0.941)	-0.073 (-0.762)	0.073 (0.767)	-0.030 (-0.313)	0.098 (1.000)	-0.012 (-0.092)	0.080 (0.627)
L.Vienna (ref: not Vienna)	-0.079 (-0.812)	0.167** (2.195)	-0.025 (-0.276)	0.095 (1.378)	0.002 (0.021)	0.095 (1.308)	-0.003 (-0.032)	0.132* (1.790)	-0.079 (-0.949)	0.118 (1.593)	-0.078 (-0.869)	0.154* (1.908)



Table A.4: continued

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Employed	Un- employed	Employed	Un- employed	Employed	Un- employed	Employed	Un- employed	Employed	Un- employed	Employed	Un- employed
L.Length of stay: in years	0.019 (0.569)	0.036 (1.108)	0.048 (0.988)	0.022 (0.939)	0.028 (0.908)	0.013 (0.537)	-0.013 (-0.480)	-0.010 (-0.454)	-0.018 (-0.635)	-0.013 (-0.545)	0.001 (0.026)	-0.009 (-0.345)
L.Social capital	-0.199 (-1.047)	0.103 (0.688)	-0.149 (-0.978)	0.020 (0.161)	-0.165 (-1.101)	-0.073 (-0.530)	-0.227 (-0.833)	0.199 (1.292)	-0.097 (-0.332)	0.218 (1.249)	-0.106 (-0.499)	0.195 (1.254)
L.Network size: Total	0.006 (1.110)	0.004 (1.072)					0.002 (0.525)	0.006* (1.960)	0.006 (1.270)	0.006* (1.939)	0.006 (1.363)	0.007** (2.075)
Network composition (ref: Austria)												
L.Network share: Country of origin			-0.279** (-2.524)	0.187* (1.922)								
L.Network share: Third country			0.231 (0.822)	0.369* (1.820)								
Network composition (ref: Austria)												
L.Network share: Migrant					-0.206* (-1.795)	0.203** (2.183)						
L.Reading and writing skills: German							0.096*** (3.887)	0.019 (0.829)				
L.Speaking and comprehension skills: German									0.099*** (3.420)	0.010 (0.472)		
Number of observations	83	83	83	83	83	83	83	83	83	83	83	83

Note: The level of significance is marked with ***(1%), **(5%) and *(10%). T-values in brackets. Average marginal effects L. refers to the value before the start of COVID-19 crisis.



Table A.5: Probit estimates for the change from unemployment before the start of COVID-19 crisis to atypical employment during the COVID-19 crisis

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Log age	0.389** (2.024)	0.331* (1.776)	0.317 (1.587)	0.107 (0.504)	0.129 (0.567)	0.259 (1.415)
Female (ref: male)	0.132 (1.218)	0.109 (1.031)	0.065 (0.603)	0.144 (1.279)	0.131 (1.122)	0.177* (1.816)
Marital status (ref: single)						
Married	-0.195* (-1.748)	-0.211** (-1.993)	-0.221** (-2.105)	-0.167 (-1.415)	-0.175 (-1.520)	-0.178* (-1.711)
Divorced/widowed	-0.192 (-0.876)	-0.101 (-0.550)	-0.059 (-0.299)	-0.087 (-0.335)	-0.101 (-0.398)	-0.169 (-0.823)
Entry via family reunification (ref: no family reunification)	-0.168 (-1.259)	-0.067 (-0.443)	-0.040 (-0.277)	-0.241* (-1.743)	-0.243* (-1.828)	-0.252** (-2.336)
Level of education before immigration (ref: low)						
Medium	-0.175 (-1.463)	-0.199 (-1.598)	-0.204 (-1.612)			
High	-0.182* (-1.718)	-0.242** (-2.474)	-0.242** (-2.417)			
L.Training/education completed in AT.: Yes						-0.042 (-0.285)
Country of origin (ref: Iran & others)						
Afghanistan	-0.057 (-0.390)	-0.056 (-0.418)	-0.053 (-0.395)	-0.101 (-0.669)	-0.064 (-0.419)	-0.025 (-0.182)
Iraq	0.031 (0.202)	0.037 (0.259)	0.023 (0.159)	0.038 (0.245)	0.020 (0.125)	0.089 (0.595)
Syria	0.090 (0.808)	0.149 (1.485)	0.141 (1.350)	0.061 (0.513)	0.088 (0.748)	0.099 (0.867)
L.Vienna (ref: not Vienna)	0.053 (0.594)	0.028 (0.297)	-0.004 (-0.042)	0.022 (0.247)	0.045 (0.501)	0.039 (0.461)



Table A.5: continued

Variables	(1)	(2)	(3)	(4)	(5)	(6)
L.Length of stay: in years	-0.052** (-2.382)	-0.050** (-2.180)	-0.049** (-2.213)	-0.051** (-1.973)	-0.045* (-1.664)	-0.048** (-2.343)
L.Social capital	0.297* (1.876)	0.069 (0.436)	0.055 (0.346)	0.255 (1.410)	0.274 (1.537)	0.291* (1.893)
L.Network size: Total	0.007 (1.548)			0.009* (1.916)	0.009* (1.819)	0.008* (1.717)
Network composition (ref: Austria)						
L.Network share: Country of origin		0.275** (2.365)				
L.Network share: Third country		0.584** (1.967)				
Network composition (ref: Austria)						
L.Network share: Migrant			0.324*** (2.757)			
L.Reading and writing skills: German				-0.062*** (-2.633)		
L.Speaking and comprehension skills: German					-0.049* (-1.817)	
Number of observations	128	128	128	128	128	129

Note: The level of significance is marked with ***(1%), **(5%) and *(10%). T-values in brackets. Average marginal effects L. refers to the value before the start of COVID-19 crisis.



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