

IBS WORKING PAPER 01/2025
MARCH 2025

The Role of Job Task Degradation in Shaping Return Intentions: Evidence from Ukrainian War Refugees in Poland

Piotr Lewandowski
Agata Górny
Mateusz Krzakała
Marta Palczyńska



The Role of Job Task Degradation in Shaping Return Intentions: Evidence from Ukrainian War Refugees in Poland•

Piotr Lewandowski♦

Agata Górny♥

Mateusz Krzakala♠

Marta Palczyńska♣

Abstract

This paper studies the relationship between professional experiences and return intentions of Ukrainian war refugees in Poland, following Russia's full-scale invasion of Ukraine in February 2022. Using country-wide, online surveys conducted in 2022 and 2023 and worker-level measures of job tasks, we show that refugees' high employment rate coexists with widespread occupational downgrading and task degradation. Refugees transitioning to lower-skilled jobs after arriving in Poland faced stark increases in routine task intensity (RTI), often equivalent to shifts from managerial to clerical roles. Even those retaining their occupational status experienced heightened RTI, signalling underutilisation of skills. We find that refugees who experience a greater task degradation were more likely to plan to return to Ukraine by 2023, particularly those who initially, in 2022, did not plan to return. This relationship persists even after accounting for earnings and occupational downgrading. These findings underscore the role of job content in shaping migration decisions and highlight implications for host countries' labour market policies and refugee integration strategies.

Keywords: migration, return intentions, occupational downgrading, task content of jobs

JEL: J24, J61, O15

• We thank the participants of the "Return and Integration Prospects of Ukrainian Refugees" workshop in Nuremberg for their helpful comments. The paper uses data collected in a survey financially supported by the International Organization for Migration. Usual disclaimers apply. All errors are ours.

♦ Institute for Structural Research (IBS), IZA, and RWI Essen. Warsaw, Poland. e-mail: piotr.lewandowski@ibs.org.pl, corresponding author

♥ Centre of Migration Research (OBM), University of Warsaw. Warsaw, Poland. E-mail: a.gorny@uw.edu.pl.

♠ Institute for Structural Research (IBS), Warsaw, Poland. e-mail: mateusz.krzakala@ibs.org.pl.

♣ Institute for Structural Research (IBS), Warsaw, Poland. E-mail: marta.palczynska@ibs.org.pl.

1. Introduction

Following Russia's full-scale invasion of Ukraine on 24 February, 2022, nearly 5.7 million war refugees had fled to other European countries by the end of 2022 (UNHCR, 2024). Poland responded swiftly, welcoming over a million people and granting them immediate access to the labour market and social safety nets. However, the state support offered included only basic services and no dedicated benefits. Ukrainian war refugees' relatively high educational attainment, combined with Poland's open labour market and worker shortages, contributed to a high employment rate among them, reaching 55-65% by late 2022 (Dudek et al., 2024; Górny and Kaczmarczyk, 2023), substantially higher than rates observed in Western European countries such as Germany or Austria (Brücker et al., 2023). Yet, most war refugees in Poland work in low- or middle-skilled occupations, and about 40% declare being overskilled for the jobs they perform in Poland (Górny et al., 2024; Gromadzki and Lewandowski, 2023).

A key issue that emerges is the extent of occupational downgrading, skill underutilisation, and job task degradation experienced by war refugees when compared to their work in Ukraine, and the implications of these experiences for refugee integration and their plans to stay in Poland or return to Ukraine. Occupational downgrading and skill underutilisation reduces war refugees' earnings potential and well-being, and depreciates human capital. For host countries, the implications include productivity losses, increased competition in low-skilled labour markets, and potential downward pressure on wages for native low-skilled workers (Dustmann et al., 2013). Over the long term, such trends may slow the economic integration of migrant communities and reduce the benefits of knowledge transfer if war refugees return to their home countries (Bahar et al., 2024).

This paper investigates the occupational trajectories and job task degradation of Ukrainian war refugees in Poland, quantifying task degradation with the difference in the routine task intensity (RTI) between jobs performed in Poland and in Ukraine before the full-scale Russian invasion. We also explore how task degradation relates to war refugees' intentions to return to Ukraine. Using data from two waves of an online, country-wide survey of Ukrainian nationals conducted in July-September 2022 and February-March 2023 by the Centre for Migration Research (OBM) at Warsaw University and the Institute for Structural Research (IBS), we study responses from 937 Ukrainian war refugees of working age (18-65 years). The survey includes a detailed assessment of job tasks and skill use at work, modelled on the Programme for the International Assessment of Adult Competencies (PIAAC).

By applying a method developed by Lewandowski et al. (2022) for PIAAC data, we quantified job tasks and constructed a worker-level measure of RTI that increases with the prevalence of structured, repetitive tasks (whether manual or cognitive) and decreases with the importance of non-routine tasks requiring creativity, analytical thinking, management, interpersonal interaction, and spatial awareness. This framework, widely used in economic studies of occupational developments (Acemoglu and Autor, 2011), demonstrates that higher RTI is generally associated with lower productivity and wages (Autor and Handel, 2013; De la Rica et al., 2020).

By comparing the tasks performed in war refugees' jobs in Poland to their previous jobs in Ukraine, we assess individuals' task degradation in greater depth than traditional measures of occupational downgrading. This approach captures differences in the nature of work performed before and after displacement. It allows for a detailed analysis of skill utilisation among war refugees, including among those working in similar occupations.

This paper makes two key contributions. First, it demonstrates that the high employment rate of Ukrainian war refugees in Poland coexists with widespread occupational downgrading and substantial task degradation. War refugees who transitioned to lower-skilled occupations experienced a stark increase in RTI, often exceeding the

difference typically seen between managerial and clerical roles. Even those who remained in their original occupational category experienced a noticeable, albeit smaller, rise in RTI. These findings highlight that the nature of tasks performed in migrants' jobs—a dimension largely overlooked in previous studies on migrants' occupational downgrading—is crucial for understanding their labour market outcomes.

Second, we identify a strong link between task degradation and an increasing willingness among war refugees to return to Ukraine, particularly among those who initially did not plan to do so. Refugees in Poland performing more routine-intensive jobs than in Ukraine were significantly more likely to shift their plans from staying or uncertainty in 2022 to intending to return by 2023. This relationship persists after accounting for earnings (negatively correlated with return intentions) and occupational downgrading (positively correlated), so the RTI differences capture variations among individuals with similar downgrading experiences and earnings. While our research design is not strictly causal, we posit that RTI differences are plausibly exogenous, as workers fully grasp routine intensity only after starting a job. Thus, the underutilisation of skills and loss of job autonomy associated with task degradation appear to be key factors shaping migration decisions, often beyond income considerations.

Our study contributes to an extensive literature on occupational downgrading among migrants, a phenomenon documented across various contexts (Castagnone et al., 2015; Dustmann et al., 2013; Lebow, 2024). While both economic migrants and war refugees experience occupational downgrading in destination countries, the extent is often more pronounced for war refugees (Akresh, 2008; Cortes, 2004; Nikolov et al., 2022; Ruiz and Vargas-Silva, 2018). The underlying differences often stem from the motivations driving migration: economic migrants primarily seek better employment opportunities, whereas war refugees prioritise safety and security, often limiting their ability to transfer skills effectively. War refugees also face additional barriers, such as prolonged legal restrictions on labour market access and the psychological toll of displacement and trauma, which can further hinder their employment outcomes (Giuntella et al., 2018; Ruiz and Vargas-Silva, 2018).

The situation of Ukrainian war refugees in Poland presents a unique case. Unlike in many other forced migration contexts, Ukrainian war refugees were granted immediate labour market access and freedom to choose their residence. Moreover, Ukrainians already constituted the largest migrant group in Poland prior to the invasion. However, Poland's status as a recent immigration destination, coupled with the absence of a robust integration framework, limited the support provided to Ukrainian war refugees (Górny and Kaczmarczyk, 2019).

This paper also extends the literature on return migration intentions. While both economic and social integration influence return decisions, evidence suggests that social integration often plays the key role (De Vroome and Van Tubergen, 2014; Di Saint Pierre et al., 2015; Haas and Fokkema, 2011; Hannafi and Marouani, 2023). Several studies found no significant relationship between employment or occupational status and return intentions (De Vroome and Van Tubergen, 2014; Snel et al., 2015; Van Hook and Zhang, 2011) but others, such as Constant & Massey (2003), demonstrated that unstable or low-prestige employment increases the likelihood of return migration. For war refugees, political and security factors in their home country may even overshadow economic considerations in shaping return intentions (Adema et al., 2024; Balcilar and Nugent, 2019; Buber-Ennsner et al., 2016; Zakirova and Buzurukov, 2021). This study reinforces the notion that economic factors, such as job content and skill utilisation, influence migration and settlement decisions, even in contexts of acute displacement.

The next section introduces our data and presents key descriptive statistics. In section 3, we outline our methodological approach. In section 4, we report our econometric results. In section 5, we conclude.

2. Data and descriptive statistics

2.1. Data and measurements

Our main data source is the country-wide online panel survey of Ukrainian war refugees and migrants conducted by the Centre for Migration Research (CMR) at Warsaw University and the Institute for Structural Research (IBS). The first wave was conducted in July-September 2022 (N=7617) by CMR as an establishment survey (Górny & Kaczmarczyk, 2023).¹ The second wave was collected between 9 February and 3 March 2023 with a sample of 1360 Ukrainian nationals, including 971 war refugees, 937 of them aged 18-65. War refugees were defined as Ukrainians residing in Poland who arrived for their current stay after 23 February 2022, so after the full-scale Russian invasion of Ukraine. Respondents were rewarded with e-vouchers to a shop of their choice.

The 2023 wave included questions on job tasks, skill use at work, and subjective over-/underskilling, following the questionnaire of OECD's Programme for the International Assessment of Adult Competencies – PIAAC (2019). We asked these questions about the current job performed in Poland and, retrospectively, about the last job performed in Ukraine before the full-scale war, unless a person had not worked in two years before the survey.

We use a task-based framework that divides job tasks into non-routine cognitive analytical, non-routine cognitive interpersonal, routine cognitive, and manual tasks (Acemoglu and Autor, 2011). We follow Lewandowski et al. (2022), who developed a worker-level RTI measure on PIAAC data consistent with Acemoglu and Autor (2011). It increases with the importance of routine tasks (structured, repetitive) and declines with the importance of non-routine tasks (analytical, aimed at solving problems), and interpersonal (aimed at supervising or presenting). Appendix Table A1 shows the task questions used. For methodological details behind their selection, see Lewandowski et al. (2022). We calculate the RTI of the job currently performed in Poland and of the last job performed in Ukraine before the full-scale war. We also use the PIAAC data for Poland (conducted in 2012) and the data for Ukraine from the World Bank's Skills toward Employment and Productivity (STEP) survey (2013), which included the job-tasks module, to benchmark war refugees' RTI with those of typical workers in Poland and Ukraine. To ensure survey comparability, we standardise the pooled sample using the US average and standard deviation of task measures, as in Lewandowski et al. (2022).

We measure human capital with education and self-reported comprehension of the Polish language, surveyed in both waves. In addition, in the 2023 wave we surveyed cognitive ability using the symbol-digit correspondence test, one of the submodules of a widely used IQ test: the Wechsler Adult Intelligence Scale (WAIS). Respondents taking the test match as many numbers and symbols as possible in 90 seconds according to a given key. They were presented with nine unfamiliar symbols, each paired with a digit (1 through 9). After short instructions, they saw a screen with the same mapping from numbers to symbols at the top and a symbol with a blank box beneath it. They had to type the correct corresponding number into the box. The test result depends on the speed and accuracy in applying the key under time pressure. Similar measures are used in many social surveys, e.g., the German Socio-Economic Panel Study (SOEP). A total of 21 people refused to participate in this test.

¹ Set up within the project "Between Poland and Ukraine" based at the Centre of Migration Research and Centre for Excellence in Social Studies at University of Warsaw.

Both survey waves included questions on plans regarding staying in Poland, returning to Ukraine, or moving to another country. We define individuals who express a desire to return to Ukraine as those who explicitly indicate an intention to move back, either unconditionally or depending on specific conditions being met, such as the restoration of safety in their home region. In contrast, individuals who intend to remain in Poland, relocate to a country other than Ukraine, or are uncertain about the duration of their stay in Poland and their potential return to Ukraine or secondary migration form the reference group—those who do not explicitly declare plans to return. In this regard, we follow van Tubergen et al. (2024) who also distinguished between people who want to return from those who have no such intention or are unsure. Respondents who expressed a desire to stay in Poland for more than a year were not asked about the possibility of returning to Ukraine at a later time. Consequently, they are classified as individuals who do not intend to return, as they have indicated a long-term commitment to residing in Poland. This group comprises approximately 20% of the sample.

Finally, to control for war and economic factors that may shape war refugees' return plans, we use two variables pertaining to their place of origin: the distance to the frontline, calculated based on the ISW (2025) data, and GDP per capita from the State Statistics Service of Ukraine (2021).

2.2. Sample structure

Our sample consists of 937 Ukrainian war refugees of working age. Table 1 presents its structure, weighted with population weights based on the Polish registry data on war refugees' gender and age. Participants are mostly women (92%) with an average age of 40.9 years. A noticeable share has a child aged 6 years or less (25%). About 1/3 has a partner in Ukraine, 1/3 – in Poland, and 1/3 is single. The respondents are highly educated (77% have tertiary education), with solid Polish comprehension (40% declared at least a good understanding in 2022 and 54% in 2023 wave). The other survey of Ukrainian war refugees in Poland shows a slightly lower share of the tertiary-educated war refugees, at around 50% (Strzelecki et al., 2023).² However, the registry of Ukrainian war refugees lacks data on education, so we cannot reweigh the sample accordingly. Ukrainians in our sample come primarily from Ukraine's central and eastern parts, and about 70% live in medium and large cities in Poland. As such, war refugees in these cities are overrepresented in our sample – according to the PESEL registry data, 43% of war refugees registered in medium or large cities in March 2023. However, the self-reported information on the municipality size may be noisy due to war refugees' limited knowledge of their host cities. Finally, 80% of war refugees in our sample have some work experience in Ukraine.

² That survey was conducted by the National Bank of Poland (NBP) using quota sampling and CAPI interviews. These differences with respect to sampling method and mode of data collection between the NBP survey and our survey might have influenced the differences in educational structures.

Table 1. Descriptive statistics of the sample

Variable	Mean	SD
Woman	0.89	0.31
Age	39.03	11.30
Age 18 - 34	0.38	0.49
Age 35 - 44	0.33	0.47
Age 45 - 54	0.16	0.37
Age 55 - 64	0.12	0.33
Primary and lower secondary education	0.01	0.12
Upper secondary, Post-secondary non-tertiary	0.24	0.43
Short-cycle tertiary education, Bachelor's or equivalent level	0.18	0.39
Master's, Doctoral or equivalent level	0.57	0.50
Participates in education	0.30	0.46
Has a child aged 0-6 years	0.26	0.44
Partner in Poland	0.37	0.48
Partner in Ukraine	0.29	0.45
Family in Poland helped	0.25	0.44
Friends in Poland helped	0.24	0.43
Somebody in the location helped	0.32	0.47
Earlier non-touristic stay in Poland	0.31	0.46
Polish comprehension (self-reported in 2022): Very good	0.13	0.34
Polish comprehension (self-reported in 2022): Good	0.27	0.44
Polish comprehension (self-reported in 2022): Average	0.37	0.48
Polish comprehension (self-reported in 2022): Weak	0.15	0.36
Polish comprehension (self-reported in 2022): Very weak	0.08	0.27
Big city (500,000 or more inhabitants)	0.46	0.50
Medium-sized city (50,000-500,000 inhabitants)	0.23	0.42
Small town (up to 50,000 inhabitants)	0.23	0.42
Rural area	0.07	0.26
Distance to the frontline in 1000km (location of origin in Ukraine)	0.15	0.17
Log(GDP per capita) (location of origin in Ukraine)	11.86	0.58

Note: Sample size N=937. Population weights based on gender and age structure of war refugees in the PESEL register.
Source: Own calculation based on 2023 CMR & IBS survey.

2.3. Descriptive evidence

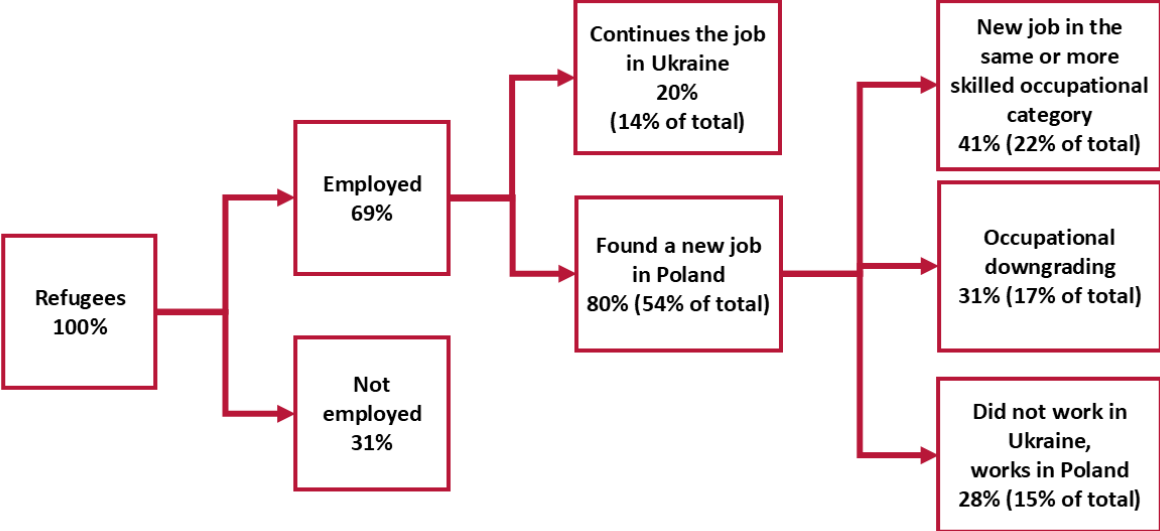
The employment rate among working-age war refugees in our sample is high at 69% (Figure 1). This aligns with other surveys (Strzelecki et al., 2023) and Ministry of Labour and Social Policy registry data (Gromadzki and Lewandowski, 2023), which also show Poland's notably high employment rates of war refugees. Approximately 20% of employed Ukrainian war refugees—equivalent to 14% of all working-age war refugees—continue to perform the same jobs they held in Ukraine prior to the full-scale Russian invasion (see Figure 2). This job continuation rate surpasses substantially that observed in Western European countries, such as Austria (Steinmayr et al., 2024). The majority of these workers are in high-skilled occupations, such as professionals, followed by managers, technicians, and associate professionals (Table 2).

About 80% of working war refugees (54% of all working-age war refugees) found a new job in Poland (Figure 1). Among them, 41% (representing 22% of working-age war refugees) found a job in an occupation requiring a similar skill level to the occupation they performed in Ukraine before the full-scale war. Most of these people work as professionals or technicians, but a noticeable share also work in sales and service occupations (Table 2).

However, a substantial share of war refugees encountered occupational downgrading—defined as working in an occupation classified as less skill-demanding than the occupation performed in Ukraine, based on the International Classification of Occupations (ISCO-08).³ 31% of employed war refugees, equivalent to 17% of working-age war refugees, found a job in Poland in an occupation that demands lower skill levels than those they performed before migration (Figure 1). Of this group, about 60% work as service and sales workers or in elementary occupations (Table 2). Occupational downgrading has been particularly pronounced among war refugees who held managerial, professional, or technical positions in Ukraine (Table 3). Half of these skilled workers have accepted jobs in less skill-demanding occupations, with 27.8% of them (19.0/68.4) transitioning to clerical support, service and sales, or skilled agricultural roles, and 22.1% (15.1/68.4) shifting to positions such as craft and trade workers, plant and machine operators, or elementary occupations (Table 3).

Finally, 15% of Ukrainian war refugees in Poland did not work in Ukraine prior to displacement. These individuals are spread across occupations with varying skill demands, with the largest groups working as professionals, sales and service workers, or in elementary occupations (Table 2).

Figure 1. Occupational trajectories of Ukrainian war refugees in Poland



Note: Occupational downgrading defined as moving from a high-skilled occupation in Ukraine (ISCO 1-3) to middle-skilled (ISCO 4-5) or low-skilled occupation (ISCO 6-9) in Poland, or moving from a middle-skilled occupation in Ukraine (ISCO 4-5) to a low-skilled occupation (ISCO 6-9) in Poland. Finding a job in a more skilled occupational category defined as moving from a low-skilled to a high- or middle-skilled occupation, or moving from middle- to high-skilled occupation.

Source: Own calculation based on 2023 CMR & IBS survey.

³ ISCO-08 defines high-skilled occupations as Managers, Professionals, Technicians, and Associate Professionals (ISCO 1-3); middle-skilled occupations as Clerical Support Workers, Service and Sales Workers (ISCO 4-5), and low-skilled occupations as Skilled Agricultural, Forestry, and Fishery Workers; Craft and Related Trades Workers; Plant and Machine Operators; and Elementary Occupations (ISCO 6-9).

Table 2. Occupational structure of working Ukrainian war refugees by occupational trajectory (in %)

	Continues the job in Ukraine	New job in the same or higher occupation category	Occupational downgrading	Did not work in Ukraine, works in Poland	Total
Managers (ISCO 1)	14.6	2.3	0.0	4.4	4.7
Professionals (ISCO 2)	64.5	45.0	0.0	28.1	34.2
Technicians and Associate Professionals (ISCO 3)	13.3	23.8	0.0	8.9	12.6
Clerical Support Workers (ISCO 4)	5.8	5.6	8.7	9.6	7.3
Service and Sales Workers (ISCO 5)	1.7	13.7	37.2	19.8	18.4
Skilled Agricultural, Forestry and Fishery Workers (ISCO 6)	0.0	0.0	0.7	0.5	0.3
Craft and Related Trades Workers (ISCO 7)	0.0	5.8	11.9	5.3	6.0
Plant and Machine Operators, and Assemblers (ISCO 8)	0.0	0.7	12.4	6.5	4.7
Elementary Occupations (ISCO 9)	0.0	3.2	29.1	16.9	11.9
Total	100.0	100.0	100.0	100.0	100.0
N	130	211	156	265	762

Source: Own calculation based on 2023 CMR & IBS survey.

Table 3. Transitions between occupations (1-digit ISCO) held by war refugees in Ukraine before the full-scale war and in Poland after displacement (in %)

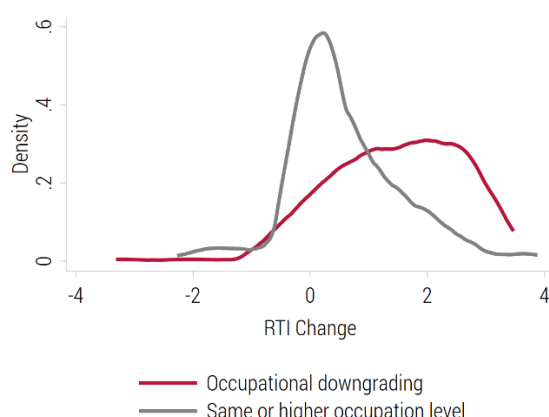
Occupation in Ukraine	Occupation in Poland			Total
	ISCO 1-3	ISCO 4-5	ISCO 6-9	
ISCO 1-3	34.3	19.0	15.1	68.4
ISCO 4-5	4.9	10.8	6.4	22.1
ISCO 6-9	1.7	1.0	6.8	9.5
Total	40.8	30.9	28.3	100.0

Note: Sample size N=367. The table only includes refugees who worked in Ukraine and found a new job in Poland. ISCO 1-3: Managers, Professionals, Technicians, and Associate Professionals. ISCO 4-5: Clerical Support Workers, Service and Sales Workers. ISCO 6-9: Skilled Agricultural, Forestry, and Fishery Workers; Craft and Related Trades Workers; Plant and Machine Operators; and Elementary Occupations.

Source: Own calculation based on 2023 CMR & IBS survey.

The difference in the nature of work between jobs held by war refugees before and after displacement becomes even more pronounced when examining changes in the task content of jobs. War refugees who experienced occupational downgrading predominantly perform substantially more routine-intensive tasks (Figure 2), with an average RTI difference of 1.48. To contextualise, a unitary difference in RTI is comparable to the gap between a managerial or professional role and a clerical position in Poland (Appendix Figure A1). At the same time, war refugees who secured employment in Poland in occupations similar to those they held in Ukraine often perform comparable tasks. Yet, many experience increased routine task intensity (RTI) and relatively few perform less routine-intensive jobs compared to their jobs in Ukraine (Figure 2). On average, the RTI difference between jobs held in Poland and Ukraine by those who retained occupational status is 0.59.

Figure 2. Task degradation among war refugees - the difference between routine task intensity (RTI) of a job found in Poland and the last job performed in Ukraine before the full-scale war



Source: Own calculation based on 2023 CMR & IBS survey

For war refugees who continued in their original Ukrainian jobs or had not worked prior to displacement, changes in task content cannot be measured. However, the former group is symmetrically distributed in terms of RTI in jobs performed in Poland. In contrast, the latter predominantly performs highly routine-intensive tasks, similar to those who experienced occupational downgrading (Appendix Figure A2).

Regarding return intentions, in 2022, 37.5% of the war refugees in the sample planned to return to Ukraine (Table 4), while the remaining 62.5% did not express such intentions (planned to stay in Poland for longer than one year, move to another country, or were unsure what they would do). However, by 2023, approximately one-third of the latter changed their minds and expressed a willingness to return. Among the 37.5% of war refugees who initially intended to return in 2022, more than two-thirds maintained this intention by 2023. As a result, the overall share of war refugees planning to return to Ukraine increased by 2.4 percentage points between 2022 and 2023. In the subsample of war refugees employed both in Ukraine and in Poland, the share of those wanting to return is slightly lower (34-35%, Appendix Table A2).

Table 4. The structure of Ukrainian war refugees' return intentions in 2022 and 2023 (in %)

	Does not want to come back in 2023	Wants to come back in 2023	Total
Did not want to come back in 2022	49.5	13.0	62.5
Wanted to come back in 2022	10.8	26.7	37.5
Total	60.3	39.7	100.0

Note: N=937.

Source: Own calculation based on 2023 CMR & IBS survey.

The share of war refugees declaring intentions to return in our survey is slightly lower than in other surveys conducted in Poland. Sohst et al. (2024) reported that 46% of war refugees expressed short-term return intentions and 93% expressed long-term return intentions. Strzelecki et al. (2023) found that 51% of war refugees declared a willingness to return shortly after the war's end, while van Tubergen et al. (2024) had that number at 73% in 2023. The differences between those surveys and ours could be in the surveyed horizon of plans – we treat those who plan to stay in Poland for at least a year as not intending to return.

Nevertheless, Ukrainian war refugees residing in Poland appear to have stronger return intentions than their peers in Western European countries. In Germany in 2022, 27% of Ukrainians planned to stay until the war's end and return to Ukraine afterwards, while 13% wanted to return after no more than a few years (Brücker et al., 2023). At the same time, a much higher share (26%) than those reported for Poland (7%) wanted to stay permanently. In Austria in 2023, only 10% of men and 17% of women were convinced to return to Ukraine after the war ended, while 12% wanted to return after a few years (Steinmayr et al., 2024). van Tubergen et al. (2024) showed that the Ukrainian war refugees in Poland are 10-15 pp. less likely to express intentions to return than refugees in Germany or the Netherlands with similar socio-demographic characteristics. Across Europe, 7% of war refugees declared in 2022 that they plan to return soon, 58% when it would be safe, and 8% planned to settle outside Ukraine (24% did not know, Adema et al., 2024). Over time, the share of those willing to settle has increased, while the share of those planning to return when it would be safe has declined (Adema et al., 2024). Similarly, UNHCR (2023) reported that in 2023, 14% of Ukrainian war refugees in Europe wanted to return in the next 3 months, and 62% wanted to return someday.

We acknowledge the sensitivity of self-reported return intentions to methodological design, sample selection, and the timing of the survey. These factors may influence the differences in shares of war refugees willing to return to Ukraine between the surveys. For this reason, we focus on changes in return intentions between the survey waves in the econometric analysis.

3. Econometric methodology

We estimate four regressions to uncover the factors associated with Ukrainian war refugees' occupational trajectories and their implications for return intentions. First, a logit on the employment likelihood among the total working-age war refugees population. Second, a multinomial logit of occupational trajectories, distinguishing between (i) continuing to work in the job held in Ukraine, (ii) finding a new job in Poland in a similar or higher-skilled occupation as that performed in Ukraine before the full-scale war, and (iii) occupational downgrading. Here, the sample includes people employed before and after displacement. Third, an OLS regression of RTI differences between jobs performed in Poland and Ukraine, estimated for those who worked in Ukraine and found a new job in Poland. All these regressions primarily use data from the 2023 survey wave, which included a module on labour market outcomes and job tasks. Fourth, we estimate a multinomial logit on changes in return intentions between 2022 and 2023, specifically focused on the role of occupational downgrading and task degradation. The return intentions and labour market integration are likely jointly determined at any given time. Therefore, when studying return plans, we focus on their changes between 2022-2023. Specifically, we are interested in whether occupational downgrading and task degradation are related to changes in intention plans of war refugees who initially (in 2022) wanted to stay in Poland. Table 5 summarises our models.

In all regressions, we include a battery of controls for socio-demographic characteristics, human capital, labour market experience in Ukraine before displacement, networks in Poland, and economic and war-related factors in the place of origin in Ukraine, as outlined in Table 6. In the regression on the RTI difference, we additionally control for occupational downgrading. In the regression for changes in return intentions, we additionally control for occupational downgrading, the RTI difference between jobs held in Ukraine and Poland, and the monthly wage earned in Poland.

Table 5. Methodology of the econometric analysis

Dependent variable	Estimation	Sample
Employment	Binary logistic regression	All war refugees
Continuing the job in Ukraine Occupational downgrading Reference: New job in Poland the same or higher-skilled occupation as in Ukraine	Multinomial logistic regression	War refugees who worked both in Ukraine pre-displacement and in Poland
RTI difference between jobs in Poland and Ukraine	Linear regression	War refugees who worked in Ukraine and found a new job in Poland
Change in return intentions between 2022 and 2023	Multinomial logistic regression	War refugees who worked in Ukraine and found a new job in Poland

Source: Own elaboration.

In a robustness check for return intentions, we use a continuous measure of occupational downgrading. It captures the ratio between the wages war refugees could expect in Poland and the wages they could have earned in Ukraine. We define it according to respondents' 2-digit ISCO occupations, gender, region of origin in Ukraine, and the region in which they stay in Poland. We assign each individual the average wage in their occupation in Ukraine for a specific gender, adjusted for regional differences in average wages, using the 2020 data from the State Statistics Service of Ukraine. We also assign the average wage by gender, occupation, and region (voivodeship) in Poland, using the 2022 Structure of Earnings Survey conducted by Statistics Poland data.⁴ We use the most recent available wage data at the time of writing, and adjust both Ukrainian and Polish wages for (average) wage growth between 2020 and 2023, country-specific income taxation, and the PLN/UAH exchange rate.

To verify if survey attrition is related to non-random selection into the second wave, we employ a Linear Probability Model (LPM), including all controls shown in Table 6. The observables explain only about 7% of the selection variance, and they predict selection only for 6.3% of individuals who participated in the second wave. Estimation results are shown in Appendix Table A3. This suggests that survey attrition is mainly random. Nevertheless, we account for potential selection into the second wave by incorporating a non-selection hazard term, following the framework of Heckman (1979). Specifically, we first estimate a binomial probit model on the entire sample to predict participation in the second wave, with the comprehension of Polish in 2022 (first wave) as a key selection variable (Table 5). The estimated coefficients are then used to compute an attrition hazard measure—the Inverse Mills Ratio (IMR)—for each individual.⁵ Higher IMR values correlate negatively with participation in the second wave, including the IMR in the subsequent regressions, which mitigates upward bias in the estimated coefficients that could arise if the outcome variable was correlated with the error term from the selection equation.

⁴ For occupation, voivodeship, and gender cells with less than 25 observations, we impute the values based on the country average for that occupation and gender.

⁵ Having estimated the coefficients of a probit model for the second survey wave participation, $\Pr(\text{second_wave} = 1 \mid X) = \Phi(X\beta)$, we calculate the Inverse Mills Ratio as $\text{IMR} = \frac{\phi(\hat{X}\beta)}{\Phi(\hat{X}\beta)}$ where $\phi(\cdot)$ denotes the standard normal probability density function, $\Phi(\cdot)$ denotes the standard normal cumulative distribution function, and $\hat{X}\beta$ represents the estimated linear predictor from the probit model.

Table 6. Control variables list

Control Category	Variable name	Variable type	Regression type			
			Selection to 2 nd wave	Employment and Occupational Trajectories	RTI difference b/w Poland and Ukraine	Return intentions change 2022-2023
Selection variables	Comprehension of Polish in 2022	5 categories	X			
	Family in the place of residence in Poland	Binary	X	X	X	X
	Friends in the place of residence in Poland	Binary	X	X	X	X
	Somebody helped in the place of residence in Poland	Binary	X	X	X	X
Socio-demographic	Woman	Binary		X	X	X
	Age	4 groups (10-year)		X	X	X
	Child 0-6 years	Binary		X	X	X
	In education	Binary		X	X	X
	Partner in Ukraine	Binary		X	X	X
	Partner in Poland	Binary		X	X	X
Human Capital	Tertiary education	4 categories		X	X	X
	Cognitive score quantile	5 variables for quantiles		X	X	X
Labour Market	Work experience	Continuous		X	X	X
	Labour market status in Ukraine	3 categories		X	X	X
Location	City size (Poland)	4 categories		X	X	X
	Distance to the frontline (place of origin in Ukraine)	Continuous		X	X	X
	GDP per capita of Ukrainian origin location	Continuous		X	X	X
Network	Earlier non-touristic stay in Poland	Binary		X	X	X
Additional	Occupational downgrading	Binary / Continuous			X	X
	RTI difference	Continuous				X
	Monthly wage	Continuous				X

Source: Own elaboration.

4. Results

4.1. Occupational trajectories and task degradation

We begin by examining the factors associated with employment, occupational transitions, and task degradation among Ukrainian war refugees in Poland.

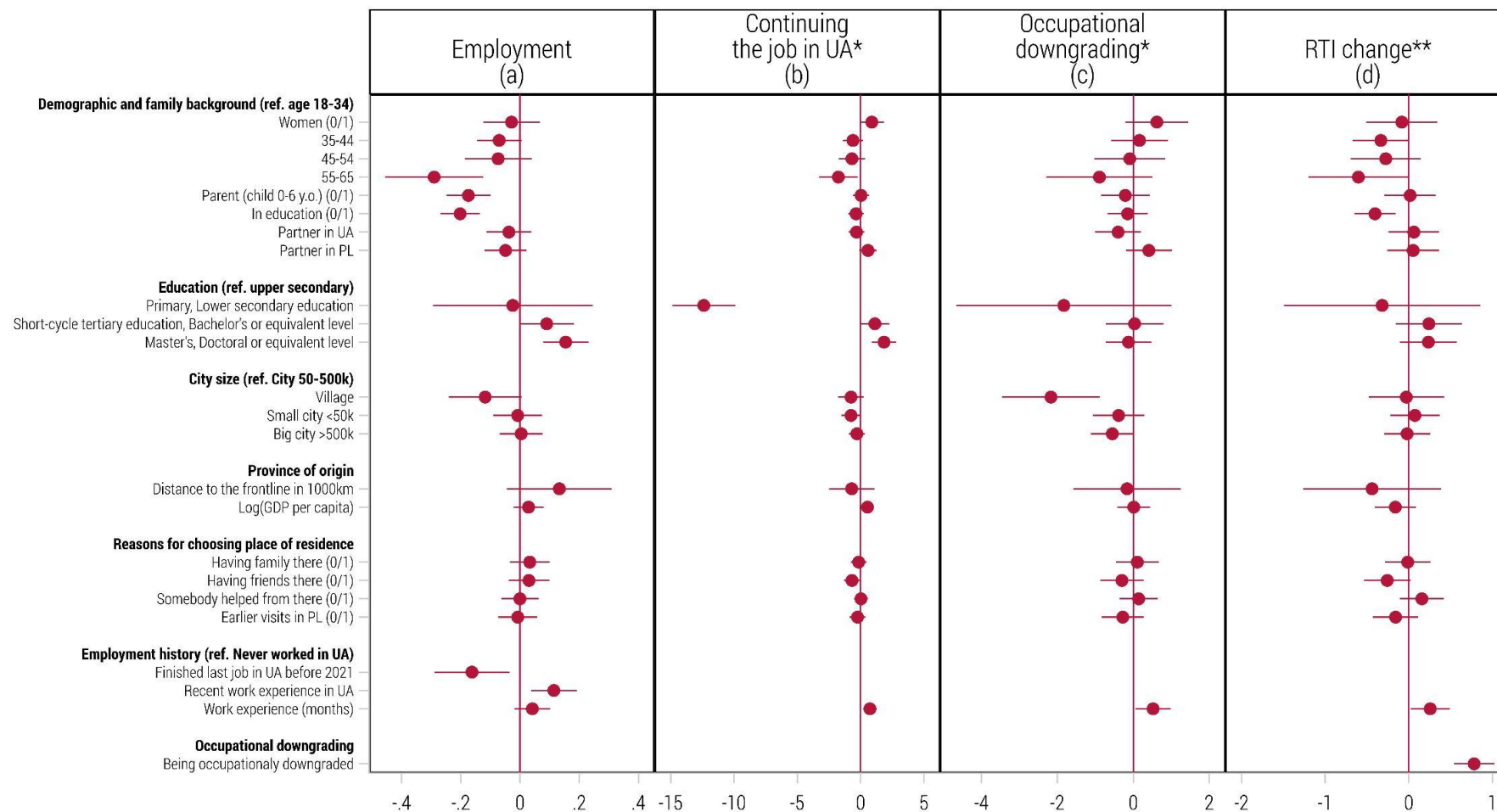
Employment is negatively associated with several demographic and experiential characteristics. Individuals aged 55-65 exhibit a lower probability of employment than those aged 18-34, with an average marginal effect (AME) of -0.29 pp., as shown in panel a of Figure 4. Similarly, the presence of a child under six years old (-0.17 pp.), current enrollment in education (-0.2 pp.) and prior work experience before 2021 (-0.16 pp.)—compared to no work experience or work experience beginning only in 2021—are all linked to significantly reduced employment likelihood. Conversely, employment is positively associated with tertiary education (0.09 pp. for a bachelor and 0.15 for a master) and recent work experience in Ukraine (0.11 pp.).

Examining occupational trajectories reveals that individuals who retained their Ukrainian jobs post-displacement tend to be prime-aged or younger (AME of -0.68 pp. for age group 55-64, panel b of Figure 4), relatively well-educated (AME of 1.14 pp. for bachelor, 1.86 pp. for master level education, -12.39 pp. for primary or lower secondary education), and have more work experience (0.74 pp. for each year). Furthermore, this group predominantly originates from Ukraine's more affluent regions. For instance, Kyiv, the most prosperous region, has a GDP per capita 25% higher than the median oblast, which correlates with a 1.95 pp. higher probability that war refugees from Kyiv continue working in their Ukrainian jobs, possibly remotely.

In contrast, individuals who experienced occupational downgrading in a new job in Poland share many characteristics with those who secured jobs in occupations comparable to their previous jobs in Ukraine. However, they generally possess greater work experience (AME for linear prediction of 0.52 pp., panel c of Figure 4). They are less likely to reside in rural areas (-2.17 pp.) or large cities (-0.55 pp) than in medium-sized cities. This urban-rural pattern likely reflects a combination of demand- and supply-side factors. War refugees residing in rural areas are less likely to engage in employment (panel a of Figure 4), suggesting some may rather stay jobless than undertake a low-skilled, low-paid job. Those residing in large cities may benefit from better labour market opportunities.

Finally, occupational downgrading is strongly correlated with an increase in RTI compared to jobs held in Ukraine before the full-scale war (0.78 pp. panel d of Figure 4). Being in education is significantly correlated with a lower level of task degradation (-0.40 pp.). At the same time, greater work experience is associated with a higher level of task degradation (0.26 pp.).

Figure 3. Marginal effects from the logistic regression on employment (a), multinomial logistic regression of occupational trajectories (b-c, baseline: new job in the same or better occupation category) and coefficients from the linear regression of the RTI difference between jobs performed in Poland and Ukraine (d).



Note Controlling for cognitive score and observation attrition hazard (IMR) in all regressions., *Margins from multinomial logit with base category – New job in the same or higher-skilled occupation category, **Point estimates from OLS. * and ** - regressions for individuals who worked both in Ukraine before the full-scale war and in Poland after displacement. Complete estimation results shown in Appendix Tables A4-A6.

Source: Own calculation based on 2023 CMR & IBS survey.

4.2. Job task degradation and changes in return intentions over time

Next, we examine the relationship between task degradation and changes in war refugees' return intentions between 2022 and 2023, as measured across two consecutive survey waves. Our primary focus is task degradation – the difference in RTI between jobs performed in Poland and Ukraine before the full-scale war – while Appendix Table A7 shows results for other explanatory variables. Importantly, we control for earnings and occupational downgrading (and other key confounders), so the estimates for RTI difference capture differences between people with similar experience of occupational downgrading and comparable earnings in Poland but a diverging extent of task degradation. While our research design is not strictly causal, we think the RTI differences are plausibly exogenous to the decision to accept a job, even in less skill-demanding occupations (downgrading), as workers obtain full knowledge of routine intensity only after starting the job.

We find that an increase in RTI by one standard deviation – in a job performed in Poland as compared to a job held in Ukraine before the full-scale war – is associated with a 3.4 pp higher likelihood that a person who did not want to return to Ukraine in 2022 wants to do so in 2023 (Table 7). This effect is statistically significant, while the marginal effects pertaining to the opposite shift in return intentions or the retention of initial plans are insignificant (Table 7). Moreover, the higher the earnings in Poland, the lower the likelihood that individuals who had wanted to stay in Poland in 2022 changed their minds by 2023. However, occupational downgrading is not significantly related to changes in return intentions (Appendix Table A7). Hence, the change in the nature and skill-intensity of work, proxied by task degradation, rather than accepting a job in a less skill-demanding occupation, discourages war refugees from settling in Poland, especially those who initially had not planned to return to Ukraine.

Table 7. Average marginal effects of the RTI difference (between the job in Poland and the last job in Ukraine) on the transitions in return plans between 2022 and 2023

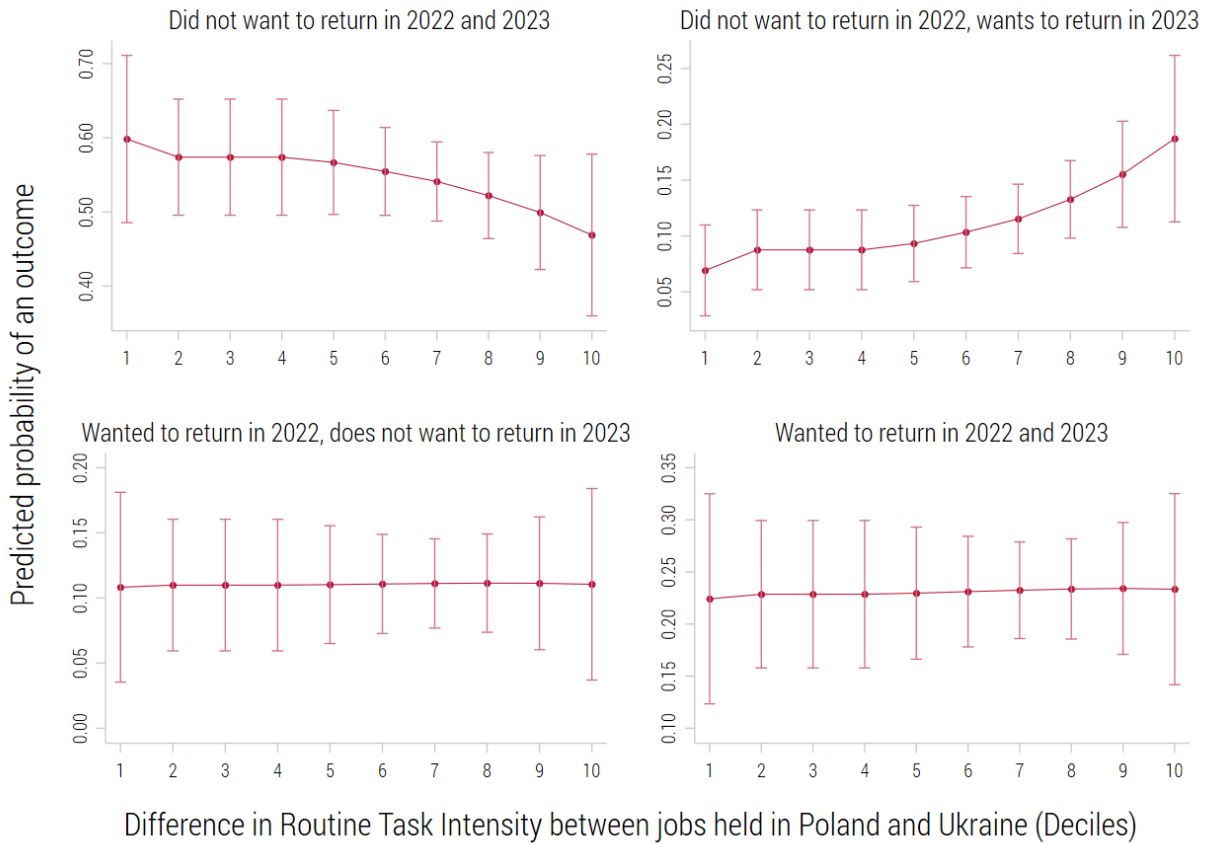
Return intentions in 2022/2023	dy/dx	std. err.	P> z
Did not want to return in 2022 and 2023	-0.036	0.028	0.189
Did not want to return in 2022, wants to return in 2023	0.034*	0.015	0.024
Wanted to return in 2022, does not want to return in 2023	0.001	0.019	0.976
Wanted to return in 2022 and 2023	0.002	0.024	0.931

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. $N = 321$.

Source: Own calculation based on 2023 CMR & IBS survey.

To assess the economic significance of these effects, we predict the probabilities of specific return intentions in 2023 conditional on return plans in 2022 and the deciles of the RTI difference distribution. On average, an increase in the RTI difference from the bottom decile (-0.77) to the top decile (2.78) is associated with an 11.8 pp. increase (6.9% to 18.7%, Figure 4) in the probability that people who did not plan to return to Ukraine in 2022 want to do so in 2023. Moving from the 6th decile (0.55) to the top decile corresponds to an 8.4 pp. increase (10.3% to 18.7%). The effects are weaker for other outcomes. There is a negative gradient of the RTI difference for the probability that people who did not want to return to Ukraine in 2022 have the same intention in 2023, but the estimates are noisier (Figure 4). The RTI difference appears to play no role for people who already wanted to return to Ukraine in 2022.

Figure 4. Predicted probability of transitions in return intentions between 2022 and 2023 conditional on RTI difference between jobs held in Poland and in Ukraine, by the deciles of RTI difference distribution



Note: The average values of RTI difference by decile are: 1 (-0.77) 2-4 (-0.01) 5 (0.2) 6 (0.55) 7 (0.93) 8 (1.44) 9 (2.03) 10 (2.78). N = 321.

Source: Own calculation based on 2023 CMR & IBS survey.

To shed further light on the role of task degradation, we split the population of war refugees who in 2022 did not plan to return to Ukraine into two subsamples: (i) those who wanted to stay in Poland (122 individuals) and (ii) those who did not know what they would do (79 individuals) or who intended to move to another country (five people). For each subsample, we estimate a logistic regression for the change of return intentions, namely, expressing the willingness to return to Ukraine by 2023. All control variables are identical to those used in the above-discussed multinomial regression on return intention shifts among all refugees.

Given the small sample size, these results are noisy but provide suggestive evidence that task degradation plays a larger role for people who in 2022 were uncertain about returning or staying in Poland. In this subgroup, performing a job in Poland that is by one unit of RTI more routine-intensive than the job they performed in Ukraine before the full-scale war, was associated with a 12.1 pp higher likelihood of wanting to return to Ukraine by 2023 (7.5% significance level, Table 8). In the subgroup of refugees who wanted to stay in Poland in 2022, the marginal effect of RTI was insignificant (Table 8). This suggests that the positive association between RTI difference and shifting return intentions from 2022 to 2023 was primarily driven by those initially uncertain about returning.

Table 8. Average marginal effects for RTI change in the regression on the return intention between 2022 and 2023, among war refugees who did not plan to return to Ukraine in 2022

Intention in 2022	Does not know / Move to other country (a)	Stay in Poland (b)	Not planning to return to Ukraine in (a+b)
RTI difference	0.121	0.029	0.041
std. err.	0.068	0.025	0.022
P> z	0.075	0.258	0.062
N	84	122	206

Source: Own calculation based on 2023 CMR & IBS survey.

To ensure the robustness of our findings, we replace the discrete measure of occupational downgrading with a continuous variable. In this specification, the estimated marginal effect for the relationship between RTI difference and changes in return intentions from staying in Poland (2022) to returning to Ukraine (2023) remains statistically significant at the 5% level (Table 9) and is virtually identical to the baseline estimate (Table 7). Appendix Table A8 includes the complete results from this specification; Appendix Figure A3 shows the corresponding predictive margins of return intentions' changes at different levels of RTI difference.

Table 9. Average marginal effects for RTI difference between the job in Poland and the last job in Ukraine

Return intentions in 2022/2023	dy/dx	std. err.	P> z
Did not want to return in 2022 and 2023	-0.042	0.026	0.106
Did not want to return in 2022, wants to return in 2023	0.029*	0.014	0.033
Wanted to return in 2022, does not want to return in 2023	0.002	0.017	0.927
Wanted to return in 2022 and 2023	0.012	0.024	0.625

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. $N = 321$.

Source: Own calculation based on 2023 CMR & IBS survey.

5. Summary and conclusions

In this paper, we have examined the occupational trajectories, task content of work, and return intentions of Ukrainian war refugees in Poland following Russia's full-scale invasion of Ukraine in February 2022. Leveraging data from two waves of an online country-wide survey of Ukrainian war refugees, we have quantified the extent of occupational downgrading and task degradation experienced by war refugees, measured through the difference in routine task intensity (RTI) of jobs held in Poland after displacement and in Ukraine before the full-scale war. The findings indicate widespread task degradation among war refugees, with those transitioning to lower-skilled jobs experiencing significant increases in RTI. Even war refugees who retained their occupational categories experienced noticeable task degradation. Notably, the study reveals a robust association between task degradation and increased return intentions, particularly among war refugees who initially planned to stay in Poland. This relationship persists even when controlling for earnings and occupational downgrading, emphasising the critical role of job content in shaping migration decisions.

The findings highlight the need for host countries like Poland to address skill underutilisation and task degradation among war refugees through targeted policies. Programs promoting skill-matching, tailored vocational training, and language proficiency development could help war refugees access jobs aligned with their qualifications and reduce their reliance on routine-intensive work. Strengthening support for integration services and expanding access to professional networks may improve labour market outcomes for war refugees. As Poland allowed Ukrainian war refugees access to the labour market and safety nets, but did not provide any targeted benefits, war refugees might have felt compelled to find jobs quickly and accepted occupational downgrading and task degradation. However, these experiences might have discouraged them from staying in Poland over time. Policymakers should also consider long-term strategies to mitigate the productivity losses associated with occupational downgrading, both for the host country and after the war refugees' eventual reintegration into their home labour markets.

Future research could explore the longitudinal impacts of task degradation on war refugees' economic well-being and social integration in host countries. Additionally, comparative studies examining the occupational experiences of war refugees across different host countries could provide deeper insights into the role of institutional and labour market frameworks in shaping integration outcomes. Finally, investigating the impact of evolving geopolitical conditions on war refugees' return decisions would enhance our understanding of the interplay between economic and non-economic factors influencing migration dynamics and labour force participation of war refugees.

References

- Acemoglu, D., Autor, D., 2011. Skills, Tasks and Technologies: Implications for Employment and Earnings. In: Card, D., Ashenfelter, O. (Eds.), *Handbook of Labor Economics*. Elsevier, pp. 1043–1171.
- Adema, J., Aksoy, C.G., Giesing, Y., Poutvaara, P., 2024. The Effect of Conflict on Refugees' Return and Integration: Evidence from Ukraine.
- Akresh, I.R., 2008. Occupational Trajectories of Legal US Immigrants: Downgrading and Recovery. *Population and Development Review* 34, 435–456.
- Autor, D.H., Handel, M.J., 2013. Putting Tasks to the Test: Human Capital, Job Tasks, and Wages. *Journal of Labor Economics* 31, S59–S96.
- Bahar, D., Hauptmann, A., Özgüzel, C., Rapoport, H., 2024. Migration and Knowledge Diffusion: The Effect of Returning Refugees on Export Performance in the Former Yugoslavia. *The Review of Economics and Statistics* 106, 287–304.
- Balcilar, M., Nugent, J.B., 2019. The migration of fear: An analysis of migration choices of Syrian refugees. *The Quarterly Review of Economics and Finance, Special Issue on the Economies of Middle East and North Africa in an Era of Political Turbulence* 73, 95–110.
- Brücker, H., Ette, A., Grabka, M.M., Kosyakova, Y., Niehues, W., Rother, N., Spieß, C.K., Zinn, S., Bujard, M., Cardozo Silva, A.R., Décieux, J.P., Maddox, A., Milewski, N., Sauer, L., Schmitz, S., Schwanhäuser, S., Siegert, M., Steinhauer, H., Tanis, K., 2023. Ukrainian Refugees in Germany: Evidence From a Large Representative Survey. *CPoS* 48.
- Buber-Ennser, I., Kohlenberger, J., Rengs, B., Al Zalak, Z., Goujon, A., Striessnig, E., Potančoková, M., Gisser, R., Testa, M.R., Lutz, W., 2016. Human capital, values, and attitudes of persons seeking refuge in Austria in 2015. *PLoS ONE* 11.
- Castagnone, E., Nazio, T., Bartolini, L., Schoumaker, B., 2015. Understanding Transnational Labour Market Trajectories of African-European Migrants: Evidence from the MAFE Survey. *International Migration Review* 49, 200–231.
- Constant, A., Massey, D.S., 2003. Self-selection, earnings, and out-migration: A longitudinal study of immigrants to Germany. *J Popul Econ* 16, 631–653.
- Cortes, K.E., 2004. Are Refugees Different from Economic Immigrants? Some Empirical Evidence on the Heterogeneity of Immigrant Groups in the United States. *The Review of Economics and Statistics* 86, 465–480.
- De la Rica, S., Gortazar, L., Lewandowski, P., 2020. Job Tasks and Wages in Developed Countries: Evidence from PIAAC. *Labour Economics* 65, 101845.
- De Vroome, T., Van Tubergen, F., 2014. Settlement Intentions of Recently Arrived Immigrants and Refugees in the Netherlands. *Journal of Immigrant & Refugee Studies* 12, 47–66.
- Di Saint Pierre, F., Martinovic, B., De Vroome, T., 2015. Return Wishes of Refugees in the Netherlands: The Role of Integration, Host National Identification and Perceived Discrimination. *Journal of Ethnic and Migration Studies* 41, 1836–1857.

- Dudek, B., Panuciak, A., Strzelecki, P., 2024. Sytuacja życiowa i ekonomiczna migrantów z Ukrainy w Polsce w 2024 r. Raport z badania ankietowego. Narodowy Bank Polski.
- Dustmann, C., Frattini, T., Preston, I.P., 2013. The Effect of Immigration along the Distribution of Wages. *The Review of Economic Studies* 80, 145–173.
- Giuntella, O., Kone, Z.L., Ruiz, I., Vargas-Silva, C., 2018. Reason for immigration and immigrants' health. *Public Health, Special issue on Migration: A global public health issue*. 158, 102–109.
- Górny, A., Józwiak, I., Kaczmarczyk, P., Lewandowski, P., Palczyńska, M., Porwit, K., Rakowska, K., Grzanka, M., 2024. Between Ukraine and Poland. Competencies and Professional Aspirations of Ukrainian Migrants in Poland.
- Górny, A., Kaczmarczyk, P., 2019. European Migration Transition in the Context of Post-Enlargement Migration from and into Central and Eastern Europe. In: *The SAGE Handbook of International Migration*. SAGE Publications, New York.
- Górny, A., Kaczmarczyk, P., 2023. Between Ukraine and Poland. Ukrainian migrants in Poland during the war. *CMR Spotlight*, 2(48).
- Gromadzki, J., Lewandowski, P., 2023. Refugees from Ukraine on the Polish labour market. *Ubezpieczenia Społeczne. Teoria i praktyka*.
- Haas, H. de, Fokkema, T., 2011. The effects of integration and transnational ties on international return migration intentions. *Demographic Research* 25, 755–782.
- Hannafi, C., Marouani, M.A., 2023. Social integration of Syrian refugees and their intention to stay in Germany. *J Popul Econ* 36, 581–607.
- Heckman, J.J., 1979. Sample Selection Bias as a Specification Error. *Econometrica* 47, 153–161.
- ISW, I.F. the S. of W., 2025. Interactive Time-lapse: Russia's War in Ukraine [WWW Document]. ArcGIS StoryMaps. URL <https://storymaps.arcgis.com/stories/733fe90805894bfc8562d90b106aa895> (accessed 1.27.25).
- Lebow, J., 2024. Immigration and occupational downgrading in Colombia. *Journal of Development Economics* 166, 103164.
- Lewandowski, P., Park, A., Hardy, W., Du, Y., Wu, S., 2022. Technology, skills, and globalization: explaining international differences in routine and nonroutine work using survey data. *The World Bank Economic Review* 36, 687–708.
- Nikolov, P., Salarpour Goodarzi, L., Titus, D., 2022. Skill Downgrading Among Refugees and Economic Immigrants in Germany: Evidence from the Syrian Refugee Crisis.
- Ruiz, I., Vargas-Silva, C., 2018. Differences in labour market outcomes between natives, refugees and other migrants in the UK. *Journal of Economic Geography* 18, 855–885.
- Snel, E., Faber, M., Engbersen, G., 2015. To Stay or Return? Explaining Return Intentions of Central and Eastern European Labour Migrants.
- Sohst, R., Tirado, T., Salgado, L., Slootjes, J., 2024. Exploring Refugees' Intentions to Return to Ukraine: Data Insights and Policy Responses.

State Statistics Service of Ukraine, 2021. Gross regional product (2004-2021), taking into account the data of the balance of payments data.

Steinmayr, A., Berens, S., Duell, D., Wett, V., 2024. Arbeitsmarktintegration von ukrainischen Vertriebenen – mit besonderem Schwerpunkt auf Frauen, Studie im Auftrag des AMS Österreich. Arbeitsmarktservice Österreich/Universität Innsbruck.

Strzelecki, P., Panuciak, Adam, Dudek, Beata, 2023. Sytuacja życiowa i ekonomiczna migrantów z Ukrainy w Polsce w 2023 roku. Departament Statystyki NBP.

Survey of Adult Skills (PIAAC) [WWW Document], 2019. URL <https://www.oecd.org/skills/piaac/> (accessed 10.1.19).

UNHCR, 2023. Lives on hold: Intentions and Perspectives of Refugees and IDPs from Ukraine #4 [WWW Document]. UNHCR Operational Data Portal (ODP). URL <https://data.unhcr.org/en/documents/details/101747> (accessed 1.15.25).

Van Hook, J., Zhang, W., 2011. Who Stays? Who Goes? Selective Emigration Among the Foreign-Born. *Popul Res Policy Rev* 30, 1–24.

van Tubergen, F., Wachter, G.G., Kosyakova, Y., Kogan, I., 2024. Return intentions among Ukrainian refugees in Europe: A Cross-National Study. *International Migration* 62, 181–198.

Zakirova, K., Buzurukov, B., 2021. The Road Back Home is Never Long: Refugee Return Migration. *Journal of Refugee Studies* 34, 4456–4478.

Appendix

Table A1. The task questions used to calculate task content measures and RTI

Task content	Non-routine cognitive analytical	Non-routine cognitive interpersonal	Routine
In your job, how often do/are you usually:			
	Confronted with more complex problems that take at least 30 minutes to find a good solution? The 30 minutes only refers to the time needed to THINK of a solution, not the time needed to carry it out	Manage or supervise other employees	To what extent can you choose or change the sequence of your tasks? (not able)
	Read articles in newspapers, magazines or newsletters (at least once a month)	Make speeches or presentations in front of five or more people? (any frequency)	Fill in forms? (at least once a month)
Task questions	Read articles in professional journals or scholarly publications? (at least once a month)		Make speeches or presentations in front of five or more people - reversed (never)
	Use a programming language to program or write computer code? (any frequency)		
$RTI = \ln(routine) - \ln \frac{(nonroutine_{analytical} + nonroutine_{personal})}{2}$			

Note: The cut-offs for the "yes" dummy in brackets. For the full wording of questions and definitions of cutoffs see Lewandowski et al. (2022).

Source: Own elaboration based on see Lewandowski et al. (2022).

Table A2. The structure of Ukrainian war refugees' return intentions in 2022 and 2023 among those employed both in Ukraine before the full-scale war and in Poland after displacement (in %)

	Does not want to come back in 2023	Wants to come back in 2023	Total
Did not want to come back in 2022	53.9	11.8	66.7
Wanted to come back in 2022	11.1	23.2	34.3
Total	65.0	35.0	100.0

Note: N=321.

Source: Own calculation based on 2023 CMR & IBS survey.

Table A3. Estimates from the linear probability model on the selection to the second wave of the survey

	(1) Selection to the second wave
Woman	-0.00785 (0.0220)
Age: 35–44	0.0451** (0.0149)
Age: 45–54	0.0643*** (0.0189)
Age: 55–64	0.0638** (0.0211)
Has a child aged 0–6	0.0336* (0.0150)
Participates in education	0.192*** (0.0167)
Partner in Ukraine	-0.0231 (0.0150)
Partner in Poland	0.0689*** (0.0158)
Basic or secondary vocational	0.0732 (0.0570)
General secondary or post-secondary	0.0548 (0.0541)
Tertiary	0.0839 (0.0533)
Not Working	-0.0592*** (0.0149)
Rural area	-0.0883*** (0.0198)
Small town (up to 50,000 inhabitants)	0.0346 (0.0178)
Big city (more than 500,000 inhabitants)	0.0565*** (0.0156)
Distance to the frontline in 1000km (location of origin in Ukraine)	-0.0891* (0.0362)
Log(GDP per capita) (location of origin in Ukraine)	-0.0156 (0.0107)
Family in Poland helped	-0.0271 (0.0147)
Friends in Poland helped	-0.0256 (0.0145)
Somebody in the location helped	0.00763 (0.0135)
Earlier non-touristic stay in Poland	0.0336* (0.0143)
Very good Polish comprehension	0.0386 (0.0220)
Good Polish comprehension	0.00424 (0.0157)
Weak Polish comprehension	-0.0531** (0.0171)
Very weak Polish comprehension	-0.0337

Constant	(0.0226) 0.265 (0.140)
Observations	4379
R^2	0.068
Adjusted R^2	0.063

Note: Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: Own calculation based on 2023 CMR & IBS survey.

Table A4. Average Marginal Effects from a logistic regression on selection to employment

	(1) Employment
Woman	-0.0285 (0.0485)
Age: 35–44	-0.0703 (0.0384)
Age: 45–54	-0.0737 (0.0578)
Age: 55–64	-0.290*** (0.0841)
Has a child aged 0–6	-0.174*** (0.0380)
Participates in education	-0.202*** (0.0337)
Partner in Ukraine	-0.0375 (0.0388)
Partner in Poland	-0.0488 (0.0363)
Primary, Lower secondary education	-0.0243 (0.138)
Short-cycle tertiary education, Bachelor's or equivalent level	0.0902 (0.0471)
Master's, Doctoral or equivalent level	0.154*** (0.0391)
Cognitive score: Lowest quintile	0.0456 (0.0464)
Cognitive score: Second quintile	0.00480 (0.0469)
Cognitive score: Fourth quintile	0.0527 (0.0454)
Cognitive score: Highest quintile	0.0228 (0.0482)
Rural area	-0.118 (0.0630)
Small town (up to 50,000 inhabitants)	-0.00776 (0.0421)
Big city (more than 500,000 inhabitants)	0.00403 (0.0371)
Distance to the frontline in 1000km (location of origin in Ukraine)	0.133 (0.0904)
Log(GDP per capita) (location of origin in Ukraine)	0.0290 (0.0260)
Family in Poland helped	0.0331 (0.0343)
Friends in Poland helped	0.0303 (0.0351)
Somebody in the location helped	-0.000225 (0.0321)
Earlier non-touristic stay in Poland	-0.00755 (0.0335)
Worked in UA before 2021	-0.162*

Worked in UA after 2021	(0.0649)
	0.114**
Months of work experience	(0.0395)
	0.0416
Observation non-selection hazard (IMR)	(0.0307)
	-0.343
	(0.181)
<hr/>	
<i>N</i>	917

Note: Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: Own calculation based on 2023 CMR & IBS survey.

Table A5. Average marginal effects from the multinomial logistic regression for occupational trajectories relative to "New job in the same or higher-skilled occupation"

	(1) Occupational Downgrading	(3) Continuing the job in Ukraine
Woman	0.622 (0.421)	0.891 (0.495)
Age: 35–44	0.164 (0.384)	-0.596 (0.407)
Age: 45–54	-0.0922 (0.475)	-0.678 (0.535)
Age: 55–64	-0.891 (0.712)	-1.751* (0.785)
Has a child aged 0–6	-0.210 (0.326)	0.0401 (0.324)
Participates in education	-0.148 (0.271)	-0.354 (0.310)
Partner in Ukraine	-0.399 (0.309)	-0.321 (0.319)
Partner in Poland	0.411 (0.309)	0.594 (0.352)
Primary, Lower secondary education	-1.829 (1.448)	-12.39*** (1.274)
Short-cycle tertiary education, Bachelor's or equivalent level	0.0342 (0.390)	1.137* (0.575)
Master's, Doctoral or equivalent level	-0.125 (0.308)	1.862*** (0.486)
Cognitive score: Lowest quintile	-0.497 (0.386)	-0.527 (0.417)
Cognitive score: Second quintile	-0.595 (0.374)	-0.534 (0.396)
Cognitive score: Fourth quintile	-0.567 (0.372)	-0.107 (0.385)
Cognitive score: Highest quintile	-0.267 (0.408)	-0.220 (0.439)
Rural area	-2.168*** (0.658)	-0.751 (0.514)
Small town (up to 50,000 inhabitants)	-0.385 (0.343)	-0.751 (0.392)
Big city (more than 500,000 inhabitants)	-0.551 (0.287)	-0.287 (0.316)
Distance to the frontline in 1000km (location of origin in Ukraine)	-0.163 (0.721)	-0.695 (0.917)
Log(GDP per capita) (location of origin in Ukraine)	0.0130 (0.219)	0.552* (0.245)

Family in Poland helped	0.108 (0.289)	-0.148 (0.324)
Friends in Poland helped	-0.299 (0.290)	-0.676* (0.328)
Somebody in the location helped	0.144 (0.258)	0.0390 (0.285)
Earlier non-touristic stay in Poland	-0.276 (0.283)	-0.238 (0.319)
Months of work experience	0.523* (0.238)	0.745** (0.278)
Observation non-selection hazard (IMR)	0.710 (1.535)	4.111** (1.576)
<hr/> <i>N</i>	<hr/> 492	<hr/> 492

Note: Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Source: Own calculation based on 2023 CMR & IBS survey.

Table A6. Estimates from a linear regression on the difference in Routine Task Intensity (RTI) between jobs held in Poland and Ukraine

	(1) RTI Difference
Woman	-0.0826 (0.216)
Age: 35–44	-0.333 (0.171)
Age: 45–54	-0.275 (0.213)
Age: 55–64	-0.602* (0.303)
Has a child aged 0–6	0.0173 (0.156)
Participates in education	-0.403** (0.125)
Partner in Ukraine	0.0616 (0.154)
Partner in Poland	0.0524 (0.157)
Primary, Lower secondary education	-0.318 (0.597)
Short-cycle tertiary education, Bachelor's or equivalent level	0.241 (0.201)
Master's, Doctoral or equivalent level	0.235 (0.173)
Cognitive score: Lowest quintile	0.123 (0.181)
Cognitive score: Second quintile	-0.159 (0.163)
Cognitive score: Fourth quintile	0.0215 (0.181)
Cognitive score: Highest quintile	-0.372 (0.217)
Rural area	-0.0289 (0.230)
Small town (up to 50,000 inhabitants)	0.0746 (0.151)
Big city (more than 500,000 inhabitants)	-0.0198 (0.140)
Distance to the frontline in 1000km (location of origin in Ukraine)	-0.439 (0.418)
Log(GDP per capita) (location of origin in Ukraine)	-0.160 (0.126)
Family in Poland helped	-0.0120 (0.139)
Friends in Poland helped	-0.257 (0.142)
Somebody in the location helped	0.157 (0.135)

Earlier non-touristic stay in Poland	-0.157 (0.138)
Months of work experience	0.257* (0.119)
Occupational Downgrading	0.782*** (0.124)
Observation non-selection hazard (IMR)	1.790** (0.664)
Constant	0.219 (1.801)
<hr/>	
<i>N</i>	360
<i>R</i> ²	0.262
<hr/>	

Note: Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Source: Own calculation based on 2023 CMR & IBS survey.

Table A7. Average marginal effects from the multinomial logistic regression on the change in intentions regarding the return to Ukraine, with discrete measure of occupational downgrading

	(1) Did not want to return in 2022, does not want to return in 2023	(2) Did not want to return in 2022, wants to return in 2023	(3) Wanted to return in 2022, does not want to return in 2023	(4) Wanted to return in 2022, wants to return in 2023
RTI Difference bw jobs held in Poland and Ukraine	-0.0365 (0.0278)	0.0338* (0.0150)	0.000563 (0.0188)	0.00211 (0.0245)
Log(monthly wage)	0.0131 (0.0152)	-0.0210** (0.00790)	0.00565 (0.00950)	0.00220 (0.0147)
Occupational Downgrading	-0.0447 (0.0625)	-0.0447 (0.0365)	0.000983 (0.0439)	0.0884 (0.0535)
Woman	0.0214 (0.0957)	0.0520 (0.0636)	-0.0628 (0.0703)	-0.0106 (0.0753)
Age: 35–44	-0.0317 (0.0871)	-0.000980 (0.0530)	0.0442 (0.0599)	-0.0115 (0.0785)
Age: 45–54	-0.0112 (0.111)	-0.0823 (0.0731)	0.0759 (0.0676)	0.0176 (0.0956)
Age: 55–64	-0.0455 (0.181)	-0.122 (0.101)	-0.0130 (0.133)	0.180 (0.154)
Has a child aged 0–6	0.0312 (0.0774)	-0.0788 (0.0498)	-0.0203 (0.0592)	0.0679 (0.0645)
Participates in education	0.0697 (0.0660)	0.00450 (0.0409)	0.0194 (0.0359)	-0.0935 (0.0609)
Partner in Ukraine	-0.139* (0.0689)	-0.0269 (0.0489)	0.0297 (0.0411)	0.136* (0.0598)
Partner in Poland	0.0418 (0.0764)	0.0375 (0.0493)	-0.0479 (0.0518)	-0.0313 (0.0667)
Primary, Lower secondary education	1.979*** (0.230)	-0.824*** (0.151)	0.645*** (0.145)	-1.800*** (0.197)
Short-cycle tertiary education, Bachelor's or equivalent level	0.140 (0.0921)	-0.224** (0.0707)	0.0504 (0.0596)	0.0343 (0.0754)
Master's, Doctoral or equivalent level	0.0920 (0.0697)	-0.0782* (0.0384)	0.0310 (0.0418)	-0.0448 (0.0588)
Cognitive score: Lowest quintile	-0.194* (0.0912)	0.122* (0.0584)	-0.00610 (0.0549)	0.0780 (0.0836)
Cognitive score: Second quintile	-0.156 (0.0922)	0.00791 (0.0790)	-0.0208 (0.0571)	0.169* (0.0744)
Cognitive score: Fourth quintile	-0.243**	0.161**	0.0386	0.0435

	(0.0804)	(0.0607)	(0.0442)	(0.0763)
Cognitive score: Highest quintile	-0.167	0.113	-0.0231	0.0771
	(0.0903)	(0.0586)	(0.0653)	(0.0827)
Rural area	-0.0184	0.114	-0.0111	-0.0841
	(0.179)	(0.0609)	(0.0919)	(0.148)
Small town (up to 50,000 inhabitants)	0.0826	-0.0921*	-0.0235	0.0329
	(0.0822)	(0.0430)	(0.0565)	(0.0678)
Big city (more than 500,000 inhabitants)	0.105	-0.147**	0.00645	0.0361
	(0.0724)	(0.0458)	(0.0433)	(0.0627)
Distance to the frontline in 1000km (location of origin in Ukraine)	0.407*	0.0136	-0.487**	0.0663
	(0.182)	(0.118)	(0.164)	(0.144)
Log(GDP per capita) (location of origin in Ukraine)	0.0261	0.0432	-0.0141	-0.0552
	(0.0554)	(0.0355)	(0.0362)	(0.0483)
Family in Poland helped	0.0610	0.0960*	-0.0300	-0.127*
	(0.0680)	(0.0400)	(0.0475)	(0.0608)
Friends in Poland helped	0.127	-0.0625	0.0163	-0.0804
	(0.0702)	(0.0509)	(0.0451)	(0.0609)
Somebody in the location helped	0.0255	0.0287	-0.00799	-0.0462
	(0.0641)	(0.0421)	(0.0381)	(0.0552)
Earlier non- touristic stay in Poland	0.0362	-0.0789	0.0368	0.00586
	(0.0628)	(0.0479)	(0.0421)	(0.0558)
Months of work experience	0.00131	0.0268	-0.0268	-0.00131
	(0.0601)	(0.0361)	(0.0400)	(0.0509)
Observation non- selection hazard (IMR)	-0.132	0.0117	-0.0258	0.146
	(0.358)	(0.218)	(0.208)	(0.315)
<i>N</i>	321	321	321	321

Note: Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Source: Own calculation based on 2023 CMR & IBS survey.

Table A8. Average marginal effects from the multinomial logistic regression on the change in intentions regarding the return to Ukraine, with continuous measure of occupational downgrading

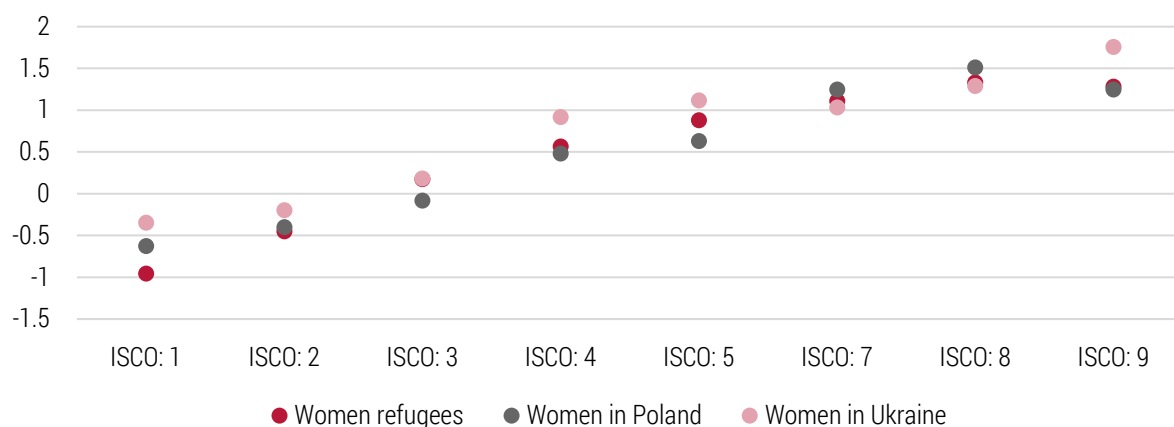
	(1) Did not want to return in 2022, does not want to return in 2023	(2) Did not want to return in 2022, wants to return in 2023	(3) Wanted to return in 2022, does not want to return in 2023	(4) Wanted to return in 2022, wants to return in 2023
RTI Difference bw jobs held in Poland and Ukraine	-0.0425 (0.0263)	0.0293* (0.0137)	0.00154 (0.0168)	0.0117 (0.0239)
Log(monthly wage)	0.0134 (0.0146)	-0.0205** (0.00765)	0.00526 (0.00954)	0.00180 (0.0135)
Occupational downgrading – continuous	-0.000546 (0.00605)	0.00599* (0.00244)	0.00115 (0.00355)	-0.00660 (0.00628)
Woman	0.0101 (0.0956)	0.0583 (0.0694)	-0.0619 (0.0710)	-0.00651 (0.0759)
Age: 35–44	-0.0336 (0.0872)	0.0000759 (0.0519)	0.0423 (0.0608)	-0.00871 (0.0776)
Age: 45–54	-0.0108 (0.110)	-0.0769 (0.0732)	0.0746 (0.0676)	0.0131 (0.0923)
Age: 55–64	-0.0187 (0.180)	-0.131 (0.103)	-0.0161 (0.133)	0.165 (0.150)
Has a child aged 0–6	0.0381 (0.0770)	-0.0822 (0.0471)	-0.0211 (0.0591)	0.0652 (0.0643)
Participates in education	0.0802 (0.0669)	-0.0173 (0.0431)	0.0222 (0.0354)	-0.0851 (0.0624)
Partner in Ukraine	-0.137* (0.0687)	-0.0208 (0.0487)	0.0296 (0.0416)	0.128* (0.0597)
Partner in Poland	0.0382 (0.0759)	0.0359 (0.0493)	-0.0473 (0.0517)	-0.0267 (0.0660)
Primary, Lower secondary education	1.978*** (0.235)	-0.786*** (0.147)	0.640*** (0.140)	-1.832*** (0.203)
Short-cycle tertiary education, Bachelor's or equivalent level	0.135 (0.0912)	-0.217** (0.0676)	0.0485 (0.0603)	0.0327 (0.0751)
Master's, Doctoral or equivalent level	0.0994 (0.0697)	-0.0792* (0.0382)	0.0304 (0.0422)	-0.0506 (0.0585)
Cognitive score: Lowest quintile	-0.184* (0.0900)	0.126* (0.0621)	-0.00716 (0.0545)	0.0648 (0.0836)
Cognitive score: Second quintile	-0.152 (0.0921)	0.0175 (0.0821)	-0.0232 (0.0570)	0.158* (0.0741)
Cognitive score:	-0.235** (0.0921)	0.170** (0.0821)	0.0373 (0.0570)	0.0274 (0.0741)

Fourth quintile	(0.0804)	(0.0634)	(0.0429)	(0.0761)
Cognitive score: Highest quintile	-0.169	0.128*	-0.0242	0.0645
Rural area	(0.0922)	(0.0614)	(0.0664)	(0.0839)
Small town (up to 50,000 inhabitants)	0.0297	0.0861	-0.0122	-0.104
Big city (more than 500,000 inhabitants)	(0.174)	(0.0600)	(0.0915)	(0.144)
Distance to the frontline in 1000km (location of origin in Ukraine)	0.0857	-0.0895*	-0.0211	0.0249
Log(GDP per capita) (location of origin in Ukraine)	(0.0828)	(0.0426)	(0.0575)	(0.0686)
Family in Poland helped	0.113	-0.145***	0.00602	0.0262
Friends in Poland helped	(0.0724)	(0.0425)	(0.0443)	(0.0627)
Somebody in the location helped	0.410*	0.00146	-0.490**	0.0787
Earlier non- touristic stay in Poland	(0.179)	(0.115)	(0.163)	(0.141)
Months of work experience	0.0282	0.0393	-0.0140	-0.0535
Observation non- selection hazard (IMR)	(0.0557)	(0.0357)	(0.0367)	(0.0480)
	0.0668	0.0950*	-0.0284	-0.133*
	(0.0684)	(0.0393)	(0.0499)	(0.0615)
	0.142*	-0.0766	0.0180	-0.0833
	(0.0713)	(0.0514)	(0.0454)	(0.0627)
	0.0219	0.0333	-0.00716	-0.0480
	(0.0634)	(0.0402)	(0.0384)	(0.0545)
	0.0333	-0.0821	0.0354	0.0134
	(0.0642)	(0.0490)	(0.0449)	(0.0583)
	0.000548	0.0147	-0.0248	0.00951
	(0.0595)	(0.0357)	(0.0395)	(0.0481)
	-0.148	0.0368	-0.0221	0.133
	(0.361)	(0.216)	(0.209)	(0.316)
<i>N</i>	321	321	321	321

Note: Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

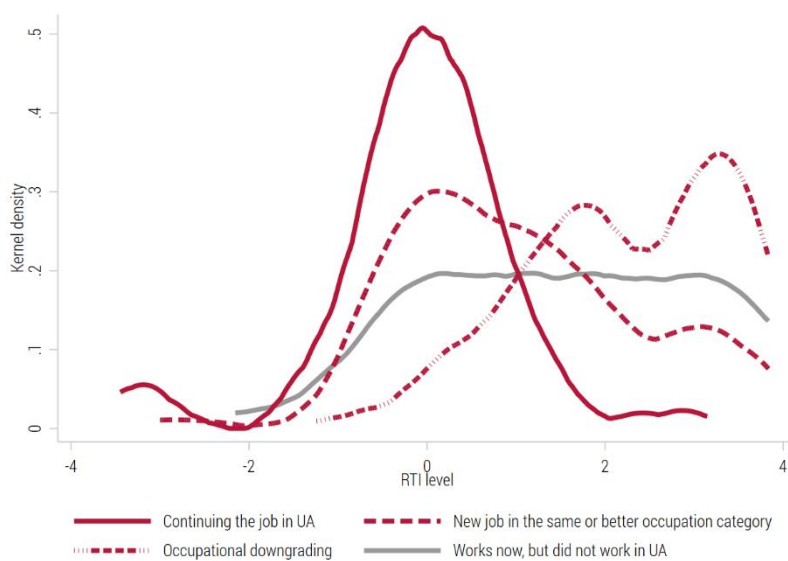
Source: Own calculation based on 2023 CMR & IBS survey.

Figure A1. Occupations in Ukraine are more routine intensive than those in Poland



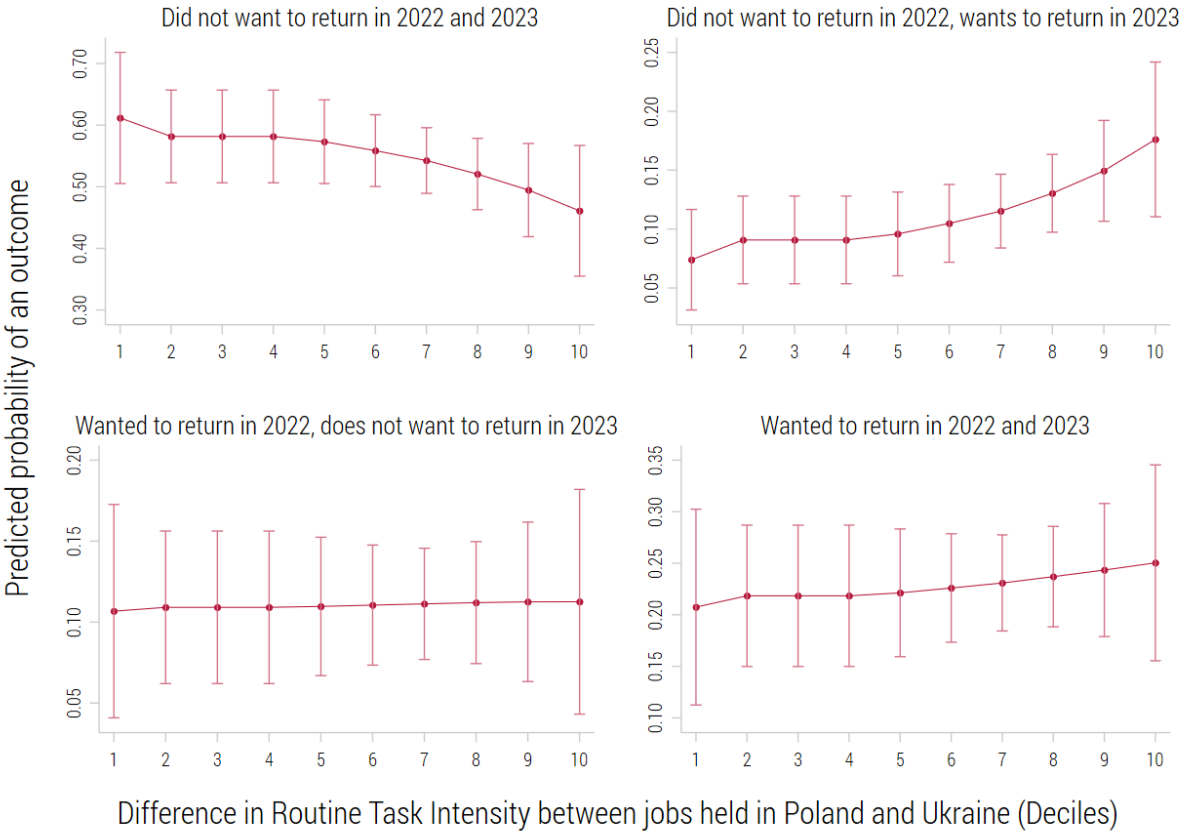
Source: Own elaboration based on data from the OECD's Programme for the International Assessment of Adult Competencies (PIAAC) (OECD, 2019) for Poland, data from the World Bank's Skills Toward Employment and Productivity (STEP) survey (World Bank, 2017) for Ukraine, data from the 2023 CMR survey for Ukrainian war refugees (weighted data).

Figure A2. RTI in jobs performed by Ukrainian war refugees in Poland, by occupational trajectory



Source: Own calculation based on 2023 CMR & IBS survey.

Figure A3. Predicted probability of transitions in intentions in different decile groups of change in RTI (controlling for a continuous measure of occupational downgrading)



Note: The average values of RTI difference by each decile are: 1 (-0.77) 2-4 (-0.01) 5 (0.2) 6 (0.55) 7 (0.93) 8 (1.44) 9 (2.03) 10 (2.78). N = 321.

Source: Own calculation based on 2023 CMR & IBS survey.



www.ibs.org.pl