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The Role of Job Task Routinization in Shaping Return Intentions: Evidence from Ukrainian War Refugees in Poland[·]

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Abstract

This paper studies the relationship between war refugees' job task routinization in the destination country and revisions of their return intentions. Using a panel survey of Ukrainian refugees in Poland collected in 2022–2023, we document substantial task routinization, namely an increase in worker-level routine task intensity relative to jobs held pre-displacement, among both refugees who transition to lower-skilled occupations and those who retain their pre-displacement occupational status. Guided by a framework in which task routinization may reduce skill utilisation and job satisfaction, we show that refugees experiencing larger routinization are significantly more likely to express intentions to return to Ukraine by 2023, particularly those who initially did not intend to return, and less likely to plan to settle in Poland. This relationship persists after controlling for earnings and occupational downgrading. Our findings suggest that job content, beyond employment status and earnings, helps explain how refugees reassess their prospects in the host country and revise return intentions.

Keywords: migration, return intentions, task content of jobs, routinization

JEL: J24, J61, O15

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1. Introduction

Upon arriving in a destination country, migrants and refugees typically find employment in occupations that require lower skill levels than the ones they held in their countries of origin (Akresh 2008; Brell et al. 2020). Such "occupational downgrading" can have negative consequences for both migrants and host countries (Carneiro et al. 2012; Dustmann et al. 2013; Lebow 2024). However, focusing on nominal occupational classifications often masks noticeable heterogeneity, as substantial variation in task content exists even among workers in the same occupation (Autor and Handel 2013; Lewandowski et al. 2022). Furthermore, migrants and natives often specialise in different tasks even within the same broad occupational groups (Mayda et al. 2022; Peri and Sparber 2009). Hence, worker-level measurement is essential to accurately capture the labour market trajectories of migrants, particularly the extent of downgrading of the content of jobs performed before and after migration.

This paper addresses two research questions. First, to what extent do war refugees experience task routinization, namely, performing more routine-intensive jobs in host countries than in their origin countries before displacement? Second, is task routinization associated with changes in their intentions to return to their home country? To answer these questions, we study Ukrainian war refugees in Poland using panel survey data collected in 2022 and 2023.

More routine-intensive jobs are more repetitive, less autonomous and skill-intensive, and pay less than jobs with a stronger non-routine component (Autor and Handel 2013; De la Rica et al. 2020; Lewandowski et al. 2022). Task routinization may weaken refugees' incentives to build a longer-term future in the host country through two related channels. First, economically, more routine-intensive work may indicate weaker skill use, limited career recovery, and potential human-capital depreciation. Theoretical models show that skills atrophy during periods of non-use or unemployment (Pissarides 1992; Weiss et al. 2003), while empirical studies show that jobs making limited use of cognitive or professional skills can lead to measurable declines in literacy and occupation-specific abilities (De Grip et al. 2008; Dinerstein et al. 2022). For displaced workers, jobs involving substantial task routinization may therefore limit career recovery and future wage growth rather than be a gateway into the host-country labour market (Baert et al. 2013; Meroni and Vera-Toscano 2017; Chiswick and Miller 2009). Second, psychologically, task routinization may reduce autonomy, professional identity, and satisfaction with job content. Jobs with little autonomy, limited decision-making, or few opportunities to use prior expertise can reduce job satisfaction and weaken professional identity (Engzell and Ichou 2020; Wassermann et al. 2017). In this sense, task routinization may help explain why labour market participation does not necessarily translate into stronger attachment to the host country, particularly among highly educated migrants, as suggested by the integration-paradox literature (Verkuyten 2016).

Theories of return intentions offer conflicting predictions about whether labour market integration encourages migrants to remain in the host country (Constant and Massey 2003) or facilitates return by providing the resources needed to do so (Cassarino 2004; De Haas et al. 2015). For war refugees, these economic considerations are additionally constrained by political and security conditions in the country of origin (Adema et al. 2026; Alrababah et al. 2023). We argue that, conditional on such safety constraints, task routinization may shape return intentions by affecting refugees' assessment of their longer-term prospects in the host country. More routine-intensive jobs can signal limited skill utilisation, weaker opportunities for career recovery, and lower autonomy or satisfaction at work. They may also reduce professional status and opportunities for workplace-based social integration. These experiences can reduce the perceived benefits of settlement and make return appear relatively more attractive, even when refugees are employed in the destination country (Di Saint Pierre et al. 2015; Stark 2019).

Conceptually, we derive three interrelated predictions regarding the nature of displacement-induced task routinization. First, we argue that traditional occupational classifications mask the true extent of human capital devaluation. Measuring the changes in routine task intensity (RTI) of jobs performed before and after migration will reveal a degradation of job content even among war refugees who nominally retain their pre-displacement occupational status. It will also capture meaningful differences between individuals with seemingly identical experiences of occupational downgrading. Second, we posit that greater task routinization is associated with stronger subjective skills underutilisation and greater dissatisfaction with job content. Third, we postulate that task routinization may operate as a learning mechanism associated with revisions to settlement plans. While war refugees knowingly accept occupational downgrading when starting a job in the host country, we hypothesise that they fully learn the exact task composition and consequently the actual extent of task routinization only after starting the job. We expect higher task routinization to be associated with a higher probability of revising plans in favour of return, especially among refugees who initially did not intend to return, even after controlling for earnings and occupational downgrading.

We test these predictions by studying the displacement of Ukrainian war refugees to Poland following Russia's full-scale invasion in February 2022. This conflict displaced nearly 5.7 million people to European countries (UNHCR 2024), with approximately 1.5 million settling in Poland. We investigate occupational trajectories and job task routinization by defining the latter as the difference in Routine Task Intensity (RTI) between current jobs in Poland and pre-invasion jobs in Ukraine. We utilise data from two waves of a nationwide online survey conducted in July–September 2022 and February–March 2023 by the Centre of Migration Research (CMR) at the University of Warsaw and the Institute for Structural Research (IBS). Our sample consists of 937 working-age refugees (18–65 years).

Our survey includes a detailed assessment of job tasks, modelled after the Programme for the International Assessment of Adult Competencies (PIAAC). Applying the method developed by Lewandowski et al. (2022) for PIAAC data, we construct a worker-level RTI measure that increases with the prevalence of structured, repetitive tasks (manual or cognitive) and decreases with the prevalence of non-routine tasks that require creativity, analytical thinking, management, interpersonal interaction, or spatial awareness. The task framework establishes that higher RTI is generally associated with lower productivity and wages, both across and within occupations (Autor and Handel 2013; De la Rica et al. 2020). By comparing tasks performed in Poland with those in Ukraine before displacement, we assess changes in the content of work with greater precision than that of traditional measures of occupational downgrading. Our approach enables a detailed analysis of skill utilisation, even among refugees who nominally retain their occupational status. Finally, since refugees' employment and occupational choices may be affected by their initial return plans, we focus on changes in return intentions between 2022 and 2023 and relate them to task routinization by estimating multinomial logit models.

We show that the high employment rate of Ukrainian war refugees in Poland (69% in our sample) coexists with widespread occupational downgrading and substantial task routinization. War refugees transitioning to lower-skilled occupations experienced a sharp RTI increase, often exceeding the magnitude typically observed as a gap between managerial and clerical jobs. Even those retaining their original occupational category experienced a noticeable, albeit smaller, task routinization. In line with our conceptual framework, dissatisfaction with job tasks performed in Poland and self-reported overskilling were both associated with significantly higher task routinization.

We identify a strong link between task routinization and an increased propensity to return to Ukraine among those who initially did not intend to do so. Refugees experiencing greater task routinization were significantly more likely to shift their intentions from not wanting to return to Ukraine in 2022 to planning a return by 2023. They were also more likely to transition away from wanting to settle in Poland. These relationships persist even after controlling for earnings, occupational downgrading, and conflict intensity in places of origin, suggesting that RTI differences capture variations among individuals with otherwise similar experiences of occupational downgrading and comparable income levels. We also find that the relationship between task routinization and revising intentions towards return is concentrated among refugees whose region of origin lies at the frontline, those living in medium-sized and large Polish cities, and those without young children. This pattern suggests that task routinization weighs most heavily where adverse labour-market experiences in Poland coincide with insecurity in the place of origin and limited responsibility for the most vulnerable family members.

Our study contributes to an extensive literature on occupational downgrading among migrants (Castagnone et al. 2015; Dustmann et al. 2013; Lebow 2024). While both economic migrants and war refugees experience occupational downgrading and worse labour market outcomes than natives in destination countries, the severity of this decline is typically more pronounced for war refugees (Akresh 2008; Cortes 2004; Nikolov et al. 2022; Ruiz and Vargas-Silva 2018). These divergences largely stem from the distinct motivations driving migration: whereas economic migrants primarily seek better employment opportunities, war refugees prioritise safety and security. This urgency often limits their ability to prepare for an effective skill transfer. The novelty of our study lies in going beyond comparing occupational titles before and after displacement to capture the extent of downgrading that war refugees experience, using self-reported data on the task composition of jobs.

Our findings contribute to research on how labour-market experiences are related to return intentions. This literature shows that return plans are shaped by both economic and social integration, but social ties, belonging, and attachment to the host society are often more closely related to return intentions than employment outcomes (De Vroome and Van Tubergen 2014; Di Saint Pierre et al. 2015; De Haas and Fokkema 2011; Hannafi and Marouani 2023). Consistent with this, several studies find little or no association between employment or occupational status and return intentions (De Vroome and Van Tubergen 2014; Snel et al. 2015; Van Hook and Zhang 2011), while others find that unstable or low-prestige jobs are associated with a higher likelihood of return (Constant and Massey 2003). Among war refugees, return plans are even more directly tied to conditions in the country of origin, especially security, political stability, and the possibility of rebuilding life after conflict (Adema et al. 2026; Alrababah et al. 2023; Balcilar and Nugent 2019; Buber-Ennser et al. 2016; Zakirova and Buzurukov 2021). Our results show, however, that even if safety concerns are central, job content in the host country — especially routinization and skill use — helps explain why some refugees revise their plans towards return.

Finally, our paper contributes to the growing body of literature on the social and economic integration of Ukrainian war refugees. First, regarding the drivers of return migration, recent research emphasises the primacy of security and political stability; experimental evidence indicates that future territorial integrity and security guarantees are the most critical determinants of return decisions (Adema, Chargaziia, Giesing, Necker, et al. 2025), while conflict intensity in the home region deters return (Adema et al. 2026). Previous economic success in Ukraine also predicts return intentions, likely indicating larger relative deprivation in the host country (Ette et al. 2026). Other studies highlight the role of host-country contexts (van Tubergen et al. 2024) and the strong influence of economic pull factors, such as wages and job opportunities (Adema, Chargaziia, Giesing, and Poutvaara 2025), as well as pre-war

migration preferences (Elinder et al. 2023) on destination choices. Second, regarding labour market integration, evidence from Poland (Duszczyk et al. 2023; Gromadzki and Lewandowski 2023; Strzelecki et al. 2023) and Czechia (Postepska and Voloshyna 2025) documents high employment rates among Ukrainian refugees, though often accompanied by lower stability or wages. Moreover, war refugees report being overeducated for their jobs and dissatisfied with them more often than pre-war Ukrainian migrants (Kubiciel-Lodzińska et al. 2026). This body of work also includes findings on the specific economic contributions of refugees through entrepreneurship (Vézina et al. 2025) and the high degree of self-selection into displacement, particularly in terms of education (Kohlenberger et al. 2023; van Tubergen et al. 2024). Our paper is unique in bridging these two strands by connecting precisely measured refugees' labour market experiences with their return intentions. Unlike previous studies that focus primarily on employment status, earnings, or security conditions, we examine the specific association with job task routinization that proxies for skill underutilisation and status loss, independent of occupational downgrading, earnings, and security considerations.

The following 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 primary data source is the country-wide online panel survey of Ukrainian war refugees and migrants conducted by the Centre of Migration Research (CMR) at the University of Warsaw and the Institute for Structural Research (IBS). The first wave was conducted in July–September 2022 (N = 7,617) by CMR as an establishment survey (Górny and Kaczmarczyk 2023). The second-wave data were collected between 9 February and 3 March 2023, with a sample of 1,360 Ukrainian nationals, including 971 war refugees, of whom 937 were aged 18–65. Both waves were collected as a Computer-Assisted Web Interview. We define war refugees 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- or 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 held in Poland and, retrospectively, about the last job performed in Ukraine before the full-scale war, unless a person had not worked in Ukraine after December 2020.

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), as well as interpersonal tasks (aimed at supervising or presenting). Appendix Table A1 shows the task questions used. For methodological details behind their selection, see Lewandowski et al. (2022). To ensure comparability, we standardise the task measures using the US average and standard deviation of task measures, as in Lewandowski et al. (2022).

We define task routinization, ΔRTI_i, as the difference between the routine task intensities of individual's i job in Poland, RTI_i^{PL}, and of the last job in Ukraine before displacement, RTI_i^{UA}. Positive values indicate performing more routine-intensive work in Poland than in Ukraine pre-displacement.

We also use the PIAAC data for Poland (collected in 2012) and the data for Ukraine from the World Bank's Skills Toward Employment and Productivity (STEP) survey (collected in 2013), which included the job-tasks module, to benchmark war refugees' RTI with those of typical workers in Poland and Ukraine.

We create two measures of occupational downgrading. First, we define a discrete occupational downgrading as moving from a high-skilled occupation in Ukraine (ISCO 1-3) to a 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. In contrast, finding a job in a more skilled occupational category is defined as transitioning from a low-skilled to a high- or middle-skilled occupation, or from a middle-skilled to a high-skilled occupation.

Second, we construct a continuous measure of occupational downgrading as the difference between (logarithms of) expected occupational earnings in Ukraine and Poland. We calculate it based on respondents' gender, 2-digit ISCO occupations, 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.[1] 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. Since wages in Poland are substantially higher than in Ukraine, the resulting values are typically negative, reflecting earnings gains for migrants. A higher (typically less negative) value shows that a gain from working in a given occupation in Poland is smaller, indicating a greater extent of occupational downgrading.

We measure human capital using the level of education, self-reported comprehension of the Polish language (surveyed in both waves), and cognitive ability, assessed in the 2023 wave with the symbol-digit correspondence test, a subtest of the widely used Wechsler Adult Intelligence Scale (WAIS).[2] 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; their observations are excluded from all regressions that control for cognitive ability.

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 constitute the reference group—those who do not explicitly declare plans to return.

[1] For gender, occupation, voivodeship cells with less than 25 observations, we impute country averages by occupation and gender.

[2] Respondents had 90 seconds to match as many numbers and symbols as possible based on a provided key. Nine unfamiliar symbols were each linked to digits 1–9. After brief instructions, participants viewed the key at the top of the screen and a target symbol with an empty box below. They entered the matching number. The score reflected both speed and accuracy under time pressure.

In this regard, we follow van Tubergen et al. (2024), who also distinguished between people who intend to return and 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 later. Consequently, we classify them as individuals who do not intend to return, as they have indicated a long-term commitment to residing in Poland. This group comprises 36% of the 2023 sample.

Finally, to control for war and economic factors that may shape war refugees' return plans, we use two variables pertaining to their region (oblast) 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 (89%) with an average age of 39.0 years. A noticeable share has a child aged 6 years or less (26%). About 1/3 has a partner in Ukraine, 1/3 – in Poland, and 1/3 is single. The respondents are highly educated (75% have a tertiary education). Due to the small share of respondents with primary or lower secondary education (approx. 1%), we combine this category with upper secondary education for the econometric analysis. The respondents also demonstrate solid Polish comprehension (40% declared at least a good understanding in 2022 and 54% in the 2023 wave). The other survey of Ukrainian war refugees in Poland shows a lower share of the tertiary-educated war refugees, at around 50% (Strzelecki et al. 2023).[3] However, the registry of Ukrainian war refugees lacks data on education, so we cannot reweight the sample accordingly. Ukrainians in our sample primarily come from Ukraine's central and eastern regions, and 69% reside in medium to 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 were 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.

[3] 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 55–65	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
Polish comprehension (self-reported in 2023): Very good	0.21	0.41
Polish comprehension (self-reported in 2023): Good	0.33	0.47
Polish comprehension (self-reported in 2023): Average	0.30	0.46
Polish comprehension (self-reported in 2023): Weak	0.12	0.33
Polish comprehension (self-reported in 2023): Very weak	0.03	0.18
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 1,000 km (location of origin in Ukraine)	0.15	0.17
Log(GDP per capita) (location of origin in Ukraine)	11.86	0.58
Earlier work experience in Ukraine	0.80	0.40

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

2.3. Descriptive evidence

The employment rate among working-age war refugees in our sample is high at 69% (Table 2). 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 employment rates of war refugees above 60%. War refugees often face barriers such as prolonged legal restrictions on labour market access that hinder their employment outcomes (Brell et al. 2020). However, already in mid-March 2022, Poland allowed refugees from Ukraine to apply for a newly created legal status that enabled them to legally work in Poland (without any permit) and also offered access to social transfers, public education, and health care.

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 (Table 2). This job continuation rate substantially surpasses 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 (Table 2). 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 works 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).[4] 31% of war refugees who found a new job in Poland, equivalent to 17% of working-age war refugees, took an occupation that requires lower skill levels than the ones they held before migration (Table 2). Of this group, about 66% 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 – half of these skilled workers have accepted jobs in less skill-demanding occupations (Appendix Table A2).

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).

[4] 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 and trajectories of Ukrainian war refugees working in Poland (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 employment
Share among refugees	13.9	22.6	16.8	15.1	68.6
Occupational structure					
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	132	201	159	135	627

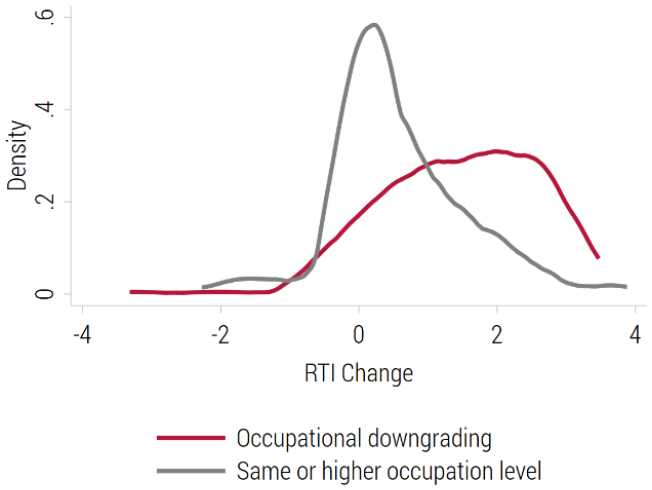
Source: Own calculations based on the 2023 CMR & IBS survey.

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 1), 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 1). On average, the RTI difference between jobs held in Poland and Ukraine by those who retained occupational status is 0.60, compared to 1.48 for those who experienced occupational downgrading – one of the largest contrasts between any two groups reported in Table 3. The extent of task routinization tends to increase with the education level and with the skill demand of occupations held before displacement (Table 3).

Moreover, in line with our conceptual framework, which interprets task routinization as a signal of psychological loss and underutilisation of human capital, routinization is more pronounced among workers dissatisfied with their job tasks (1.59) than among those who are satisfied or neutral (0.71). Similarly, workers who report being overskilled

for their current jobs experience a sharper increase in RTI as compared with their Ukrainian jobs (1.26) than those who report being underskilled or matched to the skill requirements of their Polish jobs (0.76) (Table 3).[5]

Figure 1. The distribution of the difference between the routine task intensity (RTI) of a job found in Poland and the last job performed in Ukraine before the full-scale war, by occupational trajectory



Source: Own calculations based on the 2023 CMR & IBS survey.

Table 3. 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, by selected characteristics of war refugees

		Mean RTI difference	Standard Deviation	N
	All war refugees	0.98	1.15	360
Education	Primary, Secondary education, Post-secondary	0.92	1.19	83
	Short-cycle tertiary education, Bachelor's	0.93	1.19	56
	Master's, Doctoral	1.02	1.12	221
Occupation before displacement	High skilled occupation in Ukraine (ISCO 1-3)	1.08	1.15	257
	Middle skilled occupation in Ukraine (ISCO 4-5)	0.74	1.11	72
	Low skilled occupation in Ukraine (ISCO 6-9)	0.85	1.22	31
Job Tasks Satisfaction	Satisfied or neutral	0.71	1.10	243
	Dissatisfied	1.59	1.02	117
Self-reported Skill–Job Match	Matched or underskilled	0.76	1.12	203
	Overskilled	1.26	1.13	157
Occupational Downgrading	Not downgraded	0.60	0.99	201
	Downgraded	1.48	1.16	159

Note: The table includes war refugees who worked in Ukraine and subsequently found employment in Poland. ISCO 1-3: Managers, Professionals, Technicians, and Associate Professionals. ISCO 4-5: Clerical Support Workers and 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 calculations based on the 2023 CMR & IBS survey.

[5] For war refugees who continued in jobs they performed before displacement or had not worked prior to displacement, changes in task content cannot be measured. The former are symmetrically distributed in terms of RTI. In contrast, the latter predominantly perform highly routine-intensive tasks, similarly to war refugees 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), and more than two-thirds of them maintained this intention by 2023. In 2022, 34.6% of refugees planned to stay in Poland for longer than one year, and 27.9% were unsure about their plans or wanted to move to another country. About one in six of those who planned to stay in Poland and one in four of those who were unsure or wanted to move to another country changed plans towards return by 2023. As a result, the overall share of war refugees planning to return to Ukraine increased by 2.2 percentage points (pp) between 2022 and 2023.[6] The share of those planning to stay in Poland also increased (by 1.2 pp)[7] while the share of those unsure or wanting to move to another country declined (by 3.4 pp).

Table 4. Migration intentions of Ukrainian war refugees in 2022 and 2023 (in %)

	Intention in 2023			
Intention in 2022	Return to Ukraine	Stay in Poland	Unsure or move to another country	Total
Return to Ukraine	26.7	5.1	5.7	37.5
Stay in Poland	5.9	22.7	6.0	34.6
Unsure or move to another country	7.1	8.0	12.8	27.9
Total	39.7	35.8	24.5	100.0

Note: N = 937. "Stay in Poland" denotes an intention to stay for longer than one year; "Unsure or move to another country" combines war refugees who did not know their plans and those who planned to move to another country. We combine the two since the latter is a very rare outcome.
Source: Own calculations based on the 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 an intention to return shortly after the war's end, whereas van Tubergen et al. (2024) reported a higher number (73% in 2023). The differences between our study and those studies could reflect differences in the horizon over which plans were surveyed – we treat those who plan to stay in Poland for longer than 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 a few years (Brücker et al. 2023). At the same time, a much higher share (26%) than 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). 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. 2026). Over time, the share of those willing to settle has increased, while the share of those planning to return when

[6] 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 A3).

[7] In the subsample of war refugees employed both in Ukraine and in Poland, the share of those wanting to stay is somewhat higher (38–40%, Appendix Table A3).

it would be safe has declined (Adema et al. 2026). UNHCR (2023) reported that in 2023, 14% of Ukrainian war refugees in Europe intended to return within the next three months, and 62% aspired 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 the 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.

3. Econometric methodology

We estimate two sets of regressions. The first set describes employment, occupational trajectories, and task routinization among Ukrainian war refugees in Poland. The second set evaluates the relationship between task routinization and changes in return intentions between 2022 and 2023.

For the full working-age sample, we estimate the likelihood of employment in 2023 with a binary logit:

$$Pr(E_i = 1) = \Lambda\left(\beta_0^E + \beta_1^E X_i + \varepsilon_i^E\right) \quad (1)$$

where, for individual i, E_i equals one if the individual is employed in Poland in 2023 and zero otherwise, and $\Lambda(\cdot)$ is the logistic cumulative distribution function. X_i is a vector of controls and β_1^{E} the corresponding vector of coefficients, β_0^{E} is the constant, and the superscript E marks the employment equation. The control vector X_i comprises an indicator for being a woman; age-category indicators (35–44; 45–54; 55–65; ref. 18–34); an indicator for having a child aged 0–6; an indicator for participating in education; indicators for having a partner in Ukraine and for having a partner in Poland; educational attainment indicators (short-cycle tertiary or bachelor's; master's or doctoral, secondary, and post-secondary non-tertiary; ref. primary); cognitive-ability quintile indicators (first; second; fourth; fifth; ref. third/middle quintile); Polish-language comprehension indicators (very good; good; weak; very weak; ref. average comprehension); city-size indicators for the place of residence in Poland (rural area; small town up to 50,000 inhabitants; big city of more than 500,000 inhabitants; ref. medium-sized city of 50,000–500,000 inhabitants); the distance from the oblast of origin to the frontline; the log of GDP per capita of the oblast of origin; indicators for receiving help in Poland from family, from friends, and from somebody in the locality; an indicator for an earlier non-touristic stay in Poland; labour-market status in Ukraine (worked before 2021; worked after 2021; ref. no earlier work); and years of work experience. The same control vector X_i, including Polish-language comprehension, enters every regression below.

Among refugees who worked both in Ukraine before displacement and in Poland after, we model occupational trajectories with a multinomial logit. For individual i, the outcome T_i takes three values: continuing the job held in Ukraine (C); finding a new job in Poland in the same or a higher-skilled occupational category (S); or occupational downgrading (D), namely moving to a lower-skilled occupational category. Taking S as the reference category,

$$\log\left(\frac{Pr(T_i=m)}{Pr(T_i=S)}\right) = \beta_0^{T,m} + \beta_1^{T,m} X_i + \varepsilon_i^T, \qquad m \in \{C, D\} \quad (2)$$

where the superscript T, m marks the trajectory equation for non-reference outcome m, so that each contrast – C versus S and D versus S – has its own constant and coefficients.

Finally, among refugees who worked in Ukraine and subsequently found a new job in Poland, we estimate an OLS regression of task routinization:

$$\Delta RTI_i = \beta_0^R + \beta_1^R D_i + \beta_2^R X_i + \varepsilon_i^R \quad (3)$$

where the superscript R marks the routinization equation, D_i is occupational downgrading for individual i – the same event that defines the D outcome in equation (2) – and ε_i^R is an idiosyncratic error. We measure D_i either as a discrete indicator for moving to a lower-skilled occupational category or as a continuous measure based on the gender-adjusted gap between expected occupational earnings in Ukraine and Poland, and we estimate one variant of equation (3) for each. Compared to regression (2), we exclude individuals who continued their Ukrainian job as their task content has remained unchanged. The sample size $N = 360$ (as in Table 3).

Our main regressions relate changes in return intentions between 2022 and 2023 to task routinization and other labour market variables (Table 6, panel a). For individual i, Y_i takes three values: shifting from no return intention, NR, in 2022 to a return intention, R, in 2023 ($NR \rightarrow R$); unchanged intentions (U); and shifting from a return intention in 2022 to no return intention in 2023 ($R \rightarrow NR$). Taking U as the reference category, we estimate:

$$\log\left(\frac{Pr(Y_i=m)}{Pr(Y_i=U)}\right) = \beta_0^{Y,m} + \beta_1^{Y,m}\,\Delta RTI_i + \beta_2^{Y,m}\ln Wage_i^{PL} + \beta_3^{Y,m}\,D_i + \beta_4^{Y,m} X_i + \varepsilon_i^Y \qquad m \in \{NR \rightarrow R,\ R \rightarrow NR\} \quad (4)$$

where the superscript Y, m marks the return-intention equation for non-reference outcome m, $\ln Wage_i^{PL}$ is the log monthly wage in Poland for individual i, and D_i, X_i are as defined above. As in equation (3), we estimate one variant with the discrete and one with the continuous measure of D_i (occupational downgrading). Here, starting from the same N=360 sample as equation (3), we additionally drop 39 observations with a missing monthly wage in Poland, leaving $N = 321$. This is the main estimation sample for Tables 6 and 7. In addition, to capture this reassessment of plans from a complementary margin, we estimate an identical multinomial logit for the change between 2022 and 2023 in the explicit intention to stay in Poland (Table 6, panel b), with the three outcome categories: shifting from wanting to stay to not wanting to stay, the opposite shift, and unchanged intentions.[8]

Table 5 summarises the outcome, estimation sample, and main covariates for each analysis. All regressions are estimated using the same age–gender population weights as in the descriptive analysis. For logit and multinomial logit models, we report average marginal effects. In the linear routinization regression (3), the estimated coefficients are already interpretable as marginal changes in ΔRTI_i. Standard errors are heteroskedasticity-robust and are calculated using the delta method for average marginal effects. In OLS models, we report heteroskedasticity-robust standard errors.

[8] Intentions to stay and intentions to return are not exactly opposite since being unsure about return plans and wanting to move to another country constitute reference plans for each explicitly stated intention (to return or to stay).

Table 5. Regression specifications, samples, and covariates

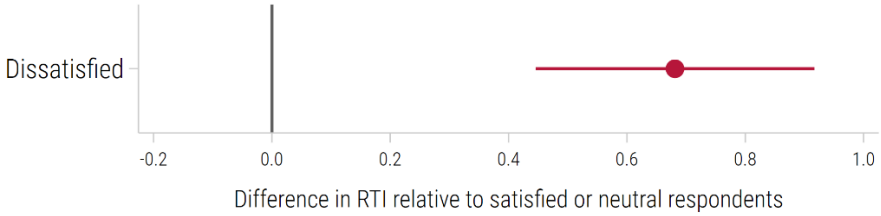
Analysis	Outcome	Estimation	Estimation sample	Main regressors / controls	Reported in
Main analyses					
Employment in Poland in 2023	Employed in Poland in 2023	Logit	All working-age war refugees	Baseline controls	Figure 3a; Table A4
Post-migration occupational trajectory	Continuing the Ukrainian job; new job in the same or a higher-skilled occupational category; occupational downgrading	MNL	Refugees who worked in Ukraine before displacement and were employed after displacement	Baseline controls	Figure 3b–d; Table A5
RTI difference between Polish and Ukrainian jobs	RTI of the job in Poland minus RTI of the last job in Ukraine before displacement	OLS	Refugees who worked in Ukraine and found a new job in Poland, excluding job continuers	Occupational downgrading; baseline controls	Figure 3e; Table A6
Changes in return and stay intentions between 2022 and 2023	No return intention → return intention; unchanged; the opposite shift (and analogously for the intention to stay in Poland)	MNL	Refugees who worked in Ukraine and found a new job in Poland, excluding job continuers, with non-missing return-intention and wage variables	RTI difference; log monthly wage in Poland; occupational downgrading; baseline controls	Tables 6–7; Tables A7–A10; Table B2
Auxiliary and robustness analyses					
Task routinization and dissatisfaction with job tasks	RTI difference between Polish and Ukrainian jobs	OLS	Refugees who worked in Ukraine and found a new job in Poland, excluding job continuers, with non-missing job-task satisfaction and wage variables	Dissatisfaction with job tasks; log monthly wage in Poland; occupational downgrading; baseline controls	Figure 2; Table A11
Intentions in 2023 (levels), conditional on the 2022 intention	Return intention in 2023 / stay intention in 2023, controlling for the 2022 intention	Logit / MNL	Same sample as the main return-intention regressions	RTI difference; log monthly wage in Poland; occupational downgrading; baseline controls; 2022 return intention	Table 8

Note: Logit denotes binary logistic regression; MNL denotes multinomial logit; OLS denotes ordinary least squares. Logit and MNL results are reported as average marginal effects. Standard errors are heteroskedasticity-robust. All regressions use age–gender population weights. Baseline controls refer to the full control vector (X_i) described in the text. Occupational downgrading is measured either as a discrete indicator or as a continuous expected-earnings measure. Appendix B reports the robustness of the headline estimates to explicit selection corrections.

The coefficient on task routinization, $\beta_1^{Y,m}$, is the main parameter of interest, capturing the association between task routinization and changes in return intentions. Since return intentions and labour market activity may be jointly determined, our specification focuses on changes in intentions over time, especially the shift from no return intention in 2022 to a return intention in 2023. Identification of $\beta_1^{Y,m}$ rests on a selection-on-observables condition: conditional on occupational downgrading, earnings in Poland, and the remaining controls, the routinization gap is unrelated to unobserved determinants of changes in return intentions. This is plausible because refugees observe an occupation's status when accepting a job but likely learn its detailed task content (and therefore the extent of routinization) only after starting the job.

To test this assumption, we use self-reported satisfaction with "tasks that correspond to my education and competencies," surveyed in 2023. We posit that if war refugees had complete information about both occupations and their task composition before accepting a job in Poland and knowingly started jobs that are more routine-intensive than jobs they held in Ukraine, there should be no relationship between being satisfied with these tasks and the RTI difference between jobs performed in Poland and in Ukraine before displacement. However, the opposite is true – dissatisfaction with job tasks performed in Poland is strongly associated with routinization. Controlling for occupational downgrading, earnings in Poland, and other confounders, we find that war refugees who were dissatisfied with their job tasks in Poland experienced substantially higher task routinization, with RTI difference by 0.69 points higher than among satisfied or neutral respondents (Figure 2, see Appendix Table A11 for full results under both the discrete and continuous measures of occupational downgrading). This pattern aligns with the interpretation that task content is fully learned only after employment begins. We therefore read $\beta_1^{Y,m}$ as the contribution of task routinization net of downgrading and pay, while noting that, without random variation, strict causality cannot be guaranteed.

Figure 2. The relationship between satisfaction with job tasks performed in Poland and task routinization.



Note: N = 321. Point estimate and 95% confidence interval. Satisfaction with job tasks ("tasks that correspond to my education and competencies") was measured on a five-point Likert scale; "dissatisfied" pools "somewhat dissatisfied" and "very dissatisfied", and the reference group pools all other answers, including "hard to say". We control for a continuous measure of occupational downgrading and other variables as in Table 6. Appendix Table A11 provides complete estimation results.

Source: Own estimations based on the 2023 CMR & IBS survey.

4. Results

4.1. Occupational trajectories and task routinization

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

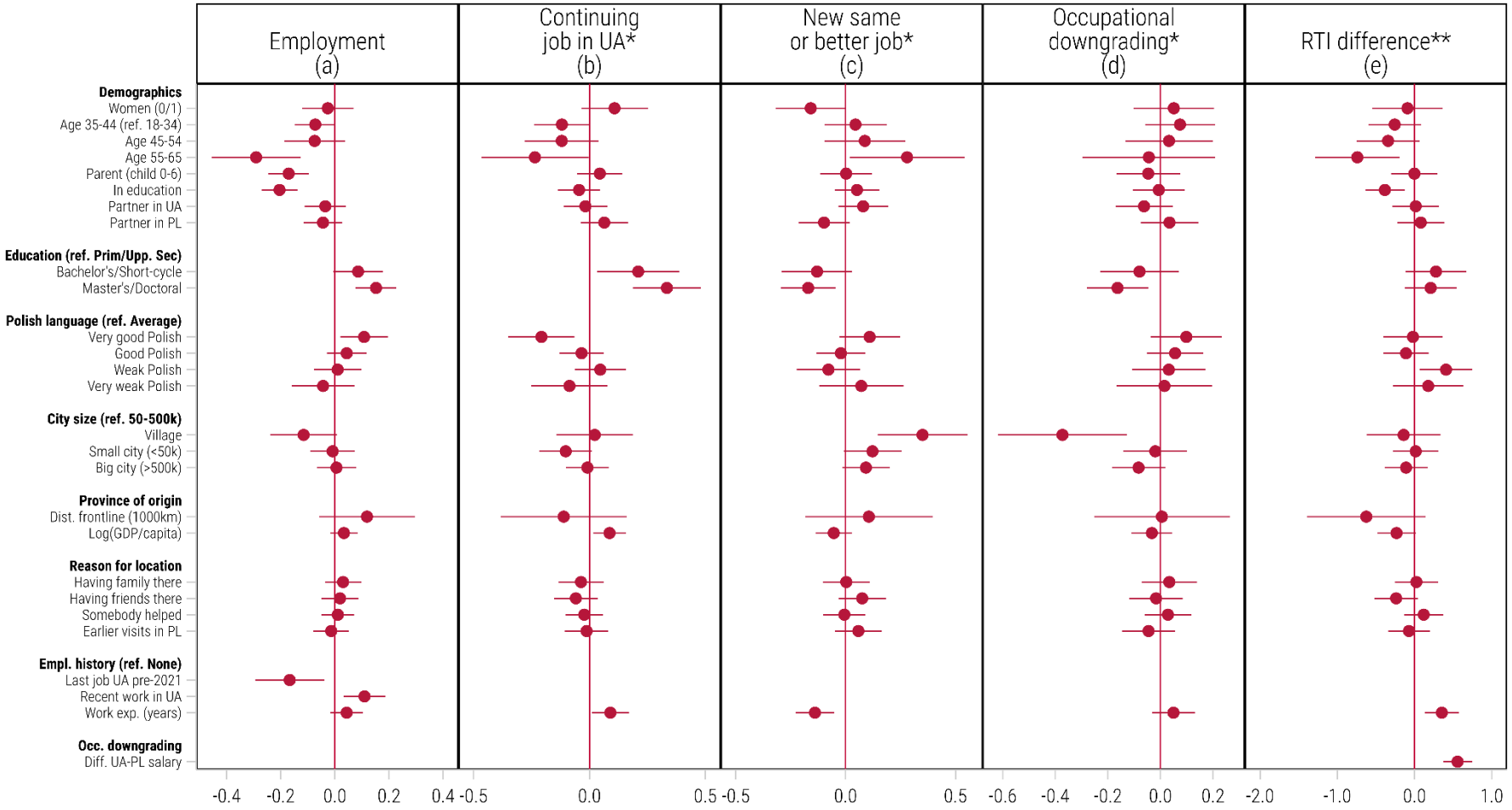
Employment likelihood is negatively associated with several demographic and experiential characteristics. Individuals aged 55–65 exhibit a lower likelihood of employment than those aged 18–34, with an average marginal effect (AME) of -29 pp, as shown in panel a of Figure 3 (for complete estimation results, see Appendix Table A4). Similarly, the presence of a child under six years old (-17 pp), current enrolment in education (-20 pp) and prior work experience before 2021 (-17 pp) — compared to no work experience or work experience beginning only in 2021 — are all linked to significantly lower employment likelihood. Conversely, employment likelihood is positively associated with having a tertiary education (9 pp for a bachelor's degree and 15 pp for a master's degree), very good Polish language comprehension (11 pp, relative to average comprehension) and recent work experience in Ukraine (11 pp).

Examining occupational trajectories, shown in panels b, c, and d of Figure 3 (for detailed results, see Appendix Table A5) reveals that individuals who retained their Ukrainian jobs post-displacement (panel b) tend to be prime-aged or younger (AME of -24 pp for age group 55–65), relatively well-educated (AME of 21 pp for bachelor and 33 pp for master level education), and have more work experience (9 pp for each additional year). Furthermore, this group predominantly originates from Ukraine's more affluent regions. For instance, Kyiv, the most prosperous region, has a GDP per capita about 3.5 times that of the median oblast, which is associated with a substantially higher probability that war refugees from Kyiv continue working in their Ukrainian jobs, possibly remotely.

In contrast, individuals who experienced occupational downgrading in Poland share many characteristics with those who secured jobs in occupations comparable to their previous jobs in Ukraine, as shown in panels c and d of Figure 3 (for detailed results, see Appendix Table A5). However, they generally possess greater work experience (AME of 5 pp for occupationally downgraded vs -14 pp for those with a new job in the same or higher-skilled occupation). They are less likely to reside in rural areas (-37 pp for downgraded) or large cities (-8 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 work (panel a of Figure 3), suggesting that some may prefer to remain jobless rather than undertake a low-skilled, low-paid job. Those residing in large cities may benefit from better labour market opportunities and higher earnings, even in low-skilled jobs.

Occupational downgrading is strongly correlated with task routinization, as shown in Figure 3 panel e (for detailed results, see Appendix Table A6). A one-unit increase in the continuous measure of occupational downgrading is associated with a 0.56 increase in the RTI difference. Being in education is significantly correlated with a lower level of task routinization (-0.38). At the same time, greater work experience is related to a higher level of task routinization (by 0.35). Having friends in Poland who helped is associated with a lower level of task routinization (-0.24), suggesting that networks familiar with the local labour markets could have helped war refugees find jobs that better fit their skills. Weak Polish language comprehension, relative to average comprehension, is also associated with a higher level of task routinization (0.41), consistent with limited host-country language proficiency constraining access to less routine, more analytically or interpersonally demanding jobs.

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



Note: Estimates with 95% confidence intervals. Detailed results are shown in Appendix Tables A4, A5, and A6.
Source: Own estimations based on the 2023 CMR & IBS survey.

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

We find that stronger task routinization in Poland, relative to the respondent's pre-displacement job in Ukraine, is associated with a shift towards return intentions (Table 6, panel a). We use a common sample of refugees who worked in Ukraine and later found employment in Poland (N = 321). The columns separate three channels: RTI difference only, wages and occupational downgrading without controlling for the RTI difference, and the full specification with all three. Columns (2) and (3) use the discrete downgrading indicator, while columns (4) and (5) use the continuous measure of occupational downgrading.

In the RTI-only model, a one-unit increase in the RTI difference is associated with a 2.1 pp higher probability of switching from no return intention in 2022 to wanting to return in 2023, though the estimate falls short of conventional significance levels. In the full models, which add wages and occupational downgrading, this marginal effect rises to 3.1 pp and is significant at the 5% level in both specifications (controlling for occupational downgrading using either a discrete or a continuous measure). Occupational downgrading itself is not significantly associated with changes in return intentions in any specification. This is consistent with our interpretation that task routinization captures variation in job content that is not captured by occupational downgrading or earnings, and is associated with revised return intentions.

Finally, war refugees who earn more in Poland are less likely to shift their intentions towards returning to Ukraine. Conditional on RTI, a one log-point higher monthly wage in Poland lowers the probability of revising plans towards return by 2.3 pp in column (3) and 2.4 pp in column (5), with both estimates significant at the 1% level (Table 6).

Importantly, neither RTI difference, nor occupational downgrading and wages are associated with changes in return intentions in the opposite direction – from wanting to return in 2022 to not intending to return in 2023 – or with unchanged intentions (Table 6, panel a). The result pertaining to the RTI difference is therefore concentrated among refugees who did not intend to return in 2022 but revised their plans towards return by 2023.

We complement the return-intention results with a second outcome capturing a complementary margin: the change between 2022 and 2023 in the explicit intention to stay in Poland. A shift away from intending to stay often coincides with a shift towards intending to return, but not necessarily: it may instead reflect emerging indecisiveness or a shift towards wanting to move to a third country. This outcome therefore validates if task routinization is associated with revised settlement plans. Panel (b) of Table 6 reports average marginal effects from the same multinomial logit specifications as panel (a), applied to the stay-in-Poland transition outcome.

The results (Table 6, panel b) are consistent with the findings for return intentions in panel (a). Task routinization is associated with a higher probability that refugees who initially intended to stay in Poland no longer report such an intention in 2023. In the full specification, a unitary increase in the RTI difference is associated with a 3.1–3.4 pp higher probability of moving from wanting to stay in Poland in 2022 to not wanting to stay in Poland or becoming unsure about it in 2023, depending on the occupational downgrading measure used. The analogous transition also points in the expected direction: higher task routinization is associated with a lower probability of developing an intention to stay in Poland among those who did not initially intend to do so.

The RTI estimate is not attenuated once earnings and occupational downgrading are included. The occupational downgrading measures remain statistically insignificant across most specifications. Earnings in Poland are also not associated with changes in the intention to stay, suggesting that earnings matter mainly for the return-to-

Ukraine margin. Overall, Table 6 is consistent with task routinization being associated not only with stronger return intentions, but also with a higher probability of abandoning an earlier intention to stay in Poland.

Table 6. Average marginal effects on changes in the intention to return to Ukraine (panel a) and in the intention to stay in Poland (panel b) between 2022 and 2023

Panel (a). Changes in the intention to return to Ukraine

Return intentions in 2022/2023	(1) RTI only	(2) Wages + downgrading	(3) Full	(4) Wages + downgrading	(5) Full
Did not want to return in 2022, wants to return in 2023					
RTI difference	0.021	–	0.031**	–	0.031**
	(0.013)		(0.014)		(0.014)
Log monthly wage in Poland	–	-0.021***	-0.023***	-0.022***	-0.024***
		(0.008)	(0.008)	(0.008)	(0.008)
Occupational downgrading (discrete / continuous)	–	-0.008	-0.038	-0.028	-0.046
		(0.035)	(0.038)	(0.028)	(0.029)
Did not change return intentions between 2022 and 2023					
RTI difference	-0.018	–	-0.029	–	-0.030
	(0.020)		(0.023)		(0.022)
Log monthly wage in Poland	–	0.013	0.016	0.014	0.017
		(0.011)	(0.011)	(0.010)	(0.011)
Occupational downgrading (discrete / continuous)	–	0.014	0.040	0.043	0.061
		(0.048)	(0.053)	(0.038)	(0.040)
Wanted to return in 2022, does not want to return in 2023					
RTI difference	-0.003	–	-0.002	–	-0.001
	(0.017)		(0.020)		(0.018)
Log monthly wage in Poland	–	0.008	0.007	0.007	0.007
		(0.009)	(0.009)	(0.009)	(0.009)
Occupational downgrading (discrete / continuous)	–	-0.005	-0.003	-0.015	-0.015
		(0.038)	(0.043)	(0.030)	(0.032)
Occupational Downgrading Measure	None	Discrete		Continuous	
N	321	321	321	321	321

Panel (b). Changes in the intention to stay in Poland

Stay-in-Poland intentions in 2022/2023	(1) RTI only	(2) Wages + downgrading	(3) Full	(4) Wages + downgrading	(5) Full
Wanted to stay in 2022, does not want to stay in 2023					
RTI difference	0.030*	–	0.034*	–	0.031*
	(0.016)		(0.018)		(0.017)
Log monthly wage in Poland	–	-0.004	-0.006	-0.003	-0.005
		(0.010)	(0.009)	(0.010)	(0.009)
Occupational downgrading (discrete / continuous)	–	0.011	-0.019	0.018	0.001
		(0.039)	(0.043)	(0.032)	(0.033)
Did not change stay-in-Poland intentions between 2022 and 2023					
RTI difference	0.006	–	0.014	–	0.001
	(0.022)		(0.024)		(0.022)
Log monthly wage in Poland	–	-0.018	-0.020	-0.014	-0.014
		(0.037)	(0.036)	(0.029)	(0.027)
Occupational downgrading (discrete / continuous)	–	-0.014	-0.032	0.052	0.054
		(0.051)	(0.056)	(0.041)	(0.042)
Did not want to stay in 2022, wants to stay in 2023					
RTI difference	-0.036**	–	-0.048***	–	-0.032*
	(0.017)		(0.018)		(0.018)
Log monthly wage in Poland	–	0.023	0.026	0.017	0.019
		(0.041)	(0.039)	(0.032)	(0.029)
Occupational downgrading (discrete / continuous)	–	0.003	0.051	-0.070**	-0.054*
		(0.038)	(0.041)	(0.029)	(0.032)
Occupational Downgrading Measure	None	Discrete		Continuous	
N	321	321		321	

*Note: Average marginal effects from multinomial logits estimated on a common sample of N = 321 war refugees who worked in Ukraine before the full-scale war and found new employment in Poland. In panel (a) the outcome is the change in the intention to return to Ukraine between 2022 and 2023, where "wants to return" corresponds to declaring an intention to return to Ukraine and "does not want to return" pools the alternatives "stay in Poland", "move to a third country", and "don't know". In panel (b) the outcome is the change in the explicit intention to stay in Poland, where "wants to stay" corresponds to a response of "Poland" to the question on plans for the next twelve months, and "does not want to stay" pools the alternatives "return to Ukraine", "move to a third country", and "don't know". All models include controls for gender, age categories, childcare, partnership status, education, cognitive-ability quintiles, place of residence in Poland, characteristics of the location of origin in Ukraine, support received in Poland, prior migration experience, labour-market characteristics, and Polish language comprehension. Appendix Tables A7 and A8 (panel a) and A9 and A10 (panel b) provide complete estimation results for the full specifications under, respectively, the discrete and continuous measures of occupational downgrading. Heteroskedasticity-robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.*

Source: Own estimations based on the 2023 CMR & IBS survey.

Importantly, we also find noticeable differences in the association between task routinization and revised return intentions across refugee subgroups. We focus on three dimensions of heterogeneity: place of origin, specifically location at the frontline, destination in Poland, and family background, specifically having young children. For each dimension, Table 7 reports heterogeneity across both headline outcomes: revising plans towards return to Ukraine (columns 1–2) and revising plans against staying in Poland (columns 3–4).

The marginal effect of the RTI difference on the probability of revising plans towards return to Ukraine is larger among respondents whose oblast of origin is at the frontline (Table 7). For this group, a one-unit increase in the RTI difference is associated with a 5.4–5.8 pp higher probability of shifting from no intention to return in 2022 to an intention to return in 2023. By contrast, the corresponding estimates for refugees from regions farther from the frontline are close to zero and statistically insignificant. The joint tests provide suggestive evidence of heterogeneity by frontline exposure.

The stay-in-Poland outcome shows a flatter gradient: the point estimates are positive both close to the frontline (3.2–3.6 pp) and far from it (2.4–2.9 pp), and the interaction is not statistically significant. This contrast demonstrates that changes in the intention to stay and changes in the intention to return capture distinct reassessments. While severe task routinization uniformly increases the probability that refugees shift away from their initial intention to stay in Poland, it translates into a newly formed intention to return to Ukraine only for those from the most war-torn areas.

For frontline refugees, task routinization significantly increases the probability of revising plans towards return to Ukraine (Table 7). We attribute this pronounced sensitivity to a sharp expectations shock combined with viable internal relocation alternatives. Only 21.2% of frontline refugees experienced a prior non-touristic stay in Poland. Without previous exposure to the realities of the host country's secondary labour market, the degradation in occupational status may create stronger disillusionment.[9] Furthermore, return to Ukraine does not necessarily mean returning to an active warzone, as these refugees can relocate to safer Western or Central regions.[10] For those originating from the frontline regions, secondary relocation within Ukraine could offer a relative improvement in safety compared to their pre-migration baseline and a chance to restore occupational status, making return a viable alternative to working in a job abroad that underutilises skills and offers much more routine-intensive tasks.

Conversely, for refugees from regions farther from the frontline, task routinization has no statistically significant impact on return plans. Table 7 shows that the marginal effect of the RTI difference on both revising plans towards return and newly not wanting to stay is statistically indistinguishable from zero. This unresponsiveness aligns with their pre-migration experience: 40.0% of this group had prior stays in Poland. Since they have greater historical exposure to the Polish secondary labour market, entering a routinized job may not trigger a severe expectations shock. Additionally, returning home for this group means returning to their pre-war baseline in Western or Central Ukraine, offering no relative improvement in safety to offset the economic realities of wartime Ukraine. Consequently, task routinization does not shift their plans towards returning.

[9] Consistent with this mechanism, directly interacting the RTI difference with an indicator for prior non-touristic stay in Poland yields the same qualitative pattern for the probability of revising plans towards return: the marginal effect is 3.5–3.6 pp among refugees without prior stay experience (marginally to conventionally significant, $p = 0.054$ and $p = 0.044$ for the discrete and continuous downgrading specifications, respectively) versus 1.8–1.9 pp among those with prior stay experience (not statistically significant, $p = 0.362$ and $p = 0.374$). The interaction term itself is not jointly significant ($\chi^2(2) = 0.02–0.03$, $p = 0.986–0.988$), so we treat this as corroborating rather than independent evidence of heterogeneity. Full results are reported in Appendix Table A13.

[10] According to the UNHCR, about 3.7 million people were internally displaced in Ukraine.

Table 7. Heterogeneity in the average marginal effect of the RTI difference on the probability of revising plans towards return to Ukraine (columns 1–2) and of revising plans against staying in Poland (columns 3–4), for discrete and continuous measures of occupational downgrading

RTI Interacted with	(1)	(2)	(3)	(4)
a. Distance of the oblast of origin to the frontline (joint test p: return 0.071 / 0.088; stay 0.414 / 0.471)				
At the frontline (high war exposure)	0.058**	0.054**	0.036	0.032
	(0.025)	(0.022)	(0.024)	(0.022)
Far from the frontline (low war exposure)	0.005	0.006	0.029	0.024
	(0.012)	(0.013)	(0.029)	(0.029)
b. Place of residence in Poland (joint test p: return 0.020 / 0.029; stay 0.131 / 0.132)				
Rural area or small town	-0.047	-0.043	0.034	0.033
	(0.032)	(0.031)	(0.033)	(0.032)
Medium-sized city (50,000–500,000)	0.092**	0.092**	0.126***	0.116***
	(0.045)	(0.042)	(0.046)	(0.041)
Big city (>500,000)	0.031**	0.030**	0.004	0.002
	(0.014)	(0.014)	(0.018)	(0.018)
c. Young children in the household, aged 0–6 (joint test p: return 0.248 / 0.275; stay 0.881 / 0.897)				
No	0.041**	0.041***	0.037*	0.033*
	(0.017)	(0.016)	(0.022)	(0.020)
Yes	-0.009	-0.008	0.019	0.016
	(0.021)	(0.022)	(0.034)	(0.035)
Outcome	Newly wants to return	Newly wants to return	Newly does not want to stay	Newly does not want to stay
Occupational Downgrading Measure	Discrete	Continuous	Discrete	Continuous

*Note: Each block reports the average marginal effect of the RTI difference within the indicated subgroup, obtained from a multinomial logit that interacts the RTI difference with the moderator. In columns (1) and (2) the outcome is "did not want to return in 2022, wants to return in 2023" (Table 6, panel a); in columns (3) and (4) it is "wanted to stay in 2022, does not want to stay in 2023" (Table 6, panel b). Columns (1) and (3) use the discrete and columns (2) and (4) the continuous measure of occupational downgrading; the sample is the same throughout (N = 321). The joint tests report whether the interaction terms are jointly zero, for the return and stay outcomes respectively. For the place-of-residence block, the corresponding baseline control (city size) is replaced by the moderator; the other moderators are added to the baseline specification. Heteroskedasticity-robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.*
Source: Own estimations based on the 2023 CMR & IBS survey.

The marginal effect of the RTI difference on the probability of revising plans towards return to Ukraine also varies by the place of residence in Poland (Table 7). It is strongest among refugees living in medium-sized cities (marginal effect of 9.2 pp), and remains positive and statistically significant in large cities, at about 3.0–3.1 pp. For refugees living in rural areas or small towns, the estimates are negative but statistically insignificant. The interaction tests indicate statistically significant heterogeneity by place of residence for revising plans towards return. The concentration in medium-sized cities is even more pronounced for the stay outcome (11.6–12.6 pp, significant at the 1% level), although the joint interaction test falls short of conventional significance there ($p \approx 0.13$). This divergence across urban settings likely reflects differences in local labour market depth. In medium-sized cities, a highly routinized job acts as a structural dead-end, which both sharply reduces the intention to stay in Poland and

strongly drives the intention to return to Ukraine. In larger metropolitan areas, however, the depth of the local labour market offers hope for future occupational mobility; this anchor fully preserves refugees' overall intention to stay, while only slightly increasing the probability of actively planning a return.

Finally, the estimates by the presence of young children point in the expected direction: the association between the RTI difference and the probability of revising plans towards return to Ukraine is positive and statistically significant only among respondents without children aged 0–6. The same holds for the stay outcome, for which the association is likewise concentrated among respondents without young children (3.3–3.7 pp, significant at the 10% level). However, the interaction itself is not statistically significant, so this difference should be interpreted cautiously. Behaviourally, this suggests that the overriding need for physical safety and stable public services acts as a binding constraint that anchors families to the host country, compelling parents to tolerate severe skill underutilisation without revising their long-term plans. Overall, these patterns suggest that task routinization is more strongly associated with revised return intentions among refugees for whom adverse labour-market experiences in Poland intersect with local labour market limitations, security conditions in the place of origin, and an absence of mobility constraints that would be created by the need to ensure the safety of young children.

4.3. Robustness checks

As a first robustness check, we model the 2023 intentions directly — in levels — while controlling for the respondent's 2022 intention, for both headline outcomes: wanting to return to Ukraine and wanting to stay in Poland in 2023. Table 8 reports two versions for each outcome. Panel (a) uses a binary logit for whether a respondent intends to return to Ukraine (columns 1–2) or to stay in Poland (columns 3–4) in 2023. Panel (b) uses a three-state multinomial logit, with outcomes defined as staying in Poland, returning to Ukraine, and either moving elsewhere or not knowing, and reports the average marginal effect on the probability of the respective outcome. We pool the last two categories because the "move to another country" cell is too small (11 observations) for a four-state model.

The results match the main estimates. A one-unit increase in the RTI difference is associated with a 3.8–4.0 pp higher probability of intending to return in 2023 in the binary logit, and a 3.8–4.1 pp higher probability in the multinomial logit (Table 8, columns 1–2). These estimates are close to the 3.1 pp estimate in Table 6. The stay-in-Poland columns mirror this pattern: a one-unit increase in the RTI difference is associated with a 4.9–6.6 pp lower probability of intending to stay in Poland in 2023 in the binary logit, and a 5.0–6.9 pp lower probability in the multinomial logit, depending on the downgrading measure (Table 8, columns 3–4). The other average marginal effects also follow the baseline pattern. Higher earnings in Poland are associated with a lower probability of return, while occupational downgrading is not statistically significant once earnings and RTI are included. Prior intentions matter strongly: refugees who already intended to return in 2022 are about 52 pp more likely to report the same intention in 2023 (Table 8). Still, the RTI pattern remains robust after conditioning on this persistence. This supports the interpretation that the routinization of the job task content, learned after starting work in Poland, aligns with updated return plans.

Table 8. Average marginal effects on the level of 2023 intentions, conditional on the intention in 2022

	(1)	(2)	(3)	(4)
(a) Binary logit — probability of wanting to return to Ukraine (columns 1–2) or to stay in Poland (columns 3–4) in 2023 (N = 321)				
RTI difference	0.038*	0.040**	-0.066**	-0.049*
	(0.020)	(0.021)	(0.026)	(0.027)
Log monthly wage in Poland	-0.026***	-0.027***	0.031*	0.026*
	(0.010)	(0.010)	(0.018)	(0.016)
Occupational downgrading (discrete / continuous)	0.022	0.011	0.085*	-0.014
	(0.051)	(0.046)	(0.050)	(0.048)
Return intention in 2022 = return to Ukraine	0.527***	0.528***	-0.561***	-0.561***
	(0.058)	(0.058)	(0.057)	(0.057)
Return intention in 2022 = don't know / other	0.096*	0.094*	-0.345***	-0.356***
	(0.054)	(0.053)	(0.069)	(0.068)
(b) Multinomial logit (3-state) — AME on the probability of returning to Ukraine (columns 1–2) or staying in Poland (columns 3–4)				
RTI difference	0.038*	0.041*	-0.069**	-0.050*
	(0.021)	(0.021)	(0.027)	(0.028)
Log monthly wage in Poland	-0.030***	-0.028***	0.030*	0.026*
	(0.011)	(0.010)	(0.017)	(0.016)
Occupational downgrading (discrete / continuous)	0.028	0.012	0.091*	-0.017
	(0.051)	(0.045)	(0.050)	(0.049)
Return intention in 2022 = return to Ukraine	0.515***	0.522***	-0.564***	-0.562***
	(0.059)	(0.058)	(0.057)	(0.056)
Return intention in 2022 = don't know / other	0.099*	0.097*	-0.342***	-0.354***
	(0.055)	(0.054)	(0.067)	(0.066)
Outcome	Return to Ukraine	Return to Ukraine	Stay in Poland	Stay in Poland
Occupational Downgrading Measure	Discrete	Continuous	Discrete	Continuous

*Note: Average marginal effects on the levels of the 2023 intentions, conditional on the 2022 intentions. The sample is the same as in Tables 6 and 7 (N = 321). In columns (1)–(2) the outcome is wanting to return to Ukraine in 2023; in columns (3)–(4) it is wanting to stay in Poland in 2023. Panel (a) reports binary logits; panel (b) reports average marginal effects from a three-state multinomial logit with outcomes stay in Poland, return to Ukraine, and move to another country / don't know — the return and stay columns of panel (b) are derived from the same fitted model per downgrading measure. All models control for the three-state 2022 intention (base: stay in Poland; "move to another country" is merged into "don't know / other", which avoids the perfect-prediction problem a four-state control would create) and include the same control set as Table 6. Heteroskedasticity-robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.*
Source: Own estimations based on the 2023 CMR & IBS survey.

Finally, we verify that our results are robust to explicitly modelling selection into the second survey wave. Appendix B describes the attrition diagnostics and two alternative Heckman-style corrections that compute an Inverse Mills Ratio from a first-stage probit of second-wave participation. The RTI-difference estimates for both outcomes are stable across all approaches (Appendix Table B2).

As an additional robustness check, we verify that our results are not sensitive to correlation among war refugees from the same oblast of origin. Appendix Table A12 reports the RTI-difference average marginal effects from Table 6 alongside their standard errors clustered by oblast of origin (23 clusters) and wild cluster bootstrap p-values (Roodman et al. 2019). The return-intention estimates remain significant at the 5% level under both alternatives

(bootstrap p-values of 0.042 and 0.032 for the discrete and continuous measures). The stay-intention estimates are somewhat less precise: the wild cluster bootstrap p-values remain at approximately 5% (0.045 and 0.050), while the clustered delta-method standard errors place the average marginal effects just above the 10% threshold.

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. Using two waves of a Poland-wide online survey collected in 2022 and 2023, which included a PIAAC-type module on job tasks, we measured task routinization at the worker level — as the difference between the routine task intensity (RTI) of the job held in Poland and that of the last job held in Ukraine before displacement — and related it to changes in return intentions between 2022 and 2023.

Task routinization among employed war refugees is widespread. It is most pronounced among refugees who moved to lower-skilled occupations, but it also affects most of those who found jobs in the same broad occupational category, confirming that comparisons of occupational titles understate the deterioration in job content that refugees experience. Task routinization is systematically related to subsequent revisions of return plans: a one-unit increase in the RTI difference is associated with a 3.1 pp higher probability of shifting from no return intention in 2022 to an intention to return in 2023. We find no comparable association with the opposite shift, away from returning. The association is robust to controlling for earnings in Poland and experiencing occupational downgrading, and it is similar when the outcome is defined around the intention to stay in Poland and when 2023 intentions are modelled conditional on 2022 intentions. It is strongest among refugees from oblasts at the frontline and those living in medium-sized and large Polish cities.

We interpret these findings through the framework that perceives task routinization as a learning mechanism about career prospects in the host country and as a potential psychological burden related to skill underutilisation. We posit that refugees observe an occupation and a wage when accepting a job but fully learn its actual task content only after starting work. A job that turns out to be much more routine than the pre-displacement one signals limited skill use and weak prospects of career recovery and may also erode professional identity and satisfaction with work. Consistent with this learning interpretation, refugees who experienced higher task routinization were also more likely to be dissatisfied with their job tasks in Poland, conditional on occupational downgrading and earnings. Our data do not allow us to separate the economic channel — skill underutilisation and the risk of human capital depreciation — from the psychological one — the loss of autonomy, status, and satisfaction with job content. Both are consistent with the patterns we document.

Our results are subject to limitations. The estimates rest on selection on observables; the dissatisfaction patterns above and the conditioning on occupational downgrading, earnings, and initial intentions support our interpretation, although, without random variation in task content, strict causality cannot be guaranteed. The estimation sample is moderate in size (N = 321) and drawn from an online panel dominated by women, which mirrors the structure of this refugee population but limits what we can say about men. Finally, we observe stated intentions over a one-year horizon, not realised return decisions.

For host countries, these findings imply that the labour market integration of war refugees should not be judged by employment rates alone. Ukrainian refugees in Poland found work quickly, but many ended up in jobs far more routine-intensive than those they had left, and it is this deterioration in job content — rather than downgrading across occupational categories or earnings as such — that is associated with revisions of intentions towards return. Policies that improve skill matching, including the recognition of foreign credentials, language training, and job-placement services targeted at refugees' prior occupations, would address this margin directly. Reducing hiring discrimination, which is widespread (Lippens et al. 2023) and affects Ukrainian refugees (Buttler et al. 2025), would too. Skill underutilisation underuses the human capital available to the host economy and concentrates competition in the labour market segments where refugees are most likely to work (Dustmann et al. 2013). It may also limit the knowledge and experience gains that refugees could transfer back to Ukraine if they return (Bahar et al. 2024). Future research should examine whether task routinization predicts realised return behaviour, and whether its consequences for refugees' earnings, occupational mobility, and integration persist over time.

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Appendix A. Additional results

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:		
Task questions	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 Read articles in newspapers, magazines or newsletters (at least once a month) Read articles in professional journals or scholarly publications? (at least once a month) Use a programming language to program or write computer code? (any frequency)	Manage or supervise other employees Make speeches or presentations in front of five or more people? (any frequency)	To what extent can you choose or change the sequence of your tasks? (not able) Fill in forms? (at least once a month) Make speeches or presentations in front of five or more people - reversed (never)

$$RTI = \ln(routine) - \ln\frac{(nonroutine_{analytical} + nonroutine_{personal})}{2}$$

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 Lewandowski et al. (2022).

Table A2. Transitions between occupations (1-digit ISCO) held by war refugees in Ukraine before the full-scale war and in Poland after displacement (in % of refugees working before and after displacement)

Occupation in Ukraine	Occupation in Poland			
	ISCO 1-3	ISCO 4-5	ISCO 6-9	Total
ISCO 1-3	34.1	18.6	15.4	**68.1**
ISCO 4-5	5.0	11.2	6.6	**22.8**
ISCO 6-9	1.1	1.1	7.0	**9.1**
Total	**40.2**	**30.8**	**29.0**	**100.0**

Note: Sample size N = 360. 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 calculations based on the 2023 CMR & IBS survey.

Table A3. Migration intentions of Ukrainian war refugees in 2022 and 2023 among those employed both in Ukraine before the full-scale war and in Poland after displacement (in %)

	Intention in 2023			
Intention in 2022	Return to Ukraine	Stay in Poland	Unsure or move to another country	Total
Return to Ukraine	23.2	4.7	6.4	34.3
Stay in Poland	6.0	26.0	5.7	37.7
Unsure or move to another country	5.8	9.6	12.6	28.0
Total	35.0	40.3	24.7	100.0

Note: N = 321. "Stay in Poland" denotes an intention to stay for longer than one year; "Unsure or move to another country" combines war refugees who did not know their plans and those who planned to move to another country. We combine the two since the latter is a very rare outcome.
Source: Own calculations based on the 2023 CMR & IBS survey.

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

	(1) Employment
Woman	-0.026
	(0.049)
Age category: 35–44	-0.073*
	(0.038)
Age category: 45–54	-0.075
	(0.058)
Age category: 55–65	-0.291***
	(0.084)
Has a child aged 0–6	-0.171***
	(0.038)
Participates in education	-0.205***
	(0.034)
Partner in Ukraine	-0.036
	(0.039)
Partner in Poland	-0.044
	(0.036)
Short-cycle tertiary education, Bachelor's or equivalent level	0.086*
	(0.047)
Master's, Doctoral or equivalent level	0.152***
	(0.038)
Cognitive score: Lowest quintile	0.046
	(0.046)
Cognitive score: Second quintile	0.011
	(0.047)
Cognitive score: Fourth quintile	0.054
	(0.045)
Cognitive score: Highest quintile	0.022
	(0.048)
Very good Polish language knowledge	0.108**
	(0.045)
Good Polish language knowledge	0.044
	(0.037)
Weak Polish language knowledge	0.010
	(0.045)
Very weak Polish language knowledge	-0.044
	(0.059)
Rural area	-0.116*
	(0.063)
Small town (up to 50,000 inhabitants)	-0.009
	(0.042)
Big city (more than 500,000 inhabitants)	0.006
	(0.037)
Distance to the frontline in 1,000 km (location of origin in Ukraine)	0.119
	(0.091)
Log(GDP per capita) (location of origin in Ukraine)	0.033
	(0.026)
Family in Poland helped	0.030
	(0.034)

Friends in Poland helped	0.019
	(0.035)
Somebody in the location helped	0.011
	(0.031)
Earlier non-touristic stay in Poland	-0.014
	(0.034)
Worked in UA before 2021	-0.167**
	(0.065)
Worked in UA after 2021	0.110***
	(0.039)
Years of work experience	0.043
	(0.031)
Observations	917
Pseudo R^2	0.129

Note: Heteroskedasticity-robust standard errors in parentheses. For logit and multinomial logit models, average marginal effects are reported, with standard errors calculated using the delta method. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
Source: Own estimations based on the 2023 CMR & IBS survey.

Table A5. Average marginal effects from the multinomial logistic regression for occupational trajectories

	(1) Occupational Downgrading	(2) New job in the same or higher-skilled occupation	(3) Continuing the job in Ukraine
Woman	0.051	-0.159**	0.108
	(0.078)	(0.081)	(0.073)
Age category: 35–44	0.074	0.045	-0.119**
	(0.068)	(0.072)	(0.061)
Age category: 45–54	0.032	0.087	-0.120
	(0.085)	(0.094)	(0.081)
Age category: 55–65	-0.044	0.280**	-0.235**
	(0.128)	(0.134)	(0.118)
Has a child aged 0–6	-0.047	0.002	0.044
	(0.062)	(0.060)	(0.050)
Participates in education	-0.006	0.052	-0.045
	(0.050)	(0.052)	(0.046)
Partner in Ukraine	-0.062	0.080	-0.017
	(0.056)	(0.058)	(0.048)
Partner in Poland	0.034	-0.098*	0.064
	(0.056)	(0.059)	(0.052)
Short-cycle tertiary education, Bachelor's or equivalent level	-0.080	-0.130	0.210**
	(0.077)	(0.082)	(0.090)
Master's, Doctoral or equivalent level	-0.163***	-0.171***	0.334***
	(0.060)	(0.063)	(0.075)
Cognitive score: Lowest quintile	-0.054	0.088	-0.035
	(0.069)	(0.075)	(0.062)
Cognitive score: Second quintile	-0.073	0.105	-0.032
	(0.066)	(0.071)	(0.057)
Cognitive score: Fourth quintile	-0.104	0.067	0.037
	(0.067)	(0.070)	(0.057)
Cognitive score: Highest quintile	-0.030	0.043	-0.013
	(0.075)	(0.078)	(0.066)
Very good Polish language knowledge	0.098	0.109	-0.207***
	(0.069)	(0.071)	(0.073)
Good Polish language knowledge	0.056	-0.022	-0.034
	(0.055)	(0.057)	(0.049)
Weak Polish language knowledge	0.032	-0.078	0.047
	(0.071)	(0.074)	(0.057)
Very weak Polish language knowledge	0.015	0.071	-0.086

	(0.093)	(0.098)	(0.084)
Rural area	-0.373***	0.350***	0.023
	(0.125)	(0.104)	(0.084)
Small town (up to 50,000 inhabitants)	-0.020	0.122*	-0.103*
	(0.062)	(0.067)	(0.058)
Big city (more than 500,000 inhabitants)	-0.083	0.092*	-0.009
	(0.052)	(0.055)	(0.047)
Distance to the frontline in 1,000 km (location of origin in Ukraine)	0.005	0.106	-0.111
	(0.132)	(0.148)	(0.139)
Log(GDP per capita) (location of origin in Ukraine)	-0.033	-0.054	0.087**
	(0.040)	(0.042)	(0.036)
Family in Poland helped	0.034	0.003	-0.037
	(0.054)	(0.055)	(0.050)
Friends in Poland helped	-0.017	0.075	-0.059
	(0.052)	(0.055)	(0.049)
Somebody in the location helped	0.028	-0.006	-0.023
	(0.046)	(0.049)	(0.041)
Earlier non-touristic stay in Poland	-0.045	0.058	-0.013
	(0.052)	(0.055)	(0.048)
Years of work experience	0.049	-0.140***	0.090**
	(0.041)	(0.045)	(0.041)
Pseudo R^2		0.109	
N		492	

Note: Heteroskedasticity-robust standard errors in parentheses. For logit and multinomial logit models, average marginal effects are reported, with standard errors calculated using the delta method. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
Source: Own estimations based on the 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	-0.091
	(0.231)
Age category: 35–44	-0.257
	(0.174)
Age category: 45–54	-0.343*
	(0.208)
Age category: 55–65	-0.741***
	(0.278)
Has a child aged 0–6	-0.003
	(0.153)
Participates in education	-0.384***
	(0.129)
Partner in Ukraine	0.014
	(0.153)
Partner in Poland	0.080
	(0.156)
Short-cycle tertiary education, Bachelor's or equivalent level	0.278
	(0.201)
Master's, Doctoral or equivalent level	0.208
	(0.171)
Cognitive score: Lowest quintile	0.096
	(0.185)
Cognitive score: Second quintile	-0.179
	(0.169)
Cognitive score: Fourth quintile	-0.047
	(0.187)
Cognitive score: Highest quintile	-0.379*
	(0.214)
Very good Polish language knowledge	-0.021
	(0.195)
Good Polish language knowledge	-0.112
	(0.150)
Weak Polish language knowledge	0.407**
	(0.172)
Very weak Polish language knowledge	0.176
	(0.232)
Rural area	-0.142
	(0.243)
Small town (up to 50,000 inhabitants)	0.015
	(0.150)
Big city (more than 500,000 inhabitants)	-0.110
	(0.142)
Distance to the frontline in 1,000 km (location of origin in Ukraine)	-0.625
	(0.391)
Log(GDP per capita) (location of origin in Ukraine)	-0.234*
	(0.126)
Family in Poland helped	0.023

	(0.142)
Friends in Poland helped	-0.239*
	(0.142)
Somebody in the location helped	0.118
	(0.127)
Earlier non-touristic stay in Poland	-0.073
	(0.137)
Years of work experience	0.353***
	(0.111)
Continuous measure of occupational downgrading	0.557***
	(0.095)
Constant	4.634***
	(1.507)
N	360
R^2	0.240

Note: Heteroskedasticity-robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Own estimations based on the 2023 CMR & IBS survey.

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

	(1) Did not change return intentions between 2022 and 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
RTI difference	-0.029	0.031**	-0.002
	(0.023)	(0.014)	(0.020)
Log(monthly wage)	0.016	-0.023***	0.007
	(0.011)	(0.008)	(0.009)
Occupational Downgrading	0.040	-0.038	-0.003
	(0.054)	(0.039)	(0.044)
Woman	0.027	0.047	-0.075
	(0.088)	(0.066)	(0.070)
Age category: 35–44	-0.056	0.010	0.046
	(0.076)	(0.053)	(0.061)
Age category: 45–54	-0.004	-0.066	0.070
	(0.098)	(0.074)	(0.069)
Age category: 55–65	0.151	-0.128	-0.023
	(0.162)	(0.104)	(0.136)
Has a child aged 0–6	0.111	-0.074	-0.037
	(0.071)	(0.049)	(0.058)
Participates in education	-0.007	-0.002	0.009
	(0.051)	(0.039)	(0.036)
Partner in Ukraine	0.011	-0.037	0.026
	(0.064)	(0.052)	(0.041)
Partner in Poland	0.017	0.028	-0.045
	(0.066)	(0.048)	(0.050)
Short-cycle tertiary education, Bachelor's or equivalent level	0.196**	-0.224***	0.027
	(0.087)	(0.075)	(0.057)
Master's, Doctoral or equivalent level	0.063	-0.070*	0.006
	(0.054)	(0.040)	(0.040)
Cognitive score: Lowest quintile	-0.120	0.138**	-0.017
	(0.074)	(0.058)	(0.053)
Cognitive score: Second quintile	0.002	0.029	-0.031
	(0.088)	(0.081)	(0.055)
Cognitive score: Fourth quintile	-0.220***	0.180***	0.041
	(0.067)	(0.059)	(0.044)
Cognitive score: Highest quintile	-0.114	0.148***	-0.034
	(0.080)	(0.057)	(0.068)
Very good Polish language knowledge	-0.096	0.025	0.072

	(0.069)	(0.048)	(0.052)
Good Polish language knowledge	-0.016	-0.050	0.066
	(0.063)	(0.049)	(0.045)
Weak Polish language knowledge	-0.059	0.024	0.035
	(0.074)	(0.052)	(0.058)
Very weak Polish language knowledge	-0.052	-0.073	0.125*
	(0.097)	(0.071)	(0.068)
Rural area	-0.108	0.091	0.017
	(0.108)	(0.065)	(0.094)
Small town (up to 50,000 inhabitants)	0.105	-0.089**	-0.017
	(0.065)	(0.044)	(0.053)
Big city (more than 500,000 inhabitants)	0.157***	-0.155***	-0.003
	(0.060)	(0.047)	(0.044)
Distance to the frontline in 1,000 km (location of origin in Ukraine)	0.483**	-0.013	-0.469**
	(0.198)	(0.114)	(0.188)
Log(GDP per capita) (location of origin in Ukraine)	-0.042	0.055	-0.012
	(0.048)	(0.033)	(0.037)
Family in Poland helped	-0.100*	0.106***	-0.006
	(0.057)	(0.040)	(0.045)
Friends in Poland helped	0.046	-0.066	0.021
	(0.060)	(0.048)	(0.043)
Somebody in the location helped	-0.043	0.044	-0.002
	(0.054)	(0.044)	(0.039)
Earlier non-touristic stay in Poland	0.054	-0.084*	0.030
	(0.059)	(0.049)	(0.042)
Years of work experience	-0.005	0.030	-0.025
	(0.050)	(0.036)	(0.039)
N		321	
Pseudo R^2		0.204	

Note: Heteroskedasticity-robust standard errors in parentheses. For logit and multinomial logit models, average marginal effects are reported, with standard errors calculated using the delta method. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Own estimations based on the 2023 CMR & IBS survey.

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

	(1) Did not change return intentions between 2022 and 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
RTI difference	-0.030	0.031**	-0.001
	(0.022)	(0.014)	(0.018)
Log(monthly wage)	0.017	-0.024***	0.007
	(0.011)	(0.008)	(0.009)
Continuous measure of occupational downgrading	0.061	-0.046	-0.015
	(0.040)	(0.029)	(0.032)
Woman	0.026	0.047	-0.073
	(0.093)	(0.071)	(0.070)
Age category: 35–44	-0.053	0.009	0.044
	(0.076)	(0.053)	(0.062)
Age category: 45–54	-0.010	-0.060	0.071
	(0.098)	(0.075)	(0.069)
Age category: 55–65	0.162	-0.137	-0.024
	(0.163)	(0.106)	(0.135)
Has a child aged 0–6	0.107	-0.070	-0.037
	(0.070)	(0.048)	(0.057)
Participates in education	0.002	-0.013	0.011
	(0.052)	(0.040)	(0.036)
Partner in Ukraine	0.009	-0.035	0.026
	(0.064)	(0.051)	(0.042)
Partner in Poland	0.018	0.026	-0.044
	(0.066)	(0.048)	(0.050)
Short-cycle tertiary education, Bachelor's or equivalent level	0.197**	-0.224***	0.026
	(0.085)	(0.073)	(0.057)
Master's, Doctoral or equivalent level	0.063	-0.070*	0.007
	(0.054)	(0.040)	(0.040)
Cognitive score: Lowest quintile	-0.127*	0.147**	-0.020
	(0.075)	(0.060)	(0.053)
Cognitive score: Second quintile	-0.008	0.041	-0.033
	(0.089)	(0.083)	(0.055)
Cognitive score: Fourth quintile	-0.228***	0.190***	0.039
	(0.068)	(0.061)	(0.043)
Cognitive score: Highest quintile	-0.129	0.163***	-0.034
	(0.080)	(0.059)	(0.068)
Very good Polish	-0.094	0.024	0.070

language knowledge			
	(0.068)	(0.047)	(0.052)
Good Polish language knowledge	-0.019	-0.047	0.066
	(0.063)	(0.049)	(0.046)
Weak Polish language knowledge	-0.067	0.029	0.038
	(0.075)	(0.052)	(0.059)
Very weak Polish language knowledge	-0.052	-0.074	0.125*
	(0.100)	(0.076)	(0.069)
Rural area	-0.091	0.076	0.015
	(0.106)	(0.062)	(0.094)
Small town (up to 50,000 inhabitants)	0.105	-0.090**	-0.014
	(0.065)	(0.045)	(0.054)
Big city (more than 500,000 inhabitants)	0.158***	-0.155***	-0.003
	(0.058)	(0.045)	(0.044)
Distance to the frontline in 1,000 km (location of origin in Ukraine)	0.473**	-0.010	-0.463**
	(0.191)	(0.110)	(0.183)
Log(GDP per capita) (location of origin in Ukraine)	-0.050	0.061*	-0.012
	(0.049)	(0.034)	(0.037)
Family in Poland helped	-0.104*	0.110***	-0.006
	(0.057)	(0.041)	(0.046)
Friends in Poland helped	0.049	-0.071	0.022
	(0.059)	(0.047)	(0.043)
Somebody in the location helped	-0.044	0.046	-0.002
	(0.054)	(0.044)	(0.039)
Earlier non-touristic stay in Poland	0.063	-0.090*	0.027
	(0.059)	(0.048)	(0.043)
Years of work experience	-0.002	0.025	-0.023
	(0.050)	(0.036)	(0.039)
N		321	
Pseudo R^2		0.208	

Note: Heteroskedasticity-robust standard errors in parentheses. For logit and multinomial logit models, average marginal effects are reported, with standard errors calculated using the delta method. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Own estimations based on the 2023 CMR & IBS survey.

Table A9. Average marginal effects from the multinomial logistic regression on the change in intentions to stay in Poland between 2022 and 2023 – controlling for a discrete measure of occupational downgrading.

	(1)	(2)	(3)
	Did not change stay-in-	Did not want to stay in 2022,	Wanted to stay in 2022, does

	Poland intentions between 2022 and 2023	wants to stay in 2023	not want to stay in 2023
RTI difference	0.014	-0.048***	0.034*
	(0.024)	(0.018)	(0.018)
Log(monthly wage)	-0.020	0.026	-0.006
	(0.036)	(0.039)	(0.009)
Occupational Downgrading	-0.031	0.050	-0.019
	(0.056)	(0.041)	(0.044)
Woman	-0.012	-0.030	0.042
	(0.085)	(0.076)	(0.060)
Age category: 35–44	-0.013	0.038	-0.025
	(0.075)	(0.054)	(0.057)
Age category: 45–54	0.022	0.050	-0.072
	(0.106)	(0.077)	(0.086)
Age category: 55–65	0.037	-0.036	-0.001
	(0.163)	(0.130)	(0.110)
Has a child aged 0–6	-0.029	0.044	-0.015
	(0.074)	(0.051)	(0.060)
Participates in education	0.018	-0.040	0.022
	(0.064)	(0.043)	(0.055)
Partner in Ukraine	0.122*	-0.032	-0.090*
	(0.067)	(0.049)	(0.054)
Partner in Poland	0.080	-0.003	-0.077
	(0.069)	(0.055)	(0.049)
Short-cycle tertiary education, Bachelor's or equivalent level	0.131	0.049	-0.180**
	(0.083)	(0.055)	(0.071)
Master's, Doctoral or equivalent level	0.054	0.024	-0.078*
	(0.065)	(0.053)	(0.045)
Cognitive score: Lowest quintile	-0.074	-0.051	0.125*
	(0.092)	(0.074)	(0.068)
Cognitive score: Second quintile	-0.068	-0.043	0.111
	(0.090)	(0.062)	(0.085)
Cognitive score: Fourth quintile	-0.229***	0.098*	0.130*
	(0.078)	(0.054)	(0.069)
Cognitive score: Highest quintile	-0.132	0.028	0.104
	(0.087)	(0.065)	(0.070)
Very good Polish language knowledge	-0.181**	0.164***	0.018
	(0.077)	(0.062)	(0.061)
Good Polish language knowledge	-0.109	0.092*	0.017
	(0.069)	(0.054)	(0.050)
Weak Polish language	-0.037	0.092	-0.055

knowledge			
	(0.081)	(0.071)	(0.053)
Very weak Polish language knowledge	-0.073	0.100	-0.027
	(0.111)	(0.078)	(0.085)
Rural area	0.037	-0.107	0.070
	(0.159)	(0.154)	(0.066)
Small town (up to 50,000 inhabitants)	0.093	-0.012	-0.080*
	(0.072)	(0.059)	(0.049)
Big city (more than 500,000 inhabitants)	0.041	0.049	-0.090*
	(0.064)	(0.050)	(0.048)
Distance to the frontline in 1,000 km (location of origin in Ukraine)	0.407**	-0.333**	-0.074
	(0.167)	(0.148)	(0.108)
Log(GDP per capita) (location of origin in Ukraine)	-0.014	-0.030	0.044
	(0.047)	(0.033)	(0.038)
Family in Poland helped	-0.119**	-0.024	0.144***
	(0.059)	(0.046)	(0.040)
Friends in Poland helped	0.039	-0.019	-0.020
	(0.057)	(0.045)	(0.044)
Somebody in the location helped	-0.040	0.046	-0.006
	(0.055)	(0.041)	(0.044)
Earlier non-touristic stay in Poland	0.037	0.024	-0.061
	(0.063)	(0.042)	(0.054)
Years of work experience	-0.022	0.025	-0.003
	(0.054)	(0.041)	(0.040)
N		321	
Pseudo R^2		0.172	

Note: Heteroskedasticity-robust standard errors in parentheses. For logit and multinomial logit models, average marginal effects are reported, with standard errors calculated using the delta method. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Own estimations based on the 2023 CMR & IBS survey.

Table A10. Average marginal effects from the multinomial logistic regression on the change in intentions to stay in Poland between 2022 and 2023 – controlling for a continuous measure of occupational downgrading.

	(1) Did not change stay-in-Poland intentions between 2022 and 2023	(2) Did not want to stay in 2022, wants to stay in 2023	(3) Wanted to stay in 2022, does not want to stay in 2023
RTI difference	0.001	-0.032*	0.031*
	(0.022)	(0.018)	(0.017)
Log(monthly wage)	-0.014	0.019	-0.005
	(0.027)	(0.029)	(0.009)
Continuous measure of	0.054	-0.054*	0.001

occupational downgrading			
	(0.042)	(0.032)	(0.033)
Woman	-0.018	-0.018	0.037
	(0.084)	(0.070)	(0.061)
Age category: 35–44	-0.014	0.039	-0.025
	(0.076)	(0.056)	(0.055)
Age category: 45–54	0.014	0.058	-0.072
	(0.105)	(0.073)	(0.087)
Age category: 55–65	0.027	-0.028	0.002
	(0.158)	(0.122)	(0.110)
Has a child aged 0–6	-0.029	0.044	-0.015
	(0.076)	(0.056)	(0.059)
Participates in education	0.014	-0.033	0.019
	(0.065)	(0.043)	(0.055)
Partner in Ukraine	0.128*	-0.040	-0.088*
	(0.069)	(0.052)	(0.054)
Partner in Poland	0.075	0.005	-0.079*
	(0.067)	(0.054)	(0.047)
Short-cycle tertiary education, Bachelor's or equivalent level	0.128	0.053	-0.181**
	(0.084)	(0.054)	(0.070)
Master's, Doctoral or equivalent level	0.066	0.011	-0.077*
	(0.066)	(0.053)	(0.045)
Cognitive score: Lowest quintile	-0.067	-0.061	0.128*
	(0.091)	(0.072)	(0.067)
Cognitive score: Second quintile	-0.062	-0.051	0.113
	(0.090)	(0.061)	(0.084)
Cognitive score: Fourth quintile	-0.223***	0.088*	0.135*
	(0.078)	(0.052)	(0.069)
Cognitive score: Highest quintile	-0.141	0.035	0.106
	(0.091)	(0.068)	(0.071)
Very good Polish language knowledge	-0.178**	0.158***	0.020
	(0.077)	(0.059)	(0.061)
Good Polish language knowledge	-0.115*	0.098*	0.017
	(0.069)	(0.055)	(0.050)
Weak Polish language knowledge	-0.043	0.096	-0.054
	(0.081)	(0.072)	(0.053)
Very weak Polish language knowledge	-0.066	0.088	-0.023
	(0.111)	(0.080)	(0.087)
Rural area	0.080	-0.159	0.079

	(0.173)	(0.171)	(0.067)
Small town (up to 50,000 inhabitants)	0.096	-0.018	-0.078
	(0.074)	(0.062)	(0.048)
Big city (more than 500,000 inhabitants)	0.050	0.037	-0.087*
	(0.065)	(0.052)	(0.047)
Distance to the frontline in 1,000 km (location of origin in Ukraine)	0.385**	-0.312**	-0.073
	(0.166)	(0.141)	(0.112)
Log(GDP per capita) (location of origin in Ukraine)	-0.021	-0.024	0.044
	(0.047)	(0.032)	(0.039)
Family in Poland helped	-0.122**	-0.022	0.144***
	(0.060)	(0.047)	(0.040)
Friends in Poland helped	0.032	-0.012	-0.021
	(0.059)	(0.047)	(0.044)
Somebody in the location helped	-0.043	0.048	-0.006
	(0.056)	(0.043)	(0.043)
Earlier non-touristic stay in Poland	0.050	0.008	-0.057
	(0.062)	(0.040)	(0.052)
Years of work experience	-0.027	0.031	-0.005
	(0.054)	(0.041)	(0.040)
N		321	
Pseudo R^2		0.174	

Note: Heteroskedasticity-robust standard errors in parentheses. For logit and multinomial logit models, average marginal effects are reported, with standard errors calculated using the delta method. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Own estimations based on the 2023 CMR & IBS survey.

Table A11. Estimates from a linear regression of the difference in Routine Task Intensity (RTI) between jobs held in Poland and Ukraine on dissatisfaction with job tasks in Poland, under the discrete (1) and continuous (2) measures of occupational downgrading

	(1) RTI difference	(2) RTI difference
Dissatisfied with job tasks (ref.: satisfied/neutral)	0.521***	0.686***
	(0.141)	(0.122)
Woman	-0.129	-0.077
	(0.219)	(0.237)
Age category: 35–44	-0.326*	-0.304
	(0.192)	(0.191)
Age category: 45–54	-0.256	-0.341
	(0.229)	(0.221)
Age category: 55–65	-0.747**	-0.805**
	(0.365)	(0.358)
Has a child aged 0–6	-0.023	-0.057
	(0.172)	(0.164)
Participates in education	-0.444***	-0.411***
	(0.133)	(0.141)
Partner in Ukraine	0.049	-0.006
	(0.162)	(0.160)
Partner in Poland	0.065	0.076
	(0.157)	(0.159)
Short-cycle tertiary education, Bachelor's or equivalent level	0.207	0.206
	(0.207)	(0.209)
Master's, Doctoral or equivalent level	0.264	0.210
	(0.178)	(0.180)
Cognitive score: Lowest quintile	0.159	0.106
	(0.191)	(0.196)
Cognitive score: Second quintile	-0.159	-0.176
	(0.170)	(0.171)
Cognitive score: Fourth quintile	0.056	0.017
	(0.188)	(0.194)
Cognitive score: Highest quintile	-0.229	-0.272
	(0.221)	(0.219)
Very good Polish language knowledge	0.007	0.025
	(0.191)	(0.205)
Good Polish language knowledge	0.011	0.017
	(0.155)	(0.156)
Weak Polish language knowledge	0.490***	0.464**
	(0.178)	(0.184)
Very weak Polish language knowledge	0.292	0.216
	(0.220)	(0.232)
Rural area	-0.145	-0.143
	(0.233)	(0.260)
Small town (up to 50,000 inhabitants)	0.071	0.032
	(0.161)	(0.161)
Big city (more than 500,000 inhabitants)	-0.030	-0.072
	(0.148)	(0.145)

Distance to the frontline in 1,000 km (location of origin in Ukraine)	-0.501	-0.551
	(0.446)	(0.430)
Log(GDP per capita) (location of origin in Ukraine)	-0.201	-0.290**
	(0.135)	(0.137)
Family in Poland helped	0.005	-0.028
	(0.144)	(0.147)
Friends in Poland helped	-0.207	-0.253*
	(0.149)	(0.147)
Somebody in the location helped	0.184	0.175
	(0.128)	(0.127)
Earlier non-touristic stay in Poland	-0.079	0.003
	(0.142)	(0.143)
Years of work experience	0.269**	0.339***
	(0.129)	(0.123)
Log(Monthly Salary)	0.061	0.063
	(0.048)	(0.043)
Occupational downgrading (discrete / continuous)	0.655***	0.476***
	(0.144)	(0.118)
Constant	2.390	4.376***
	(1.593)	(1.638)
N	321	321
R^2	0.335	0.323
Occupational downgrading measure	Discrete	Continuous

Note: Columns (1) and (2) report the same linear regression of the RTI difference on dissatisfaction with job tasks in Poland and the full control set (including Polish language comprehension), differing only in whether the discrete or the continuous measure of occupational downgrading is included as a control. Heteroskedasticity-robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: Own estimations based on the 2023 CMR & IBS survey.

Table A12. AMEs on changes in return and stay intentions — robust vs oblast-clustered standard errors

	Return to Ukraine Discrete	Return to Ukraine Continuous	Stay in Poland Discrete	Stay in Poland Continuous
RTI difference (average marginal effect)	0.031	0.031	0.034	0.031
Heteroskedasticity-robust SE	(0.014)**	(0.014)**	(0.018)*	(0.017)*
Oblast-clustered SE (23 clusters)	(0.014)**	(0.012)**	(0.021)	(0.022)
Wild cluster bootstrap p-value	0.042	0.032	0.045	0.050
Observations	321	321	321	321

Note: The table reports the average marginal effect of the RTI difference on the probability of the outcome "did not want to return in 2022, wants to return in 2023" (columns 1–2; Table 6, panel a) and of the outcome "wanted to stay in 2022, does not want to stay in 2023" (columns 3–4; Table 6, panel b), from the full multinomial logit specifications (common sample, N = 321), under the discrete and continuous measures of occupational downgrading. The rows report the heteroskedasticity-robust standard error, the standard error clustered by the oblast of origin (23 clusters), and the p-value from a wild cluster bootstrap on the underlying multinomial logit coefficient (Roodman et al. 2019; 9,999 replications). Stars next to a standard error denote the significance of the average marginal effect under that standard error. For the stay outcome, the clustered delta-method standard errors place the estimates just above the 10% threshold, while the wild cluster bootstrap p-values remain close to 5%. * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: Own estimations based on the 2023 CMR & IBS survey.

Table A13. RTI difference × prior non-touristic stay in Poland interaction — return-intention outcome

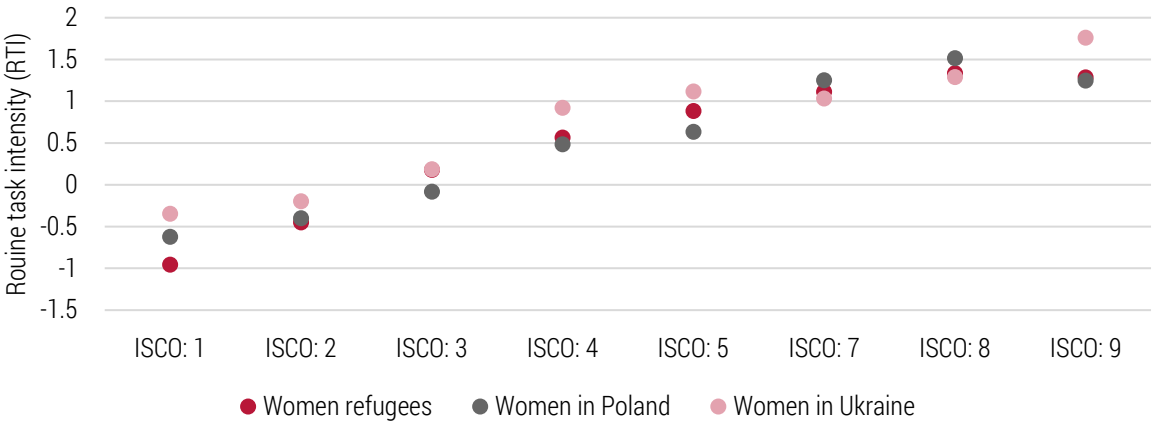
	Discrete downgrading	Continuous downgrading
RTI difference	0.400* (0.213)	0.405* (0.208)
Earlier non-touristic stay in Poland	-0.994 (0.636)	-1.075* (0.629)
RTI difference × Prior stay in Poland	-0.031 (0.409)	-0.037 (0.420)
AME of RTI difference | No prior stay in Poland	0.035	0.036
(SE)	0.018	0.018
p-value	0.054	0.044
AME of RTI difference | Prior stay in Poland	0.019	0.018
(SE)	0.021	0.020
p-value	0.362	0.374
Joint test of interaction, $\chi^2(2)$	0.03	0.02
p-value	0.986	0.988
N	321	321

Note: Coefficients in rows 1–3 are raw mlogit log-relative-risk coefficients on the outcome-2 ("did not want to return in 2022, wants to return in 2023") equation of a multinomial logit with baseoutcome 1, estimated separately under the discrete and continuous measures of occupational downgrading (same control sets as Table 6, panel a, columns 3 and 5, with RTI difference interacted with the prior-stay indicator instead of entered alone). The AME rows report the within-group average marginal effect of the RTI difference on the same outcome, obtained from the same interaction model, for refugees without and with a prior non-touristic stay in Poland respectively. The joint test row reports the χ^2 test that the interaction terms across both non-

reference mlogit equations are jointly zero. Sample: sample2==1 & ISCO_UA!=. & continue_main!=1, N = 321. Weighted by age–gender population weights; heteroskedasticity-robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

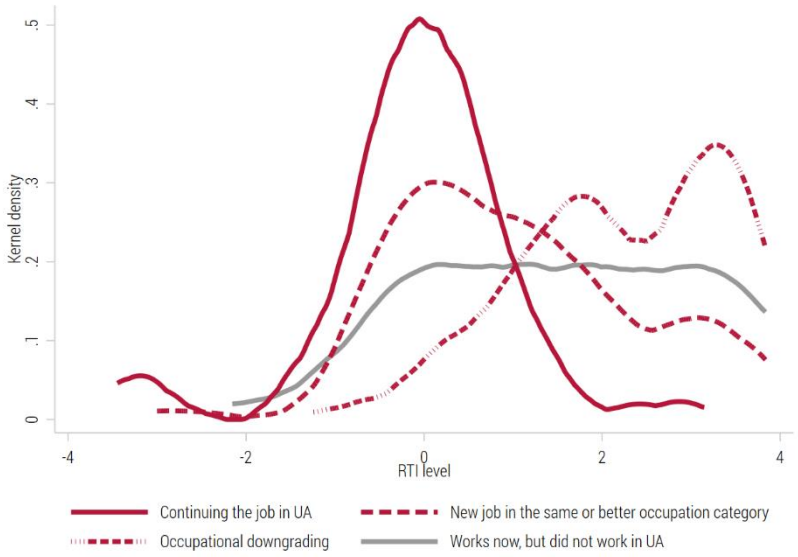
Source: Own estimations based on the 2023 CMR & IBS survey.

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



Source: Own calculations 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 (Kupets et al. 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 calculations based on the 2023 CMR & IBS survey.

Appendix B. Correction for selection into the second survey wave

Attrition between the survey waves could bias our estimates if participation in the second wave were systematically related to respondents' characteristics. To assess this, we estimate a linear probability model of participation in the 2023 wave on the full set of baseline controls described in the Econometric Methodology section. Observable

characteristics explain only about 6.3% of the variance in second-wave participation (Table B1, column 1). Comprehension of Polish in 2022 is one of the stronger observable predictors of attrition (Table B1, column 2), which is why our main specification addresses attrition directly, by including comprehension of Polish in 2022 among the baseline controls in every outcome equation.

As a robustness check, we alternatively model selection explicitly, following Heckman (1979). Let $W_i = 1$ indicate that individual i participated in the 2023 wave. We estimate a first-stage probit of second-wave participation on comprehension of Polish in 2022, L_i, and indicators of network support received upon arrival in Poland – help from family, from friends, or from somebody in the locality – collected in N_i:

$$Pr(W_i = 1) = \Phi(\gamma_0 + \gamma_1 L_i + \gamma_2 N_i), \qquad \text{(B1)}$$

where $\Phi(\cdot)$ is the standard normal cumulative distribution function; the estimates are reported in Table B1, column 2. From the fitted index $\hat{w}_i$ we compute the inverse Mills ratio

$$\hat{\lambda}_i = \phi(\hat{w}_i)/\Phi(\hat{w}_i), \qquad \text{(B2)}$$

where $\phi(\cdot)$ is the standard normal density. The estimated $\hat{\lambda}_i$ is then added as an additional regressor to the outcome equations of the main text. Identification requires an exclusion restriction – a variable that affects participation in the second wave but does not affect the outcomes directly. We implement two variants: in the first, comprehension of Polish is excluded from the outcome equation while the network-support indicators remain among the controls; in the second, the network-support indicators are excluded while language comprehension remains a control. Neither exclusion restriction is fully verifiable – both host-country language proficiency and support networks may affect labour-market outcomes and migration intentions directly – which is why we treat these corrections as robustness checks rather than as the main specification. Table B2 reports the average marginal effect of the RTI difference on both headline outcomes (Table 6, panels a and b) under the main specification and both IMR variants; the estimates are stable across all three approaches.

Table B1. Estimates from the linear probability model (1) and coefficients from a probit model (2) on the selection to the second wave of the survey

	(1) Specification with all controls	(2) Specification to calculate Inverse Mills Ratio (IMR)
Very good Polish comprehension	0.039*	0.185**
	(0.022)	(0.072)
Good Polish comprehension	0.005	0.028
	(0.016)	(0.055)
Weak Polish comprehension	-0.053***	-0.191***
	(0.017)	(0.062)
Very weak Polish comprehension	-0.034	-0.134*
	(0.023)	(0.081)
Family in Poland helped	-0.027*	-0.022
	(0.015)	(0.051)
Friends in Poland helped	-0.026*	-0.048
	(0.014)	(0.051)
Somebody in the location helped	0.008	0.042
	(0.013)	(0.047)
Earlier non-touristic stay in Poland	0.034**	
	(0.014)	

Woman	-0.008	
	(0.022)	
Age category: 35–44	0.045***	
	(0.015)	
Age category: 45–54	0.064***	
	(0.019)	
Age category: 55–65	0.064***	
	(0.021)	
Has a child aged 0–6	0.033**	
	(0.015)	
Participates in education	0.192***	
	(0.017)	
Partner in Ukraine	-0.023	
	(0.015)	
Partner in Poland	0.069***	
	(0.016)	
General secondary or post-secondary	-0.008	
	(0.023)	
Tertiary	0.021	
	(0.022)	
Not Working	-0.060***	
	(0.015)	
Rural area	-0.089***	
	(0.020)	
Small town (up to 50,000 inhabitants)	0.034*	
	(0.018)	
Big city (more than 500,000 inhabitants)	0.056***	
	(0.016)	
Distance to the frontline in 1,000 km (location of origin in Ukraine)	-0.089**	
	(0.036)	
Log(GDP per capita) (location of origin in Ukraine)	-0.016	
	(0.011)	
Constant	0.333**	-0.771***
	(0.130)	(0.044)
Observations	4379	4373
R2	0.067	
Adjusted R2	0.063	
Pseudo R2		0.006

Note: Heteroskedasticity-robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
Source: Own estimations based on the 2023 CMR & IBS survey.

Table B2. Robustness of the RTI-difference association to the selection-correction approach

	Return to Ukraine Discrete	Return to Ukraine Continuous	Stay in Poland Discrete	Stay in Poland Continuous
Main: no selection correction (language as control)	0.031**	0.031**	0.034*	0.031*
	(0.014)	(0.014)	(0.018)	(0.017)
IMR, language excluded	0.035**	0.035**	0.033*	0.029*
	(0.015)	(0.014)	(0.018)	(0.016)
IMR, networks excluded	0.034***	0.034**	0.038**	0.035**
	(0.013)	(0.013)	(0.018)	(0.017)

Observations	321	321	321	321

*Note: The table reports the average marginal effect of the RTI difference on the probability of the outcome "did not want to return in 2022, wants to return in 2023" (columns 1–2; Table 6, panel a) and of the outcome "wanted to stay in 2022, does not want to stay in 2023" (columns 3–4; Table 6, panel b), from the full multinomial logit specifications (common sample, N = 321), under three approaches to wave-2 attrition: the main specification (no selection correction; Polish language comprehension is a direct control); a Heckman-style correction adding the Inverse Mills Ratio from the first-stage probit (B1), with language comprehension excluded from the outcome equation; and an analogous correction with the network-support indicators excluded instead. Heteroskedasticity-robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.*

Source: Own estimations based on the 2023 CMR & IBS survey.