

Article

The Relationship Between Migration Background and Career Benefits in the Lives of Hungarian Mobile Workers in German-Speaking Countries

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Abstract

Labour migration from Central and Eastern Europe plays a significant role in the labour market of the European Union, yet few studies examine the direction and extent of occupational mobility triggered by migration. This study introduces a new analytical tool, the Career Benefit Index, which measures the direction of change in occupational status between the labour markets of the country of origin and the host country. The tool also enables the assessment of sociological factors that explain these changes. The index was developed using data from Hungarian workers living in Austria and Germany. The analysis revealed that educational attainment has no significant impact on career mobility. In contrast, demographic factors such as gender, age, and particularly very high-level German language proficiency strongly influence career trajectories. The index demonstrates that labour market capacities play a limited role in shaping migrants' career paths, as the host labour markets tend to "evaluate" migrant workers primarily based on their linguistic and demographic attributes. The index and the findings contribute to a deeper understanding of labour market integration among Central and Eastern European migrants and may offer new directions for migration and employment policy analysis.

Keywords: migration; labour market; occupational mobility; eastern European



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1. Introduction

East–West labour migration is a key element of the EU's economic and social structure [1]. Intra-EU labour migration is a legally and politically supported process [2,3], with citizens of the post-socialist countries of Eastern Europe being key participants. Statistical data show that in year 2024, the number of Eastern European migrants was 6,878,334, representing a significant population in Western European countries [4]. The most popular destinations for Eastern European workers are the UK (prior to Brexit), Germany, and Austria. (A worker is a person who works in any capacity for an enterprise or employer. The term is used generically in this study, including both manual and mental workers.) In Austria, Hungarians made up over 20% of all Eastern European workers in 2023 [5]. In Germany, their proportion was almost 4% of all Eastern European workers [4]. The number of people born in Hungary and living abroad in 2020 represents 7.3% of the total Hungarian-born population [6]. In Austria, for example, the number of Hungarians

increased tenfold between 2001 and 2021, but according to data from 1 January 2024, their number continued to grow to 107,347 [7].

There have been numerous studies on the economic effects of migration, its advantages [8] and disadvantages [9], and social sciences have also addressed the labour market and social integration characteristics of people involved in migration [10]. However less attention has been paid to the occupational mobility of migrants once they enter host labour markets. Existing literature primarily focuses on structural integration and employment outcomes in the destination country but often neglects the dynamic process of occupational mobility—that is, how people’s careers change and how this relates to social stratification and inequality—that migrants experience as a result of relocation. The quantitative but mainly qualitative data available on the labour market integration of workers who emigrate from post-socialist countries do not reveal the dynamics and characteristics of occupational mobility in the context of migration. The literature [10] tends to focus on the labour market situation in the host country but pays little attention to the direction and characteristics of the change that occurs with the move and the sociological circumstances that explain downward or upward mobility. Based on the literature [11], the motivation for migration to Germany and Austria—which are one of the most relevant host countries in the EU—is predominantly economic. The significant proportion of Hungarians living in these countries justifies an examination of the characteristics of occupational change resulting from migration, as the situation of Hungarians may also serve as a predictor for understanding the experiences of other migrant groups.

This study addresses this gap by introducing a novel analytical tool—the Career Benefit Index (CBI)—which aims to measure the direction and magnitude of migrants’ occupational changes as they transition from the labour market of their country of origin to that of the host country. CBI is a tool for understanding the direction of occupational mobility among migrant workers due to migration. CBI can help us to better identify the demographic and labour market characteristics of the winners and losers of labour migration.

The research questions of the presented study outlined above using the Career Benefit Index is the following:

Q1: Which sociodemographic and labour market-related skill variables determine the career benefit migrants gain through relocation?

Q2: Can the Career Benefit Index be used to identify career gainers and career losers?

Labour Market Integration of Eastern European Migrant Workers

According to neoclassical theory, migration results from geographic differences in the supply and demand for labour, one of the main drivers of migration being the wage gap between countries [12]. Closely related to neoclassical theory is the theory of labour migration, which sees migration as an economically motivated cross-border movement of individuals, with the goal of migrants being the successful labour market integration in the host country [13,14]. Much of the labour migration literature assumes that workers migrate not only for higher wages but also for better working conditions, such as safety and avoiding unemployment [15–18]. The literature also interprets the motivation for East–West migration—including Hungarian migration [11,19–21]—in this context and concludes that East–West mobility follows similar patterns. Kurekova [22] criticizes the neoclassical school and emphasizes the need for country-specific analyses of East–West migration. She argues that Central and Eastern European countries are medium-income countries with productive structures similar to those of developed economies, and their citizens are generally well-educated. Therefore, wage differences alone can only partially explain their migration goals.

Neoclassical migration theory found that migration is generally successful, and the expected benefits increase with higher levels of education [12]. While active labour market status in the host country is a key indicator of successful migration, another important factor is whether the individual can find a job that matches their qualifications. Piore [23] notes that workers migrating from less developed regions tend to find employment in secondary labour markets in host countries, which results in a loss of occupational status. According to this theory, the labour market is divided into a primary and secondary sector, the former characterized by high prestige, safe work and working conditions, and the latter by low wages, poor working conditions, high turnover, and few opportunities for advancement. Priore showed that migrants are occupied primarily in the secondary sector in the host countries. Following the accession of Central Eastern European countries to the EU in 2004, numerous studies were published that dealt with the specificities of the labour market integration of migrant workers. Much of them highlighted that immigrants in the EU—especially from middle- and low-income countries—face lower labour market participation and higher unemployment rates, along with significant underemployment and de-qualification [24–27]. In Hungary, for example 2016 Microcensus [21] data showed 34% of migrants work below their education level, and 51% in roles misaligned with their qualifications. De-qualification appears common in host labour markets Nowotny [28] found that one-third of tertiary-educated and one-fifth of secondary-educated mobile workers are de-qualified in the EU. In the UK, Polish workers frequently experience career setbacks [27,29].

Examining the position of skilled migrants is a central issue, as EU migration increasingly targets highly skilled workers [30]. Yet, a significant number still experience career breaks and downward mobility. Johnston et al. [31] found that East Europeans were more likely than White-British and West Europeans to be over-qualified and received the lowest pay premium on their excess education. Favell [32] similarly highlighted that Eastern European migrants, though often well educated, work in temporary and low-paid jobs and experience exclusion and exploitation. One relevant cause of downward mobility is the non-recognition of migrant qualifications and experience [33,34], which can result in temporary unemployment or de-qualification [35,36] hindering long-term success [37–39]. A well-known case is Polish migrants in Glasgow, many of whom work in low-skilled jobs regardless of education [40]. In contrast to this Dalmazzo et al. [41] highlight the positive effects of the East–West movement, finding, for example, that Romanian and Bulgarian workers constitute a significant advantage in host countries. Kováts and Papp's [42] sample survey also shows positive effects of CEE migration as it provides a detailed account of the success of skilled Hungarians living in London. Based on their survey, more than half of the respondents had university or postgraduate degrees, and the employment situation of skilled workers often improves compared to that of Hungarians. Studies comparing Hungarian and regional migrant workers show that employment rates of Hungarians, regardless of educational attainment, are exceptionally high in the labour market of host countries [19,20]. As we can see there are conflicting results in the literature about the success of CEE migrants on the labour market, the authors of this paper are of similar opinion to that of Kurekova [22] that country specific analysis is needed.

Based on empirical data studies pointed out that Eastern European migrants' career outcomes abroad are influenced by various demographic and human capital factors, most notably language proficiency, gender, age [31,43].

Migrants who speak the host country's language are more likely to find better-paid and more stable employment [44]. Beyond this obvious fact, research also highlights the complex relationship between language skills and labour market outcomes. Michalikova [45] notes that low-skilled migrants with minimal language proficiency face economic insecurity,

while highly skilled migrants often experience a mismatch between their qualifications and job opportunities, hindering integration. Language proficiency decreases with age, reducing the chances of qualified employment, while the longer one stays in the host country, the better their language skills become, improving labour market prospects [46,47].

Women are disproportionately affected by career drop-out. The financial situation and relationship system within families are strong determinants of labour market outcomes [48–50]. Ho and Turk [43] found that while both male and female migrants face sizable employment gaps relative to natives (a gap persisting even after 20 years), it is larger for women. Women are more likely to be marginalized or suffer career disruption, as their opportunities are shaped by family relationships and financial context. Cultural factors also hinder women's labour market success, including reinforced traditional roles abroad—as mothers [51–54] and wives [52–56]. For many women, career goals are replaced by promoting family integration and their husband's assertiveness, enhancing their familial role but devaluing them as workers.

Age is also a key determinant in work perspective abroad. Productivity rises in early working years, stabilizes, then declines, affecting labour market position. Studies in the US, Canada, and Australia [57,58] show that later-age immigrants face earnings disadvantages. Similar findings in Europe [59,60] reveal robust evidence of age discrimination. Employers are often reluctant to hire older candidates. We examine the effects of the complex system of variables identified in the literature on the development of career benefit.

2. Methods

In our research, we developed an equipment to examine occupational mobility resulting from migration, which we termed the 'Career Benefit Index' (CBI). The name reflects its purpose: to measure the extent to which individuals benefit in their careers as a result of migration. CBI is an improvement of a previously published index [61,62]. In the case of a positive change (i.e., CBI value is above the career benefit threshold), we speak of career gains. In contrast, in the case of an unfavourable change (i.e., CBI value is below the career benefit threshold), we speak of career losses. In our research, using knowledge and experience acquired in Hungary in the foreign labour market means utilizing qualities and skills. In contrast, the non-utilization of skills means the loss of skills.

Unlike established indicators such as overqualification rates or wage gaps, the Career Benefit Index (CBI) does not simply combine employment, education, and income outcomes. Rather, it measures the direction and magnitude of occupational mobility between the country of origin and the host country, thereby transforming static snapshots into a dynamic assessment of career change. This method serves to reveal the role of demographic and linguistic factors—dimensions that remain largely invisible in OECD/Eurostat statistics—in shaping careers. In this sense, the CBI is not a substitute but a complementary tool that links individual career paths to aggregate integration indicators.

In this research, using three steps we look for correlations between career benefits and the variables identified in the literature as most likely to explain labour market outcomes. First, we examine the effects of key skill-related factors (such as language skills or educational attainment) and demographic characteristics (such as gender, age) on career payoffs. Second, we also investigate the impact of similarly relevant demographic factors such as marital status and presence of children, duration of stay in host country and degree of urbanization in country on career payoffs. With family-related variables, we aim to uncover patterns primarily linked to gender-specific dynamics. With the examining the duration of stay, we aim to understand the effects of the time factor as an opportunity for integration. Analysing the settlement type in the origin country allows us to investigate whether labour market disadvantages stemming from regional inequalities in the origin country [63,64]

can be mitigated through migration. Finally, in the third step, we aim to further explore and contextualize potential gender-based differences in career benefit.

2.1. Sampling

The data used in the study were collected as part of a more extensive survey, with a questionnaire that examined, among other things, the labour market situation of people in migration. Participation in the study was voluntary, with respondents providing online informed consent. The study's target population was persons aged 18–75 years, currently living in Austria or Germany but born in Hungary. The sample size was 429 for Austria and 402 for Germany. The sampling was conducted online in the spring of 2023 using a self-completion method. Recruitment was done through social media (Facebook, Instagram) ads, but we also used relevant Facebook groups, such as 'Hungarians in Austria' or 'Hungarians in Germany'. To our knowledge, there is no dedicated and actively maintained up-to-date database, so social media was the best way to reach our target group, with as much diversity as possible. In order to make the final database as similar as possible to the demographic structure of those living abroad, we applied weighting adjustments after data collection to align the sample with the demographic distribution by age and gender. For Austria, the Eurostat data table [65] was used to retrieve the size of the Hungarian-born population living in Austria (on 1 January) by sex and age. For Germany, we used the 2022 data table from genesis.destatis.de [66], which gives the size of the first-generation Hungarian population living in Germany (on 31 December) by sex and age. It is important to note here that in the case of Austria, the Eurostat data include Hungarian-born persons living in Austria, while the Destatis data for Germany includes Hungarian citizens. The case-count weighting—by age (categories used: 20–29 years, 30–39 years, 40–44 years, 45–49 years, 50–54 years, 55–59 years, +60 years) and sex combined—was performed using the cell-matrix method. The overall range of sample weights was 0.48–2.13 for Austria and 0.58–2.65 for Germany.

2.2. Measuring Instruments

The present study was carried out using 16 questions of the online questionnaire, of which nine questions were used to produce the Career Benefit Index and eight for further analysis. Data imputation using averaging was applied to construct the index: for respondents missing a value in any of the nine variables, the overall sample mean was used to replace the missing data.

2.3. Statistical Analysis

2.3.1. Descriptive Analysis of the Sample

For the sample's descriptive statistics, the number of items and the frequency (proportion) were entered for categorical variables and the number of items, mean and standard deviation for scale-type variables.

2.3.2. Structure of the Career Benefit Index

The CBI is an indicator describing the occupational mobility of migrant workers. We partly utilized variables used in mobility research [67,68] to develop the indicator. The CBI differs from surveys examining career mobility in that it measures the change that occurs with migration during an individual's career path. The CBI was constructed from the following variables: labour market activity (measured on a three-point scale, −1: changed from active to inactive; 0: no change in activity; 1: changed from inactive to active); the so-called de-qualification indicator—i.e., the change in occupational status according to educational attainment (for which a continuous scale was used, defined from standardized values of the difference between current and Hungarian values). In addition, in this research

we have taken into account the change of position due to migration (measured on a three-point scale, −1: moved to a lower position; 0: working in the same position; 1: moved to a higher position), the inclusion of work experience in Hungary in the foreign workplace (measured on a two-point scale, −1: not counted; 1: counted), and also staying in/leaving the career due to migration (measured on a three-point scale, 1: left job with qualification; 0: stayed in job with qualification; 1: got job with qualification) and finally, to characterize the financial status, the change is monthly savings (measured with standardized values on the following 5-point scale: −2: significantly decreased; −1: somewhat decreased; 0: no change; 1: somewhat increased; 2: significantly increased). Further details on the variables underlying the CBI are provided in Table A1. The CBI is defined as a linear combination of variables. The coefficients were calculated in two ways: first, all variables were given equal weight and the index was calculated as the average of the z-scores of the variables (z-score index), then the weights were determined using principal component analysis, a method that allows the originally observed variables to be combined into a single principal component variable (principal component index). The principal component analysis was performed using the CATPCA (Categorical Principal Components Analysis) method, which allows for the use of categorical variables. The index was derived from the first principal component. For the analysis, we used the FactoMinerR 2.10 R package by Husson and Pages [69]. We compared the robustness of the two indices calculated by different methods using bootstrap resampling. For both countries, we drew 1000 bootstrap samples with replacement, each consisting of 429 observations for Austria and 402 for Germany. We examined and compared the standard deviations, and 5% confidence intervals of the mean index values determined from these samples. Subsequent analyses were conducted using the more robust index.

2.3.3. Examining the Differences in Occupational Mobility

To answer our research questions, we conducted hierarchical linear regression analyses [70] (Chambers et al., 1992) separately for each host country, using the CBI as the dependent variable. The analysis was carried out in three blocks. In the first block (Model 1), we included gender (male, female), age (years), language proficiency (basic, intermediate, upper level), and educational attainment (primary, secondary, higher) as explanatory variables. In the second block (Model 2), we added duration of stay (years), degree of urbanization in Hungary (village, city, capital city), presence of children (with or without children), and family status (single, in partnership). In the third block (Model 3), we introduced interaction terms between gender and language proficiency, as well as between gender and family status. We reported point estimates of standardized beta coefficients and coefficients of determination for linear regressions. The calculations were performed using the R Stats and Wooldridge packages, while the graphs were generated using MS Excel.

3. Results

To present our results, we first describe the demographic characteristics of the sample. Table 1 presents the composition of the weighted samples.

3.1. Composition and Evolution of the Career Benefit Index in the Two Countries

The Career Benefit Index was constructed from six variables detailed in Table A1 (the correlation matrices of these variables can be found in Tables A2 and A3). For both countries, the index was calculated using two methods: the z-score index and the principal component index. The results of the bootstrap analysis comparing the robustness and stability of these two indices are presented in Table 2.

Table 1. Characteristics of the weighted samples. Data collected and compiled by the authors.

Variable Name	For Austria (N = 429)		For Germany (N = 402)	
	Missing Values N (%)	N (%) or Mean (SD)	Missing Values N (%)	N (%) or Mean (SD)
Sex	0 (0)		0 (0)	
Male		193 (45%)		173 (43%)
Female		236 (55%)		229 (57%)
Age	0 (0)	43.8 (12.10)	0 (0)	43.48 (11.03)
Family status	2 (0.5%)		4 (1%)	
Single		109 (25%)		97 (24%)
In partnership		318 (75%)		301 (76%)
Disposal of children	8 (2%)		11 (3%)	
Disposal		180 (43%)		153 (39%)
Not disposal		242 (57%)		238 (61%)
Level of German language proficiency	20 (5%)		36 (9%)	
Basic (A1–A2)		143 (35%)		155 (42%)
Intermediate (B1–B2)		178 (43%)		155 (42%)
Upper level (C1–C2)		89 (22%)		56 (16%)
Education level	1 (0.2%)		4 (1%)	
Primary		96 (22%)		124 (31%)
Secondary		246 (57%)		185 (47%)
Higher		86 (20%)		89 (22%)
Type of residence in Hungary	0 (0)		0 (0)	
Village/municipality (Control)		127 (30%)		79 (20%)
City		196 (45%)		220 (54%)
Capital city		106 (25%)		104 (26%)
Length of migration	7.9 (4.3)	0 (0)	7.1 (3.5)	

Table 2. Bootstrap of the weighted samples.

Country	Index	Average	Standard Deviation	LCI	UCI
Austria	Z-score index	0.2117	0.1706	−0.1177	0.5453
Austria	Principal component index	−0.0036	0.0494	−0.0963	0.0954
Germany	Z-score index	0.1696	0.1530	−0.1331	0.4673
Germany	Principal component index	0.0005	0.0482	−0.0901	0.0943

In both Austria and Germany, the mean value of the principal component index is practically zero (−0.0036 and 0.0005, respectively), and its standard deviation is much smaller (0.0494 and 0.0482, respectively) than that of the z-score index (0.1706 and 0.1530, respectively). Accordingly, the bootstrap confidence intervals are also significantly narrower (Austria: [−0.0963, 0.0954]; Germany: [−0.0901, 0.0943]) than those of the z-score index (Austria: [−0.1177, 0.5453]; Germany: [−0.1331, 0.4673]), which indicates greater accuracy. Based on the standard deviations and confidence intervals, the principal component index proved to be more robust and stable; therefore, we used it for all subsequent analyses.

Figure 1 shows each variable's weights (loadings) in the principal components.

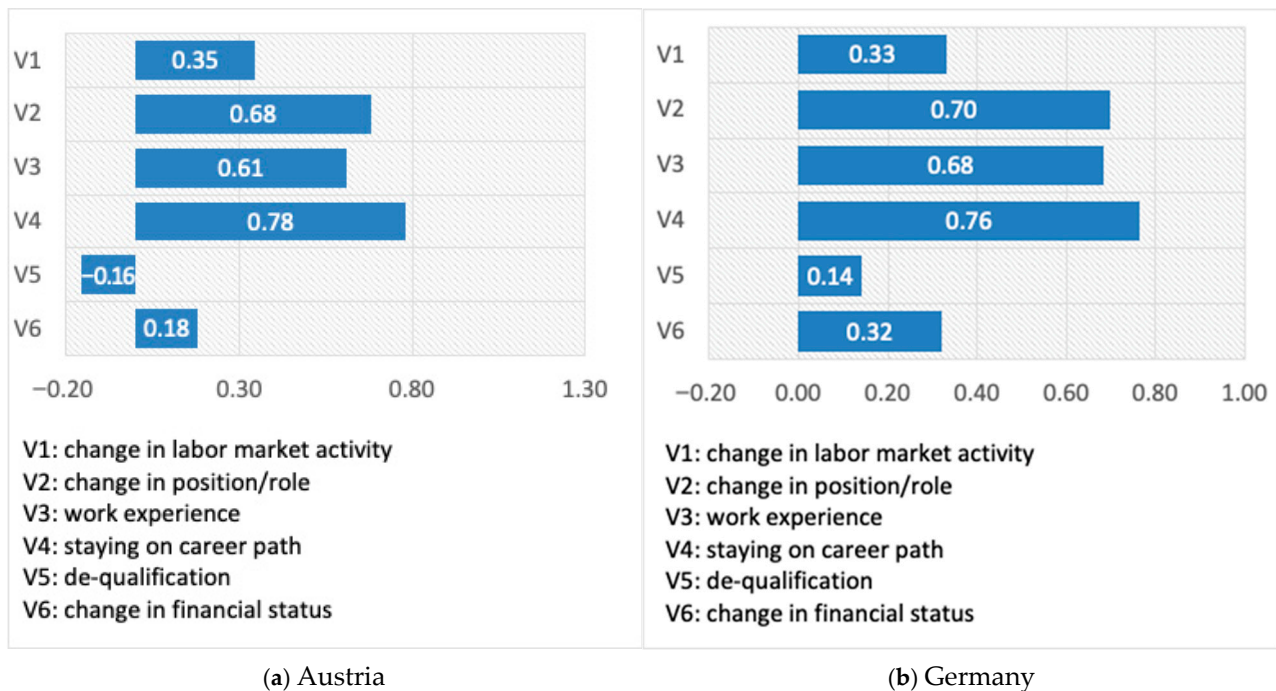


Figure 1. Weights of variables in the career benefits indicator.

Figure 1 shows that the Career Benefit Index we created is determined most by the variable measuring staying on track and least by the indicator of de-qualification. Moreover, the latter's weight is negative for Austria.

The career gains of Hungarians living in German-speaking countries that we studied are most strongly influenced by whether they manage to find a job abroad that matches their qualifications, whether they manage to work in a higher position than in Hungary and whether they manage to do a job that matches their work experience. Accordingly, the principal component makes similar statements to those already found in the literature [19]. Staying in a career is a decisive factor in the lives of Hungarians living in the German-speaking area.

Figure 2 shows the distribution and descriptive statistics of the Career Benefit Index across the two samples.

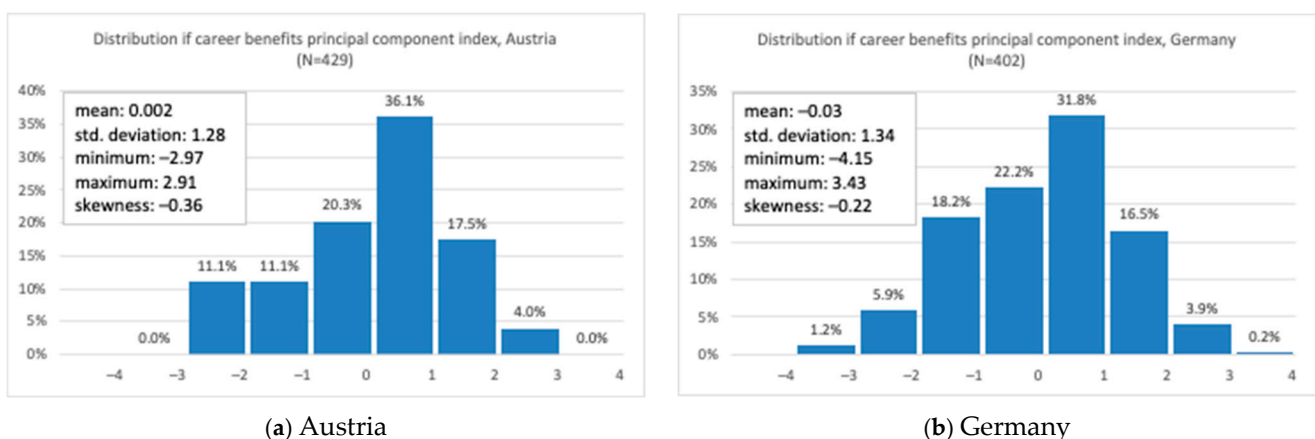


Figure 2. Distribution and descriptive statistics of Career Benefit Index.

The centers of the distributions in both countries are concentrated around zero, with the majority of observations falling within the range of -1 to +1. At the same time, both

countries exhibit a thin, right-skewed tail, while in Germany the left tail is more pronounced, indicating deeper losses in position. The figure shows that the rate of career losers is higher in Germany, while Austria shows a slightly more favorable picture. In addition, there is greater variability in the case of Germany, indicating different outcomes of career paths.

3.2. Demographic Characteristics and Labour Market Skills That Influence Career Benefits

Below, we present the results of the hierarchical regression analyses conducted separately for each country, which included three blocks (Table 3). In the regression models, CBI was used as the dependent variable. In Model 1, we included the variables considered most important based on the literature—age, gender, educational attainment and language proficiency level—as independent variables, which yielded some quite surprising results.

Table 3. Results of hierarchical regression analysis (standardized betas).

Predictor Variable	Austria			Germany		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Sex						
Male	0.162 ***	0.162 ***	0.221 **	0.210 ***	0.185 ***	0.151 *
Female (Control)						
Age	−0.242 ***	−0.307 ***	−0.305 ***	−0.109 *	−0.160 **	−0.169 **
Level of German language proficiency						
Basic level (A1–A2)	−0.087	−0.036	0.004	−0.081	−0.059	−0.132
Intermediate (B1–B2) (Control)						
Upper level (C1–C2)	0.219 ***	0.198 ***	0.222 **	0.119 *	−0.096	−0.093
Education level						
Primary	0.058	0.068	0.471	−0.066	−0.052	−0.064
Secondary (Control)						
Higher	−0.075	−0.066	0.151	−0.039	−0.041	−0.029
Length of migration		0.155 **	0.155 **		0.112 *	0.104
Type of residence in Hungary						
Village/municipality (Control)						
City		0.020	0.020		−0.016	−0.013
Capital city		0.050	0.053		0.027	0.023
Family status						
Single		−0.038	−0.016		0.120 *	0.181 **
Partnership (Control)						
Disposal of children						
Not disposal		0.089	0.094		0.004	0.009
Disposal (Control)						
Male X Basic level (A1–A2)			−0.061			0.134
Male X Upper level (C1–C2)			−0.034			0.007
Male X Single			−0.039			−0.097
R ²	0.183	0.208	0.211	0.087	0.112	0.122
R ² change	0.183	0.025	0.002	0.087	0.025	0.010

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

3.2.1. The Role of Educational Attainment

As Table 3 shows, career benefit is not associated with the level of educational attainment in either country ($p > 0.05$), which implies that workers' qualifications do not play a role in shaping occupational mobility. A high level of education yields neither significantly greater nor smaller career benefits in either country. Some studies highlight a positive link, for example in the United States, legal immigrants with a high level of education are even more successful than natives [71]. Kogan and Weißmann [72] found that migrants from former Soviet Union countries with tertiary education are more likely to begin their careers in Germany in professional, technical, and managerial employment. Schmidt and colleagues [73] found that migrants who are highly educated relative to others in their origin country tend to attain higher-status jobs in the host country. However, other studies point to a contrasting, well documented trend: the de-qualification of migrants, especially from Eastern Europe, in Western labour markets. To increase external validity, the results were compared with data from Eurostat (2024) (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Migrant_integration_statistics_-_over-qualification&oldid=680036 (accessed on 26 September 2025)), the OECD (2023) (https://www.oecd.org/en/publications/indicators-of-immigrant-integration-2023_1d5020a6-en.html (accessed on 26 September 2025)), and Nature (2025) (<https://www.nature.com/articles/s41586-025-09259-6> (accessed on 26 September 2025)). According to these sources, approximately one-third of highly skilled migrants are overqualified and suffer an average wage disadvantage of 18%. The CBI results are consistent with these trends, so the index reflects the structural patterns observed in EU and OECD data at the micro level, confirming its external validity.

3.2.2. The Role of Demographic Factors

According to Model 1, career outcomes are determined much more by demographic factors. In both countries, age is the strongest negative predictor of career benefit (Austria: standardized beta = -0.242^{**} ; Germany: standardized beta = -0.109^{***}), indicating that career benefit decreases as age increases. The effect of age on career benefit aligns with findings in the literature (see, for example, [58,59,74,75]). However, there is a difference between the two countries regarding the role of age: in Austria, each additional year of age corresponds to more than twice the career loss compared to Germany. The average age of those below the career benefit threshold is 42 years in Austria, while for those above the threshold it is 47 years; in Germany, these figures are 38 and 46 years, respectively. This suggests that midlife represents a turning point in career progression.

The most striking difference between the two countries is that while in Germany demographic characteristics are the strongest positive predictors of career benefit, in Austria it is the level of language competence that plays the most decisive role. In Germany, men achieve significantly greater career benefit from migration than women (standardized beta = 0.210^{***}). In Austria, this effect is also significant, though somewhat more moderate (standardized beta = 0.162^{***}). These findings are consistent with previous research [19], which showed that two out of three Hungarian women living abroad are certain to leave their careers, compared to only 50% of men.

The labour market disadvantage of women abroad is a well-documented phenomenon in EU countries. One key explanation highlights that women often prioritise family well-being over their own career goals [76–79], which has been observed, for example, in Vienna [61], in Germany [56], in England [27], in Switzerland [80], and in Finland [76]. A significant reason for career failure is putting children's financial security before career goals; women cannot wait for a better job, retrain or spend time unemployed [51]. Time-consuming family management also means no time and energy for language training and

further education [81,82]. In addition, their CVs often show a non-linear development due to unskilled employment at the beginning of migration, which can lead to career dropout [39].

3.2.3. The Role of Language Proficiency

The significance of language proficiency in shaping career trajectories is unsurprising. However, our results highlight that intermediate language skills do not offer substantial career advantages compared to basic proficiency. In contrast, individuals with very high or near-native language competence are able to achieve meaningful career benefit. This suggests that merit and skills only gain relevance within the dimension of language, which may point to specific mechanisms of labour market selection in the case of migrant workers. In essence, if one does not speak German at a very high level, one does not make any career gains. While according to [19], language skills do not explain career drop-out among Hungarians living abroad, ref. [61] shows that the most vital explanatory factor for downward mobility is the level of workers' language skills. Our present data confirm other literature [44,83–85], which argues that language proficiency is a strong determinant of labour market performance.

There is no significant difference in career benefit between individuals with intermediate and basic language proficiency, which suggests that even an average level of language skills has no meaningful impact on career outcomes. This phenomenon the authors termed as the 'second-language gap', meaning it does not matter whether a worker speaks no, basic or intermediate German because the career payoff at this level does not influence significantly with language proficiency.

In summary, the results of Model 1 indicate that career benefit is shaped more by demographic characteristics and language proficiency than by formal educational attainment. In other words, the qualifications of migrant workers do not significantly influence the degree of occupational mobility they experience after migration. However, this result needs to be further examined in other research, as such a weak role of educational attainment in occupational mobility may be related to the characteristics of the research sample or the structural characteristics of the labour markets. A favourable labour market position is most often attained by young men who speak German at a very high level in both countries examined. Their advantage stems not from their education, but from their age, gender, and language skills. In contrast, middle-aged or older workers, as well as women, are in a considerably more disadvantaged position in the labour market. This disadvantage arises from demographic factors that negatively affect their labour market outcomes—regardless of the skills or knowledge they may possess that would, in principle, be of value.

3.2.4. The Role of Other Demographic Factors, Degree of Urbanization in the Origin Country and Duration of Stay

In Model 2, we included additional key factors documented in the literature—such as marital status, having children, duration of stay, and the degree of urbanization in country the origin country—as explanatory variables. Including these variables aimed to provide a more nuanced interpretation of the model. The results show that cohabiting with a partner reduces career benefit in Germany (standardized beta = -0.120), while having children does not influence career mobility in either country. This suggests that family status only significantly shapes Hungarian migrants' career perspectives in one of the countries, which is particularly interesting given that the literature strongly emphasizes the relevance of these factors. For example, Grubanov-Boskovic et al. [86] highlight that marriage tends to be associated with a 'Motherhood Penalty' for women and a 'Marriage Premium' for men, pointing to a clear gender-based relationship between these variables. Moreover, the presence of children has been shown to negatively impact women's career prospects

without question [87,88]. We also found no relationship between the degree of urbanization in origin country and career benefit in either country, which suggests that potential labour market disadvantages stemming from territorial disparities in the country of origin are not altered by migration.

The duration of stay has a positive effect on career benefit. This significant relationship can be explained by the fact that individuals who have spent more time in the host country are more likely to have developed broader professional networks and acquired specific work experience, which increases their chances of obtaining higher-quality jobs [75]. For example, Constant and Massey [89] found that in Germany, immigrants' income, occupational prestige, and likelihood of employment significantly increase after approximately 15 years of residence.

In Model 3, we examined the interaction effects of gender with language proficiency and family status on career benefit. From a gender perspective, women's language competencies are shaped by their specific migration situations. Their family roles often prevent them from learning the language in formal or professional settings early in migration, making them more likely to experience downward career mobility [90]. Contrary to findings in the existing literature, we found that women's career disadvantage compared to men is independent of both language proficiency and partnership status—no significant interaction effects were observed. The difficult situation of women is likely to be influenced by other dynamics that cannot be examined in this study, such as structural problems in the labour market. The structural factors hindering the labour market integration of migrant women are complex, and intersectionality theory helps us understand how gender, migration, and social disadvantages reinforce each other. According to a review study by Yazdankhoo et al. [91], European migrant women are particularly affected by loss of professional identity, non-recognition of qualifications and work experience, labour market discrimination, gender segregation, unpaid care work, and lack of childcare infrastructure. Overall, these problems are systemic and result from the combined effects of migration policies, institutional barriers, and gender and race-based discrimination.

4. Discussion

This study introduced the Career Benefit Index (CBI) as a direction-sensitive measure of migration-related occupational mobility, measuring the progression or regression between the original and host labour markets. The CBI does not simply summarize unidimensional movement, but also takes into account multiple aspects—activity status, qualification compliance/non-compliance, position change, recognition of prior experience, career continuity/interruption, and savings changes—thus providing an integrated picture of migrants' career development abroad.

Our findings are consistent with the view that labour market participation is a primary channel of social integration and a prerequisite for longer-term settlement [10,92]. However, the quality and direction of post-migration careers seem to be determined by how the labour markets of the host country "value" individual characteristics, effectively opening or restricting paths to advantageous positions. In this sense, employment is necessary but not sufficient for upward mobility. The CBI patterns show that gender, age, knowledge of the host country's language and length of residence are the most important correlates of the direction of mobility. In contrast, in this case, formal education does not show a systematic relationship with upward or downward mobility. Family circumstances present a more nuanced picture: in Germany, being single is associated with a more favourable trajectory, while being in a relationship and having children are not strong predictors. The degree of urbanisation of the country of origin is also not clearly associated with

career advantages, suggesting that pre-migration territorial disadvantages do not simply “disappear” with relocation.

According to human capital theories [93], there is a strong correlation between migrants’ educational attainment and their position in the labor market, suggesting that individuals’ knowledge and skills clearly contribute to productivity. Better-educated immigrants should achieve higher returns in the labor market than their less-educated counterparts. As a practical application of this approach, ref. [94] notes that wages in labor markets are strongly correlated with productivity-related characteristics such as professional certification, professional licenses, or educational attainment. Based on human capital theory, Chiswick and Miller [95] and Esser [96] emphasize the importance of educational attainment for successful integration into the occupational system of the destination country and consider educational attainment to be a fundamental productivity-related factor for labor market success and advancement. However, our results showed the weakened role of education, which are consistent with prior evidence, pointed out that there is no strong correlation between high educational attainment and labor market position, as positive selection based on educational attainment is negatively correlated with the probability of employment. One interpretation is that the overqualification of Central and Eastern European migrants is due to problems with the recognition of educational qualifications and the difficulties of credential validation, which hinder the portability of educational attainment from the country of origin to the host country. Numerous studies have shown that economic and financial expectations related to migration are often fulfilled in contradictory ways, as a significant proportion of mobile workers in the host country become marginalized, underpaid, or de-skilled in some form [24]. Dumont et al. [25] OECD studies clearly pointed to the deskilling and downward mobility of people with a migration background. For example, in Italy, 27 percent of women with a migration background and 20 percent of men are overqualified for their positions. According to Guhlich [56], half of migrants with foreign degrees in Germany do not work in positions commensurate with their qualifications. However this is at odds with studies documenting positive returns to higher education (e.g., [42,71]). It is worth noting that there are consistent findings across groups and settings (e.g., Miyar-Busto et al. [97] on Spain; Frattini & Cugini [98] on second-generation migrants), suggesting that the relationship between education and employment is contingent on context, institutional filters and the salience of other competencies (e.g., soft skills specific to the host country).

Our results are consistent with well-established evidence of negative selection in the labour markets of host countries for women and older workers [43,60]. The length of time spent in migration plays a key role in the labor market integration of migrants within the EU, although full integration is rare. As the length of stay increases, the probability of employment improves (convergence in employment), as migrants gradually acquire country-specific skills, such as language [43,99]. The pace of catching up is rapid at first, with their employment probability gradually approaching that of natives, but then it mostly slows down, and differences remain even after two decades: in Germany, for example, there is still an employment gap of about ten percentage points after ten years. Research by Guzi et al. [100] confirms that labor market hierarchies persist over time among migrants within the EU. The CBI adds two nuances: the age disadvantage is already evident in middle age, and the disadvantage for women is independent of relationship status or parental status (with the exception of Germany), which is consistent with the double discrimination observed in the EU context [101,102].

A key pattern is the apparent threshold effect, in which only near-native-level (C1–C2) German language skills confer clear career advantages; intermediate-level language skills are indistinguishable from basic-level language skills in terms of orientation. Interpretation

sociologically, high language proficiency in the workplace can act as a marker of trust and homophily, in line with classical mechanisms [103,104]. At this point, we can formulate some hypotheses about why these host countries expect such high levels of language proficiency from their employees and how this may be related to the duration of migration. It is well known that the higher the proficiency of two actors in a common language, the greater the chance of increasing trust between them. A common language therefore strengthens the effect of homophily and increases trust, which promises good cooperation [103]. According to Luhmann [104], trust reduces the feeling of social complexity by replacing missing information with internal security. Let us assume that we interpret this relationship not in terms of the language used by actors in interpersonal interactions, but at the societal level. In this case, higher levels of language use by migrant workers may also promise more effective integration and higher quality work for the host country. Whether this reflects strict work-related communication requirements or a wider range of language choices remains an empirical question, but the result underlines the central role of language in mobility hierarchies.

We do not observe any stark divergencies in the profile of potential winners and losers between Austria and Germany. We find that younger men with very high German proficiency tend to advance, while middle-aged or older workers, women, those without C1–C2 language skills and—in Germany—those in a relationship are more likely to suffer career losses. As these selection mechanisms are not strictly meritocratic, policy measures that focus exclusively on formal education [71,105] may miss the most important tools. Targeted advanced language programmes, recognition/transfer of prior experience and gender-sensitive support (e.g., re-entry from low-skilled entry-level jobs) could be more effective. Otherwise, persistent career loss may increase the intention to return or lead to other integration challenges (e.g., cognitive dissonance [50]; intergenerational effects [106]). This article did not seek to answer what aspects of prestige or status migrant workers have in the foreign labour market. The experienced career loss suggests that the driving force behind settlement or return migration is not fundamentally related to career considerations, but to other factors not examined here, which we will further investigate in the future.

The present case cannot judge all the mechanisms behind the disconnect between education and CBI. Further work is needed to clarify which competencies (beyond schooling) are crucial in each segment, ideally linking measures such as the CBI to administrative wage and occupation codes. Investigating the relationship between language and trust among native and migrant workers could open up promising interdisciplinary directions. Finally, as many Hungarian—and other Central and Eastern European migrants—are first-generation, their early mobility experiences may shape the socialization trajectories of subsequent generations, justifying the use of longitudinal and mixed methods. In conclusion, the CBI provides a compact lens of post-migration directed mobility. It suggests that progress depends less on formal education than on demographics, mastery of the host country's language, and time spent in the field—a configuration that both challenges simple human capital expectations and identifies concrete, actionable tools for policy and practice.

In summary, the development of the CBI has made it possible to analyze dynamics such as demographic characteristics, educational attainment, and language proficiency, which shape career changes resulting from migration. These mechanisms cannot be observed through standard overqualification or wage gap statistics, which focus on structural outcomes rather than relative shifts caused by migration. Accordingly, the CBI is not a substitute for policy evaluation tools such as MIPEX or a competitor to OECD/Eurostat indicators, but rather a complementary tool that compares the career paths of individual migrants to their pre-migration status. In this way, the CBI bridges micro-level career paths

with macro-level integration outcomes and provides additional explanatory power beyond the established measures.

Limitations

This study has several limitations that must be acknowledged. First, the sample of Hungarian-born workers in Austria and Germany was obtained through a voluntary online survey disseminated via social media (rather than through random sampling).

Consequently, certain groups—especially younger, more digitally active individuals—are likely overrepresented, whereas older or less internet-connected migrants may be underrepresented in our data. At the same time, we took deliberate steps to maximize demographic diversity and the clarity of presentation: recruitment was multi-channel (general social-media ads and relevant community groups), and we applied post-stratification weighting on age and gender to better align the sample with the underlying population. We also sought to depict the phenomenon as rigorously as possible by constructing the Career Benefit Index using two alternative methods (z-score and principal-component indices) and by conducting bootstrap robustness checks. Nevertheless, these measures cannot fully eliminate the selection bias inherent in non-random recruitment; therefore, the findings should be interpreted within the context of this sample, and caution is warranted when generalizing to all Hungarian migrants or to other migrant populations with different characteristics.

Importantly, while we weighted by age and gender, we deliberately chose not to weight the data by occupational categories (ISCO). This was a conscious methodological decision rather than an oversight. The study's main focus was on occupational change and restructuring as an outcome of migration. Adjusting the sample to reproduce the occupational distribution of Hungarians abroad would have risked masking the very structural shifts—such as deskilling, stalled careers, or reallocation—that our Career Benefit Index was designed to capture.

Another set of limitations relates to data collection and measurement. All information (including respondents' pre- and post-migration occupational status and skill levels) was self-reported, which raises the possibility of response inaccuracies or biases; for instance, participants might overestimate their German language proficiency or misremember details of their prior employment. In addition, the questionnaire relied on fixed response options for key questions, which may have constrained respondents from fully conveying nuances of their career experiences. Furthermore, the cross-sectional, retrospective design of the survey (collecting data at a single time point with participants recalling their past status) means that we could not directly observe how careers evolve over time or establish clear causal relationships. This primarily quantitative approach also meant that only limited qualitative insight into migrants' subjective career perceptions was obtained within our study's framework.

Finally, as an innovative feature of this research, the Career Benefit Index (CBI)—introduced here as a novel tool to quantify occupational mobility before and after migration—comes with its own limitations. The CBI is focused on changes in formal occupational status between the country of origin and the host country, so other important facets of career progression (such as wage growth, job security, or personal job satisfaction) were outside the scope of our analysis. Moreover, since the index was newly developed and calibrated on this specific sample, its validity and applicability to other migrant populations or contexts remain to be examined. Future research should apply and possibly refine the CBI in different settings and might incorporate additional indicators (or complementary qualitative data) to capture a more holistic picture of career benefits. Given these constraints, and the absence of comprehensive longitudinal data on migrants' careers, we recommend that further studies adopt mixed-methods approaches—combining broad quantitative

analyses with in-depth qualitative insights—to build on our findings. It is important to note that acknowledging these limitations does not diminish the value or originality of the study; rather, it delineates the boundaries of our inquiry and highlights avenues for future research building on the CBI framework.

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Appendix A

Table A1. Variables underlying the Career Benefit Index.

Variable Name	Questionnaire Questions	Variable Values: and Their Meaning
I. changes in labour market activity	Before you moved, what was your labour market status in Hungary? Indicate the status which gave you the highest income (active status: employed, full-time; self-employed; part-time; casual, contract work; public sector, forced self-employed inactive statuses: retired; student; other inactive earner; homemaker; GYES/GYED; early jobseeker; registered unemployed; not registered unemployed) What is your current labour market status in Austria/Germany? Please indicate the most relevant for your situation. (active status: formal, declared full-time job; formal, declared part-time job; casual work, assignments; working in own business; working without a work contract; working partly or entirely in the black; frontier worker; not working inactive statuses: maternity benefit, childcare benefit, care allowance; registered unemployed without benefits; registered unemployed with benefits; not registered unemployed; studying; not working, at home; other inactive earner; homemaker; retired)	–1: changed from active to inactive 0: no change in activity 1: changed from inactive to active

Table A1. Cont.

Variable Name	Questionnaire Questions	Variable Values: and Their Meaning
II. change in position	Has your current job changed since your last job in Hungary before you moved? (yes, I work in a higher position/job with more responsibility; yes, I work in a lower position/job with less responsibility; no, I work in the same position/job with similar responsibility; I cannot say)	–1: yes, I work in a lower grade/position/job with less responsibility 0: no, I work in the same job/position/job with similar responsibilities; I cannot judge 1: yes, I work in a higher position/position with more responsibility
III. recognition of work experience	Are you currently working in Austria/Germany in a field relevant to your work experience in Hungary? (yes/no)	1: yes –1: no
IV. staying on track	Did you work in Hungary in a field relevant to your education before you moved? (yes/no) Are you working in Austria/Germany in a field relevant to your education? (yes/no)	–1: worked in Hungary in a job corresponding to your qualification, but not in Austria/Germany 0: working in Hungary in a job corresponding to your qualification and also in Austria/Germany, 1: or did not work in Hungary in a job corresponding to your qualification and also in Austria/Germany
V. de-qualification indicator	What level of education is required for the most lucrative job in Hungary? (1: no qualification required, 2: general education, 3: vocational education, 4: vocational secondary school, 5: secondary school leaving certificate, 6: OKJ qualification, 7: college degree, 8: university degree, 9: doctorate/PhD degree) What level of education is required for the current job that pays the most? (1: no qualification required, 2: general education, 3: vocational education, 4: vocational secondary school, 5: secondary school leaving certificate, 6: OKJ qualification, 7: college degree, 8: university degree, 9: doctorate/PhD degree)	scale: standardized values of the difference between current and Hungarian educational attainment
VI. change in financial status	Compared to your life in Hungary, how did your household's monthly savings change in Austria? –2: Significantly decreased, –1: Somewhat decreased, 0: No change, 1: Somewhat increased, 2: Significantly increased	scale: standardized values of the current scale

Table A2. Correlation of Career Benefit Index variables in Austria.

Variable1	Variable2	Pearson's Correlation	p Value	N
V1	V2	0.1414	0.0059	379
V1	V3	0.0850	0.0986	379
V1	V4	0.1236	0.0161	379
V1	V5	–0.0247	0.6582	323
V1	V6	–0.0034	0.9483	360
V2	V3	0.1548	0.0025	379
V2	V4	0.3419	0.0000	379
V2	V5	0.0775	0.1646	323
V2	V6	0.1281	0.0150	360

Table A2. *Cont.*

Variable1	Variable2	Pearson's Correlation	p Value	N
V3	V4	0.2803	0.0000	379
V3	V5	−0.0179	0.7481	323
V3	V6	0.0292	0.5805	360
V4	V5	−0.0873	0.1175	323
V4	V6	0.0628	0.2345	360
V5	V6	0.0481	0.3996	308

Table A3. Correlation of Career Benefit Index variables in Germany.

Variable1	Variable2	Pearson's Correlation	p Value	N
V1	V2	0.1184	0.0273	347
V1	V3	0.0939	0.0806	347
V1	V4	0.0949	0.0772	347
V1	V5	0.1316	0.0238	295
V1	V6	0.2062	0.0002	323
V2	V3	0.2512	0.0000	359
V2	V4	0.3734	0.0000	359
V2	V5	0.0371	0.5216	301
V2	V6	0.1235	0.0240	334
V3	V4	0.3817	0.0000	359
V3	V5	0.0063	0.9134	301
V3	V6	0.0680	0.2155	334
V4	V5	0.0662	0.2517	301
V4	V6	0.0700	0.2021	334
V5	V6	0.0686	0.2510	282

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