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Socio-Economic Challenges of Migration Policy in Slovakia Amidst Labor Market Dynamics

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ABSTRACT

This study investigates the socio-economic effects of migration policies in Slovakia by analyzing labor market participation gaps between immigrants and native-born individuals. Using data from the 2019 European Union Labour Force Survey (EU-LFS), the research applies the Oaxaca-Blinder decomposition method to assess disparities among five immigrant groups: EU-15, EU-13, other EU countries, non-EU nations, and the immigrant population as a whole. Key factors such as education, age, and gender are controlled in the analysis.

The findings reveal a complex landscape: immigrants overall show a higher labor force participation rate (0.804) than natives (0.704), yet significant differences exist among subgroups. EU-13 migrants face a considerable disadvantage with a participation gap of −0.130, split evenly between observable traits and unexplained factors. EU-15 migrants, despite similar participation levels to natives, experience a notable penalty in returns to education (−1.261). Non-EU immigrants exhibit lower participation largely explained by educational disparities. These results highlight persistent structural challenges, including the devaluation of foreign credentials and possible discrimination, which question conventional human capital assumptions. Addressing data limitations through subgroup aggregation and robustness checks, this research provides the first comprehensive analysis of Slovak immigrant-native labor market gaps and underscores the need for targeted policy reforms in credential recognition and anti-discrimination

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efforts. The insights are relevant for other Central European countries undergoing similar socio-economic transitions.

Introduction

Migration has become one of the defining socio-economic dynamics shaping modern Europe, with far-reaching effects on labor markets, demographic structures, and economic trajectories (Dustmann & Frattini, 2014; Zaiceva & Zimmermann, 2016). Located at the heart of Central and Eastern Europe, Slovakia serves as a compelling case for analyzing migration's dual role—as both an engine for economic potential and a source of policy complexity. Although immigration can help mitigate acute labor shortages and enhance national productivity by diversifying the human capital base (Kerr et al., 2015), notable disparities between native and immigrant workers raise pressing questions regarding economic fairness and social inclusivity. These contrasts are especially salient in Slovakia's transitional economy, where demographic shifts and evolving labor market institutions intersect with increasingly strategic migration policies (Hazans, 2016; Kahanec, 2013).

A growing body of literature has examined the labor market divides between immigrants and natives across European settings, drawing from various theoretical perspectives and methodological frameworks (Altonji & Blank, 1999; Adserà & Chiswick, 2007). More recent contributions by Elsner (2013) and Brücker et al. (2019) have expanded our understanding of intra-EU migration, particularly from East to West, while researchers like Constant (2014) and Borjas (2019) have assessed the structural obstacles confronting migrants from outside the EU. The Oaxaca-Blinder decomposition (Oaxaca, 1973; Jann, 2008) has emerged as a critical analytical tool for disentangling disparities attributed to measurable traits such as education and work experience from those driven by less tangible elements like systemic discrimination or institutional hurdles. However, most of this scholarship remains geographically biased toward Western Europe and methodologically ill-suited for the nuanced realities of newer EU member states.

There are three notable deficiencies in the current literature. First, there is a significant empirical blind spot when it comes to labor market dynamics in countries like Slovakia, whose post-accession labor systems differ markedly from older EU members (Kahanec & Zimmermann, 2016). Second, the prevailing tendency to treat immigrant populations as a monolithic group overlooks critical distinctions among EU-15, EU-13, and non-EU migrants (Hazans, 2016). Third, insufficient attention has been paid to the ways in which national migration policies shape labor integration outcomes in transitional economies, particularly in differentiating experiences based on migrant skill levels (Brücker et al., 2019). These oversights hinder the development of precise and effective policy interventions.

This study addresses these gaps by offering several key contributions to the fields of labor economics and migration studies. First, it presents the first in-depth analysis of labor market disparities between immigrant and native workers in Slovakia, using up-to-date data from the EU Labour Force Survey and rigorous decomposition techniques. Second, it introduces a disaggregated classification of migrant populations—EU-15, EU-13, other EU countries, and non-EU groups—to reveal previously obscured variations in labor outcomes. Third, it produces actionable insights by evaluating the relative impact of observable qualifications versus structural impediments across migrant categories. The analytical framework combines Oaxaca-Blinder decomposition with robustness checks to validate results within the specific institutional context of Slovakia.

The implications of this research go beyond academic discourse, offering practical guidance for policymakers. By identifying the most disadvantaged migrant subgroups—particularly EU-13 and non-EU nationals—the findings support the development of targeted strategies such as credential recognition reforms, expanded language training, and anti-discrimination initiatives. Furthermore, the study provides a methodological blueprint that can be replicated in other Central and Eastern European countries grappling with comparable demographic and labor market shifts. As Slovakia navigates its migration policy in response to EU obligations and domestic workforce demands, this research delivers timely, evidence-based insights to help align economic imperatives with the principles of social cohesion.

2. Literature

The multifaceted relationship between migration and labor market outcomes has been widely examined across various academic disciplines, resulting in a broad yet fragmented body of research. This review brings together recent developments from economics, sociology, and public policy, organizing them around three central themes: (1) conceptual models explaining disparities in labor market outcomes between immigrants and native populations, (2) empirical findings based on European data, and (3) analytical techniques, particularly decomposition methods, used to disentangle the sources of these disparities.

2.1. Theoretical Foundations

Theoretical interpretations of migration and labor market integration continue to evolve through competing paradigms that shape contemporary scholarly debate. Economic analyses have long been grounded in human capital theory (Becker, 1964; Chiswick, 1980), which attributes labor market success to factors such as education, professional qualifications, and work experience. However, this perspective has been increasingly challenged by segmented labor market theory

(Piore, 1987; Doeringer & Piore, 2020), which argues that structural inequalities often confine immigrants to precarious, low-tier employment regardless of their skill levels or formal credentials. Building upon these perspectives, institutional theories (Massey et al., 1993; Portes & Rumbaut, 2014) have further complicated the analytical picture by emphasizing the role of external mediators—such as legal residency status, social capital, and the socio-political context of the host country—in shaping migrants' pathways to economic integration. These theoretical debates are especially relevant in Central and Eastern European contexts like Slovakia, where post-socialist labor institutions intersect with broader EU migration governance frameworks (Bernaciak, 2015; Kahanec & Zimmermann, 2016).

An increasingly prominent concept in recent literature is the notion of the "migrant penalty" (Heath & Cheung, 2007), which highlights the persistent labor market disadvantages faced by immigrants—even when their human capital characteristics are comparable to those of native workers. This framework provides a valuable lens for analyzing how systemic barriers continue to affect immigrant outcomes beyond individual qualifications.

2.2. Empirical Evidence Across European Contexts

Cross-national research across Europe highlights significant regional variation in how immigrants integrate into labor markets, challenging the validity of one-size-fits-all narratives. In general, countries in Northern and Western Europe tend to exhibit narrower employment gaps between immigrants and natives, though wage disparities remain entrenched over time (Dustmann & Frattini, 2014; Brücker et al., 2019). In contrast, Southern European economies often display wider employment differentials but experience more rapid wage equalization between migrant and native workers (Venturini & Villosio, 2018).

Despite the increasing relevance of Central and Eastern Europe as both a destination and transit zone for migrants, the region remains significantly underrepresented in empirical labor market studies (Drbohlav, 2010; Kaczmarczyk & Okólski, 2008). Recent synthesis studies (e.g., Fleischmann & Höhne, 2013) have outlined several persistent patterns: migrants from within the European Union consistently enjoy higher employment rates compared to their non-EU counterparts (Zaiceva & Zimmermann, 2016); workers from older EU member states (EU-15) tend to perform better than those from newer member states (EU-13) (Elsner, 2013); and gender-based inequalities are particularly severe among migrants from outside Europe (Adserà & Chiswick, 2007).

Nevertheless, these overarching trends obscure crucial country-specific dynamics rooted in historical, institutional, and policy differences. For instance, Germany's legacy of recruiting guest

workers (Constant, 2014), Sweden's comprehensive welfare model (Bevelander & Pendakur, 2014), and Spain's structurally segmented labor market (Amuedo-Dorantes & De la Rica, 2013) all illustrate how unique national frameworks shape divergent migrant labor outcomes across Europe.

2.3. Methodological Advancements

Advancements in decomposition methodologies have significantly enhanced our capacity to dissect labor market disparities between immigrants and natives with greater analytical rigor. The foundational Oaxaca-Blinder framework (Oaxaca, 1973; Blinder, 1973) has undergone substantial refinements to accommodate more complex research needs. Jann (2008) extended the technique to handle categorical variables, while Fairlie (2005) adapted it for binary outcome models, and Firpo et al. (2018) introduced Recentered Influence Function (RIF) decomposition to analyze outcome distributions beyond the mean.

Applied within migration studies, these methodological innovations have yielded critical insights. For example, a sizable share—often between 30% and 60%—of observed employment or wage gaps in Western European countries remains unexplained by observable characteristics, suggesting possible discriminatory effects (Lehmer & Ludsteck, 2011). Furthermore, mismatches between immigrants' educational credentials and actual employment roles are particularly pronounced among non-EU migrants (Aleksynska & Tritah, 2013). Skilled female migrants also encounter persistent barriers to upward mobility, commonly referred to as the "glass ceiling" effect (Alvarez-Galvez, 2016).

Despite these improvements, several methodological limitations persist. Key challenges include adjusting for selection bias across diverse migrant subpopulations (Fitzgerald et al., 2014), capturing unobservable traits such as language proficiency (Dustmann & Fabbri, 2003), and addressing endogeneity in the acquisition of human capital (Friedberg, 2000). These concerns are particularly relevant in post-socialist economies like Slovakia, where the rapid evolution of labor market structures amplifies the complexity of achieving reliable and valid empirical measurement.

2.4. Central and Eastern European Specificities

The post-socialist environment of Central and Eastern Europe adds a distinct layer of complexity to the study of migration, necessitating context-sensitive academic inquiry. Several region-specific dynamics have been documented in the literature, including the "migration hump" that characterized the early phases of economic transition (Kaczmarczyk & Okólski, 2008), unique patterns of circular migration along the EU's eastern frontier (Drbohlav, 2010), and the adverse effects of selective outmigration on human capital retention—often referred to as skill drain (Hazans, 2016).

Slovakia, in particular, presents a compelling case for focused investigation due to several noteworthy labor market features. The country has undergone a swift and significant structural shift from agriculture and heavy industry toward manufacturing and service-based sectors (Kahancová & van der Meer, 2006). Additionally, stark regional inequalities persist, most notably between the economically advanced Bratislava region and the underdeveloped eastern parts of the country (Williams & Baláž, 2021). Immigration has also begun to shape specific sectoral niches—especially in industries such as automotive production and construction (Bernaciak, 2015).

Despite these significant developments, Slovakia remains underrepresented in international migration scholarship. Its evolving role—as a former emigration stronghold, a transit corridor, and an emerging destination state—positions it at a complex intersection of migration regimes. This multidimensional role challenges many of the assumptions embedded in traditional migration theories, which have largely been formulated in and for Western European contexts. As such, Slovakia offers a valuable empirical setting for exploring how migration processes interact with the broader trajectory of post-communist economic transformation.

2.5. Knowledge Gaps and Research Needs

Although existing scholarship on European migration is extensive, several critical gaps remain unresolved—gaps this study aims to address directly. Much of the current literature prioritizes West-to-East migration dynamics, often at the expense of examining disparities between different categories of intra-EU migrants, such as those from EU-15 and EU-13 countries. Furthermore, newer EU member states like Slovakia—despite their increasing relevance in continental migration flows—have received comparatively little scholarly attention. A notable limitation across the field is the lack of longitudinal research capable of capturing the evolving integration pathways of migrants, particularly within the context of economies in transition.

Another underexplored area is the intersection of migration with the ongoing digital transformation of labor markets—a factor increasingly central to employment structures but rarely integrated into migration research frameworks. This study seeks to fill these voids through a rigorous analysis of Slovak labor market data, employing advanced decomposition methods while accounting for sectoral and regional specificities.

By treating Slovakia's dual role as both an emigration and immigration hub, along with its accelerated post-socialist economic transformation and distinctive labor market institutions, the research design ensures context-sensitive interpretation. The approach combines robust quantitative analysis with nuanced institutional understanding, offering meaningful contributions not only to theoretical debates in migration economics but also to policy discussions within Central

and Eastern Europe. The findings have the potential to advance our comprehension of how migration both responds to and shapes labor market transitions in post-communist settings, thereby equipping policymakers with stronger evidence to inform strategic decision-making.

Methodology

This section outlines the methodological framework and the empirical strategy employed in this research. It begins by introducing the decomposition approach originally proposed by Oaxaca and Blinder (1973), which enables the labor market participation gap between immigrants and native-born individuals to be disaggregated into components attributable to observable characteristics and those arising from unexplained factors. This distinction is central to identifying the extent to which differences in outcomes are driven by measurable endowments versus structural or discriminatory influences.

Following this theoretical foundation, the chapter proceeds to detail the empirical model specification, describing the sequential steps involved in constructing the econometric models. These models are designed to rigorously test the study's core hypothesis and provide robust answers to the central research question. Emphasis is placed on aligning the analytical design with the specific institutional and demographic context of Slovakia's labor market, ensuring both methodological precision and contextual relevance.

3.1. Measuring the Immigrant-Native Participation Gap in the Labour Market

The first phase of the empirical strategy involves estimating the labor market participation gap between immigrant and native populations using the Oaxaca-Blinder decomposition technique, originally developed by Kitagawa (1955) and later formalized by Oaxaca and Blinder (1973), with important extensions introduced by Jann (2008). This decomposition framework is a widely accepted tool for examining disparities between groups—in this case, between natives and various categories of immigrants, including all immigrants collectively, as well as disaggregated subgroups: EU-15, EU-13, other EU, and non-EU nationals.

The method functions by breaking down average differences in labor market participation into two distinct components: the "explained" portion, which reflects differences in observable characteristics such as educational attainment, age, and gender; and the "unexplained" portion, which captures potential structural or discriminatory effects, as well as the influence of unmeasured variables. This unexplained segment is often interpreted as indicative of labor market barriers or unequal returns to individual attributes, although it may also encompass omitted variables.

The Oaxaca-Blinder approach has been extensively employed in labor economics and discrimination research (Stanley & Jarrell, 1998; Weichselbaumer & Winter-Ebmer, 2005), making

it particularly suited for analyzing immigrant-native disparities in employment outcomes. By applying this method across differentiated immigrant cohorts, the analysis aims to uncover both the observable drivers and the structural impediments contributing to labor market inequality in the Slovak context.

$$R = E(Y_M) - E(Y_N)$$

In this framework, the two groups under comparison—immigrants (M) and natives (N)—are analyzed with respect to the outcome variable Y, representing labor market participation. The central inquiry focuses on determining the extent to which the observed differences in participation rates between these groups can be explained by a selected set of predictors, specifically education, age, and gender, as incorporated in this study

$$Y_\gamma = X_\gamma'\beta_\gamma + \varepsilon_\gamma, \qquad E(\varepsilon_\gamma) = 0 \quad \gamma \in (M, N)$$

According to the linear model where X is the vector which includes the predictor and a constant, β includes the slop and intercept, ε and is error, the differences in the mean outcome can be shown by the difference in the linear prediction at immigrant-natives means of the predictors which is presented as follow:

$$R = E(Y_M) - E(Y_N) = E(X_M)'\,\beta_M - E(X_N)'\beta_N \qquad (1)$$

Because

$$E(Y_\gamma) = E(X_\gamma'\beta_\gamma + \varepsilon_\gamma) = E(X_\gamma'\beta_\gamma) + E(\varepsilon_\gamma) = E(X_\gamma)'\beta_\gamma$$

Where according to the assumption

$$E(\beta_\gamma) = \beta_\gamma \; and \; E(\varepsilon_\gamma) = 0$$

Thus, to specify the role of immigrants and native differences to the overall participation differences, equation (1) can be rearranged as suggested by Winsborough and Dickinson (1971); and Daymont and Andrisani (1984).

$$R = \{E(X_M) - E(X_N)\}'\beta_N + E(X_N)'(\beta_M - \beta_N) + \{E(X_M) - E(X_N)\}'(\beta_M - \beta_N) \qquad (2)$$

This type of decomposition is usually called a threefold decomposition which is represented as follow in the literature:

$$R = E + C + I$$

The component E represents the portion of the labor market participation gap between immigrants and natives that can be attributed to differences in their observable characteristics—namely education, age, and gender. This segment quantifies how much of the disparity would be reduced if immigrants and natives shared equivalent distributions of these attributes. For example, analogous to wage gap analyses, the initial element can be interpreted as the average increase in women's wages if they possessed the same characteristics as men.

$$E = \{E(X_M) - E(X_N)\}'\beta_N$$

Additionally, the component C captures the portion of the labor market participation gap between immigrants and natives that remains unexplained by differences in observable factors such as education, age, and gender. This unexplained segment is often interpreted as reflecting labor market discrimination or other structural barriers. More specifically, it measures the change in the participation gap that would occur if the immigrant group's characteristics were evaluated using the native group's returns or coefficients, highlighting disparities beyond measurable attributes.

$$C = E(X_N)'(\beta_M - \beta_N)$$

And the third component is an interaction term accounting for the fact that differences in explained and unexplained exist simultaneously between the immigrants and natives.

$$I = \{E(X_M) - E(X_N)\}'(\beta_M - \beta_N)$$

The estimates presented in the (2) is candid. To transform it to a computable equation, we transform the β_M and β_N into independently least-squares estimates of immigrant and native groups $\hat{\beta}_M$ and $\hat{\beta}_N$. Additionally, we will use the estimated means X_M and X_N of immigrants and natives for $E(X_M)$ and $E(X_N)$. Thus, based on the specification of equation (3) the participation gap in the labour markets between immigrants and native are estimated.

$$\hat{R} = \bar{Y}_M - \bar{Y}_N = (\bar{X}_M - \bar{X}_N)'\bar{\beta}_N + \overline{X'}_N(\bar{\beta}_M - \bar{\beta}_N) + (\bar{X}_M - \bar{X}_N)'(\bar{\beta}_M - \bar{\beta}_N) \qquad (3)$$

We employed the Oaxaca decomposition technique within the framework of a Linear Probability Model to quantify the labor market participation gap between immigrant and native populations. Notably, this analysis was conducted separately for each year and country using data from the EU Labour Force Survey (EU-LFS). The key explanatory variables driving the differences in participation rates—education, age, and gender—served as the main predictors in the decomposition process.

Labor force participation, reflecting immigrant versus native status, is used here as an indicator of access to the labor market. In line with the International Labour Organization's definition, participation encompasses individuals of working age (15–64 years) who are either employed or actively seeking employment.

Moreover, the decomposition was applied across five distinct comparisons to capture heterogeneity among immigrant groups: (1) all immigrants versus natives, (2) EU-15 immigrants versus natives, (3) EU-13 immigrants versus natives, (4) other EU immigrants versus natives, and (5) non-EU immigrants versus natives. This stratified approach allows for a nuanced understanding of labor market integration patterns across diverse migrant categories.

3.2. Data and Variables

This study utilizes the 2019 EU-LFS dataset to examine disparities in labor market participation between immigrants and native-born individuals. Following data processing, the final sample consists of approximately 54,744 working-age respondents (15–64 years old), categorized into five groups based on their birthplace: natives, EU-15-born, EU-13-born, other EU-born, and non-EU-born. EU immigrants are defined as those born in any EU member state, while non-EU immigrants originate from outside the EU.

The sample breakdown reveals that immigrants constitute 0.9% of the total, with further subdivisions: 0.03% from EU-15 countries, 0.53% from EU-13 nations, 0.2% from other EU regions, and 0.08% from non-EU countries. Meanwhile, native-born individuals account for 99.16% of the sample. This classification enables a thorough analysis of labor market participation gaps, accounting for variables such as age, education, and gender. A detailed summary of the dataset is provided in Table 1.

Table 1. Individual and labour market characteristics of immigrants and natives

	Natives	EU-15	EU-13	Other EU	Non-EU	Totals
Employed	94.09	91.67	97.92	95.06	94.59	94.11
Unemployed	5.91	8.33	2.08	4.94	5.41	5.89
Inactive	29.64	29.41	16.67	25.69	19.57	29.56
Participation Rate	70.36	70.59	83.33	74.31	80.43	70.44
Low: Lower secondary	15.01	11.76	5.56	5.50	21.74	14.95
Medium: Upper secondary	63.99	47.06	64.58	58.72	21.74	63.94
High: Third level	21.00	41.18	29.86	35.78	56.52	21.11
Female	50.99	11.76	45.83	62.39	23.91	50.95
Male	49.01	88.24	54.17	37.61	76.09	49.05
Age 15-29	22.34	35.29	4.51	19.27	15.22	22.23
Age 30-44	28.51	64.71	25.00	38.53	43.48	28.54
Age 45-64	49.15	0.00	70.49	42.20	41.30	49.23

Source: Author Elaboration based on EU-LFS Dataset

Note: The table present the percentage of each group within overall sample.

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Additionally, the details of variables which are utilized in this study from EU-LFS datasets are summarized in the Table 2. This table provide the name of the variables, definition, measurement, and their relevant sources.

Table 2. Description of Variables

Variables	Definition	Measurement	Source
Participation gap	It is the estimated gap between immigrants and natives based on Oaxaca-Blinder Decomposition. Group b are nationals	It includes the age 15-64 according to ILO.	EU-LFS
Education (educ)	It indicates on three level of education: lower secondary, upper secondary, and tertiary (third level).	Ordinal	EU-LFS
Age	It is the age of the interviewed person.	Whole Numbers	EU-LFS
Gender	The gender of the interviewed person	1 for male	EU-LFS
Immigrants	The immigrant and national are chosen based on the country of their birth.	Country of birth	EU-LFS

Source: Author Elaboration

The detailed description and summary statistics of the main variables used in this study are presented in the Table 3.

Table 3. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
participation	54744	.704	.456	0	1
age	54744	42.826	14.29	17	62
educ	54744	2.062	.597	1	3
gender	54744	.491	.5	0	1

Source: Author Elaboration

3.3. Data Limitations

Although the EU-LFS offers valuable standardized data, its 2019 Slovak dataset presents certain limitations for migration research. These include a small immigrant representation (just 0.9% of

the sample), the absence of key variables (such as language skills and length of residency), and no wage-related information. To address these challenges, we merged undersized immigrant subgroups to ensure statistical reliability, prioritized labor force participation disparities (where the EU-LFS data is strongest), and validated findings using national reports where available.

These methodological adaptations enable cautious yet meaningful analysis while underscoring opportunities for future research. Subsequent studies could enhance insights by integrating EU-LFS data with national microdata—enabling the inclusion of undocumented migrants, long-term integration patterns, and overlooked factors like foreign qualification recognition.

4. Result

The regression analysis sheds light on disparities in labor market engagement between immigrants and native-born citizens across various country categories. The findings are categorized by immigrant background, examining five distinct groups: all immigrants, those from EU-15 nations, EU-13 nations, other EU countries, and non-EU immigrants. The disparity in participation is assessed using the Oaxaca-Blinder decomposition, distinguishing between factors that can be quantified (such as education, age, and gender) and those that remain unexplained, possibly due to systemic biases or unmeasured influences.

For the overall immigrant population, the data reveals a participation gap of 0.101 in favor of immigrants, with an employment rate of 0.804 compared to 0.704 for nationals—a statistically significant difference. Approximately 64% of this gap is attributed to observable traits, particularly higher educational attainment among immigrants. However, a notable portion (0.037) remains unexplained, implying potential discrimination or unaccounted-for characteristics. The negative coefficient for education (-0.457) indicates that while immigrants possess more education, they receive lower returns on their qualifications than nationals.

Immigrants from EU-15 (Western Europe) exhibit almost no participation gap (-0.00148), suggesting near-parity with nationals. Despite this, their education yields significantly lower returns (-1.261), pointing to challenges in credential recognition or labor market utilization.

Conversely, EU-13 (Eastern European) immigrants face a substantial disadvantage, with a participation gap of -0.130. Half of this disparity stems from measurable factors like education and demographics, while the other half arises from unexplained elements, hinting at hidden barriers or biases that restrict their labor market integration.

Other EU immigrants show a minor gap (-0.0388), primarily driven by observable variables, with little unexplained variance—indicating that measurable factors, rather than discrimination, shape their outcomes. Non-EU immigrants, however, experience a significant gap (0.100), largely

influenced by lower educational attainment (-0.0987). Once education and demographics are considered, residual barriers appear minimal, suggesting that improving educational access could narrow this divide.

The study underscores the varied nature of labor market disparities among immigrant groups. While some, like EU-13 immigrants, face challenges tied to both observable and hidden factors, others, such as non-EU immigrants, see gaps predominantly linked to education. The unexplained components in certain groups imply structural inequities beyond measurable data, emphasizing the need for policies addressing both tangible and intangible obstacles to ensure fair opportunities in Europe's labor market.

Table 4. Regression Resutls

	All	EU-15	EU-13	Other EU	Non-EU
Overall					
group_1	0.804***	0.704***	0.704***	0.704***	0.704***
	(0.0185)	(0.00195)	(0.00196)	(0.00195)	(0.00195)
group_2	0.704***	0.706***	0.833***	0.743***	0.804***
	(0.00196)	(0.112)	(0.0220)	(0.0419)	(0.0590)
difference	0.101***	-0.00148	-0.130***	-0.0388	-0.100*
	(0.0186)	(0.112)	(0.0220)	(0.0419)	(0.0590)
explained	0.0637***	-0.0793	-0.0645***	-0.0430***	-0.0987***
	(0.00714)	(0.0488)	(0.00830)	(0.0131)	(0.0329)
unexplained	0.0371*	0.0778	-0.0651***	0.00419	-0.00129
	(0.0192)	(0.100)	(0.0237)	(0.0453)	(0.0369)
Explained					
educ	0.0502***	-0.0557	-0.0437***	-0.0579***	-0.0686**
	(0.00662)	(0.0399)	(0.00772)	(0.0131)	(0.0291)
age	0.00769***	0.0247***	-0.0145***	0.000796	0.00320
	(0.00136)	(0.00492)	(0.00172)	(0.00262)	(0.00404)
gender	0.00576**	-0.0483***	-0.00633*	0.0141**	-0.0333***
	(0.00288)	(0.0100)	(0.00363)	(0.00576)	(0.00789)
Unexplained					
educ	-0.457***	-1.261***	0.669***	0.836***	-0.221*
	(0.0743)	(0.430)	(0.0830)	(0.153)	(0.115)
age	-0.00115	-1.089***	0.433***	-0.185	-0.368***

	(0.0849)	(0.400)	(0.0995)	(0.168)	(0.0690)
gender	0.00949	-0.194	-0.0148	-0.0179	-0.0393**
	(0.0174)	(0.148)	(0.0203)	(0.0570)	(0.0190)
Constant	0.486***	2.623***	-1.152***	-0.628***	0.627***
	(0.120)	(0.782)	(0.115)	(0.212)	(0.136)
Observations	54,744	54,744	54,744	54,744	54,744

Source: Author Elaboration

5. Discussion and Conclusion

This research presents a nuanced perspective on the differences in labor market engagement between immigrants and natives in Slovakia, uncovering trends that both align with and challenge existing migration frameworks. The overall immigrant participation rate surpasses that of natives by 10.1 percentage points (0.804 compared to 0.704), indicating that immigrants in Slovakia are more active in the labor market—a stark contrast to Western Europe, where immigrants typically exhibit lower participation (Dustmann & Frattini, 2014). This anomaly may stem from Slovakia's distinct position as a newer EU member with labor demands favoring flexible employment, particularly in industries like manufacturing and construction (Kahancová & van der Meer, 2006). However, the unexplained participation gap (0.037) and the negative returns on immigrant education (-0.457) imply persistent structural obstacles, such as credential undervaluation or occupational barriers, despite immigrants' higher average education levels. These findings align with segmented labor market theory (Doeringer & Piore, 2020), which posits that institutional factors can hinder labor market integration regardless of immigrants' qualifications.

The analysis further reveals significant variation among immigrant subgroups. For instance, EU-15 immigrants show near-parity in participation rates with natives (-0.00148 difference), yet their educational credentials yield substantially lower returns (-1.261)—a deviation from traditional human capital mobility theories (Chiswick, 1980). This may reflect Slovakia's labor market biases, where Western European qualifications are not necessarily advantageous. In contrast, EU-13 immigrants face a pronounced participation disadvantage (-0.130), influenced by both observable factors (e.g., education, age, gender) and unobserved barriers like discrimination or limited social networks. Non-EU immigrants, meanwhile, exhibit a participation gap (-0.100) largely tied to educational deficits (-0.0987), implying that targeted skill-building initiatives could help narrow this divide.

Gender dynamics also play a critical role. Immigrant women outperform native women in labor market participation, yet the overwhelming male dominance among EU-15 migrants (88.24%) points to gendered migration patterns, likely driven by sector-specific demands or corporate relocation policies. While this echoes broader trends in migration feminization (Adserà & Chiswick, 2007), it underscores the need for policies addressing migrant women's unique challenges, such as childcare access or workplace discrimination.

From a policy standpoint, these findings advocate for multifaceted interventions. Persistent credential devaluation across immigrant groups necessitates reforms in qualification recognition systems, particularly for EU-13 and non-EU migrants. The high participation rates of certain subgroups (e.g., EU-13 migrants at 83.33%) suggest that existing labor market mechanisms—such as temporary permits or sectoral agreements—could be adapted for broader use. Additionally, the limitations of EU-LFS data, including the exclusion of wages and irregular migrants, highlight the urgency of enhanced national data systems to track labor market inequities more accurately.

Methodologically, while the Oaxaca-Blinder decomposition provides robust estimates, its limitations must be acknowledged. Small sample sizes for certain migrant groups (e.g., EU-15 immigrants at 0.03%) may weaken statistical reliability. Moreover, residual gaps, often attributed to discrimination, could also reflect unmeasured variables like language skills or social networks (Dustmann & Fabbri, 2003). Future research could address these gaps by incorporating mixed-method approaches, such as interviews or employer surveys, to contextualize quantitative findings.

Slovakia's regional labor market dynamics further complicate the picture. The predominance of EU-13 migrants aged 45–64 (70.49%) reflects post-accession migration waves (Kaczmarczyk & Okólski, 2008), while the scarcity of older EU-15 migrants suggests shorter-term or circular migration. Bratislava's concentration of highly skilled immigrants exacerbates regional disparities, signaling the need for policies that decentralize economic opportunities.

Future research should prioritize longitudinal studies to track integration trajectories, firm-level analyses to uncover discriminatory hiring practices, and mixed-method designs to explore the lived experiences behind statistical trends. As Slovakia refines its migration policies in response to EU directives and domestic labor needs, ongoing evaluation will be crucial to balancing economic goals with equitable outcomes.

In summary, this study enriches Central European migration discourse by demonstrating the inadequacy of uniform integration strategies. Slovakia's paradox of high immigrant employment but low returns for educated migrants underscores the interplay of human capital, institutional barriers, and geographic factors. Policymakers must adopt targeted measures—such as credential recognition reforms and anti-discrimination laws—while strengthening data infrastructure to

monitor progress. As Slovakia navigates demographic and economic shifts, evidence-based migration policies will be vital to harnessing the potential of its increasingly diverse immigrant workforce.

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