The Role of Foreign Workers in the Evolution of Employment in the Construction Sector: A Comparative Analysis of Selected Central European Countries

Michał Kot [1]

[1] Częstochowa University of Technology, Poland
ORCID: 0000-0002-5449-593X
e-mail: michal.kot@pcz.pl

Abstract

The article brings a novel perspective, integrating a comparative analysis of six countries (Poland, Czech Republic, Slovakia, Hungary, Lithuania, and Germany) with the impact of contemporary crises (the pandemic, the war in Ukraine) and the Green Deal on the role of migrants in construction. Its uniqueness lies in capturing the evolution of migrants from cheap labour to skilled professionals in a regional context. The goal of the study is to identify and compare the impact of foreign workers on employment in the construction sector between 2014 and 2024, to provide data for migration and integration policies and projections for the future of the region in the face of demographic and economic challenges. The methodology is based on a mixed approach: quantitative (statistical analysis of data from the CSO, Eurostat, OECD, and national offices) and predictive (extrapolation of trends to 2030). Data for 2024 were estimated based on trends from 2014–2023, considering migration, policies, and demand for skills in sustainable construction. The research sample covers the construction sector in six Central European countries, with a focus on migrants' employment (legal and illegal), their qualification structure, and migration policies. The results show a significant increase in the number of migrants: in Poland by 150% (47,000 to 140,000) and in Germany by 66.7% (278,000 to 504,000), driven by investment and the influx of Ukrainians. The employment structure is evolving – in Poland, the proportion of unskilled workers fell from 75% to 60%, while specialists rose from 5% to 10%. Projections show further growth (Poland: 160,000; Germany: 550,000 by 2030). Liberal policies (e.g. Poland +156%) are more effective in increasing migrant contributions than restrictive ones (Hungary +117%). Recommendations include simplification of procedures, training and integration, and strengthening the role of migrants in sector transformation.

Key words

foreign workers, labour migration, construction sector, employment, migration policy, Central Europe.

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Introduction

The construction sector in Central European countries has undergone a dynamic transformation over the past decade, determined by growing demand for infrastructure and resource upgrades in countries such as Poland, the Czech Republic, Slovakia, Hungary, Lithuania, and Germany. These investments, supported by EU funds such as NextGenerationEU and national pandemic recovery programmes, have increased pressure on labour markets facing local labour shortages (Eurostat, 2023). Aging populations, emigration to the West, and a decline in the number of technical graduates are further exacerbating these deficits (OECD, 2022). In this context, foreign workers have become a key pillar of the sector, enabling ambitious projects such as highways, housing developments, factories and renewable energy sources in line with the European Green Deal (Hainsch et al., 2022). Their role increased after the COVID-19 pandemic, which disrupted supply chains and revealed construction's

reliance on a mobile workforce (Frey & Osborne, 2020). Since 2022, the war in Ukraine has accelerated the influx of Ukrainians, changing employment dynamics in the region (Kamyshnykova, 2023). Globally, migrants have long driven major investments – in the United Arab Emirates they have built modern metropolises, in Qatar they have erected infrastructure for international sporting events, and in Singapore they have transformed the city into Asia's financial centre, highlighting their transformative potential (Wagle, 2024).

The literature indicates that labour migration alleviates labour shortages, but raises challenges related to integration, regulation, and social costs (Anderson et al., 2021). In Central Europe, the importance of migrants is particularly evident in the face of the energy crisis, which is driving up the price of construction materials and increasing the need for rapid infrastructure projects (Jakovljevic et al., 2021). In Poland and the Czech Republic, for example, migrants are supporting an investment boom, while in Germany, immigration policies are attracting professionals from the region (Schäfer & Henn, 2023). Current events, such as Brexit, tighter post-pandemic border controls, and sanctions related to the war in Ukraine, are complicating migration flows, affecting the availability of workers (Portes & Springford, 2023). At the same time, the Green Deal requires new skills, putting migrants at the centre of the sector's transformation (European Commission, 2023). Their role in construction goes beyond mere employment – they are a driver of economic resilience in times of crisis (Alessi et al., 2020).

Interest in the topic stems from the construction sector in Central European countries and its growing reliance on migrants to enable continued investment in the face of demographic, economic, and geopolitical challenges such as war and the pandemic. Their importance, while globally recognised, needs to be better understood in a regional context.

The literature focuses on the overall effects of migration (Borjas, 2019) or the impact of automation on the construction industry (Frey & Osborne, 2020), but there is a lack of detailed comparative analyses of the role of foreign workers in the construction sector in Central Europe, especially in the context of their contribution to employment in times of current crises and the Green Deal.

The goal is to identify and compare the impact of foreign workers on employment in the construction sector in Poland, the Czech Republic, Slovakia, Hungary, Lithuania, and Germany between 2014 and 2024 to provide data for migration and integration policies in the face of contemporary challenges. We examine how migrants are shaping the labour market and what this means for the region's future. Research Questions:

1. How have foreign migrants affected the dynamics of construction employment in Central Europe between 2014 and 2024?
2. What are the differences in the role and impact of migrants between countries in the region in the context of current events?
3. What policies and social strategies can increase the contribution of migrants to the construction sector in the face of contemporary challenges?

1. Literature Review

1.1 Theoretical basis of labour migration in the context of construction

Labour migration in the construction sector is well established in the literature through a variety of theoretical frameworks. The push-pull model (Lee, 1966) is a starting point, but Seemann et al., (2021) extends it to include institutional factors such as migration policies and differences in labour standards, which gained prominence after the COVID-19 pandemic. Neoclassical migration theory (Harris & Todaro, 1970) emphasizes income differences as a motivation, which Kamyshnykova (2023) relate to the influx of Ukrainians after 2022 in response to the war. Labour market segmentation theory (Felbo-Kolding et al., 2019) indicates that migrants occupy segments with high demand for unskilled labour, which Schäfer& Henn (2023) confirm in Central European construction. Wallerstein's (1974) dependency theory suggests that migration from peripheral

countries supports the development of more advanced economies, which Gereffi (2019) links to the global flow of labour to infrastructure sectors.

De Haas's et al. (2019) institutional approach emphasizes the role of recruitment agencies and social networks in directing migrants to construction, as Kurekova and Zilincikova (2023) observe in the influx of workers from Eastern Europe. Stoklosa et al., (2021) point to the risk of exploitation due to information asymmetries, which ILO (2023) reports confirms in the context of difficult post-pandemic working conditions. Anderson et al., (2021) introduce a complementarity perspective, suggesting that migrants complement the local labour force, increasing sector productivity, which is key to the Green Deal (Hainsch et al., 2022). Vasyltsiv et al., (2023) add that migration increases the flexibility of labour markets, which helps absorb economic shocks such as the energy crisis (Jakovljevic et al., 2021). These theories form a solid basis for analysing the role of migrants in construction in the face of contemporary challenges.

1.2 Historical and contemporary importance of migrants in the construction industry

Historically, migrants have played a key role in construction. In the 19th-century United States, Irish and Chinese labourers-built railroads and canals, fuelling infrastructure development under difficult conditions (Wan, 2022). In post-war Germany, Turkish "guest workers" rebuilt cities in the 1960s and 1970s (Chin, 2019), and in Australia, migrants from Italy and Greece erected power plants and highways in the 1950s and 1960s (Dellios, 2020). Today, Latin American migrants in the US are boosting construction productivity, which Caiumi & Peri (2024) attributes to their ability to alleviate labour shortages. In the UK, after the 2004 EU enlargement, migrants from Central and Eastern Europe dominated the construction sector, especially in London, although Brexit has changed these dynamics (Portes & Springford 2023). In the Gulf countries, Asian migrants are building metropolises, albeit under difficult conditions, which Wagle. (2024) link to global inequalities.

In Central Europe, migrants are key in responding to current events (Cabinova et al., 2024; Surya et al., 2024). The war in Ukraine has increased the influx of Ukrainians, which Kamyshnykova (2023) describe as a "supply shock" to construction, supporting infrastructure projects. The COVID-19 pandemic revealed the sector's reliance on migrants when travel restrictions halted construction (Frey & Osborne, 2020). The energy crisis raised the cost of materials, which increased pressure to quickly complete projects where migrants play a key role (Eurostat, 2023). King et al. (2020) emphasize that migrants mitigate the effects of aging populations, and Vasyltsiv et al., (2023) point out that their presence increases the sector's flexibility during periods of economic instability, which is important in the era of the Green Deal (European Commission, 2023).

1.3 Socio-economic aspects of migration in the construction industry

The economic impact of migration in the construction industry is complex (Owusu et al., 2023). Borjas (2019) suggests that migrants may lower wages for local workers in the short term, but Marois et al. (2020) argue that they increase productivity in the sector in the long term, as evidenced by data from Central Europe. Hack-Polay (2020) points to integration challenges - migrants create ethnic enclaves, which facilitates adaptation but hinders advancement, as Favell (2019) observes in the region. Migration policies are key: Fox-Rush & Rush (2022) note that liberal regulations increase labour supply, but without integration lead to inequality, a trend that intensified after 2022 (Kurekova & Zilincikova, 2023). Migrants bring a diversity of skills, which Knudsen et al., (2023) link to innovation, such as in the sustainable construction required by the Green Deal (Hainsch et al., 2023).

IOM (2023) stresses that improving migrant labour conditions is essential, especially after the pandemic and war in Ukraine, which has increased pressure on labour markets. Gavonel et al., (2021) point out that migration reflects global inequality, which requires sustainable policies. For example, the influx of Ukrainians after 2022 increased competition in the labour market, but also accelerated infrastructure projects (Kamyshnykova, 2023; Tiutiunyk et al., 2024). Tightening migration policies after Brexit and the pandemic further complicate the situation (Ciupijus et al., 2023). Migrants are

thus not only a labour force, but also a social and economic factor shaping the future of construction (Oumansour & M'ssiyah, 2024; Korcsmaros et al., 2024).

2. Methodology

The study aimed to analyse the impact of foreign workers on employment in the construction sector in Poland, the Czech Republic, Slovakia, Hungary, Lithuania and Germany between 2014 and 2024, assess future trends until 2030, and develop recommendations for migration and integration policies in the context of challenges such as the Green Deal and labour shortages. A mixed approach was used: quantitative and predictive.

The quantitative part used data from the CSO, Eurostat, OECD and national statistical offices (CSU, SUSR, KSH, Statistics Lithuania, Destatis), supplemented by reports from PIP, EURES, Spectis and IOM. Data included employment, share of foreigners and number of companies. Values for 2024 were estimated extrapolating trends from 2014-2023 (no complete data available as of February 28, 2025). The analysis was based on statistical methods: dynamics of change and cross-country comparisons, with results in tables. For the projections (2024-2030), extrapolation of trends was used, taking into account stabilization of migration, automation and demand for RES qualifications (Table 10). Analysis of migration policies (Table 8) was used for recommendations.

A quantitative approach was chosen for comparability of data, complemented by forecasts and policy assessments to answer research questions and propose strategies to enhance the role of migrants. Limitations include estimates for 2024 and incomplete data on the shadow economy, although reliable sources provided a solid base.

The objective was expanded beyond analysis to include: (1) identification of the impact of migrants, (2) projections of employment trends, and (3) recommendations for policies to support the construction sector. The study provides data and practical guidance for the future of the region, consistent with the full research process.

3. Research Results

The dynamics of change in the number of construction companies in Poland, the Czech Republic, Slovakia, Hungary, Lithuania and Germany from 2014 to 2024 are shown below. The figures reflect the evolution of the construction sector in these countries, taking into account both the impact of economic factors, such as infrastructure investments and EU funds, and social factors, including migration and demographic changes. The period 2014-2024 allows an assessment of long-term trends in the Central European region, where the construction sector plays a key role in the economy. The values for 2024 are estimates, based on extrapolation of trends from previous years, as full statistics for that year are not yet available (as of February 26, 2025). The information includes both numerical changes (in thousands) and percentage changes, making it easier to compare the growth or decline in the number of companies between countries (Table 1).

Table 1. Dynamics of change in the number of construction companies in selected Central European Countries (2014–2024).

Country	2014 (thousands)	2016 (thousands)	2018 (thousands)	2020 (thousands)	2022 (thousands)	2024* (thousands)	Change 2014-2024 (%)
Poland	89.0	90.2	91.5	92.5	95.2	96.8	+8.76%
Czech Republic	51.5	52.0	52.5	53.0	54.1	55.0	+6.80%
Slovakia	18.5	18.8	19.2	19.8	20.3	20.7	+11.89%
Hungary	36.8	37.2	37.8	38.2	39.0	39.6	+7.61%
Lithuania	11.8	12.0	12.2	12.4	12.8	13.0	+10.17%
Germany	77.0	77.8	78.5	79.5	80.8	82.2	+6.75%

Note: * – estimated.

Source: Central Statistical Office (2024c); Czech Statistical Office (2023b); Statistical Office of Slovakia (2023b); Hungarian Statistical Office (2023b); Statistics Lithuania (2023a); Destatis (2024b); Eurostat (2024e); Spectis (2024a).

Between 2014 and 2024, the number of construction companies increased in all the Central European countries analysed. Slovakia recorded the highest percentage growth (+11.89%), increasing the number of companies from 18.5 thousand to 20.7 thousand, Lithuania achieved +10.17% (from 11.8 thousand to 13.0 thousand), and Poland +8.76% (from 89.0 thousand to 96.8 thousand), showing the largest numerical increase (+7.8 thousand). Hungary recorded an increase of +7.61% (from 36.8 thousand to 39.6 thousand), the Czech Republic +6.80% (from 51.5 thousand to 55.0 thousand), and Germany +6.75% (from 77.0 thousand to 82.2 thousand), with the second largest numerical increase (+5.2 thousand). The aggregate conclusions point to positive dynamics in the region, driven by infrastructure investment, EU funds and migration, although the scale and pace of growth vary depending on local economic and demographic conditions.

Legal employment in the construction sector in Poland, the Czech Republic, Slovakia, Hungary, Germany and Lithuania from 2014 to 2024, along with the percentage dynamics of change, is presented below based on estimates and data from national statistical offices (Table 2).

Table 2. Legal employment in the construction sector in selected Central European Countries (2014-2024) and the dynamics of change.

Country	Legal employment 2014 (thousands)	Legal employment 2024 last quarter (thousands)	Dynamics of change 2014-2024 (%)	Sources of information
Poland	440	510	+15.9%	CSO, Eurostat, PIP reports
Czech Republic	245	265	+8.2%	CSU, Eurostat, EURES reports
Slovakia	125	135	+8.0%	SUSR, Eurostat
Hungary	195	205	+5.1%	CCC, Eurostat
Lithuania	72	67	-6.9%	Statistics Lithuania, Eurostat
Germany	2280	2420	+6.1%	Destatis, Eurostat, Bundesagentur für Arbeit reports

Source: Central Statistical Office (2024d); State Labour Inspectorate (2023); Czech Statistical Office (2023b); Statistical Office of Slovakia (2023b); Hungarian Statistical Office (2023b); Statistics Lithuania (2023a); Destatis (2024b); Eurostat (2024a).

Poland recorded the highest employment growth (+15.9%), thanks to infrastructure investments and an influx of migrants. The Czech Republic (+8.2%) and Slovakia (+8.0%) showed stable growth, driven by EU funds. Hungary (+5.1%) grew at a slower pace due to labour outflows. Germany (+6.1%) increased employment due to labour demand. Lithuania recorded a decline (-6.9%) through emigration. Overall employment (legal and illegal) in the construction sector in selected Central European Countries from 2014 to 2024, along with the dynamics of change and the estimated share of illegal labour, is presented below based on statistical data and reports (Table 3).

Table 3. Employment in the construction sector (legal and illegal) in selected Central European Countries (2014-2024) and the dynamics of change.

Country	Employment (thousands) 2014	Employment (thousands) 2024	Dynamics of change 2014-2024 (%)	Share of illegal employment 2014 (%)	Share of illegal employment 2024 (%)
Poland	470	560	+19.1%	6.4%	8.9%
Czech Republic	255	280	+9.8%	3.9%	5.4%
Slovakia	130	145	+11.5%	3.8%	6.9%
Hungary	205	220	+7.3%	4.9%	6.8%
Lithuania	77	72	-6.5%	6.5%	6.9%
Germany	2320	2520	+8.6%	2.2%	4.0%

Source: Central Statistical Office (2024a); State Labour Inspectorate (2023); Czech Statistical Office (2023b); Statistical Office of Slovakia (2023a); Hungarian Statistical Office (2023a); Statistics Lithuania (2023b); Destatis (2024a); Eurostat (2024c).

Poland stands out with the highest growth (+19.1%), mainly due to a construction boom and a growing shadow economy (from 6.4% to 8.9%). The Czech Republic (+9.8%) and Slovakia (+11.5%) increased employment, including illegals (to 5.4% and 6.9%). Hungary (+7.3%) and Germany (+8.6%) saw moderate growth, with illegal employment rising to 6.8% and 4.0%. Lithuania (-6.5%) lost workers through emigration, with minimal growth in the shadow economy (to 6.9%).

The numerical share of foreigners (in thousands) in legal employment in the construction sector in 2014 and 2024 in the six Central European Countries, along with the percentage change in this share over the decade, is shown below (Table 4).

Table 4. Numerical share of foreigners in legal employment in the construction sector (2014-2024) and dynamics of change.

Country	Share of foreigners 2014 (thousands)	Share of foreigners 2024 (thousands)	Dynamics of change in share of foreigners 2014-2024 (%)
Poland	44	128	+190.9%
Czech Republic	20	40	+100.0%
Slovakia	6	14	+133.3%
Hungary	6	12	+100.0%
Lithuania	3	5	+66.7%
Germany	274	484	+76.6%

Source: Central Statistical Office (2024c); State Labour Inspectorate (2023); Czech Statistical Office (2023a); Statistical Office of Slovakia (2023b); Hungarian Statistical Office (2023a); Statistics Lithuania (2023a); Destatis (2024c); Eurostat (2024b).

Poland recorded the largest increase in the number of legally employed foreigners, from 44,000 in 2014 to 128,000 in 2024 (+190.9%), thanks to simplifications in the employment of migrants, mainly from Ukraine. The Czech Republic doubled the number from 20 thousand to 40 thousand (+100.0%), as did Hungary from 6 thousand to 12 thousand (+100.0%). Slovakia increased its share from 6 thousand to 14 thousand (+133.3%), benefiting from migrants from the region. Germany saw an increase from 274,000 to 484,000 (+76.6%), driven by legal migration from the EU. Lithuania, with the smallest scale, increased from 3,000 to 5,000 (+66.7%), mainly thanks to Belarusians.

Table 5 shows the share of foreigners in total employment (legal and illegal) in the construction sector from 2014 to 2024 in six Central European Countries, along with the dynamics of change in this share. The data is based on migration trends and employment statistics.

Table 5. Dynamics of change in employment of foreigners in the construction sector in selected Central European Countries (2014-2024).

Country	Share of foreigners 2014 (thousands)	Share of foreigners 2024 (thousands)	Dynamics of change in the share of foreigners 2014-2024 (%)
Poland	47	140	+150.0%
Czech Republic	20	42	+87.5%
Slovakia	7	15	+100.0%
Hungary	6	13	+100.0%
Lithuania	3	6	+100.0%
Germany	278	504	+66.7%

Source: Central Statistical Office (2024c); State Labour Inspectorate (2023); Czech Statistical Office (2023b); Statistical Office of Slovakia (2023a); Hungarian Statistical Office (2023b); Statistics Lithuania (2023b); Destatis (2024b); Eurostat (2023).

Poland saw the largest increase in the number of foreigners in the construction sector, from 47 thousand in 2014 to 140 thousand in 2024 (+150.0%), driven by a construction boom and an influx of workers, mainly from Ukraine. The Czech Republic increased from 20 thousand to 42 thousand (+87.5%), benefiting from migration from Eastern Europe. Slovakia doubled its share, from 7,000 to

15,000 (+100.0%), as did Hungary, where it rose from 6,000 to 13,000 (+100.0%), albeit on a smaller scale. Germany, with the largest number of foreigners, saw an increase from 278,000 to 504,000 (+66.7%), driven by demand for labour from within and outside the EU. Lithuania, despite its small scale, doubled in number from 3,000 to 6,000 (+100.0%), mainly thanks to migrants from Belarus.

Table 6 shows the estimated numerical share of the most numerous nationalities of foreigners in the construction sector in the six Central European Countries in 2014 and 2023, referring to total employment (legal and illegal). Data for 2023 is based on official reports available for 2023 or 2022 (e.g., CSO "Foreigners performing work in Poland 2023" dated June 10, 2024, Destatis 2023, ČSÚ 2022/2023), with extrapolation to 2023 where full data has not yet been published.

Table 6. The most numerous nationalities of foreigners in the construction sector (2014 and 2023).

Country	Most numerous nationalities 2014	Estimated number 2014 (thousands)	Most numerous nationalities 2023	Estimated number 2023 (thousands)
Poland	1. Ukraine	40	1. Ukraine	105
	2. Belarus	3	2. Belarus	12
	3. Lithuania	2	3. Georgia	4
	4. Russia	1	4. India	2
Czech Republic	1. Ukraine	15	1. Ukraine	28
	2. Slovakia	3	2. Vietnam	4
	3. Poland	1	3. Poland	3
	4. Hungary	1	4. Romania	2
Slovakia	1. Ukraine	5	1. Ukraine	9
	2. Czech Republic	1	2. Romania	2
	3. Hungary	1	3. Serbia	1
	4. Poland	0.5	4. Czech Republic	1
Hungary	1. Ukraine	4	1. Ukraine	7
	2. Romania	1	2. Romania	3
	3. Slovakia	0.5	3. Serbia	1
	4. Serbia	0.5	4. China	1
Lithuania	1. Ukraine	2	1. Belarus	3
	2. Belarus	1	2. Ukraine	2
	3. Russia	0.5	3. Russia	1
	4. Latvia	0.5	4. Georgia	0.5
Germany	1. Poland	100	1. Poland	145
	2. Turkey	50	2. Romania	75
	3. Romania	20	3. Turkey	55
	4. Croatia	10	4. Ukraine	35

Source: Central Statistical Office (2024d); Polish Border Guard (2023); EURES (2023); Statistical Office of Slovakia (2023b); Hungarian Statistical Office (2023b); Eurostat (2024d); Bundesagentur für Arbeit (2023); International Labour Organization ILO (2023a).

In Poland, Ukrainians (40 thousand), Belarusians (3 thousand), Lithuanians (2 thousand) and Russians (1 thousand) predominated in 2014, with Ukrainians rising to 105 thousand in 2023, Belarusians to 12 thousand, with Georgians (4 thousand) and Indians (2 thousand) as new groups. In the Czech Republic, Ukrainians (15,000 in 2014, 28,000 in 2023) dominate, with Slovaks, Poles and Hungarians in 2014, and Vietnamese (4,000), Poles and Romanians in 2023. Slovakia had Ukrainians (5,000), Czechs, Hungarians and Poles in 2014, and Ukrainians (9,000), Romanians, Serbs and Czechs in 2023. In Hungary, Ukrainians (4,000 to 7,000) and Romanians (1,000 to 3,000) are the most numerous, with Slovaks and Serbs in 2014 and Serbs and Chinese in 2023. Germany employed Poles (100,000), Turks (50,000), Romanians and Croats in 2014, and Poles (145,000), Romanians (75,000), Turks and Ukrainians in 2023. In Lithuania, Ukrainians (2,000) and Belarusians (1,000) predominated in 2014, with Russians and Latvians, and in 2023 Belarusians (3,000), Ukrainians (2,000), Russians and Georgians.

The role of migrants in the construction sector in Central Europe is not limited to their direct contribution to employment in the industry but must be considered in the broader context of overall migration flows to the countries analysed. With the increasing influx of migrants, especially after 2014, triggered by factors such as EU enlargement, the war in Ukraine from 2022 and the migration policies of individual countries, the construction sector has become one of the main beneficiaries of this labour mobility. To better understand the importance of migrants in the construction industry, it is crucial to compare their numbers in the industry with the total number of migrants arriving in a country. Table 7 presents these figures for Poland, the Czech Republic, Slovakia, Hungary, Lithuania and Germany in 2014 and 2024, showing how the concentration of migrants in the construction sector has changed against the background of overall migration trends. This analysis allows us to assess the extent to which construction attracts migrants compared to other sectors of the economy, and how migration policies and labour market needs shape these proportions.

Table 7. Number of migrants employed in the construction sector relative to all migrant arrivals in selected Central European Countries (2014-2024).

Country	Number of total migrants 2014 (thousands)	Number of migrants in construction 2014 (thousands)	Number of total migrants 2024 (thousands, estimated)	Number of migrants in construction 2024 (thousands, estimated)	Dynamics of change in share 2014-2024 (% pts)
Poland	220	47 (21.4%)	650	140 (21.5%)	+0.1
Czech Republic	80	20 (25.0%)	180	42 (23.3%)	-1.7
Slovakia	35	7 (20.0%)	70	15 (21.4%)	+1.4
Hungary	50	6 (12.0%)	90	13 (14.4%)	+2.4
Lithuania	20	3 (15.0%)	40	6 (15.0%)	0.0
Germany	1500	278 (18.5%)	2200	504 (22.9%)	+4.4

Source: Central Statistical Office (2024b); Czech Statistical Office (2023a); Statistical Office of Slovakia (2023c); Hungarian Statistical Office (2023c); Statistics Lithuania (2023a); Destatis (2024c); Eurostat (2024c); International Organization for Migration IOM (2023d).

Table 8 illustrates the number of migrants employed in the construction sector in relation to the total number of migrants arriving in Poland, the Czech Republic, Slovakia, Hungary, Lithuania and Germany in 2014 and 2024, along with the percentage and dynamics of change in this share.

Table 8. Impact of migration policies on migrant employment in the construction sector (2014-2024).

Country	Key migration policy (year of introduction)	Migrants in construction before change (thousands) (year)	Year	Migrants in construction after the change (thousands) (year)	Growth (%)
Poland	Simplification of procedures for Ukrainians (2017)	50 (2016)	2016	128 (2024)	+156%
Czech Republic	Program "Režim Ukrajina" (2022).	30 (2021)	2021	42 (2024)	+40%
Slovakia	Facilitation for EU migrants (2014)	7 (2014)	2014	15 (2024)	+114%
Hungary	Restrictions for non-EU migrants (2015)	6 (2014)	2014	13 (2024)	+117%
Lithuania	Simplifications for Belarusians (2020)	4 (2019)	2019	6 (2024)	+50%
Germany	Fachkräfteeinwanderungsgesetz (2020)	350 (2019)	2019	484 (2024)	+38%

Source: Central Statistical Office (2024b); Czech Statistical Office (2023a); Statistical Office of Slovakia (2023c); Hungarian Statistical Office (2023c); Statistics Lithuania (2023b); Destatis (2024c); Eurostat (2024d); International Organization for Migration IOM (2023c).

In Poland, in 2014, 47,000 migrants worked in construction with a total of 220,000 migrant arrivals (21.4%), and in 2024, this number increased to 140,000 with 650,000 migrants (21.5%), indicating a stable, although slightly increasing (+0.1 percentage points) share of construction in migrant employment, mainly from Ukraine. In the Czech Republic, the share of migrants in construction fell from 25.0% (20,000 of 80,000) in 2014 to 23.3% (42,000 of 180,000) in 2024 (-1.7 percentage points), which may reflect the diversification of migrant employment in other sectors. Slovakia saw an increase from 20.0% (7,000 of 35,000) to 21.4% (15,000 of 70,000) (+1.4 percentage points), suggesting the growing importance of construction to migrants. Hungary increased its share from 12.0% (6 thousand from 50 thousand) to 14.4% (13 thousand from 90 thousand) (+2.4 percentage points), indicating the gradual attraction of migrants to the sector. Lithuania maintained a stable share of 15.0% (3 thousand from 20 thousand in 2014 and 6 thousand from 40 thousand in 2024), with no change in dynamics. Germany recorded the largest increase in share, from 18.5% (278 thousand from 1,500 thousand) in 2014 to 22.9% (504 thousand from 2,200 thousand) in 2024 (+4.4 percentage points), driven by strong demand for construction labour, especially from EU countries and Ukraine.

Migration policy plays a key role in shaping the availability of foreign labour in the construction sector, especially in the face of shortages of local workers and growing infrastructure needs in Central Europe. The introduction of visa facilitation, work permits, or integration programs has had varying effects on the inflow of migrants to the construction industry in the countries analysed between 2014 and 2024. Table 8 shows how selected migration policy changes in Poland, the Czech Republic, Slovakia, Hungary, Lithuania and Germany have affected the number of migrants employed in the construction sector, allowing an assessment of the effectiveness of these regulations in response to current challenges, such as the war in Ukraine and the Green Deal. This analysis provides data relevant to the design of future migration and integration strategies, which is one of the goals of the study.

Table 8 shows the impact of key changes in migration policy on migrant employment in the construction sector in six Central European Countries. In Poland, the simplification of visa procedures for Ukrainians in 2017 increased the number of migrants in construction from 50,000 in 2016 to 128,000 in 2024 (+156%), reflecting the construction boom and the influx of refugees after 2022. In the Czech Republic, the 2022 "Režim Ukrajina" program raised the number from 30,000 in 2021 to 42,000 in 2024 (+40%), supporting the sector after the war in Ukraine. Slovakia, with its facilitation of EU migrants since 2014, saw an increase from 7,000 to 15,000 (+114%). Hungary, despite 2015 restrictions, saw growth from 6,000 to 13,000 (+117%), thanks mainly to migrants from Ukraine and Romania. Lithuania, after facilitating Belarusians in 2020, increased from 4,000 to 6,000 (+50%). Germany, thanks to the 2020 skilled immigration law, saw an increase from 350,000 to 484,000 (+38%), attracting specialists. The data shows that liberal policies (Poland, Slovakia) have yielded more growth than restrictive ones (Hungary), although all countries have benefited from migrants in response to sector needs.

The transformation of the construction sector in Central Europe, driven by infrastructure investment and the requirements of the European Green Deal, requires migrants not only to be present, but also to adapt their skills to new market needs. Table 9 analyses the structure of migrant construction employment in Poland, the Czech Republic, Slovakia, Hungary, Lithuania and Germany in 2014 and 2024, dividing them into unskilled (e.g., labourers), skilled (e.g., masons, carpenters) and specialists (e.g., engineers, RES technicians). Changes in this structure reflect both the historical role of migrants as low-cost labour and their growing contribution to more advanced projects, which is key to understanding their impact on the future of the sector in the context of the Green Deal and current challenges.

Table 9 shows the evolution of the structure of migrant employment in the construction sector by skill level. In Poland, unskilled labourers accounted for 75% of migrants in 2014, but by 2024 their share had fallen to 60% (-15 percentage points), while skilled increased from 20% to 30% (+10

percentage points) and specialists from 5% to 10% (+5 percentage points), reflecting the demand for skills in Green Deal projects.

Table 9. Employment structure of migrants in the construction sector by qualification (2014-2024).

Country	Category	Share 2014 (%)	Share 2024 (%)	Change (% points)	Country	Category	Share 2014 (%)	Share 2024 (%)	Change (% points)
Poland	Unskilled	75	60	-15	Hungary	Unskilled	80	70	-10
	Qualified	20	30	+10		Qualified	15	20	+5
	Specialists	5	10	+5		Specialists	5	10	+5
Czech Republic	Unskilled	65	55	-10	Lithuania	Unskilled	70	65	-5
	Qualified	30	35	+5		Qualified	25	25	0
	Specialists	5	10	+5		Specialists	5	10	+5
Slovakia	Unskilled	70	60	-10	Germany	Unskilled	50	40	-10
	Qualified	25	30	+5		Qualified	30	35	+5
	Specialists	5	10	+5		Specialists	20	25	+5

Source: Eurostat (2024b); Central Statistical Office (2024d); Destatis (2024b); Spectis (2024c); International Labour Organization ILO (2023b).

In the Czech Republic and Slovakia, a similar trend: a decline in the unskilled (from 65% to 55% and from 70% to 60%) in favour of the skilled and specialists (+5-10 percentage points each). Hungary maintains a high share of unskilled (70% in 2024), but specialists have increased from 5% to 10%. Lithuania shows the least change, with unskilled at 65% in 2024, but specialists increased to 10%. Germany, with a more advanced market, has reduced the share of unskilled from 50% to 40%, increasing specialists from 20% to 25%. The trend indicates a gradual shift of migrants toward higher qualifications, supporting the transformation of the sector, although the unskilled still dominate in most countries.

The future role of migrants in the construction sector in Central Europe depends on the continuation of migration trends, EU policies (e.g., the Green Deal), as well as demographic and economic changes. Table 10 shows a forecast of migrant employment in construction in 2024-2030, based on extrapolation of current data (Tables 4, 5, 7) and assumptions about the stabilization of migrant inflows (e.g., Ukrainians after the war), the increase in demand for RES specialists and the impact of automation. This forecast provides a glimpse into the long-term implications of the role of migrants, which is important for understanding their impact on the region's future, according to the study's objective.

Table 10. Forecast of migrant employment trends in the construction sector (2024-2030).

Country	Migrants in construction 2024 (thousands)	Forecast 2030 (thousands)	Change 2024-2030 (%)	Key forecast factors
Poland	140	160	14	Stabilizing migration from Ukraine, Green Deal
Czech Republic	42	50	19	Increase in demand for RES, migration from Asia
Slovakia	15	18	20	EU investment, regional migration
Hungary	13	15	15	Migration restrictions, local projects
Lithuania	6	7	17	Migration from Belarus, stable demand
Germany	504	550	9	Automation, EU and non-EU specialists

Source: Author's elaboration based on European Commission (2023a); Organisation for Economic Co-operation and Development (2022); Spectis (2024b).

Table 10 forecasts the growth of migrant employment in the construction industry through 2030. In Poland, the number will increase from 140,000 in 2024 to 160,000 (+14%), driven by stabilizing migration from Ukraine and Green Deal projects, although the pace will slow due to market saturation. The Czech Republic will increase from 42,000 to 50,000 (+19%), driven by demand for RES specialists and migration from Asia. Slovakia will reach 18k (+20%) due to EU investment, and Hungary will reach 15k (+15%) despite restrictions. Lithuania will grow to 7 thousand (+17%), thanks mainly to Belarusians. Germany, from 504k to 550k (+9%), will see slower growth due to automation, but demand for specialists will remain. The forecast suggests a continuation of the role of migrants as a pillar of the sector, with increasing importance of qualifications and regional differences.

Conclusions

The survey provided a comprehensive picture of the impact of migrants on the construction sector in Poland, the Czech Republic, Slovakia, Hungary, Lithuania and Germany. The results confirm that foreign workers have become an indispensable pillar of the sector, filling labour gaps resulting from local labour shortages, aging populations and emigration to the West. The main objective of the study - to identify and compare the impact of foreign workers on employment in the construction sector between 2014 and 2024, in order to provide data for migration and integration policies in the face of contemporary challenges - was fully realized. The analysis not only revealed key trends and regional differences, but also answered the research questions, offering practical conclusions and forecasts for the future.

The first research question ("How have foreign migrants affected the dynamics of construction employment in Central Europe between 2014 and 2024?") showed a significant increase in the number of migrants in the sector. In Poland, their number in total employment increased by 150% (from 47,000 to 140,000), driven by the infrastructure boom and the influx of Ukrainians after 2022. In the Czech Republic, the increase was 87.5% (from 20,000 to 42,000), and in Germany 66.7% (from 278,000 to 504,000), reflecting the growing demand for labour in the face of EU funds and the Green Deal. The second question ("What are the differences in the role and impact of migrants between countries in the region in the context of current events?") revealed variation: Poland and the Czech Republic benefited from a "supply shock" from Ukraine (Kamyshnykova, 2023), Slovakia and Hungary experienced smaller but stable growth (+100% and +100%, respectively), Lithuania had the lowest dynamics (+100%, but from a small base of 3,000 to 6,000) due to emigration, and Germany attracted both unskilled and specialists from the EU. The third question ("What policies and social strategies can increase the contribution of migrants to the construction sector in the face of contemporary challenges?") was answered in the analysis of migration policies (Table 8): the liberal approach of Poland (+156% after 2017) and Slovakia (+114% after 2014) yielded greater benefits than the restrictive one of Hungary (+117% despite 2015 restrictions), suggesting the need for administrative and integration facilitation.

The results also indicate that the structure of migrant employment has evolved (Table 9). In Poland, the share of the unskilled fell from 75% to 60%, while the share of specialists rose from 5% to 10%, reflecting the demand for skills in sustainable construction. Similar trends are evident in the Czech Republic, Slovakia and Germany, although Hungary and Lithuania remain more dependent on unskilled labour. Projections for 2024-2030 (Table 10) suggest a further increase in the role of migrants, such as in Poland to 160,000 (+14%) and Germany to 550,000 (+9%), driven by stabilizing migration and the demands of the Green Deal.

Recommendations. Simplifying migration procedures: Countries should continue liberalizing visa policies and work permits, following the example of Poland (2017 simplifications for Ukrainians) or the Czech Republic ("Režim Ukrajina" of 2022) to increase the availability of migrants, especially from Ukraine, Belarus and Asia.

Investment in training: Programs to upgrade the skills of migrants, especially in renewable energy technologies (RES) and sustainable construction, can accelerate the sector's transformation, as changes in employment patterns show (Table 9).

Legalization and control of the shadow economy: The increase in illegal employment (e.g., in Poland from 6.4% to 8.9%, in Slovakia from 3.8% to 6.9%) requires more effective regulation, PIP inspections and incentives for legal work to improve the conditions of migrants and the stability of the sector.

Social integration: Creating integration programs, including language and housing support, can reduce ethnic enclaves and increase the long-term contribution of migrants, which is key to the challenges identified by Hack-Polay (2020).

The work stands out for its comprehensive comparative analysis of six countries, integration of statistical data (Tables 1-9) with forecasts (Table 10) and practical recommendations. Its uniqueness lies in capturing the evolving role of migrants - from cheap labour to skilled professionals - in the context of the Green Deal, the pandemic and the war in Ukraine. It provides not only data, but also strategies for policymakers, making it a valuable contribution to the migration and construction literature.

Further research should focus on several areas. First, analysing the impact of automation on migrant employment, especially in Germany, where it is projected to increase (Table 10), can clarify how technology will change labour demand. Second, the long-term effects of migrant integration, including their career advancement and impact on local communities, need to be deepened, especially in countries with a high proportion of enclaves (Favell, 2019). Third, increasing migration from Asia (e.g., India in Poland, Vietnam in the Czech Republic) deserves detailed study in the context of future sector needs. Finally, the impact of climate change on migration and construction - e.g., the need for disaster-resistant infrastructure - can open up a new dimension of analysis, linking ecology to the labour market.

The study provides a solid foundation for understanding the role of migrants in Construction sector in Central European Countries, offering both a retrospective and a forward-looking perspective. Its findings and recommendations can support policies that strengthen the region's economic resilience in the face of global challenges.

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