

Labour market gaps in the context of the green transition in Bulgaria and the role of third-country nationals*

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Abstract. This article examines the role of third-country nationals in addressing labour market shortages in Bulgaria in the context of the green transition. Against the backdrop of demographic decline and structural labour shortages, the study explores whether and under what conditions third-country workers are perceived as a resource for sustainable economic transformation. The analysis combines official administrative data with evidence from a nationally representative quantitative survey conducted among 800 employers across key economic sectors. The findings reveal a dual dynamic. While administrative data indicate a growing reliance on third-country nationals, including an increase in long-term permits, employers' perceptions remain shaped by labour market segmentation. Most employers associate third-country workers with temporary or low-skilled positions, and only a small share consider them capable of contributing substantially to green industries. The article argues that without coordinated policies linking labour migration, skills development and employer engagement, third-country nationals are likely to remain a short-term compensatory workforce rather than an integral part of Bulgaria's green transition.

Keywords: third-country nationals, green transition, employers' attitudes, labour market segmentation

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Introduction

The European Union (EU) positions the green transition as a central strategic priority, most clearly articulated through the European Green Deal, which commits the EU to climate neutrality by 2050 and embeds sustainability objectives across economic and social policy domains (European Commission n.d.). Academic analyses indicate that recent shifts in the United States' climate position, marked by increased policy volatility and reduced federal ambition, have so far not weakened the EU's commitment to the green transition. Instead, transatlantic divergence has reinforced the EU's emphasis on regulatory leadership, strategic autonomy, and internal policy coherence in areas such as green industrial policy and sustainable finance (Dennison, Engström, Hobbs 2024; White 2025). While this divergence presents challenges for international climate coordination, the literature suggests that the EU continues to frame the green transition as integral to its long-term competitiveness and global role (European Central Bank n.d.). Despite political fluctuations, some academics highlight that market forces and technological innovation continue to drive elements of the green transition, such as the growth of clean tech within the private sector. Research shows that a growing number of U.S. firms are developing climate-related technologies and business models, creating pathways for decarbonization even amid policy uncertainty (Milligan 2024).

At the beginning of the third decade of the twenty-first century, Bulgaria finds itself at a critical juncture where long-term demographic processes, structural labour shortages, and the requirements of the green transition intersect in ways that call into question the sustainability of economic development. A declining and ageing population, nevertheless high levels of emigration, and a therefore limited domestic labour supply generate chronic workforce deficits that already affect not only traditionally vulnerable sectors but also key areas linked to the ecological transformation¹ of the economy. In this context, labour shortages are evolving from a temporary market imbalance into a structural risk for the implementation of Green Deal policies and the achievement of sustainable development goals (European Commission 2023a; European Commission 2023b). The green transition is not labour market neutral. Rather, it entails both quantitative expansion and qualitative reconfiguration of the workforce, including the development of new “green” skills, the adaptation of existing jobs, and the restructuring of entire economic sectors. In Bulgaria, this transformation unfolds amid limited institutional capacity, pronounced regional disparities, and underdeveloped mechanisms for long-term human resource planning. These all are factors that significantly constrain the labour market's capacity to adjust to ecological transformation (ILO 2022; OECD

¹ In the text, we use “ecological transformation” and further on “sustainable economic transformation” as synonyms for “green transition” – most often to avoid repetition and with full awareness of possible nuances in understanding, which are deliberately ignored here.

2021). In this context, increasing attention is being paid to the role of third-country nationals (TCNs)² as a potential resource for addressing labour market shortages. Unlike earlier periods, when labour migration in Bulgaria was perceived primarily as a solution for low-skilled and seasonal work, the challenges of the green transition call for a broader and more strategic approach. This approach involves not only ensuring a sufficient number of workers, but also creating conditions for their training, adaptation, and long-term integration into sectors with higher added value. However, existing research indicates that migrants often remain concentrated in low-paid and low-skilled segments of the labour market, regardless of their actual educational and professional potential (Piore 1979; Kogan 2011), especially in countries where legal immigration is not tightly linked to a selection process by education and professional qualification. This labour market segmentation constitutes a significant constraint on the inclusion of third-country nationals in activities related to the green transition, which require skills adaptation, investment in training, and stable employment relationships. As several authors have emphasized, migrants' participation in processes of sustainable economic transformation depends not only on their individual human capital, but also on the institutional framework, qualification recognition mechanisms, and employers' attitudes (Spencer et al. 2022; European Training Foundation 2023). The Bulgarian context clearly illustrates these tensions. Despite measures introduced in recent years to facilitate access to the labour market for third-country nationals, public and political discourse continues to frame labour migration primarily as a short-term compensatory mechanism for addressing shortages in low-skilled sectors. Such an approach constrains the potential for the strategic use of migration as a tool to support the green transition and risks reproducing existing patterns of labour market segmentation and social vulnerability. Employers play a key role in this process, functioning as the main intermediaries and "gatekeepers" of access to employment. Their attitudes, expectations, and recruitment practices directly influence whether third-country nationals are perceived as a temporary labour reserve or as a potential for long-term integration and development. Recent research shows that employers' perceptions of migrants' skills, adaptability, language competence, and cultural compatibility are decisive for migrants' opportunities to integrate beyond the lowest segments of the labour market (Anderson et al. 2010; Cangiano 2014).

Against this background, the present article analyses the role of third-country nationals in addressing labour market shortages in the context of the green transition in Bulgaria, with a particular focus on employers' attitudes. The study is based on a national survey of employers and aims to identify dominant positions, perceived barriers, and potential incentives for the inclusion of third-country nationals in sectors affected by ecological transformation. The central research question guiding the article is: *to what extent, and under what conditions, do*

² Throughout the text of the article, we use either the full name "third-country nationals" or the corresponding abbreviation TCNs.

employers in Bulgaria perceive third-country nationals as a resource for overcoming labour shortages emerging in the process of the green transition? By focusing on employers' perspectives, the article contributes to the scholarly debate on the relationship between migration, labour market segmentation, and sustainable economic transformation (Kogan 2011; Seo 2021; European Migration Network 2018). Our central argument is that the effective addressing of labour shortages in the context of the green transition requires a coordinated approach. Such an approach combines labour migration policies, skills development, and an active role for employers in integration processes (e.g., OECD 2021; Sandmann et al. 2024; Soldani et al. 2025). Only under such coordination can third-country nationals move beyond being a temporary compensatory resource and become a genuine factor in a socially and economically sustainable green transition in Bulgaria.

Theoretical framework

According to the International Labour Organization, the *green transition* has the potential both to create new jobs and to deepen social inequalities if it is not accompanied by targeted policies for skills development and social protection (ILO 2022). In this sense, the labour market becomes a key arena in which the environmental objectives and the social consequences of the transformation intersect. *Green jobs* and *green skills* are interrelated but distinct concepts in the literature on sustainable economic transitions. *Green jobs* are typically defined as employment that contributes directly to environmental protection, climate mitigation, or the sustainable use of natural resources, including roles that produce environmentally beneficial goods or services or that reduce ecological impacts through their processes. These jobs are often concentrated in sectors such as renewable energy, waste management, and environmental services, and their identification can be based on job functions and outputs that support sustainability goals (ILO 2015; Urban et al. 2023). *Green skills*, by contrast, refer to the knowledge, abilities, attitudes, and competences that enable individuals to perform tasks in ways that support environmental sustainability and the green transition. These skills are not necessarily confined only to workers in green jobs but are increasingly relevant across all sectors as economies pursue decarbonization and resource efficiency (UNESCO-UNEVOC n.d.; ILO 2015). Whereas green jobs denote specific employment categories aligned with environmental outcomes, green skills denote the human capital necessary to effectively carry out work in an environmentally sustainable manner, whether within or outside traditional green employment (ILO 2015; UNESCO-UNEVOC n.d.). The concept of a “just transition” complements this analysis by emphasizing the need for environmental policies to be socially balanced and not to result in the exclusion of certain groups from the labour market. Research highlights that countries experiencing demographic decline and limited domestic labour supply face particularly serious challenges, as the transformation requires both the quantitative provision of labour and the qualitative restructuring of skills (OECD 2021). Therefore, the green transition cannot be considered in isolation from migration processes and the mechanisms for incorporating external labour, particularly in societies such as Bulgaria, which have long functioned as emigration rather than immigration

societies. As a “late immigration” country, Bulgaria has developed its labour market institutions and practices in the absence of sustained experience with the integration of third-country nationals. This institutional legacy shapes both public policy and employer behaviour, which tend to frame migrant labour as a temporary and externalized resource rather than as a component of long-term workforce development. Consequently, integration practices prioritize short-term labour gap filling over the strategic incorporation of migrant workers into processes of economic restructuring and skills formation. Labour market segmentation theories provide a key analytical framework for understanding the role of labour migration in contexts of structural labour shortages. In the classic model proposed by Piore (1979), the labour market is conceptualized as divided into a primary and a secondary segment, with migrants typically concentrated in the latter, which is characterized by low wages, employment insecurity, and limited opportunities for career advancement. Importantly, this segmentation is not temporary but structurally reproduced through institutional practices, employer strategies, and social expectations that channel migrants into specific types of employment regardless of their actual human capital. More recent empirical studies show that even in the presence of labour shortages, migrants rarely move into more stable and higher-skilled positions in the absence of targeted mechanisms for skills recognition, access to training, and institutional support (Kogan 2011). This indicates that labour migration does not constitute an automatic solution to labour market shortages, but rather operates within already established patterns of labour market segmentation. In the context of the green transition, this problem is further intensified, as many newly created or transformed jobs require medium- to high-level qualifications, adaptability, and participation in lifelong learning processes (Spencer et al. 2022).

For the purposes of the present study, the category of third-country nationals is approached through a differentiated analytical lens rather than treated as an abstract or homogeneous group. While the term is used in accordance with its legal definition to denote individuals who are not citizens of a Member State of the European Union, the analytical focus of the article is placed specifically on labour migrants originating from Central Asia, the Black Sea region, and Ukraine. This focus reflects both their growing quantitative presence in the Bulgarian labour market and their strategic relevance for sectors affected by labour shortages and the processes of the green transition. Ukraine is examined within a specific context shaped by forced mobility, temporary protection regimes, and differentiated access to employment, which distinguishes Ukrainian nationals from other groups of TCNs. By explicitly foregrounding region of origin and migration trajectories, the study avoids treating third-country nationals as a unified category and instead conceptualizes them as a structurally differentiated workforce, whose position in the labour market is shaped by legal status, sectoral concentration, and the institutional framework. In contemporary migration scholarship, the integration of TCNs is conceptualized as a multidimensional and dynamic process that extends beyond labour market participation to encompass institutional access, social inclusion, and opportunities for upward mobility. Transnational and translocal approaches emphasize that migrants’ economic and professional strategies are shaped by simultaneous engagements

with both countries of origin and destination, challenging assimilationist and purely instrumental understandings of migrant labour (Pries 2005; Vertovec 2009). From this perspective, migrants are not merely labour inputs but actors whose capacity for human capital accumulation depends on the institutional and organizational contexts in which they are embedded. Within segmented and transnationally structured labour markets, employers occupy a central position as mediating actors between migration regimes, labour market institutions, and everyday practices of inclusion and exclusion. As labour market “gatekeepers”, employers exercise decisive influence over migrants’ access not only to employment, but also to training, skill utilization, and career advancement, thereby shaping whether third-country nationals remain confined to secondary labour market segments or achieve more stable forms of long-term integration (Anderson et al. 2010). Employer attitudes and hiring practices are shaped by the interplay of economic rationalities, regulatory constraints, and culturally embedded classifications of labour, rendering employers particularly influential actors under conditions of structural economic transformation. Building on a neo-institutionalist perspective, Chavdarova conceptualizes employers not merely as market respondents but as active agents in processes of social stratification and labour market segmentation. Her analysis demonstrates how organizational strategies and routine hiring practices contribute to the reproduction and institutionalization of inequality, systematically channelling certain categories of workers into precarious and low-paid positions irrespective of their actual skill levels or qualifications (Chavdarova 2016). Crucially, these practices are not reducible to individual employer preferences but are embedded in broader institutional and cultural frameworks that shape normative expectations regarding “appropriate” workers, labour discipline, and loyalty. Within such a framework, the recruitment of third-country nationals is frequently associated with assumptions of greater flexibility, higher tolerance of insecurity, and limited bargaining capacity. Such assumptions operate as classificatory mechanisms that stabilize segmented labour market outcomes and reinforce the structural positioning of migrant workers in secondary labour market segments (Chavdarova 2016).

Based on these theoretical considerations and guidelines, our research conceptualizes the socio-economic position of third-country nationals in the Bulgarian labour market at the intersection of the green transition, labour market segmentation, and employer mediation. Analytically, the study focuses on three interrelated dimensions: (1) *forms of employment as institutional mechanisms* structuring access to stability, skills development, and mobility; (2) *region of origin and migration trajectory* as factors shaping differentiated legal positions and pathways of labour market inclusion; and (3) *employer perceptions and practices* as gatekeeping mechanisms that mediate between structural labour shortages and concrete integration outcomes. Within this framework, the green transition is treated as a structural transformation that amplifies existing tensions between short-term labour flexibility and long-term human capital formation. These dimensions jointly provide the analytical scheme through which the empirical findings are interpreted.

Methodology

(1) Data and analytical strategy

This study draws on official statistical data and a nationally representative quantitative survey of employers in Bulgaria, conducted through standardized interviews with a sample of 800 firms in 2025. The survey includes employers across key economic sectors such as industry, construction, agriculture, and IT sector and tourism services which are identified in national and European policy documents as particularly affected by labour shortages and the green transition. The research design captures variation in employer practices and orientations toward the recruitment and integration of third-country nationals across sectoral and regional contexts. The sample ensures national representativeness by sector, firm size, and region, allowing the findings to be interpreted as reflecting general employer patterns at the national level. Data were collected using a standardized questionnaire covering five analytical dimensions: perceived labour shortages; experience with hiring third-country nationals; assessments of their skills and adaptability; practices related to training and workforce retention; and evaluations of regulatory frameworks and public support. Selected items explicitly address skill requirements and organizational changes associated with the green transition. The data were analysed using descriptive statistics and comparative analysis to identify dominant patterns in employer attitudes and practices. The analysis focuses on relationships between perceived labour shortages, sectoral context, investment in skills development, and the positioning of third-country nationals within different labour market segments. To capture heterogeneity in employer orientations, a cluster analysis was conducted using survey data (Tabl. 1).

Table 1. Overview of analytical dimensions, constructs, and survey items

| Analytical dimension | Construct | Operationalization | Survey items |
|-----------------------|---|---|---|
| Employer attitudes | Attitudes toward hiring TCNs in green roles | Likert-scale index capturing perceived suitability, risks, and expected contribution to green-related tasks | Perceived contribution of third-country nationals to the development of green industries in the company |
| Barriers & incentives | Perceived obstacles and drivers | Composite indices reflecting language requirements, administrative burden, skills mismatch, labour shortages, and wage considerations | Perceived barriers and incentives related to the hiring and integration of third-country nationals, including language barriers, administrative constraints, skills mismatches, and the availability of supportive measures |

Table 1 (continued)

| Analytical dimension | Construct | Operationalization | Survey items |
|----------------------|------------------------------|---|--|
| Green exposure | Firm exposure to green tasks | Share of firm activities related to energy efficiency, waste management, and renewable energy | Green exposure was derived from firms' sectoral affiliation (economic activity), complemented by reported engagement in green and digital technologies |
| Controls | Firm characteristics | Firm size, ownership structure, union presence, vacancies, and region | Control variables describing basic firm characteristics, including company size, economic activity, and region |

Source: Own nationally representative survey by the IPS–BAS team.

The clustering is based on three dimensions: (1) assessments of the relevance of the green transition to firms' activities; (2) perceptions of the suitability of third-country nationals for skilled or strategic positions; and (3) willingness to invest in training, retraining, and longer-term integration. A hierarchical cluster analysis using Ward's method and squared Euclidean distance was applied. The number of clusters was determined based on theoretical interpretability and internal coherence, resulting in a three-cluster solution consistent with the study's analytical focus on labour market segmentation and employer-mediated inclusion.

(2) Limitations

The findings of this study should be interpreted in light of several limitations:

1. The analysis is based primarily on data from a nationally representative quantitative survey of employers. As such, it captures employers' attitudes, assessments, and strategies, but does not directly include the perspectives of third-country nationals themselves. This limits the ability to analyse migrants' social agency and their subjective experiences of integration, working conditions, and career development in the context of the green transition. Consequently, the study primarily reflects the institutional and organizational logic of the labour market rather than the full spectrum of employer–employee interactions. However, data on the professional background and skills of TNCs prior immigration were also not available.

2. The quantitative nature of the study does not allow for in-depth examination of intra-firm practices, informal recruitment mechanisms, or everyday workplace relations, which are often crucial in shaping processes of labour market segmentation and migrant integration. While the data provide

robust insights into general patterns and dominant attitudes, they cannot fully capture decision-making dynamics, internal contradictions, or adaptive employer strategies in specific organizational contexts.

3. Although the sample includes employers from sectors affected by the green transition, the analysis does not allow for detailed sector-specific examination across all relevant economic activities (e.g., energy, construction, manufacturing, IT, services). As a result, the findings should be interpreted as a generalized picture of employer attitudes rather than as a sector-specific analysis of labour shortages and integration mechanisms.

4. The study examines the green transition within the context of current policies and economic conditions and does not attempt to forecast long-term effects of future regulatory changes, technological innovation, or shifts in migration policy. The results therefore reflect a snapshot of prevailing attitudes and practices that may evolve as the institutional and market environment changes.

Despite these limitations, the study makes a valuable empirical contribution by highlighting the role of employers as key intermediaries in addressing labour shortages and integrating third-country nationals in the context of the green transition. At the same time, the limitations point to clear directions for future research, including mixed-methods approaches, the inclusion of migrants' perspectives, and more detailed sectoral analyses – all of which are planned for implementation in the second phase of our project.

Results

This section examines the positioning of third-country nationals in the Bulgarian labour market in the context of the green transition, with a particular focus on workers originating from Central Asia, the Black Sea region, and Ukraine. The analysis centres on employment regimes, region of origin, and employer perceptions (constituted by past experience as well as existing stereotypes not necessarily reflecting actual education and skills of third-country nationals) as key dimensions shaping TCNs' capacity to contribute to long-term labour market transformation.

(1) Employment regimes and labour market integration

Forms of employment constitute a central indicator of how TCNs are integrated into the Bulgarian labour market and of their potential contribution to sustainable employment transformation. In the context of the green transition, labour market adaptation requires employment stability, opportunities for training, and the accumulation of sector-specific skills. Where access to employment is dominated by short-term and seasonal regimes, TCNs' inclusion remains primarily oriented toward filling immediate labour shortages, with limited scope for long-term human capital development. Administrative data indicate that TCN participation in the Bulgarian labour market is predominantly structured around temporary and seasonal employment. These regimes are characterized by limited duration and strong dependence on specific employers or seasonal cycles (Fig. 1). While this model provides labour market flexibility,

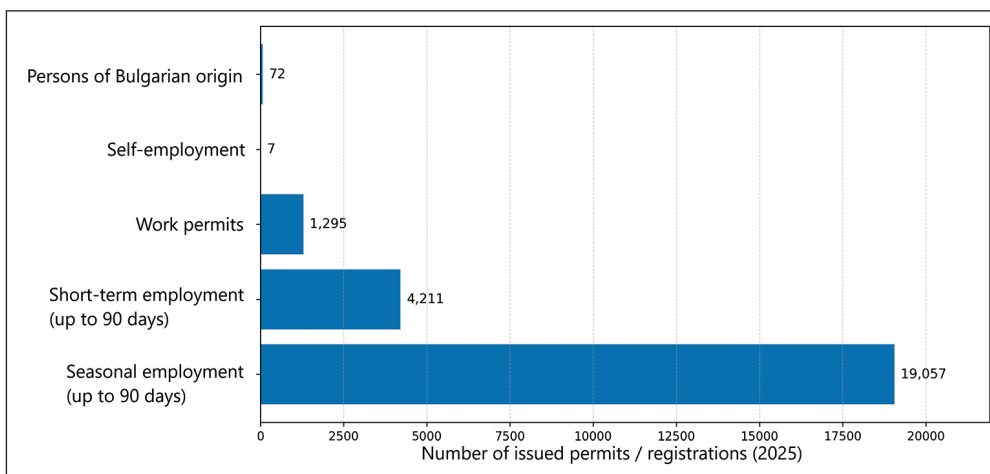


Fig. 1. Types of employment permits and registrations issued to third-country nationals in Bulgaria (2025)

Source: Employment Agency, official administrative data (2025).

it constrains opportunities for long-term retention, retraining, and integration into sectors undergoing technological and organizational transformation as part of the green transition. As a result, a tension emerges between short-term labour market adjustment and the long-term objectives of sustainable workforce development.

(2) Region of origin and differentiated integration

Region of origin represents a key analytical dimension shaping heterogeneous patterns of labour market inclusion. Different migration trajectories, legal statuses, and socio-economic profiles associated with specific regions condition unequal access to employment stability and skills development. As of 1 January 2024, approximately 144,100 third-country nationals were registered in Bulgaria (European Commission 2024), reflecting diverse migration flows. National Statistical Institute (NSI) data identify countries such as Turkey and Ukraine among the most common countries of origin, underlining the importance of regional differentiation for analysing labour market integration in the context of the green transition. NSI data on single permits issued to TCNs by duration of residence reveal a substantial shift in labour market inclusion between 2015 and 2024. Within the EU regulatory framework established by Directive 2011/98/EU, and further strengthened through Directive (EU) 2024/1233, access of third-country nationals to the labour market has expanded significantly. The total number of issued permits increased from fewer than 200 in 2015 to over 7,000 in 2024, indicating a growing reliance on TCNs as a labour resource. This growth is strongly concentrated in long-term permits exceeding 12 months, whose share increased markedly after 2020. At the same time,

short-term and seasonal permits (3–11 months) remain functionally important, particularly in labour-intensive and cyclical sectors. This dual structure points to a contradictory integration model: while TCNs are increasingly present as long-term workers, they remain institutionally embedded in employment regimes that limit systematic skills development and retraining. In the context of the green transition, this contradiction constrains the translation of quantitative labour supply into qualitative workforce adaptation.

(3) Employer perceptions and firm-level mediation

Employer survey data add a firm-level perspective on how this labour potential is perceived and utilized. Employer attitudes toward TCNs in the context of the green transition are highly heterogeneous and polarized (Fig. 2). Only 11% of surveyed employers consider TCNs suitable for skilled or key positions related to green transformation. The majority (55%) perceive TCNs primarily as low-skilled or auxiliary workers, unsuitable for tasks requiring specialized skills (irrespective of their actual formal qualifications and or skills). A further 33% regard the green transition as irrelevant to their firm’s activity, effectively excluding any consideration of green skills or workforce adaptation strategies.

These findings reveal a mismatch between structural labour market needs and dominant employer framings. While administrative data point to increasing dependence on TCNs, employer perceptions largely position them as temporary, low-skilled labour rather than as participants in long-term skills development strategies. This suggests that institutional and cultural factors at the firm level play a significant role in constraining TCNs’ contribution to the green transition. Employers identify language barriers, administrative complexity, and skills mismatches as the main obstacles to broader inclusion of TCNs. These factors function as structural constraints that limit their transition from a temporary labour reserve to a stable workforce capable of participating in retraining and

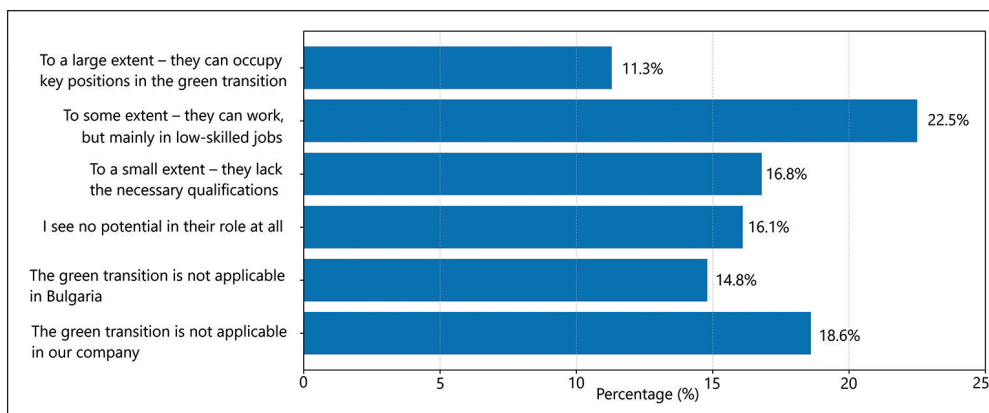


Fig. 2. Employers’ perceptions of third-country workers’ role in green industries (%)
Source: Own nationally representative survey by the IPS–BAS team.

technological adaptation. At the same time, the primary incentives for hiring TCNs remain acute labour shortages, labour cost considerations, and the availability of public programmes facilitating recruitment. The results indicate that the inclusion of third-country nationals in the Bulgarian labour market is driven predominantly by short-term economic imperatives rather than by a strategic vision of their (potential) role in the long-term transformation of employment under the green transition. This result confirms the outcome of the analysis of administrative data in Bulgaria.

(4) Employer clusters and orientations toward third-country nationals

The cluster analysis reveals a clear polarization of employer attitudes toward third-country nationals in the context of the green transition, resulting in three analytically distinct groups of approximately equal size (Table 2). The absence of a dominant cluster indicates a lack of consensus among employers regarding both the relevance of the green transition and the role of third-country nationals in labour market adaptation.

Table 2. Employers clusters and what distinguishes them

| Employer cluster | Green transition relevance | TCNs suitable for skilled roles | Willingness to invest in training |
|---------------------------|-----------------------------------|--|--|
| Strategic integrators | High | High | High |
| Conditional users | Medium | Low | Low–Medium |
| Green transition sceptics | Low | Very low | Low |

Source: Own nationally representative survey by the IPS–BAS team.

Cluster 1 “Strategic integrators” are approximately 34% of respondents. Employers in this cluster express support for the active inclusion of third-country nationals in economic activities, including sectors affected by the green transition. This group recognizes the relevance of ecological transformation for their firm and perceives third-country nationals as a potential human capital resource capable of contributing to new skill demands and organizational adaptation. Employers in this cluster demonstrate greater openness to long-term employment relationships and to investments in training and workforce development. This orientation aligns with a strategic understanding of labour migration as part of longer-term human resource planning rather than as a short-term compensatory mechanism. Presumably, actual professional qualifications and skills of TNCs are valued and a formal skill screening is requested for recruitment policies by the state.

Cluster 2 “Conditional users” are approximately 33% of the respondents. The second cluster is characterized by ambivalent and conditional attitudes.

Employers in this group acknowledge labour shortages and do not exclude the hiring of third-country nationals, but primarily associate them with low-skilled or auxiliary roles. Dominant within this cluster are perceptions of skills mismatch, limited adaptability, and insufficient qualifications for positions linked to technological change or environmental standards. While these employers may rely on third-country nationals to address immediate staffing needs, their practices tend to confine this workforce to secondary labour market segments, thereby limiting opportunities for skill development and participation in the green transition.

Cluster 3 “Green transition sceptics” are approximately 33% of the respondents. Employers in the third cluster perceive the green transition as largely irrelevant to their firm’s activity and, by extension, do not frame workforce adaptation or green skills development as necessary. Within this interpretative frame, third-country nationals are not considered in relation to green transformation at all, regardless of existing labour shortages. This position effectively excludes third-country nationals from strategies of long-term adaptation and reinforces a narrow, short-term logic of labour utilization. The prevalence of this cluster highlights the extent to which resistance to or disengagement from the green transition constrains the potential integration of third-country nationals into transforming sectors.

Taken together, the three clusters illustrate that employer mediation constitutes a critical mechanism shaping the role of third-country nationals in the green transition. Even under conditions of growing structural reliance on migrant labour, employer perceptions and strategic orientations produce divergent integration pathways. While a minority of employers adopt a forward-looking approach linking migration, skills development, and ecological transformation, the dominant orientations continue to frame third-country nationals as temporary or marginal labour, thereby reinforcing existing patterns of labour market segmentation.

Discussion and conclusion

(1) Discussion

This article examines the role of third-country nationals in addressing labour market shortages associated with the green transition in Bulgaria, with a particular focus on employers’ perceptions. The findings reveal a constrained and segmented understanding of migrants’ potential contribution, closely mirroring patterns identified in the broader European literature on labour market transformation, green skills, and migration. A central result concerns employers’ limited recognition of the green transition itself. A substantial share deny its relevance either at firm level (18.6%) or at national level (14.8%), suggesting that for many employers the green transition is perceived as externally imposed or sector-specific rather than as a systemic economic transformation. This scepticism aligns with comparative research showing that labour market readiness for the green transition varies markedly across countries and sectors, particularly where institutional capacity and policy coordination are

weak (Oncioiu et al. 2026). From a sociological perspective, this constitutes a structural constraint: when employers do not recognize the relevance of the green transition, they are unlikely to invest in skills development, workforce restructuring, or the strategic integration of migrant labour, thereby weakening labour markets' capacity to respond proactively to ecological necessities and transformation. Among employers who do acknowledge some relevance of the green transition, perceptions of third-country nationals remain firmly embedded in low-skilled labour market segments. Nearly 40% of respondents reported that TCNs could contribute only to a limited extent or primarily in low-skilled positions, reflecting classic patterns of labour market segmentation. This finding is consistent with segmentation theory and extensive empirical evidence showing that migrants are routinely channelled into secondary labour market segments regardless of actual qualifications or labour shortages (Kogan 2011; Seo 2021; Tóth 2024). Only a small minority of employers (11.3%) perceive TCNs as capable of occupying key or strategic positions related to the green transition. This limited recognition stands in sharp contrast to policy and academic assessments emphasizing that the green transition is constrained primarily by skills shortages rather than by labour availability per se (Tóth 2024). The cluster analysis further reveals pronounced heterogeneity in employer orientations towards third-country nationals in the context of the green transition. Three ideal-typical clusters can be identified. Strategic Integrators recognize the relevance of the green transition and are comparatively more inclined to view third-country nationals as potential contributors to skills development and longer-term workforce adaptation. Conditional Users, the largest group, acknowledge labour shortages and, in some cases, green-transition pressures, yet continue to position TCNs primarily in low-skilled or auxiliary roles, reproducing segmented patterns of inclusion. Green Transition Sceptics reject or marginalize the relevance of the green transition altogether and therefore do not perceive any strategic role for TCNs in green-related activities. Together, these clusters demonstrate that employer responses to green transition labour pressures are shaped less by labour demand alone than by interpretative frames and institutional logics, which mediate whether labour migration functions as a strategic resource or remains confined to short-term, compensatory roles.

Recent research further demonstrates that successful green transformation depends on education systems, training infrastructure, and institutional support, rather than on sectoral employment shifts alone (Oncioiu et al. 2026). The discrepancy between employer perceptions and structural labour market needs points to a significant coordination failure: while green-transition sectors increasingly require medium- and high-level qualifications, adaptability, and participation in lifelong learning, employers largely do not view TCNs as candidates for such trajectories.

Our findings underscore the central role of employers as gatekeepers of green labour market inclusion. Employers' recruitment practices, expectations, and training strategies decisively shape whether third-country nationals are treated as temporary labour reserves or as long-term contributors to economic transformation, a pattern well documented in comparative research on labour market integration (European Migration Network 2018). In the Bulgarian

context, this gatekeeping role is reinforced by limited institutional experience with immigration and weak coordination between migration policy, skills recognition, and training systems. As a result, employer scepticism functions as a structural barrier to integrating TCNs into green-transition-related jobs. The study further indicates that labour migration currently operates less as a strategic instrument for supporting the green transition and more as a short-term compensatory mechanism. This finding aligns with broader European evidence showing that, in the absence of targeted institutional frameworks, labour migration tends to reproduce existing inequalities rather than alleviate structural labour market pressures (Tóth 2024). From the perspective of a just transition, this dynamic is problematic, as the systematic exclusion of TCNs from training, skills development, and stable employment risks deepening labour market segmentation. These dynamics must be situated within the broader structural context of the green transition. A key insight from the literature is that the green transition does not simply generate new employment but intensifies pre-existing labour shortages, particularly in countries affected by demographic decline and skills mismatches. At EU level, shortages are most pronounced in sectors central to decarbonization such as energy efficiency, renewables, construction, transport, and environmental services where demand for medium- and high-skilled labour is growing faster than domestic supply (Tóth 2024). For Bulgaria, population ageing, emigration, onward mobility of third-country nationals to higher-income countries, and limited training capacity intersect with green-transition skill demands, making reliance on internal labour reserves insufficient. Across the literature, a recurring finding is that labour migration alone does not automatically resolve labour shortages in sectors undergoing technological and organizational transformation. Migrants tend to be absorbed through existing institutional and sectoral pathways that place them in low-skilled, low-wage, and precarious positions, even under conditions of labour scarcity. The present study confirms that skills and not jobs constitute the main bottleneck of the green transition. Forecasting and comparative research consistently show that labour market readiness depends primarily on human capital quality, training, and institutional capacity rather than on labour supply alone (Tóth 2024).

Finally, comparative research highlights strong institutional asymmetries across EU Member States in their capacity to translate green-transition pressures into inclusive labour market outcomes (OECD 2021; European Parliamentary Research Service 2024; Sandmann et al. 2024). Countries with weaker governance structures, fragmented policy coordination, and limited training infrastructure such as Bulgaria and Romania exhibit lower readiness for green labour market adjustment. Bulgaria's status as a late-immigration country further implies that migration policies, skills systems, and employer practices remain insufficiently aligned with the demands of green transformation (Soldani et al. 2025; Tóth 2024). From this perspective, TCNs can contribute meaningfully to a socially sustainable green transition only if migration policy, skills development, and employer engagement are aligned. Otherwise, migration risks functioning primarily as a short-term compensatory mechanism rather than as a lever for inclusive and resilient economic transformation.

(2) Conclusion

The article raises the issue of third-country workers in the Bulgarian labour market, seeking to empirically verify, by linking this type of migration to the green transition, the chances for long-term residence and integration of this type of workers into Bulgarian society. The empirical findings reveal several interrelated patterns concerning the positioning of third-country nationals in the Bulgarian labour market in the context of the green transition. *First*, forms of employment emerge as a central structuring factor. Administrative data show that the labour market participation of third-country nationals is predominantly organized through temporary and seasonal employment regimes (Fig. 1). These short-term and employer-dependent arrangements facilitate the filling of immediate and cyclical labour shortages but significantly limit opportunities for employment stability, skills accumulation, retraining, and long-term retention. In the context of the green transition, where adaptation depends on sustained investment in human capital, this employment structure constrains the potential of third-country nationals to contribute to long-term labour market transformation. *Second*, the results reveal a tension between quantitative growth and qualitative integration. Between 2015 and 2024, there is a sharp increase in the number of issued work and residence permits for third-country nationals, particularly long-term permits exceeding 12 months. This trend indicates a growing structural reliance on third-country nationals as a labour resource. However, the continued functional importance of short-term and seasonal regimes suggests that increased presence does not automatically translate into improved conditions for skills development or integration into economy and society. The data thus point to a mismatch between the expanding quantitative role of third-country nationals and the qualitative conditions of their labour market inclusion. *Third*, region of origin constitutes a key axis of differentiation. Third-country nationals in Bulgaria originate from diverse regions, including Central Asia, the Black Sea region, and Ukraine, each associated with distinct migration trajectories, legal statuses, and labour market opportunities. These differences shape heterogeneous patterns of employment and integration, underscoring that third-country nationals cannot be treated as a homogeneous group and that their potential contribution to the green transition is unevenly distributed. *Fourth*, employer perceptions introduce a critical layer of mediation. Survey data reveal strongly polarized employer attitudes regarding the role of third-country nationals in the green transition. Only a small minority perceive them as suitable for skilled or strategic positions linked to green transformation, while the majority frame them primarily as low-skilled or auxiliary labour. A substantial share of employers reject the relevance of the green transition altogether, thereby excluding any consideration of green skills or workforce adaptation strategies. This heterogeneity highlights a significant gap between structural labour market needs and dominant employer frames. *Fifth*, barriers and incentives reflect a predominantly short-term logic. Employers identify language barriers, administrative complexity, and skills mismatches as key obstacles to broader inclusion of third-country nationals. At the same time, the primary incentives for hiring remain acute labour shortages,

cost considerations, and regulatory facilitation. Together, these factors indicate that employer decisions are driven mainly by immediate operational needs rather than by long-term strategies for skills development or adaptation to green transformation. Hence, our results point to a structural contradiction. While third-country nationals are increasingly indispensable for the functioning of key sectors, their institutional positioning as predominantly temporary, low-skilled labour reinforced by employer perceptions and practices limits their capacity to contribute to the long-term objectives of the green transition. The findings thus highlight a tension between short-term labour market adjustment and the requirements of sustainable economic and ecological transformation.

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