



OPEN ACCESS

EDITED BY

Francesco Vittori,
University of Verona, Italy

REVIEWED BY

Susan Doofan Albert-Makyur,
Nile University of Nigeria, Nigeria
Tord Austdal,
University of Stavanger, Norway

*CORRESPONDENCE

Violeta Cvetkoska
✉ violeta.cvetkoska@eccf.ukim.edu.mk

RECEIVED 28 September 2025

REVISED 17 December 2025

ACCEPTED 24 December 2025

PUBLISHED 16 January 2026

CITATION

Cvetkoska V, Trpeski P, Ivanovski I, Peovski F, Kozheski K, Merdzan G, Babadoğan MC, İmrol MH, Görür DZ, Ecer H, Melnyk S, Lytvynchuk A, Tereshchenko H, Anisimova O, Hunde AB, Gemeda FT, Dubi YB and Yacob ET (2026) Stakeholder perceptions of migration policies and investment in human capital development: expert interview evidence from policymakers, labor market organizations and social partners in North Macedonia, Türkiye, Ukraine, and Ethiopia.
Front. Educ. 10:1714973.
doi: 10.3389/feduc.2025.1714973

COPYRIGHT

© 2026 Cvetkoska, Trpeski, Ivanovski, Peovski, Kozheski, Merdzan, Babadoğan, İmrol, Görür, Ecer, Melnyk, Lytvynchuk, Tereshchenko, Anisimova, Hunde, Gemeda, Dubi and Yacob. This is an open-access article distributed under the terms of the [Creative Commons Attribution License \(CC BY\)](#). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

Stakeholder perceptions of migration policies and investment in human capital development: expert interview evidence from policymakers, labor market organizations and social partners in North Macedonia, Türkiye, Ukraine, and Ethiopia

Violeta Cvetkoska^{1*}, Predrag Trpeski¹, Igor Ivanovski¹, Filip Peovski¹, Kristijan Kozheski¹, Gunter Merdzan¹, Mustafa Cem Babadoğan², Meryem Hamsi İmrol³, Durmuş Ziya Görür⁴, Halil Ecer⁵, Sergii Melnyk⁶, Andrii Lytvynchuk⁶, Hanna Tereshchenko⁶, Olga Anisimova⁶, Adula Bekele Hunde^{7,8}, Fekede Tuli Gemeda⁷, Yosef Beco Dubi⁹ and Ephrem Tekle Yacob⁷

¹Faculty of Economics – Skopje, Ss. Cyril and Methodius University in Skopje, Skopje, North Macedonia,

²Faculty of Educational Sciences, Ankara University, Ankara, Türkiye, ³Teraki Private Schools, Istanbul, Türkiye, ⁴Ministry of National Education (MoNE), Ankara, Türkiye, ⁵Ankara Metropolitan Municipality, Ankara, Türkiye, ⁶Institute of Educational Analytics, State Scientific Institution, Kyiv, Ukraine,

⁷Department Curriculum and Instructional Science, Kotebe University of Education, Addis Ababa, Ethiopia, ⁸Department of Teacher Education and School Research, University of Oslo, Oslo, Norway,

⁹Department of English Language Education, Kotebe University of Education, Addis Ababa, Ethiopia

Introduction: Policies that combine human capital development and migration governance are necessary because migration alters the labor supply and skill distribution across economies. Through a cross-country approach, four migrant-origin countries, North Macedonia, Türkiye, Ukraine, and Ethiopia, that reflect various combinations of demographic pressures, institutional capacity, and conflict shocks are examined in this study.

Methods: Using standardized qualitative expert interviews with policymakers, labor market intermediaries, and social partners, analyzed through a reflexive thematic analysis, the study explores the respondents' perceptions and the channels through which education and migration policies, as perceived, interact to influence labor market outcomes.

Results: Respondents reported that migration dynamics exacerbate structural unemployment, gender disparities, brain drain, and ongoing skill mismatches in all four countries. Interviewees highlight structural gaps in technical training and job-readiness in Ethiopia, while in Ukraine, a prime example of the disruptive effects of war, population displacement strains both education and the labor market. In North Macedonia and Türkiye, skill mismatches are pronounced by the notable emigration as well as the inefficiency of retention mechanisms. Among all studied countries, participants identified demand-based training and reliable

institutional frameworks as crucial levers for reducing shortages and slowing the human capital depletion.

Discussion: The comparative study emphasizes the need for policies that efficiently connect labor market demands, migration management, and education to achieve a balance between social demands and long-term socioeconomic growth.

KEYWORDS

brain drain, human capital development, labor market, migration, policy coordination, skills mismatch

1 Introduction

Migration is a dynamic force that shapes the labor supply, modifies wage structures, and can completely alter the demographics of entire regions. It is no longer a side topic of interest. Asymmetric growth, war, demographic imbalances, and the pull of globalization have all contributed to the widening and acceleration of global flows, which have increased both opportunity and dislocation in both the origin and destination economies. Shortages occur where skilled workers leave in large numbers, and thus wage pressure increases where low-skilled entrants appear. Therefore, analytically sound migration policies and consistent investments in human capital development are necessary to reduce such frictions (Stark and Bloom, 1985; Castles et al., 2014).

This paper studies the connectedness between migration policies and investments in human capital development in the unique contexts of four migrant-origin countries i.e., North Macedonia, Türkiye, Ukraine, and Ethiopia. Each of the four exhibits distinct socio-economic contexts where migration patterns, developmental challenges, and labor market conditions vary, which in turn helps us understand how migration impacts human capital so that adequate policies can be shaped. Among all four analyzed cases, the relationship with the European Union as a destination, global partner as well as a reference point in policymaking provides a unique view into how migration and skills policies are designed. However, it must be emphasized that policy design is rarely consistent and uniform.

Based on this, our research poses the following research questions: (1) How do policymakers, labor market organizations, and social partners in North Macedonia, Türkiye, Ukraine, and Ethiopia perceive the relationship between migration policies, investments in human capital development, and skill alignment? and (2) Which skill mismatch typologies do these stakeholders view as most prevalent in their national contexts, and how do they assess the role of current education and training initiatives aimed at addressing these mismatches? This study investigates stakeholders' perceptions of public spending on education and targeted upskilling in relation to employability and migration trajectories. It also identifies the institutional mechanisms that respondents describe as enabling or constraining these relationships. Here, the perspectives of social partners, labor-market organizations, and policymakers are crucial. Their detailed observations highlight bottlenecks that are not visible in aggregate data and aid in the calibration of interventions that balance the supply of education with the constantly evolving demand for skills. Respondents underlined that in order to mitigate skill

erosion and achieve economic adaptation under sustained mobility, migration governance must be in line with strategic human capital investment.

We present a qualitative content analysis of primary data obtained through standardized, open-ended question interviews with policymakers in the labor market and education domains, as well as with labor market intermediaries, social partners, and other labor market organizations. A total of 34 respondents were interviewed across the four countries. All participants provided informed consent to take part in the study, and their identities were anonymized in the presentation of results.

The study continues in the following manner. Section 2 focuses on reviewing some of the key works on the topic from the global literature. In Section 3, we present the methods used. Sections 4 and 5 are reserved for presenting the main results of the research as well as a general discussion to the topic. Finally, we conclude the study in Section 6.

2 Theoretical background

2.1 Human capital, labor skills, and mobility

A complex and interdependent trinity is formed by migration, human capital formation, and labor market adjustment. Some human migrations are gradual, cumulative trickles, while others seem more like abrupt flood that can completely alter production systems. The first analytical lens is provided by human-capital theory, which states that intentional investment in education and training increases individual productivity and, when combined, improves growth trajectories (Shultz, 1961; Becker, 1964). Migration has a major impact on migrants' accumulation of human capital, particularly in education and skills. The possibility of greater returns on skills in the countries of destination frequently influences people's decisions to migrate, encouraging them to make educational investments before leaving. Through knowledge transfer and remittances, this investment benefits their families and communities back home in addition to improving their employability. However, learning never happens in a setting where multiple factors do not influence it. Incentives to migrate rely on a dynamic combination of push and pull factors, while migrants carry, lose, or enhance their skills along the way (Lee, 1966; Stark and Bloom, 1985). As Vidal (1998) notes, increased human capital formation in the source country results from migrants' motivation to obtain education and skills that are valued in the host nation. However, there seem to be interconnected decisions on education investment. The possibility of migration

may impact domestic educational decisions since people may seek internationally transferable credentials (Dustmann and Glitz, 2011).

Moreover, traditional divisions can be considered to be outdated, as Castles et al. (2014) note that additional layers of complexity are added by digital information flows, transnational networks, and diaspora feedback loops. The national stock of skills declines in the countries of origin when workers leave, while host economies benefit when they return, but only if integration processes are well in place. Notably, there is ample evidence of asymmetric outcomes. Developing economies may lose out on valuable expertise due to high-skill emigration (Beine et al., 2008; Docquier and Rapoport, 2012). On the other hand, large areas of migrant underemployment are still reported by destination countries, which is a well-documented phenomenon for the labor markets in Europe after 2004, as per Dustmann et al. (2008). The host economy can benefit from the skills that migrants bring, which lessens the detrimental growth effects that immigration is usually linked to (Dolado et al., 1994). On the other hand, migration may result in brain drain in the country of origin, where the loss of qualified people can hinder local development and worsen inequality, even though in some cases it can increase human capital for many.

2.2 The four distinct cases

North Macedonia faces protruding challenges of still relatively high unemployment and a persistent loss of highly skilled workers, especially in the health, ICT, and export-oriented manufacturing sectors. According to the regional labor market diagnostics, the resulting skills loss reduces fiscal capacity and limits potential output (World Bank Group, 2019). The situation in Türkiye is rather different. It serves as a sender, receiver, and a migration corridor all at once, making it strategically important for global migration flows, and cannot be explicitly considered only a country of origin of migrants. A sizable migrant workforce is absorbed by informal employment, youth unemployment is still stubbornly high, and the macroeconomic volatility encourages educated citizens to leave the country. Curriculum reform is explicitly tied to labor-demand projections in Ankara's 12th Development Plan. This agenda was hinted at in academic work on migration governance (İçduygu and Kirişçi, 2009) and supported by a recent macro-structural survey (OECD, 2023). The war-torn Ukraine serves as an example of how severe shocks amplify structural weaknesses. Talent pipelines in IT, engineering, and healthcare have been disrupted by mass migration and forced displacement. Though empirical assessments reveal persistent mismatches between education and employment, re-skilling initiatives and diaspora engagement are now high on the governmental list of policy imperatives (Kupets, 2016). Finally, the demographic paradox is best exemplified by Ethiopia. In urban labor markets, a growing youth population and rapid urbanization clash with a limited capacity for absorption. As previously noted in the Urbanization Review (World Bank Group, 2015), inadequate vocational training and weak ties between education institutions and firms increase brain-drain dynamics and encourage outward mobility in the country.

Taken together, the four analyzed countries of migrant origin position within the wider European and global migration systems. For instance, North Macedonia and Türkiye are closely linked to the European Union's labor markets through mobility channels and policy alignment processes. Moreover, they are both considered candidates for full membership into the EU, but have failed to complete this process for years. While Ukraine also emerged as a potential candidate for membership recently, besides their long-lasting skills to the EU members, the country experienced large-scale forced displacement in the nearby countries - notably Poland and Germany. On the other hand, even though culturally and geographically distinct, Ethiopia is a prime example of a low-income country where internal migration, demographic pressures, and emigration (with a traditional movement toward the Middle East and Europe) intersect. While using the EU as a common reference point without assuming it is the only or dominant destination context, comparing these cases enables us to study how similar policy challenges around migration and human capital development manifest under different institutional capacities, demographic structures, and even exposure to conflicts.

2.3 Education and migration policies—what works and what does not?

When visas, credential recognition, and settlement services work together, selective skilled migration programs in Australia, Canada, and Germany demonstrate quantifiable benefits (OECD, 2019). However, discrimination and credential downgrading plague even high-income environments, reducing the return on human capital (Dustmann and Glitz, 2011). Another point of reference is provided by dual VET systems in Germany, Switzerland, and Austria, where it is noted that close school-firm coordination reduces youth unemployment and narrows mismatch (Eichhorst et al., 2015). However, exporting that model is risky; inflexible curricula and low employer engagement frequently prevent replication (Euler, 2013; Pilz and Li, 2020). Policymakers in middle-income countries have attempted to convert brain drain into something called brain gain. Higher schooling rates and larger skill pools are signs of some success for Mexico's and the Philippines' education-plus-return strategies, but the benefits are squandered by ongoing outflows and inadequate reintegration programs (McKenzie and Rapoport, 2007; Docquier and Rapoport, 2012). A similar, albeit more EU-centric, story is told in Eastern Europe, where targeted investment increases enrollment, but wage disparities continue to attract talent from outside the region (Kaczmarczyk and Okólski, 2008; Barslund et al., 2014). The experiences in Africa are equally varied. Ghana, Nigeria, and Kenya continue to lose medical and STEM professionals (Clemens and Pettersson, 2008; Awumbila et al., 2017), despite significant increases in tertiary capacity. Although still in their infancy, emerging tools like diaspora bonds and global skill partnerships promise greater alignment (Clemens, 2015).

3 Materials and methods

This study employs a cross-national qualitative research design to explore how migration policies and public investment in

human capital development shape the labor market dynamics in North Macedonia, Türkiye, Ukraine, and Ethiopia. Through semi-structured expert interviews, we conduct a comparative synthesis based on a reflexive thematic analysis (Braun and Clarke, 2019) to provide a comprehensive and context-sensitive understanding of skill mismatches and migration-related labor market disruptions. Researchers from all four countries worked together to create a standardized set of interview protocols, methodological frameworks, and ethical and procedural guidelines, in line with the study's goals. Even though the instruments were adapted to national contexts, core themes were kept consistent to ensure comparability across countries. To strengthen the methodological validity of the study, we employed multiple layers of data triangulation, ensuring that the presented findings and conclusions are relevant and trustworthy. In order to ensure that interpretations were not restricted to a single institutional viewpoint, interviews were first cross-validated between research teams from all countries by contrasting the perspectives of the various stakeholder groups. Moreover, to preserve anonymity, each of the quotes extracted from the interviews were given a unique identifier i.e., the type of stakeholder (where labor market organizations, intermediaries, and social partners are simply denoted as labor market organization for simplicity), the country code, and a single-digit numerical representation. Typically for expert interviewing, we consider policymakers, labor market intermediaries, and social partners as stakeholders with specialized, situated knowledge, who interpret their perceptions on policy design and implementation (Dexter, 1970). We ought to note that this approach does not establish possible causality nor does it measure the quantitative impact of policy interventions, but rather uncovers the perceived institutional challenges and inconsistencies.

In total, 34 participants (22 policy creators and 12 labor market organizations, intermediaries, and social partners) were engaged across the four countries, ensuring the inclusion of varied and contextually rich perspectives on skill formation, labor market challenges, and migration policy implementation. The analysis's thematic dimensions included labor market dynamics and structures, the degree to which human capital development strategies and migration governance have been integrated, the consequences of brain drain, the alignment or misalignment between the supply and demand of skills, and the efficacy of policy responses. Each participating country used a purposive sampling technique to guarantee that a range of institutional actors were included. Figure 1 portrays the methodological approach to the study.

3.1 Questionnaire structure for policy creators in employment, labor market, and the education sector

To collect the views of key players involved in the development and implementation of national and regional policies, two distinct but methodologically related questionnaires were developed for policy providers in the areas of employment and labor market policy and education and training policy. Each instrument was tailored to its particular policy area while maintaining thematic

coherence with the consequential qualitative analysis. Respondents who represented organizations in charge of labor market and employment policy were given a structured questionnaire with 13 questions covering key aspects of labor market policy, its connections to migration, strategies for addressing shortages and mismatches, the function of the national qualifications system, national migration frameworks, and collaboration with the European Union.

On the other hand, for participants involved in education and training policy, the questionnaire had 15 questions and was centered on obtaining perceptions matching the supply of skills to the demands of the labor market, how migration influences frameworks for qualifications and skills policy, the consequences for investments in human capital, and prospects for European collaboration and skill partnerships. A minimum of five policy experts per country were selected to participate in this phase of the study; however, the sampled respondents may be lower due to the availability of such institutions in each country. People who actively participate in the creation and implementation of policies in ministries and government organizations, such as the Ministry of Education, the Ministry of Economy, or the Ministry of Labor, as well as Chamber of Commerce and Industry, were given preference in the selection process. To ensure that their viewpoints represented both the creation of strategic policies and their *de facto* implementation, the respondents also had to have developed relationships with both labor market stakeholders and educational service providers.

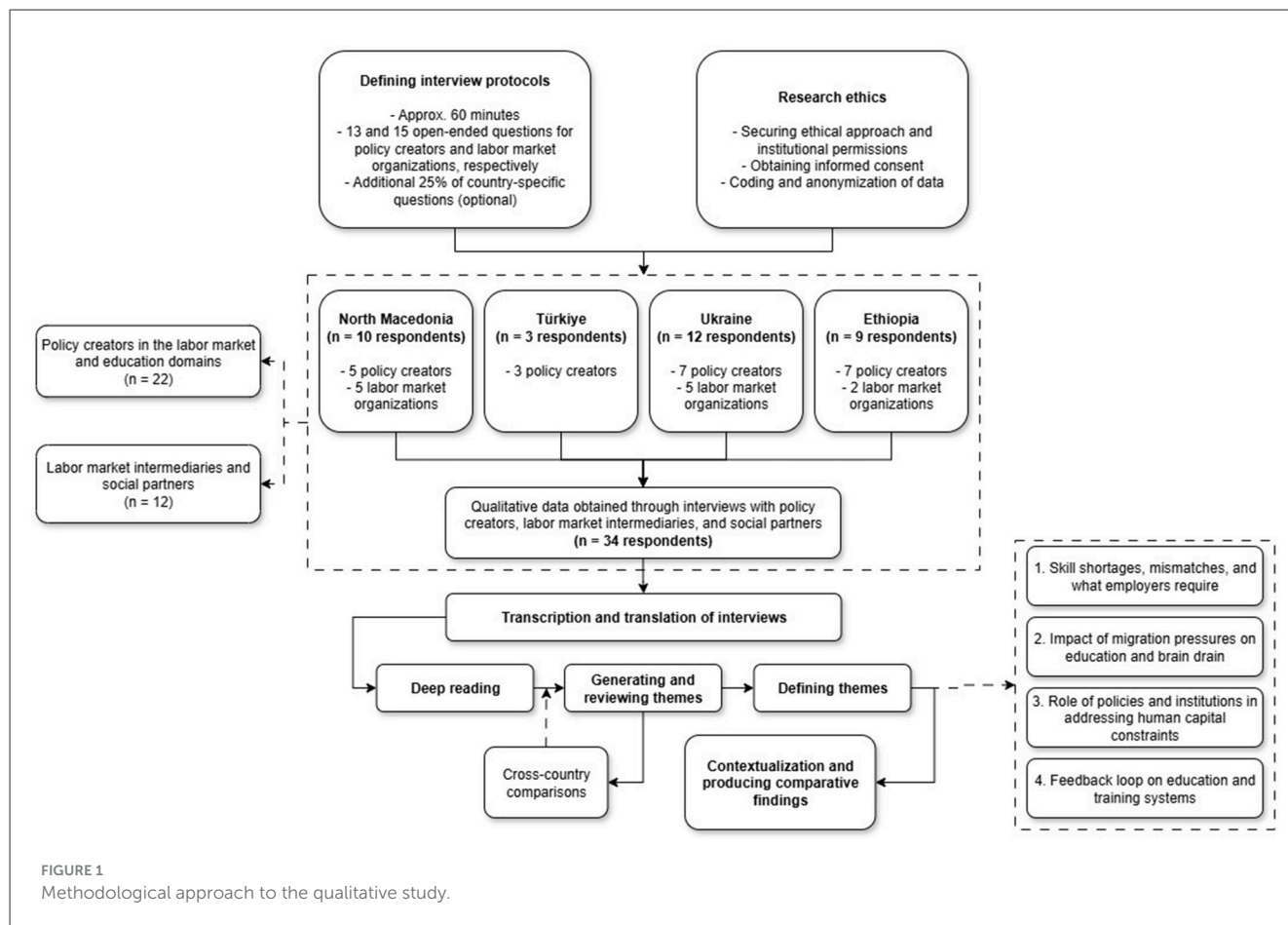
3.2 Questionnaire structure for social partner organizations and labor market intermediaries

As the last step in the primary data collection process, an interview questionnaire was developed for representatives of labor market intermediaries and social partner organizations in order to gather the opinions of organizations that act as mediator between labor supply and demand, specifically in the areas of skills policy and migration. The respondents were interviewed on 15 questions, targeted at exploring employment policy frameworks, the relationship between migration and the labor market, institutional approaches to labor market imbalances, the role of international cooperation, especially with the European Union, the contribution of national qualifications systems to skill formation, and the orientation of migration policy. Each participating country was required to conduct a minimum of five interviews within this stakeholder group; however, with the exceptions noted earlier.

4 Results

4.1 Skills shortages, mismatches, and what employers require

Labor market intermediaries and policymakers all see a persistent and growing skills gap in the Macedonian labor market. Respondents agree on a number of issues, including a



lack of qualified applicants, a discrepancy between educational requirements and job demands, and obstacles that slow hiring and impede productivity gains. Businesses find it difficult to fill openings in both skilled and routine roles, particularly outside of the capital. Severe labor shortages in traditional industries such as construction, agriculture, textiles, tourism, and hospitality have been identified through the interviews of respondents. Even in the expanding ICT sector, where there is a consistent flow of graduates, there are certain skill gaps. Many respondents blamed this on a lack of link between education and the economy, pointing out that while universities continue to produce graduates in fields with low demand (like general economics or social sciences), enrollment in occupations with high demand (like engineers, technicians, and even STEM teachers) is declining. Youth and professions requiring dependable soft skills and fundamental technical proficiency are particularly affected by these shortages. Employers emphasize that job seekers rarely acquire practical, certifiable competencies through the school-to-work pipeline. Respondents note several challenges, such as "insufficient competence of job seekers, inadequate education of the workforce, etc." (Labor market organization, MKD_5) as well as:

High rate of youth unemployment, mismatch of the educational structure with the needs of the labor market, the phenomenon of brain drain, a relatively inflexible labor market

characterized by rigid regulations that can discourage job creation, especially in sectors that are looking for a temporary or part-time job. (Labor market organization, MKD_4)

In Ukraine, migration has long been a problem, and replenishment is limited by labor loss and demographic decline. The situation has deteriorated since 2022, resulting in significant labor market imbalances from the combination of internal war-related displacement and external migration. With millions of people fleeing overseas and many more internally displaced, the Russian invasion set off one of Europe's worst forced migration crises since World War II. The demographics of Ukraine have changed as a result of these migrations, and the EU and Ukraine now face socioeconomic, educational, and humanitarian difficulties. While Ukraine is under political and developmental pressure, the EU is affected in areas such as labor markets, skills, education, and migration management. The long-term viability of such measures is uncertain, despite the fact that EU nations provided temporary protection. Strategic, coordinated solutions are needed for problems like brain drain, qualification recognition, labor integration, and displaced youth's access to education. In many cases, policy efforts to find a balance between humanitarian needs and economic resilience are based on how well migration patterns are actually understood.

Between 2014 and 2025, the multiple occurrences of war, political unrest, and socioeconomic changes caused a significant

change in Ukraine's migration dynamics. Ukraine and Europe are facing previously unheard-of demographic and political challenges as a result of internal displacement and external migration. In addition to being humanitarian, forced displacement is a structural issue that calls for innovative methods of managing migration. Internal migration has expanded rapidly since 2022, leaving many host regions struggling to provide jobs, maintain key infrastructure, and deliver essential services. The integration of internally displaced people (IDP) is still uneven despite state assistance, underscoring the need for long-term reintegration plans that incorporate regional development and digitalized services. Ukraine's labor force and human capital are being further depleted by external migration. Even though the EU employs and supports a large number of migrants, Ukraine will suffer long-term demographic effects, especially if highly educated women and youth permanently relocate abroad, where they run the risk of losing out on innovation and productivity. Although it depends on institutional trust, security, and reconstruction, reverse migration presents opportunities. Economic recovery, housing plans, and retraining initiatives for both locals and returnees must all be in line with effective repatriation.

As a result of the interviews conducted in Ukraine, the labor market intermediaries indicated that there were shortages in specific professions. Among the main drivers for the shortage of qualified personnel, the respondents identified internal and external migration as a result of voluntary dismissal of employees and their relocation to other regions of the country or outside its borders, insufficient pay and other employment conditions, and suspension of production, relocation of production, etc. The representative of the labor market intermediaries noted that:

The key factor causing the shortage of required staff is martial law, as it causes the decline in manufacturing, the severance of ties with suppliers, partners and clients/consumers of goods or services, the relocation of production facilities, the reduction of the number of employees, the difficulties of their return when production resumes/increases, the relocation of employees to other regions of the country (internally displaced persons (IDPs)) or outside its borders (refugees). There is also an additional departure of qualified workers as labor migrants, similar to the pre-war period. (Labor market organization, UA_2)

Ethiopian policymakers shift attention to significant labor market issues like brain drain, structural unemployment, and skill mismatches. Many graduates are still unemployed despite their increased education because they lack the necessary technical and practical skills required by the industry. Employment is further disrupted, migration is pronounced, and opportunities are destabilized by long-lasting internal conflicts and displacement. Many young people, particularly those from Technical and Vocational Education and Training (TVET) and higher education (HE) institutions, face protruding problems of underemployment or unemployment as a main consequence of training that does not meet the de facto demands of the local labor market.

Pronounced difficulties in recruiting skilled workers have been identified by many Ethiopian respondents directly involved in communication with companies from sectors such as healthcare,

digital technology, engineering, and manufacturing. It has been highlighted that this shortage forces companies to hire expatriates or invest heavily in internal training, both of which increase operational costs and reduce efficiency. According to respondents, curricula still lean heavily on theory, leaving graduates without the hands-on skills employers require. A case in point is provided by a labor market organization in Ethiopia, where the respondent states that:

To ensure our strategies are effective, we acknowledge the necessity of conducting regular assessments and studies of the labor market. This ongoing research will help us adapt our approach to align with current and future demands, ultimately improving our chances of successfully entering and integrating into the labor market. (Labor market organization, ETP_2)

4.2 Stakeholder perspectives on how migration pressures relate to education and brain drain

Respondents consistently reported that structural frictions are exacerbated by migration dynamics. Emigration is now a binding constraint for both public services and businesses, rather than a passing trend. Respondents in North Macedonia report teams that are severely understaffed, with the loss of seasoned employees leading to expensive shift reorganizations and a slower onboarding process for new hires. But at the end, it is not just about wages. As a respondent highlights, expectations are built on housing, education, and social services, determining the overall quality of life, thus indicating:

The problem is certainly big... There are two ways to replenish it. One is those who are left here, for whom it is necessary to analyze which skills they have and which they need to acquire in order to be of high quality and qualified for the needs of the labor market. Or the second thing is what is happening now, which is to import. But the importation of employees in a country with a fragile economy, such as North Macedonia, is never sustainable and has no longevity. We have examples when they come from other countries that are poorer, stay here for a short time, and then go to Western Europe or other more developed countries... However, migration is mostly generated by economic factors. Quality of life, too, in any case. These are the two factors—income and quality of life. (Labor market organization, MKD_1)

Macedonian policymakers and social partners agree on a very evident diagnosis, which is a tightening labor market with persistent emigration compounding labor shortages and skills mismatches. They shared a sense of urgency regarding the shrinking population and the growing gap between available positions and workers with the necessary skills. The evidence shows that the country's labor market is beset by three main constraints, i.e., the quantity, quality, and retention of human capital. These constraints reinforce one another and limit the nation's potential for growth in the long run. When asked what the most challenging

and urgent current problems in the field of employment and labor market are, a respondent thus noted two main pressing issues:

Under number one, number of people, and under number two, skills of people who need to be in the labor market... In our country [North Macedonia], let's say, an average salary of 600–700 euros, which can be obtained on the labor market, is three times lower compared to some nearby countries. Simply, the time and income generation factor is reduced by a factor of 4. What you earn in another country in 3 months, you earn here in 12 months. (Labor market organization, MKD_1)

This translates into lower domestic retention, even if the nominal pay in the country is rising. Such developments in the stock of human capital can hinder economic growth, with the country failing to achieve its potential. A policymaker stressed the ongoing struggles to achieve a controlled and positive migration, stating:

Migration is a serious problem, because the emigration of the educated and most productive staff from the population directly affects economic activity. The working positions are either not filled or are filled with inadequate staff, which has serious consequences for the Macedonian economy, for its stability and growth, and represents a low basis for faster economic development. (Policymaker, MKD_3)

The effects extend beyond the number of workers on production lines. The brain drain increases the risk of production downtime and increases replacement costs by leaking mid-career supervisors along with early-career graduates. Many respondents attribute this to institutional frictions that exacerbate the incentive to relocate, such as unclear regulations and troublesome bureaucracy. Additionally, it changes the conversation about circular migration from one of plausibility to one of risk, as many departures do not return because the perceived domestic opportunity set is too limited. This governance-and-expectations channel was captured by a policymaker which indicates that:

For circular migration to be real, it would mean that people leave the country for economic reasons and are willing to earn more to then come back and live here. In our country, migration, i.e., leaving the country, is not based solely on economic postulates. People leave for something else, in addition to the economic reasons, the political-legal ones are also very strong, i.e., lack of rule of law, lack of order in the system, lack of certainty, lack of perspective... (Policymaker, MKD_4)

However, the image is not entirely negative in North Macedonia. Some respondents acknowledge the benefits of mobility in terms of remittances and skill enhancement. Wages earned overseas are used to fund training, exposure to standards, and savings, which enable returnees to start their own businesses and improve economic processes back home. How frequently and under what circumstances these advantages manifest themselves is the main question posed. Respondents contend that in order for the return to be more than symbolic, circularity

needs credible domestic anchors, such as targeted financing and recognition of the experience gained abroad. The benefits are thus clearly noted:

They [the returned migrants] will see how the world works, buy something, come here, and start their own business. Outsourcing companies, IT companies, and shipping companies are concrete examples of this. They worked, saw how well it worked, made a good network there, and came back here. However, it is much cheaper to live here and for everything else, plus we are conditionally competitive on the labor market in developed countries, which is one benefit. A second benefit is that we must give those people who stay here better conditions for acquiring education and practical experience. Some people see it as negative, but I personally see it as very positive, because here you already have competition, and firms and companies that are looking for employees must provide better employment conditions. (Labor market organization, MKD_1)

There are several benefits associated with this pattern of migration, including gains in financial capital, human capital, and social capital. (Policymaker, MKD_2)

Investments in human capital underscore the importance of not overlooking local dynamics and highlight the need for reforms aligned with the expectations of the labor market. It is widely held that ensuring the adaptability and greater flexibility of human capital investments in migration policies will alleviate pressures on the labor market and contribute to development, particularly in countries like Türkiye that experience high levels of migration. A Turkish policy creator thus notes:

We have to develop policies that will keep our people here. They bring a lot of economic benefits to their companies and the country. Because new technologies, new knowledge, meeting new people, and creating networks for idea collaboration really provide significant gains. (Policymaker, TR_1)

Given the anticipation that global migration flows will continue, there is a clear need for urgent policy interventions in Türkiye. Consequently, the need for coordinated action between the private and public sectors, as well as other stakeholders, is considered to be crucial. As some respondents note, it is all about the quality and efficiency of the education sector and producing graduates that are in line with the contemporary demands:

By creating job opportunities for our young people who have graduated from university and are qualified in their professions, we can reduce oversupply in certain fields or, instead of losing them to brain drain, cooperate with countries that need them through joint programs with migration-receiving countries. I think making agreements between countries to bring these young people back to our country would be more beneficial. (Policymaker, TR_3)

While job switching and sectoral mobility have intensified in the Turkish labor market, employees' expectations from their workplaces have also steadily increased. However, high circulation between jobs and across sectors hinders the development of skilled employment. Moreover, many migrants to Türkiye experience skill depreciation due to differences in religion, culture, habits, and beliefs in the host country, and there is a lack of adequate support for acquiring new skills. Additionally, the disruption of the planned economic growth and development of the national labor market is notably influenced by the emigration from Türkiye to European countries as one policymaker notes.

We've created a large group of unemployed graduates. Now, we're seeing this reflected in migration to other European Union countries. Our young people, especially university graduates who can't find jobs here, have to move to Europe to find work and earn higher wages. This is brain drain. In the coming years, we'll feel much more deeply just how much damage brain drain causes to countries. (Policymaker, TR_3)

For migration policies to yield effective outcomes, they must be linked to human capital and advanced within a systemic and institutional framework, requiring institutions to adapt to these changes and transformations.

As technologies develop worldwide, I believe Türkiye has significant gaps in keeping up with some of the innovations in different job sectors. (Policymaker, TR_3)

On the other hand, major issues mentioned by interviewees in Ukraine included a shortage of staff due to the mass exodus of recent graduates and young workers overseas, disruptions to education, particularly in-person classes caused by martial law, hostilities, and evacuations as well as outdated training programs with little employer cooperation that limit retraining. Mobilization, frequent alarms, power outages, inadequate labor market analysis, underfunding, and the lack of promotion of vocational professions are other problems. The majority of interviewed respondents did not believe that immigration was a practical way to account for retaining skilled workers, despite some of them suggesting that it should be widely supported. Nonetheless, post-war immigration was seen by some labor market intermediaries as a solution to the labor shortage. Thus, one of them claimed that

The full-scale war that is ongoing in Ukraine has caused a number of problems that will have long-term consequences. One of these is the shortage of labor, which the country is already experiencing and, quite obviously, will experience after the end of the war. One of the ways out seems to be replacing the labor force with labor migrants. Whether you like it or not, business will simply be forced to hire foreigners from third world countries to replace Ukrainians. We must come to terms with this and prepare now at the state level for the influx of foreigners from poor countries and, in particular, try to minimize future risks by developing norms and rules both for the business that will attract these people and for the labor migrants' themselves. (Labor market organization, UA_5)

Others argued that Ukraine has its own resources to deal with staffing shortages and opposed immigration in national and regional labor markets. They mentioned the risk that immigration would primarily bring unskilled labor, the availability of skilled local workers accustomed to the conditions, and the ongoing hostilities. Some respondents agreed that hiring foreign labor might be a viable option in the future, but not in the current moment, as it is difficult to properly manage. Those representatives identified a whole range of measures aimed at overcoming personnel and migration problems, for example, one of them notes that:

The companies implement measures aimed at maximum retention of existing employees, improvement of working conditions, team building, training, etc. (Labor market organization, UA_3)

The lack of qualified workers who are compelled to leave due to military operations, which lowers task performance and burdens remaining staff, is one of the major issues in human capital development that the social partners brought to light. The pool of available candidates for job roles is further constrained by the large number of men who are unfortunately mobilized into the armed forces. Respondents also reported an increase in burnout, illness, and injuries throughout their working hours, predominantly due to the ongoing stress and military attacks. Some men choose not to work in formal jobs, and labor has been redirected to safer areas. Social partners generally had a very negative opinion of labor migration, especially if it was considered during times of war. Thus, one respondent noted that:

This situation causes enormous harm to business and makes it impossible to achieve a rapid pace of recovery in the post-war period. (Labor market organization, UA_2)

Regarding the place and role of social partners in these matters, the opinions of the interviewees were divided. Thus, some of them claim that their respective activities are reduced to the important role of mediators (a kind of bridge) between employers and applicants for vacant positions. For example, organizations that take care of internal transfers of persons, help in finding a job, and establish connections with new employers. Although their role in qualifications is still limited, state and local authorities are vastly involved in moving businesses out of conflict zones. War-related displacement and labor migration were characterized by experts as disastrous for Ukraine's labor market. Acute staff shortages, the need to re-purpose current employees and the unemployed, which will require additional time, and money and the probable need to recruit third-country labor migrants in the postwar era, who will need to be trained and upskilled to meet workplace standards, are some of the major obstacles. A representative of an industry-level trade union association emphasized the need for

The adoption of a state program to stimulate the return of refugees from the war to Ukraine, with a focus on creating a mechanism for their material and social stimulation. (Labor market organization, UA_1)

Some possible benefits of labor migration were mentioned by the Ukrainian respondents. These include the recruitment of laborers from lower-income nations, the contribution of circular migration to post-conflict reconstruction, and the development of Ukraine's relations with European nations. Additionally, migrants have an impact on local communities overseas, promoting sustained support for Ukraine. For instance, returnees could apply their European experience back home. All social partners, however, concurred that immigration is unrealistic during times of war. One of the respondents claims that

The most effective thing in the post-war period is to attract qualified workers and experts who are able to implement their qualifications in modern innovative areas of Ukraine's recovery, primarily in the field of robotics, renewable energy, construction, rehabilitation of war victims and environmental rehabilitation. (Labor market organization, UA_1)

On the contrary, when observing the Macedonian case, targeted "stay" and "return" tactics are still in their infancy. For mobile mid-skill workers, staying is the preferred option, but employers and social partners hardly ever indicate specific, large-scale initiatives to support this claim. Pilot programs, such as employer surveys linked to local training offers or youth activation, are appreciated but insufficient to affect overall trends. A policymaker labels them as:

...medium satisfactory, with a tendency toward unsatisfactory. We are walking a fine line. (Policymaker, MKD_4)

Macedonian respondents seek tools that shorten the time between idea and firm registration, acknowledge foreign experience, and direct savings from the diaspora into small and medium enterprises. Legitimacy is also important as many returnees will keep their jobs overseas and their savings offshore if they cannot rely on predictable administration, including legal binders, permits, inspections, and financing. One of the interviewed social partners reframes the task as establishing a business environment that treats diaspora investment as strategically as investment into free economic zones:

One of the state's strategies should be the repatriation of qualified emigrants. If we have interested people who would like to come back, we should make our services available to provide good conditions, different offers, low interest loans, etc, something that will draw them back. We have TIDZs [acronym for the Technological Industrial Development Zones] all over the country, where big corporations don't pay, and we stimulate them as a state. It gave a good result, many people got a job and the salary increased a lot. Exports increased and so on. But why not apply the same to individuals? Over a hundred children returning from the world and starting a business here is equal to one TIDZ. (Labor market organization, MKD_1)

4.3 The role of policies and institutions in addressing human capital constraints

In North Macedonia, numerous respondents express disapproval of incentives that unintentionally reduce the intensity of job searches and overly standardized curricula. The end result is a patchwork of programs that appear to be in place but leave employers feeling unimpressed and job seekers only slightly closer to long-term employment. The misalignment is structural rather than sporadic, according to one policymaker's analysis of the employment policy measures (mostly referring to the operational plan for active programs and measures for employment) taken in North Macedonia to tackle human capital depletion due to migration, which views it as "not very successful" and adds:

...The trainings are redirected to cities where there is no need for the corresponding occupations, or there are very few people who want to participate in retraining and retraining training for their employment in the companies that applied for the measures from the Operational Plan... That is why this assistance must not be a permanent determination of the state, because in this way the beneficiaries become passive job seekers, do not get officially involved in the work processes, and do not register as active participants in the labor market for the simple reason of not losing that help. In this way, and practiced in this way, this aid encourages the gray economy. (Policymaker, MKD_3)

Over the past decade, policies addressing migration and human capital in Türkiye have emerged in various forms across different regions of the world. The formulation of these policies is influenced by several factors. Primarily, the characteristics of migration received by host countries significantly affect policy development. According to respondents, the migration policy is shaped both by how governments view its root causes and by the relations between migrants and the local communities. Economic development, labor markets, and education systems further influence the nature of the measures that are widely adopted.

As a country, we're not really attracting skilled migrants. The qualified ones are going to other countries. It's important that the skilled workers who come here quickly join the workforce, and for that, they need to adapt as soon as possible to the work rights and conditions in our country. (Policymaker, TR_3)

The management of migration policies in Türkiye has undergone notable changes since 2011. Türkiye's status as a neighboring country to Syria has resulted in a significant influx of migrants; however, Türkiye has often lacked the capacity to adequately accommodate this migration. The high volume of migration, reaching into the millions, has impeded the effectiveness of measures taken within the labor market, preventing the achievement of anticipated outcomes.

There's a huge group of about 6.5 million people who are neither in education nor employed. The biggest problem is that this group hasn't been brought into the labor market. Also, the fact that skilled workers are only in demand by big companies creates a structural unemployment problem. (Policymaker, TR_2)

As migration intensified and instability in the Middle East persisted for decades, policies aimed at human capital development failed to achieve the desired outcomes. In particular, the predominance of low-skilled individuals within the migrant population has distorted the labor supply in national policy planning.

We're not getting the desired efficiency; they can only work in simple jobs. Their qualifications are low, but this is the only way we've been able to fill labor shortages in some important job and occupational fields. (Policymaker, TR_1)

Migration policies and labor strategies introduced in Ethiopia, such as the 2016 National Employment Policy and Strategy, have yielded limited results. The policy requires that all job seekers, both within the country and overseas, have the necessary skills for the roles they pursue. Without these critical competencies, their ability to perform effectively is greatly hindered. A major concern is that many workers are being assigned to jobs they are not properly qualified for. A policymaker respondent remarked that,

We have not advanced as anticipated in our efforts to develop a skilled workforce. As the Minister of Labor and Skills, we want to emphasize our commitment to what we refer to as a "skill-driven" policy. (Policymaker, ETP_7)

The policies were intended to align labor supply with market demand and manage both internal and external migration more effectively. However, weak implementation and insufficient institutional coordination have undermined their effectiveness. As a respondent further states,

When it comes to migration or emigration... There is a clear demand for the skill, it is possible to bring a skilled workforce into the country. ...However, there is a clear problem of skill management; a system which creates a supportive environment for well-prepared experts. (Policymaker, ETP_2)

Migration remains predominantly driven by economic necessity rather than structured, skill-oriented programs. Ethiopia's existing migration governance does not adequately address the complex motivations for migration, nor does it sufficiently protect or integrate returnees. The inadequacy of existing policies is further illustrated by labor market data and employer feedback. Along the continuum to this, a respondent asserts that,

Although the frameworks [policies] are well-documented..., implementation remains a challenge. Many of the policies and standards have yet to be fully realized in practice... (Policymaker, ETP_1)

Experts and policymakers in Ukraine singled out the employment policy aimed at improving the state of the labor market, namely, the focus on the employment of military veterans, which is supported in organizations and institutions and enterprises, society. But all other employment policies require economic stimulation, which is impossible in full during the period of active hostilities and state budget deficit. Regarding the impact of foreign labor migration on the current practice and policy in the field of education and training, the policymakers noted its absence in wartime conditions. But in the future, when the period of post-war reconstruction comes, Ukraine should take into account the practices of EU countries and develop its own strategy when attracting labor from outside. According to one of the representatives of the central and regional authorities,

On the one hand, population migration reduces the military risks for the citizens, reduces social burdens, but on the other hand, creates a permanent and threatening shortage of qualified personnel. (Policymaker, UA_7)

Lastly, policy learning with local fit is emphasized by the Macedonian respondents. Only when modified to fit North Macedonia's institutional starting point do international templates aid in dual education, its recognition, and educational mobility. The bottom line is that credible execution and domestic ownership cannot just be replaced by plain copy-paste reforms.

I don't think we should copy the Swedish model, the Dutch model, etc., for education, agriculture, or any other industry. Macedonia must build its own model that we can then refer to as good practice and export as knowledge. We, with our infrastructure, potential, and resources, have the opportunity to do that. (Policymaker, MKD_4)

When combined, these descriptions present a labor market in which the distance between design and delivery dictates results, the instruments are partially in place, and the binding constraints are known. The main takeaways from the qualitative interviews with the stakeholders are making sure that training is closely aligned with open positions, making credentials visible and transferable, and, most importantly, basing return and retention policies on reliable domestic models rather than imported models. The country's long-term growth trajectory within the global mobility of workers is strategically shaped by emigration pressures, education-labor market mismatches, and skill shortages, posing a dual challenge of addressing labor-market gaps in the present.

4.4 The feedback loop on education and training systems

Investments in human capital in Türkiye have been advanced through two distinct channels, i.e., local and national. At the local level, policies have been developed to address the demands and needs of the local population, as well as to mitigate the impacts of intense migration. At the national level, policies have been formulated within the framework of national development

plans. In this context, both national development plans and local dynamics concur on the issue of skill mismatches in the labor market.

Our students graduating from schools often face skill mismatches. For example, the training and technical infrastructure they get in school might not match what they encounter at a workplace, especially if they come across new technology or machines, which can cause compatibility issues. (Policymaker, TR_3)

In Türkiye, mismatches between the labor market demand and the supply from educational institutions stem from the slow transformation of these institutions, which operate within bureaucratic rigidity, in contrast to the rapidly changing labor market. Efforts to address labor market needs have been made by establishing educational institutions aimed at meeting these demands.

We've set up our own vocational high school and are trying to meet our intermediate workforce needs based on the demands of our industry. (Policymaker, TR_1)

Ukrainian respondents cited several issues related to education caused by the regional (internal) movement of displaced persons. They pointed out that a large number of false admissions by those avoiding military service are causing the quality of training to decline. They also emphasized the absence of laws and regulations that specify regional authorities' rights to use their own funds and resources to host students from other regions or to continue the displaced persons' education. Different approaches undertaken by education institutions to address the aforementioned issues have been noted by the interviewed stakeholders. To introduce contemporary educational technologies, they rely on grants, donors, and international projects. Some concentrate on making more money. Others take a more active role in providing adult education at the request of employers, such as through the arrangement of dual education or short courses. A representative of the education authorities pointed out that:

The outflow of refugees from the war affects citizens with higher education more. Their mobility and high adaptive capacity allow them to quickly integrate into the countries of arrival. This is a positive thing. The negative thing is that there are threats of these citizens not returning after the war, which will complicate the already extremely negative demographic situation. (Policymaker, UA_7)

As long as quality is maintained, policymakers pointed out that increased investment in education and training can help alleviate the issues of labor migration and refugees. This entails mobilizing state funds as well as luring material and financial resources from employers. Opportunities for self-realization are also increased when educational access is increased. Every respondent in this group perceived a notable link between education spending levels and external migration volumes, although they expressed several other explanations and opinions. For example, one of the respondents emphasized that

Another more important driving factor is the level of wages and the break in the relationship between the level of wages and qualifications. The incomparability of remuneration for qualified work in Ukraine, especially in the budgetary sector (education, healthcare, state and regional administration, etc.), with most European countries is precisely the main motive (outside the war period) for leaving Ukraine for employment elsewhere. (Policymaker, UA_4)

In other words, the labor market constantly changes in response to industry demands, requiring ongoing adjustments in skills training. To stay relevant, it has become essential to regularly study these shifts and update strategies accordingly. This approach ensures better alignment between workforce capabilities and market needs, improving employability and long-term success. Due to the fact that the labor market is dynamic and continuously adapts to the shifting demands among various industries, the demand for specific skill sets evolves, necessitating ongoing monitoring and adaptive strategies to ensure alignment with emerging labor market trends.

Even with major spending occurring in higher education and TVET, Ethiopia has struggled to put reforms into practice that would better connect schools with labor market needs. The 2023 revision of the Education and Training Policy highlights competency-based curricula and digital skills, yet institutions continue to be limited by top-down curriculum design and insufficient collaboration with industry, which is continuously emphasized as one of the main issues in Ethiopia.

Ethiopian policymakers and key stakeholders in the labor market emphasize the urgent need for enhanced investment and coordination between the public and private sectors to address the structural deficiencies hindering access to decent employment. In light of the growing number of unskilled entrants into the labor force, particularly among youth, employers advocate for the establishment of more context-sensitive and practice-oriented training systems that integrate experiential learning components, such as apprenticeships and internships. A key informant from the industry provides that,

The vast majority of youth seeking employment enter the labor market without any training, with almost 2.12 million people joining annually without any form of training. (Labor market organization, ETP_1)

Persistent mismatches between graduate output and labor market demand continue to hinder employment outcomes. By conducting the interviews in Ethiopia, we observe that some sectors face an oversupply of graduates, while others, such as construction, healthcare, and ICT, suffer from severe shortages. Because of this mismatch, many young people remain jobless or underemployed while employers leave positions open for prolonged periods. The resulting inefficiencies weaken economic productivity and deepen the emigration of skilled professionals seeking better opportunities abroad. However, some positive developments indicate a potential shift in this trajectory. HEIs and TVET institutions are beginning to pilot innovative training programs, often in collaboration with international development partners.

In response to the evolving demands of the labor market, we are actively engaging with various companies to provide qualified laborers. Our comprehensive study has identified Germany, the United Kingdom, Italy, and the Netherlands as the top four countries experiencing significant demand for labor... We learned that some CEOs expressed a keen interest in hiring Ethiopian laborers whenever there is a demand. (Policymaker, ETP_7)

The feedback highlights both the emerging opportunities for Ethiopian laborers in international markets and the critical need for targeted training aligned with the specific requirements of these foreign labor destinations. Helping education connect with real jobs means giving students training that matches labor market needs, plus cultural preparation and soft skills. It is argued that these measures are particularly important for Ethiopian labor migrants seeking to meet the demands of employers on a global level. Such collaborations not only aim to modernize instruction and strengthen community engagement, but also to improve the quality of vocational education. The EU-funded 'Skills for the Future' initiative in Ethiopia has demonstrated how international collaboration can strengthen institutional capacity and increase relevance to labor market needs.

Moreover, one of the recurring themes in stakeholder consultations when conducting the study in Ethiopia is the lack of qualified instructors and outdated infrastructure within many training institutions. According to respondents, it is unfortunate that employers often lack either the resources or the knowledge needed to join apprenticeship programs. These gaps limit students' exposure to real-world applications and contribute to the growing number of graduates unprepared for the demands of the workforce. The weak feedback mechanisms between employers and educational institutions, such as the limited use of tracer studies, also restrict the ability of training centers to revise curricula based on labor market performance. Due to this, stakeholders call for targeted investments in sectors with a higher demand for graduates and for expanded teacher development initiatives within educational institutions. Emphasis must also be placed on promoting gender equity and supporting rural populations, which would ensure equal access to vocational training for displaced groups. A case in point is here:

People claim that the investment in education is significant. However, much of the budget goes to salary. In a way, the actual investment in the education sector is very limited. There is concern about whether the money is being invested in the actual business. There are also some obstacles; a gap in skill, misuse of the budget, unfair budget allocation among the different sectors, while some programs are resource-intensive, the availability and provision of resources is very limited. (Labor market organization, ETP_2)

5 Discussion

Evidence from the four labor markets that experience various combinations of institutional capacity and migration exposure

is compiled into a single study, offering a unique view into the impacts of migration policies and investment in human capital development. Despite these variations, it seems that a common pattern appears. Stakeholders indicate that industries report ongoing challenges in filling positions in both routine and advanced occupations. While labor demand changes fairly quickly, education and training systems adjust more slowly in comparison. These frictions are even more pronounced by migration, whether it is internal mobility or emigration and immigration. However, there are notable differences in the channels through which this occurs. How skill shortages translate into productivity losses and even how firms adapt are shaped by conflict shocks, regulatory design, as well as wage and quality-of-life trade-offs.

5.1 How each individual case aligns with the context?

The Macedonian case illustrates a labor market is not only constrained by the challenges observed in the quantity and quality of human capital, but also by the problems in its domestic retention. Respondents consistently link rising vacancies to a shrinking pool of applicants and to skills that do not transfer smoothly from educational institutions to the workplace. Wage gaps with nearby countries (and not even discussing the gaps with the European Union member states), as well as low trust in institutions, jointly depress retention, shifting circular migration from a national opportunity into a potential risk. In the short term, firms reorganize shifts and accept downtime as supervisors and new graduates leave. In the longer term, these frictions appear more difficult to manage. Stakeholders jointly view active labor market measures as mistargeted and often ineffective, while education continues to supply graduates in fields with low demand. Policy responses that appear most promising are those that reduce the gap between design and delivery. Recognition of foreign experience raises the returns to coming back, streamlined firm registration allows diaspora savings to flow into small and medium enterprises, while demand-driven training developed with local employers improves job readiness. In the meantime, we understand that copying foreign models without local adjustment is unlikely to succeed, and thus credible execution and domestic ownership matter more than imported templates.

In Türkiye, the interaction between migration and human capital is defined by both scale and composition. Large inflows since 2011 have increased the salience of integration, while the predominance of lower-skilled entrants complicates ambitions to raise the average skill level of the available workforce. At the same time, a large native youth cohort remains under-utilized, with many young graduates seeking better prospects abroad more often. The outcome is a two-sided mismatch. Firms struggle to employ migrants productively, and they also face shortages in intermediate and high skill roles. Local initiatives such as vocational schools linked to industrial zones and national development plans point to closing the school-to-work gap and raising adaptability, yet coordination costs and institutional inertia dilute the effect. Three levers stand out. Modular vocational pathways can allow rapid skill acquisition, stronger collaboration among employers

and government can align curricula and assessment with actual technologies, and retention policies for young graduates can build clearer progression ladders. Without such measures, brain drain will accelerate at the top while reliance on low-skilled labor continues at the bottom.

Ukraine faces a shock of a rather different magnitude. War has spurred both internal displacement and external migration on a scale that has been unseen in modern Europe for decades. This has reduced labor supply in critical sectors and created indirect effects through disrupted education, widespread burnout, and shifts of population into safer regions. The evidence in the interviews points to severe staff shortages, a shrinking pool of candidates due to mobilization, and an uneven integration of displaced persons. During active conflict, immigration is seen as infeasible, making retention and damage control the primary margins of policy action. These include maintaining links to the labor market, preserving human capital in education and health, and preventing long-term scarring among youth. Looking forward, a two phase approach is crucially needed. During the Ukrainian reconstruction phase, the repatriation policy should be linked to housing and local public goods. Moreover, wages in public services must be aligned with qualifications in order to slow outward selection of skilled professionals, as indicated by the respondents. Retraining and recognition pipelines for returnees will also be necessary. In the longer term, convergence with EU standards in accreditation and assessment will make domestic training competitive with opportunities abroad. Across both phases, institutional trust is essential. Without predictable administration and reliable enforcement, even generous incentives will underperform.

Finally, it is worth noting that even Ethiopia's challenges are structural and long-standing. Despite the rapid expansion in higher education and vocational training, employers report persistent difficulty in finding workers which are ready from a practical point of view in the health, digital, engineering, and manufacturing sectors. In addition to having inadequate apprenticeship programs and little employer input, training is frequently overly theoretical and centrally planned. High rates of youth underemployment and vacancy bottlenecks result from this, forcing businesses to rely on expensive internal training or expatriates. Although early international placement channels and pilot projects with foreign partners show promise, scale will necessitate more extensive reforms. Systematic employer participation in assessment, facility, and instructor upgrades, and outcome-based funding that incentivizes real placements are all more than required. Since ongoing expenses take up a large portion of the education budget, reallocating funds to work-based placements, scholarships, and equipment should increase returns. Complementary investments in language instruction, cultural acculturation, and soft skills can enhance results and maintain earnings overseas rather than resulting in exits when international placement is sought.

When observing the implications for the findings across countries, four central themes emerge. First, alignment driven by demand is more successful than expansion driven by supply. Programs that include employers in the design and evaluation process outperform generic training, regardless of the

margin of retention in North Macedonia, integration in Turkey, reconstruction in Ukraine, or job readiness in Ethiopia. Next, organizations serve as technologies of production. The incentives to stay, return, or even invest in skills are shaped by predictable administration and acknowledgment of prior education. Third, we believe that the order and the timing of the implemented policies is important. In settings of acute disruptions, such as in Ukraine, maintaining attachment is a priority. In structurally constrained settings such as Ethiopia, building feedback mechanisms is deemed critical. Where mixed settings are maintained, such as North Macedonia and Türkiye, retention and constant improvement of established policies must operate in parallel. Finally, it cannot be omitted that policy instruments in fact interact. Wage policy, diaspora finance, EU funded program upgrades, and mobility partnerships can either complement or weaken one another depending on design, keeping in mind that there is no single fix to all problems and contexts.

Among all four cases, a common mechanism that can be characterized as governance latency in skill formation appears. Persistent mismatches and a decline in domestic human capital returns result from education systems and employment services that adjust more slowly than changes in labor demand and mobility. Retention is more dependent on immediate placement in open positions and acknowledgment of prior learning that genuinely pushes employees over wage thresholds, according to the evidence obtained from North Macedonia and Türkiye. Ukraine serves as an example of how, to prevent long-term damage when shocks cut off common channels, policy must first maintain attachment to the labor market before reintegrating people with housing and other basic public services. Ethiopia shows that growing enrollments with poor employability can result from expansion without employer co-production, portable assessment, and systematic feedback from vacancy data. When pathways are designed alongside employers, when recognition systems turn informal or foreign experience into credentials that carry national importance, when financing is tied to outcomes such as actual placements and measurable earnings, which is a consistent pattern across interviews in the four countries. Success does not come from isolated instruments acting individually, but rather comes from bundles of measures that continuously reinforce each other.

5.2 Limitations and future research

No research is considered perfect nor ideal. Thus, conducting this multi-country study includes its own limitations that we believe are worth noting. Since the study is based on qualitative interviews conducted with policymakers, labor market intermediaries, and social partners, causality between the aspects mentioned is hard to determine. Moreover, since the study is conducted on a relatively small sample of stakeholders per country, the findings do not support broad generalizations on the topic. A separate research has been conducted with employers and education institutions; however, such results are deliberately omitted from this paper as we solely focus on the perspectives and roles of policy providers and intermediaries on the labor markets. This surely introduces a certain degree of bias when interpreting results.

Future research should pair these findings with administrative microdata linking workers, firms, and training providers, where the focal point would be the workers' perspectives. Identification could be generated through policy discontinuities or phased roll-outs, and additional evidence could be obtained through randomized or quasi-experimental pilots in recognition and work-based learning. In conflict situations, like Ukraine, for instance, tracer studies and longitudinal surveys of displaced people and returnees are particularly necessary. Furthermore, evaluating institutional trust locally and connecting it with training and migration decisions would add to the body of evidence supporting policy development.

6 Conclusion

This study examined stakeholder perceptions of how migration policies, their positioning, and human capital investments are understood to interact in shaping labor market outcomes in North Macedonia, Türkiye, Ukraine, and Ethiopia. It advances a better understanding of the ways in which education, training, and migration governance intersect in various national contexts by employing reflexive thematic analysis of qualitative interviews with policymakers, labor market intermediaries, and social partners. By incorporating evidence from conflict-affected and transition economies, where systematic empirical insights are still scarce, the comparative framework fills a significant gap in the global literature.

Interviewees emphasized that besides brain drain and skills mismatches, structural unemployment continues to be one of the focal problems. Weak links between education systems and labor market demands consistently reinforce them, though their intensity varies depending on national circumstances. Ukraine serves as an example of how displacement and conflict impair the development of human capital and deplete the labor pool. Ethiopia serves as an example of the dangers associated with persistent gaps in technical and vocational education, where stakeholders did not see rising educational attainment translating into improved employability. The retention of skilled labor is hampered in North Macedonia and Türkiye by outward migration and a lack of institutional coherence. While significant resources have been allocated to education and training in each of these contexts, respondents perceive that the institutional mechanisms that translate these investments into labor market value are still underperforming.

Treating migration governance and human capital development as interrelated processes rather than as separate policy domains is what makes the study novel. The significance of creating education and training systems that are resilient to demographic and mobility pressures and responsive to labor market demands is underscored by this strategy. Furthermore, it demonstrates the need for context-sensitive policy responses so that reintegration strategies are crucial in post-conflict recovery, while retention and recognition policies are more urgent in high-emigration settings. We note that sustained structural unemployment highlights the need for stronger channels of communication and cooperation between employers and educational institutions.

An important insight is that human capital development cannot be financed only by expanding budgets nor by increasing plain access to education. It demands comprehensive and robust governance frameworks that integrate migration into economic planning, institutional capacity to translate training into employment, and ongoing, real-time alignment with labor market dynamics. By analyzing migration in relation to human capital, the conducted study highlights major opportunities for strategies that address skill gaps, make labor markets more resilient in modern uncertainty, and contribute to broader socio-economic progress.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by the Ethics Committee of Ankara University (protocol code No. 14/140 and date of approval 6 May 2024) and the University Research Ethical board and the Vice President for Research and Community Engagement (clearance letter Number 5/67/5512/2016 dated 07/09/2016 E.C.), Kotebe University of Education. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

VC: Conceptualization, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Validation, Writing – original draft, Writing – review & editing. PT: Formal analysis, Methodology, Validation, Writing – original draft, Writing – review & editing. II: Formal analysis, Methodology, Validation, Writing – original draft, Writing – review & editing. FP: Conceptualization, Formal analysis, Investigation, Methodology, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. KK: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. GM: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. MB: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. MI: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. DG: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. HE: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. SM: Formal analysis,

Investigation, Validation, Writing – original draft, Writing – review & editing. AL: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. HT: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. OA: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. AH: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. FG: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. YD: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. EY: Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing.

Funding

The author(s) declared that financial support was received for this work and/or its publication. The research leading to these results received funding from the European Union under HORIZON-CL2-2023-TRANSFORMATIONS-01-03 program for the project no. 101132435-SKILLS4JUSTICE. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

References

- Awumbila, M., Teye, J. K., and Yaro, J. A. (2017). Social networks, migration trajectories and livelihood strategies of migrant domestic and construction workers in Accra, Ghana. *J. Asian Afr. Stud.* 52, 982–996. doi: 10.1177/0021909616634743
- Barslund, M., Busse, M., Vargas-Silva, C., Kaczmarczyk, P., Baas, T., Peinado, M. I., et al. (2014). Labour mobility in the EU: dynamics, patterns and policies. *Intereconomics* 49, 116–158. doi: 10.1007/s10272-014-0495-x
- Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis With Special Reference to Education*, 1st Edn. New York, NY: NBER.
- Beine, M., Docquier, F., and Rapoport, H. (2008). Brain drain and human capital formation in developing countries: winners and losers. *Econ. J.* 118, 631–652. doi: 10.1111/j.1468-0297.2008.02135.x
- Braun, V., and Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualit. Res. Sport Exerc. Health* 11, 589–597. doi: 10.1080/2159676X.2019.1628806
- Castles, S., Haas, H. G., d., and Miller, M. J. (2014). *The Age of Migration: International Population Movements in the Modern World*, 5th Edn. Basingstoke: Palgrave Macmillan.
- Clemens, M. A. (2015). Global skill partnerships: a proposal for technical training in a mobile world. *IZA J. Labor Policy* 4:2. doi: 10.1186/s40173-014-0028-z
- Clemens, M. A., and Pettersson, G. (2008). New data on African health professionals abroad. *Hum. Resour. Health* 6:1. doi: 10.1186/1478-4491-6-1
- Dexter, L. A. (1970). *Elite and Specialized Interviewing. Handbooks for research in Political Behavior*. Evanston, IL: Northwestern Univ. Press.
- Docquier, F., and Rapoport, H. (2012). Globalization, brain drain, and development. *J. Econ. Liter.* 50, 681–730. doi: 10.1257/jel.50.3.681
- Dolado, J., Goría, A., and Ichino, A. (1994). Immigration, human capital and growth in the host country: evidence from pooled country data. *J. Popul. Econ.* 7, 193–215. doi: 10.1007/BF00173619
- Dustmann, C., and Glitz, A. (2011). “Migration and education,” in *Handbook of the Economics of Education*, Vol. 4, eds. E. A. Hanushek, S. Machin, and L. Woessmann (Amsterdam: Elsevier), 327–439. doi: 10.1016/B978-0-444-53444-6.00004-3
- Dustmann, C., Glitz, A., and Frattini, T. (2008). The labour market impact of immigration. *Oxf. Rev. Econ. Policy* 24, 477–494. doi: 10.1093/oxrep/grn024
- Eichhorst, W., Rodríguez-Planas, N., Schmidl, R., and Zimmermann, K. F. (2015). A road map to vocational education and training in industrialized countries. *ILR Rev.* 68, 314–337. doi: 10.1177/0019793914564963
- Euler, D. (2013). *Germany's Dual Vocational Training System: A Model for Other Countries?: A Study Commissioned by the Bertelsmann Stiftung*. Gütersloh: Bertelsmann Stiftung.
- İcduygu, A., and Kiricsi, K. (Eds.). (2009). *Land of Diverse Migrations: Challenges of Emigration and Immigration in Turkey. Number 236*. 10 in İİGİstanbul Bilgi ÜLİniversitesi yayınlari; Migration Research, 1st Edn. Sİğisİgli, İİGİstanbul: İstanbul Bilgi Üniversitesi Yayınları.
- Kaczmarczyk, P., and Okólski, M. (2008). Demographic and labour-market impacts of migration on Poland. *Oxf. Rev. Econ. Policy* 24, 599–624. doi: 10.1093/oxrep/grn029
- Kupets, O. (2016). Education-job mismatch in Ukraine: too many people with tertiary education or too many jobs for low-skilled? *J. Comp. Econ.* 44, 125–147. doi: 10.1016/j.jce.2015.10.005
- Lee, E. S. (1966). A theory of migration. *Demography* 3, 47–57. doi: 10.2307/2060063
- Mckenzie, D., and Rapoport, H. (2007). Network effects and the dynamics of migration and inequality: theory and evidence from Mexico. *J. Dev. Econ.* 84, 1–24. doi: 10.1016/j.jdeveco.2006.11.003
- OECD (2019). *Recruiting Immigrant Workers: Canada 2019*. Paris: OECD Publishing. doi: 10.1787/4abab00d-en
- OECD (2023). *OECD Economic Surveys: Türkiye 2023*. Paris: OECD Publishing. doi: 10.1787/864ab2ba-en
- Pilz, M., and Li, J. (Eds.). (2020). *Comparative Vocational Education Research: Enduring Challenges and New Ways Forward*. Internationale Berufsbildungsforschung. Wiesbaden: Springer VS. doi: 10.1007/978-3-658-29924-8
- Shultz, T. W. (1961). Investment in human capital. *Am. Econ. Rev.* 51, 1–17.
- Stark, O., and Bloom, D. E. (1985). The new economics of labor migration. *Am. Econ. Rev.* 75, 173–178.
- Vidal, J.-P. (1998). The effect of emigration on human capital formation. *J. Popul. Econ.* 11, 589–600. doi: 10.1007/s001480050086
- World Bank Group (2015). *Ethiopia Urbanization Review: Urban Institutions for a Middle-Income Ethiopia*. Washington, DC: World Bank. doi: 10.1596/22979
- World Bank Group (2019). *Western Balkans Labor Market Trends: 2019*. Vienna: World Bank. doi: 10.1596/31427

Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declared that generative AI was not used in the creation of this manuscript.

Any alternative text (alt text) provided alongside figures in this article has been generated by Frontiers with the support of artificial intelligence and reasonable efforts have been made to ensure accuracy, including review by the authors wherever possible. If you identify any issues, please contact us.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.