

# Attracting foreign surveyors to Germany: intentions and implementation

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**Key words:** lack of skilled workers, foreign experts, surveyor, labor market, integration, recruiting

## SUMMARY

Currently the shortage of skilled workers is one of the biggest problems in the German Economy. Due to demographic change, more people are retiring than new local professionals are coming. According to a skilled worker monitoring of the Federal Ministry of Labor and Social Affairs (BMAS), around 240,000 positions will be unfilled by 2026. The Institute for Employment Research (IAB) has announced that only with a long-term net immigration of at least 400,000 persons per year will the labor supply remain constant in the long term. Particularly affected of this shortage in 87 out of 140 professional groups, are fields such as Construction, Architecture, and Surveying. Here the demand for skilled workers is rising rapidly, in order that the fields remain attractive and competitive for professionals.

The question is whether the vacancies can be filled by personnel from abroad. Both employees and employers are confronted with various challenges. How can integration succeed? How can quality assurance be guaranteed when there are so many barriers? How can the bureaucratic hurdles, cultural misunderstandings and an opaque immigration system make the country more attractive to foreign professionals? Solving these issues creates a win-win situation for all involved.

Based on their own experiences, the authors would like to illuminate the topic from a new perspective. It is not only about formal issues, such as the recognition of documents, the work permit, the finding of a suitable job, and possibly the need for a further training. It is also about learning the language, the family support, the search for housing, the different legal situations and the need for integration. These challenges are often underestimated.

The aim of the DVW e. V., the German Association for Geodesy, Geoinformation and Land Management, is to play an important role in this challenge. Currently a document about the immigration of surveyors in Germany is being prepared, supported by experts to provide more transparency and less complexity.

## SUMMARY

Der Fachkräftemangel ist zurzeit eins der größten Probleme der deutschen Wirtschaft. Ein Blick auf die Alterspyramiden zeigt genau das: Wegen des demografischen Wandels gehen mehr Menschen in Ruhestand, als neue einheimische Arbeitskräfte nachkommen. Laut einem Fachkräftemonitoring für das Bundesministerium für Arbeit und Soziales (BMAS), bis zum Jahr 2026 werden etwa 240.000 Stellen unbesetzt. Das Institut für Arbeitsmarkt- und Berufsforschung (IAB) hat eine langfristige Nettozuwanderung von mindestens 400.000 Personen pro Jahr angekündigt. Besonders betroffen sind unter anderem 87 aus 140 betrachteten Berufsgruppen aus den Bereichen Bau, Architektur, Vermessung und Gebäudetechnik, wo der Bedarf für Fachkräfte rasant steigt. Dazu kommt, dass die Geodäsie-Welt für Fachkräfte attraktiv und konkurrenzfähig bleibt.

Es stellt sich die Frage, ob die offenen Stellen durch Personal aus dem Ausland besetzt werden können. Da sind sowohl die Arbeitnehmer als auch die Arbeitgeber mit verschiedenen Herausforderungen konfrontiert. Wie gelingt die Integration? Wie kann die Qualitätssicherung gewährleistet werden, wenn so viele Barrieren existieren? Wie können die bürokratischen Hürden, die kulturellen Missverständnisse und ein undurchsichtiges

Zuwanderungssystem die Attraktivität des Landes für ausländische Fachkräfte steigern? Das Lösen dieser Problematiken bringt eine Win-win-Situation für alle Beteiligten.

Die Autorinnen möchten auf Basis deren eigenen Erfahrungen das Thema aus einer neuen Perspektive anleuchten. Dabei geht es nicht nur um förmliche Themen, wie die Anerkennung von Dokumenten, die Arbeitserlaubnis, das Aussuchen einer geeigneten Stelle, ggf. eine Weiterbildung; Es geht auch um das Erlernen der Sprache, die Familienunterstützung, die Wohnungssuche, die unterschiedlichen Gesetzeslagen und die Integration. Diese Herausforderungen werden oft unterschätzt.

Das Ziel des DVW, des Vereins für Geodäsie, Geoinformation und Landmanagement, ist, bei dieser Herausforderung eine wichtige Rolle zu spielen. Aktuell wird ein Dokument erstellt, wie die Zuwanderung der Vermesser nach Deutschland transparenter und unkomplizierter werden kann.

## **MOTIVATION**

According to Eurostat in Europe, almost 75% of all companies struggle to occupy their vacant positions (Jiménez, 2023). According to the Manufacturing Institute, a projected 2.1 million jobs will be open by 2030 in the USA (Grundy, 2023). More than 50% of companies in Germany see a potential danger, that the company will face problems in the future, due to a shortage of skilled workers. The data speaks for itself: a lot of countries need personal. In the next ten years, as the baby boomers retire, the problem will only get worse: a lot of open positions, delays and probably a loss of quality in the provided services.

Germany, for example, is not only one of the most important destination countries for international migration, but is now also an important country of origin for international migration movements. In general, people decide to stay abroad for a shorter or longer period of time in order to improve their individual living conditions. People move abroad to expand their professional prospects, to maintain their family relationships, or simply to broaden their own horizons of experience (Ette et al., 2021).

The question is, how do we match the people who are coming from abroad with the open positions in their country? How do we make sure, that the people from abroad being hired have the right qualifications, the needed expertise, and the required specialization for the offered position?

Although this paper refers to Germany, this situation applies to a lot of countries, and the writers of this paper consider this to be an international future challenge. As two of the writers are skilled workers from abroad (Greece and Russia) working in Germany, they are firsthand aware of the burdens both the employers and the employees have, when they are trying to work together.

When referring to the surveying world in Germany, where the level of specialization is high, the problem of a shortage of skilled workers is severe. Can we fill these open positions with people from abroad? And if we answer positively to this question, what must be done, in order to make sure, that the collaboration will work? What is the role of an organization as the DVW?

## **SPECIAL THANKS**

We would like to thank our colleagues Klaus Fischer and Peter Heinrich for this paper, as our productive discussions provided a valuable basis.

## **DEMOGRAPHIC PROBLEM AND SHORTAGE OF SKILLED WORKERS IN THE SURVEYING WORLD**

There is more than one reason why there is a shortage of skilled workers in the developed countries: the demographic problem, the high level of expertise, the lower salary rates than the national average, the one-person crews, which reduce the opportunities for training for the next generation, and the increasing retirement rate among surveyors are the most important of them. In Europe, the challenges of population aging (42%) and a diminishing working-age population, along with labor shortages (40%), are commonly identified as pressing demographic issues in the Member States surveyed. EU citizens share a consensus that the ongoing demographic trends in the EU pose a threat to the region's long-term economic prosperity and competitiveness (69%) and are contributing to labor shortages (67%). An overwhelming 85%

of respondents believe that effectively addressing demographic change necessitates close cooperation across all relevant levels of government, including the EU, national, regional, and local authorities (European Commission, 2023).

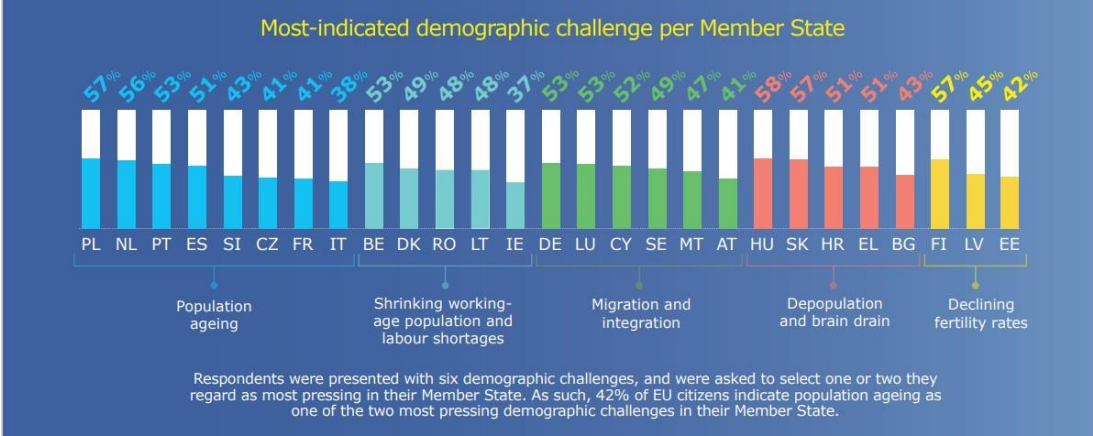


Figure 1. Most-indicated demographic challenge per Member State (European Commission, 2023)

Especially in the surveying world, the demographic problem is very noticeable. As an example, is listed the age structure of the publicly appointed surveyors in Germany in 2018 (prognoses) is listed.

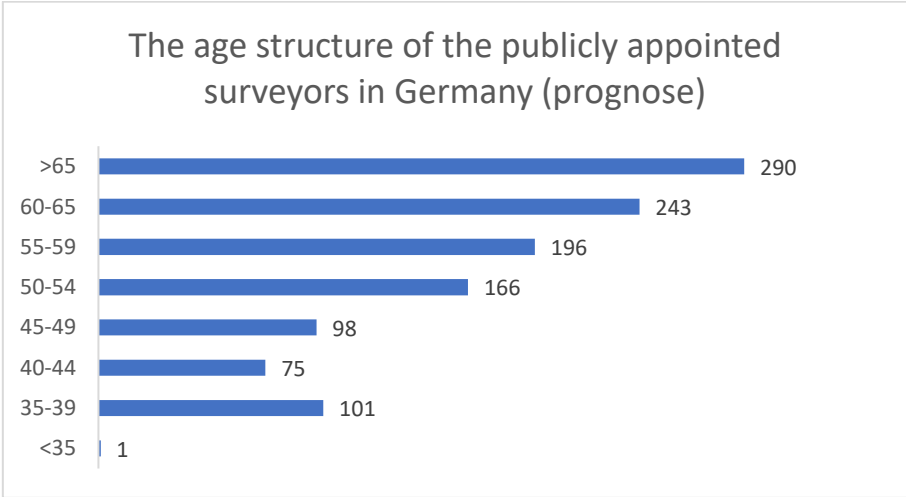


Figure 2. Data from the BDVI (BDVI, 2018)

The same situation prevails among workers in a lot of surveying sectors: universities, the public sector, and the private sector.

**MOBILITY TO GERMANY FROM ABROAD**

In Germany, the demand for labor is increasing - both for skilled workers, i.e., people with a vocational qualification, university degree or comparable multi-year qualification, and for

lower-skilled workers. In 2021, there were increasing shortages of skilled labor in all occupational fields, in some even significantly (SWP. Stiftung Wissenschaft und Politik, 2023). According to current IAB forecasts, the labor force potential without immigration will fall by more than 7 million people by 2035. Even if the labor force participation rate of women and older people increase, it will shrink so much that a decrease in the working-age population can only be counteracted in the long term with an annual net immigration of 400,000 people (Figure 3).

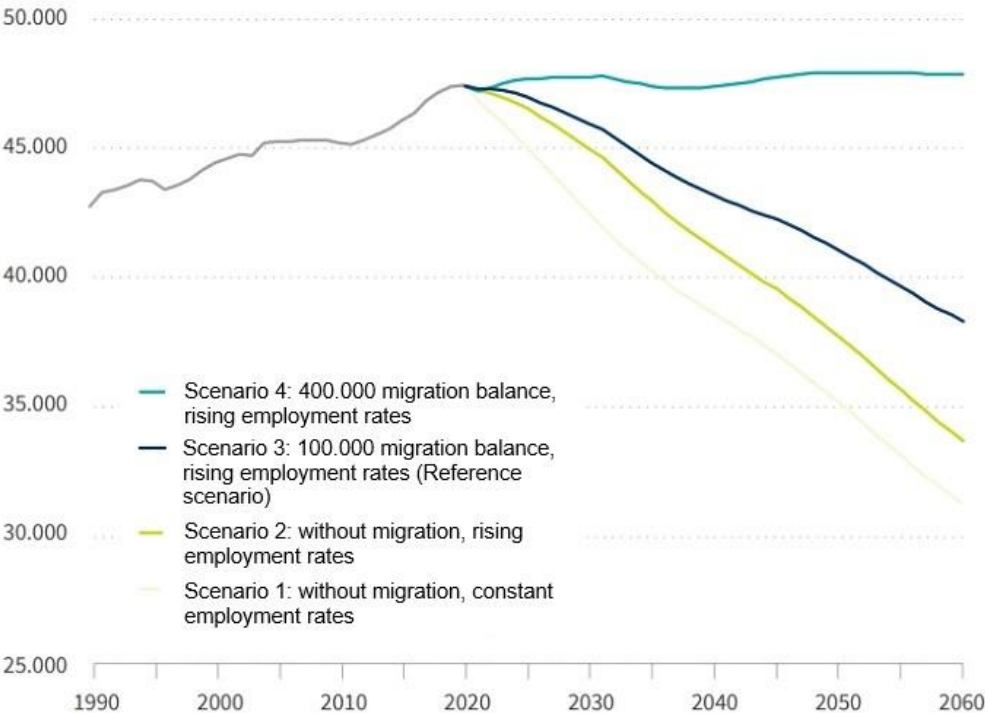


Figure 3. Scenarios for the development of the labor force potential up to 2060 in 1,000 labor force, national concept. Note: The stated migration balance is the annual difference between inflows and outflows of people aged 0 to 110 (i.e. not just workers). Source: IAB calculations, 2021.

There is still considerable potential in Germany itself, for example, in the labor force participation of women, older people, people with disabilities and the unemployed, and in improving education, training and further training. Nevertheless, it can be assumed that the domestic labor force potential will not be nearly sufficient to compensate for the decline in the working population in Germany. (SWP. Stiftung Wissenschaft und Politik, 2023)

In addition, EU countries are increasingly competing with each other and with other industrialized countries for qualified workers. Many EU countries have recently reformed their

labor migration policies and eased access for foreign workers. In addition, countries with high levels of emigration, such as Latvia, Spain and Portugal, are making increasing efforts to bring back emigrants through return assistance and tax breaks and to keep migrants in the country (Foresti, 2020).

The number of foreign nationals from countries outside the European Union (EU) who have come to Germany to work on a temporary basis has risen significantly in recent years. At the end of 2021, a total of 295,000 people were recorded in the Central Register of Foreigners who had a temporary residence permit for gainful employment. According to the Federal Statistical Office (Destatis), their number has more than tripled in ten years (+226%). At the end of 2011, a good 90,500 people with such a residence permit were still registered in Germany. Statistisches Bundesamt (Destatis), 2022)

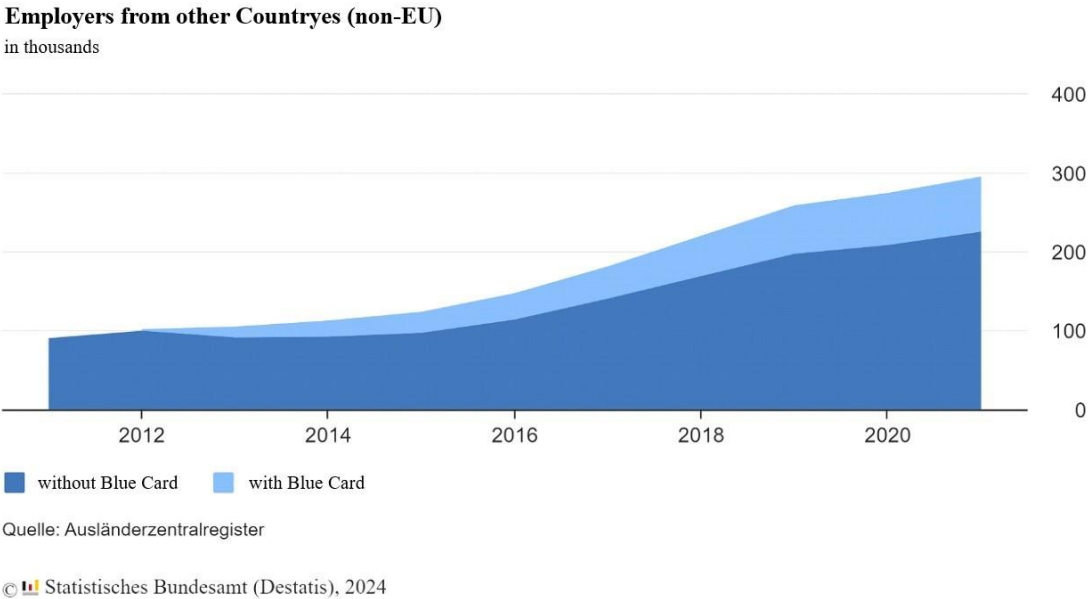


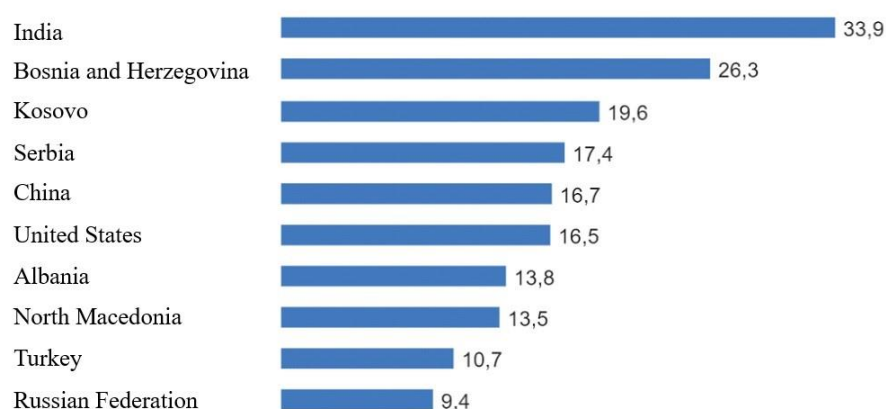
Figure 4. Employers from other Countries (non-EU).

Just under a quarter (24%) of foreign workers at the end of 2021 were academic specialists with a so-called Blue Card (Figure 4). This was introduced across the EU in 2012 with the aim of tackling the shortage of highly qualified specialists. The prerequisite for obtaining a Blue Card is a university degree and a concrete job offer with a gross annual salary of at least 56,400 euros. In so-called shortage occupations, a lower salary limit of 43,992 euros applies. At the end of 2021, almost half (48%) of people with a Blue Card were working in a shortage occupation, for example, as doctors or in IT.

Foreign nationals living and working in Germany with a residence permit for the purpose of gainful employment at the end of 2021 were most frequently of Indian nationality; 11% were citizens of the Asian state. Citizenship of the Balkan states of Bosnia and Herzegovina (9%) and Kosovo (7%) was also frequently represented (Figure 5).

### Employers from other Countries (not EU) 2021

by most common nationalities, in thousands



Quelle: Ausländerzentralregister

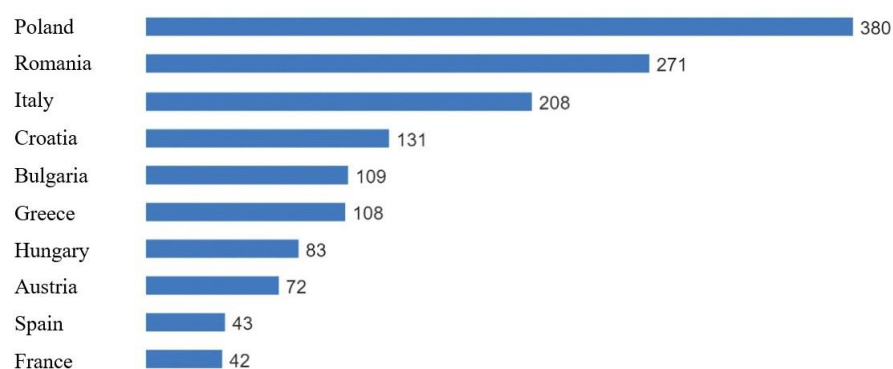
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Figure 5. Employers from other Countries (non EU).

The number of workers from non-EU countries is significantly higher than the number of people who have come to Germany from countries within the EU to work. According to the results of the microcensus, this applied to 1.65 million people in Germany last year. There was also an increase here: +19% compared to 2017, when this data was collected for the first time. Most of the workers who immigrated from EU countries already had a permanent job offer when they came to Germany: Last year, their share amounted to a good 71%. Just under a quarter (23%) of immigrant EU workers came from Poland in 2021, making it the most common country of origin. This was followed by Romania (16%) and Italy (13%) (Figure 6).

### Immigrant workers 2021

by most common EU countries of origin, in thousands



Quelle: Mikrozensus

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Figure 6. Employers from the EU - Countries.

Overall, regardless of nationality and current residence title - there were almost 2.72 million people living in Germany last year who immigrated primarily for work. Almost half of them (43%) came to Germany since 2014, with a further 15% arriving between 2008 and 2013. However, the agreements concluded during the 1960s to recruit workers are also reflected in the data: 15% of immigrant workers living in Germany in 2021 had already arrived in the country between 1950 and 1975.

In contrast, there has been no significant labor migration from African countries to date. Only Egypt was the ninth most important country of origin for the immigration of skilled workers with academic qualifications in 2021. Here, too, most titles were awarded via the EU Blue Card. This underlines the fact that German companies have so far been very reluctant to recruit in Africa - although at the same time there is a debate about Africa's labor force potential, particularly with regard to the continent's demographic and economic development. According to United Nations projections, Africa's population will more than double from 1.2 billion people to 2.5 billion between 2015 and 2050, especially in sub-Saharan Africa. Some studies predict that in view of the so-called youth bulge - defined as the proportion of the population aged 15 to 29 in relation to the total adult population - it could be difficult to take full advantage of the demographic potential in some regions of Africa. The reason is the low employment prospects and education as well as the limited training opportunities and political participation for the young population (SWP. Stiftung Wissenschaft und Politik, 2023) (Yeboua & Cilliers, 2021).

### **Refugee migration and employment**

However, the statistics on residence permits for the purpose of gainful employment are only of limited value with regard to the significance of immigration from third countries for the German labor market. Residence permits issued for reasons of international law, humanitarian or political reasons also entitle the holder to pursue gainful employment under certain conditions. In fact, only a small proportion of immigration from third countries is employment-related. In 2021, this share of total immigration from third countries was only 7.6 percent. Employment statistics also show that in June 2022, a large proportion (484,000 people) of the approximately 2.5 million employees from third countries subject to social insurance contributions came from countries of asylum origin. When assessing the employment potential, other groups of third-country nationals must therefore also be taken into account, such as recognized refugees and persons entitled to subsidiary protection, tolerated persons or people who come to Germany as part of family reunification.

Recent studies show that refugees have been making an important contribution to securing the supply of skilled workers and young talent in Germany for years. Analyses by the IAB and the Friedrich Ebert Foundation, among others, show that their integration into the labor market has been quite successful so far. In 2018, 60 percent of refugees were employed five years after their arrival in Germany or were taking part in education, integration or labor market policy measures. More than half of them were employed as skilled workers or in occupations with a higher level of requirements; 44% in so-called helper and semi-skilled jobs. In addition, the number of refugees employed as skilled workers also increased in 2020, although they worked disproportionately in service occupations, which were severely affected by the Covid pandemic.



## **CHALLENGES FOR EMPLOYERS AND EMPLOYEES, WHEN HIRING FROM ABROAD**

The recognition of qualifications and the language skills of immigrants continue to be major obstacles to recruiting workers. Recognition procedures often take too long, and the language requirements often do not match the professional requirements. Especially in combination, these problems lead to exclusion from the German labor market for many third-country nationals.

The German labor market and professional system are highly formalized. The recruitment and admission of third-country nationals are generally only possible if foreign qualifications are recognized as equivalent to German standards. The recognition procedure is, in turn, time-consuming and cost-intensive. There are increasing calls from business, politics and academia for a more flexible approach to the criterion of professional equivalence (or even its abolition). The desirable digitalization of visa issuance requires the digitalization of cooperation with immigration authorities. These often still work in analog form. There are also repeated complaints about the sluggishness of administrative structures and gaps in staffing.

A particular problem area is the large area of non-governmental recruitment, the developmental impact of which is difficult to influence and evaluate. This is also due to the fact that research to date has focused primarily on state actors and has paid less attention to the role of non-state actors.

In summary, there are the following main problem areas for employers and employees (SWP. Stiftung Wissenschaft und Politik, 2023):

- Recognition of foreign professional experience
- Language barriers
- Visa issuance
- Administration/bureaucracy and infrastructure in Germany
- Cooperation between state actors
- Development orientation and impact
- Selection of partner countries and mediation agreements
- Measures against unfair recruitment practices
- International standards for fair recruitment
- Cost of living, especially in metropolitan areas
- Lack of friendly reception in the form of discrimination and racism

The new Skilled Immigration Act is intended to solve this problem. With the further development of the Skilled Immigration Act, the German government wants to modernize German immigration law and make processes faster, more digital and more family-friendly.

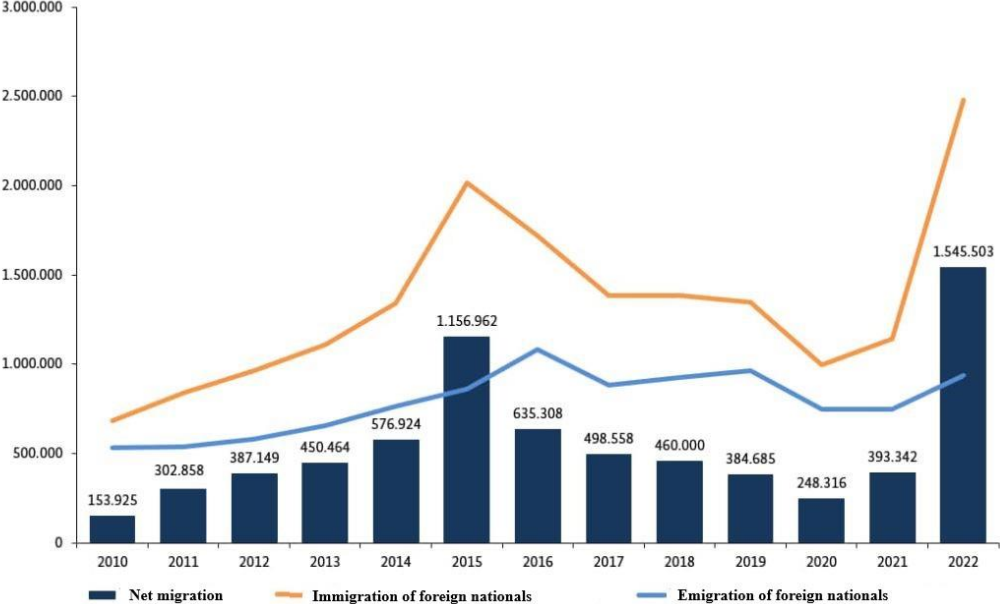
A draft bill submitted by the Federal Ministry of the Interior and the Federal Ministry of Labor and Social Affairs was approved by the Cabinet on March 29 and passed by the Bundestag on June 23. The legislative reform is set to come into force step by step in the fall of 2023.

Federal Minister of the Interior Faeser said: "We need to remove bureaucratic hurdles so that skilled workers can come to Germany quickly and get started." (Bundesministerium des Innern und für Heimat, 2023)

Because of all these hurdles, many people who have come to Germany leave the country again. More than a million people are said to leave every year. This indicates that Germany is not perceived as open and worth living in everywhere.

The number of emigrants remained relatively constant until 2012, after which it rose until it reached its temporary peak in 2016 (Figures 7 and 8). In total, around 17.4 million foreign nationals moved to Germany from abroad between 2010 and 2022, but around 10.2 million left the country again in the same period.

**Immigration and emigration of foreign nationals since 2010**



*Figure 7. Immigration and emigration of foreign nationals.*

In 2022, 935,516 departures of foreign nationals were registered, an increase of 25.3% compared to the previous year (2021: 746,474). In the same period, there were 2,481,019 inflows of foreign nationals to Germany (2021: 1,139,816, +117.7%). Net migration thus amounted to +1,545,503 (2021: +393,342) (see Figure 7).

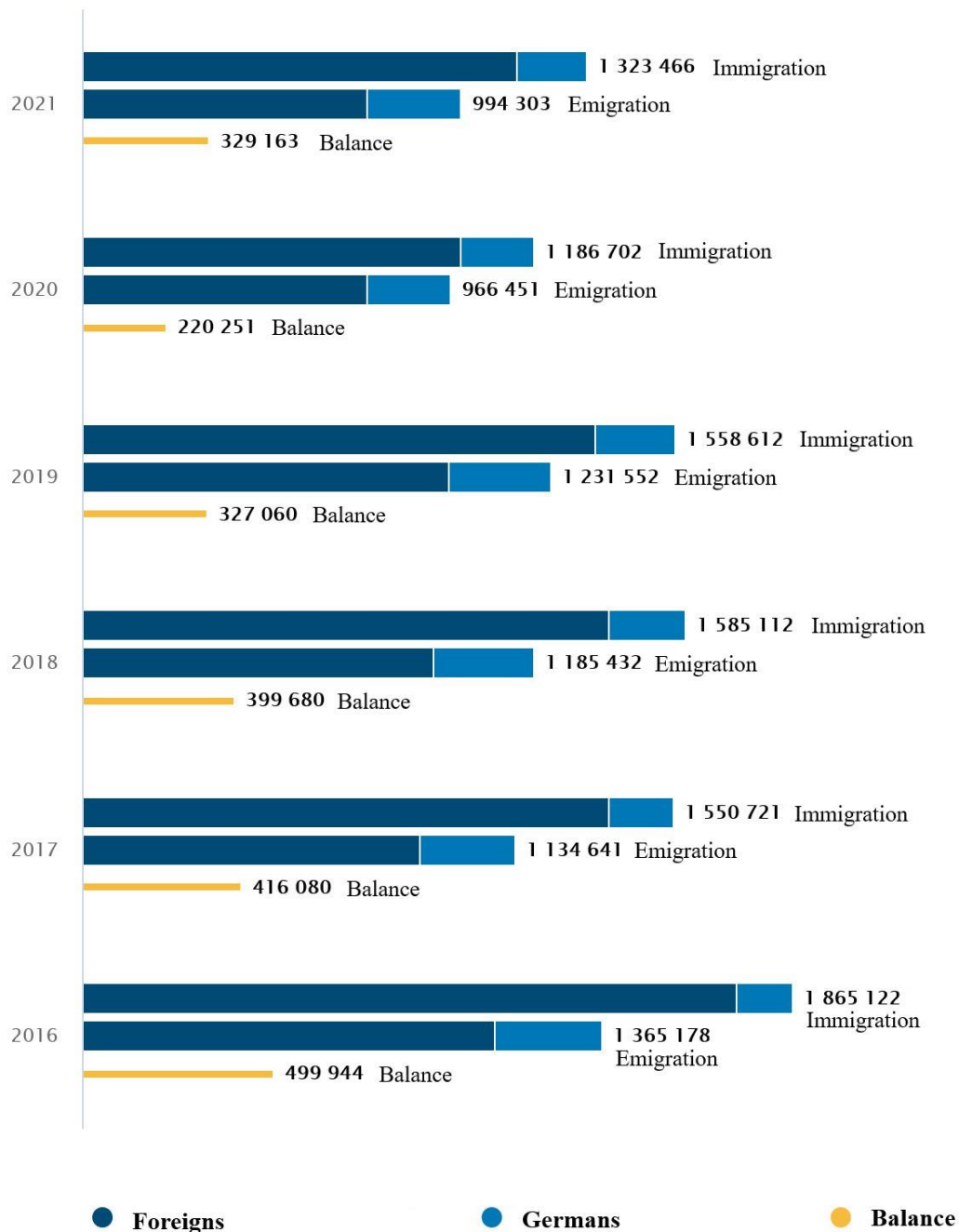
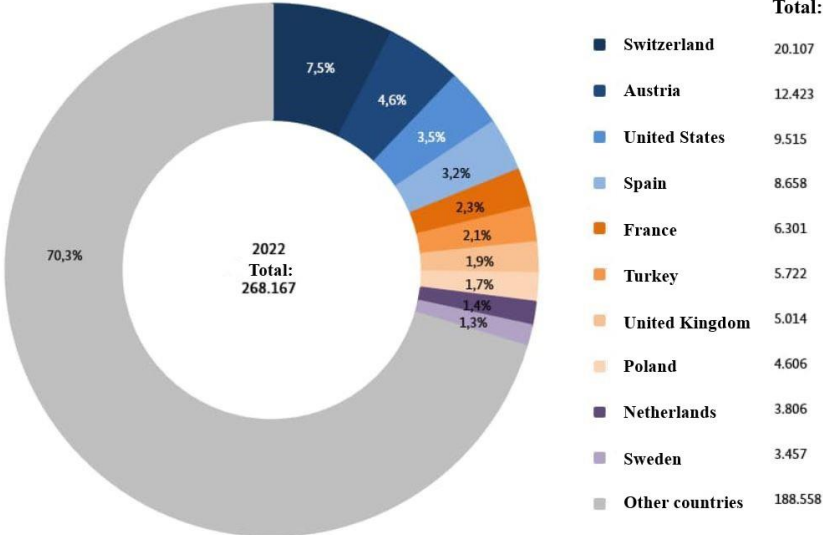


Figure 8. Immigration and emigration in Germany until 2021 (Statistisches Bundesamt, Wanderungsstatistik, 2023).

For people with German nationality, emigration increased compared to 2021. In 2022, 268,167 outflows of German nationals from the federal territory were registered, an increase of 8.2 % compared to the previous year (2021: 247,829 outflows). In 2022, the migration loss among German nationals - taking into account methodological changes in the migration statistics since

migration statistics since 2016 - was -83,414 (2021: -64,179). This includes late repatriates in both the inflows and outflows. If late repatriates are excluded from the inflows, which is not possible for outflows, the net migration of German nationals in 2022 is -89,531 (Statistisches Bundesamt (Destatis), 2023, Figure 9).

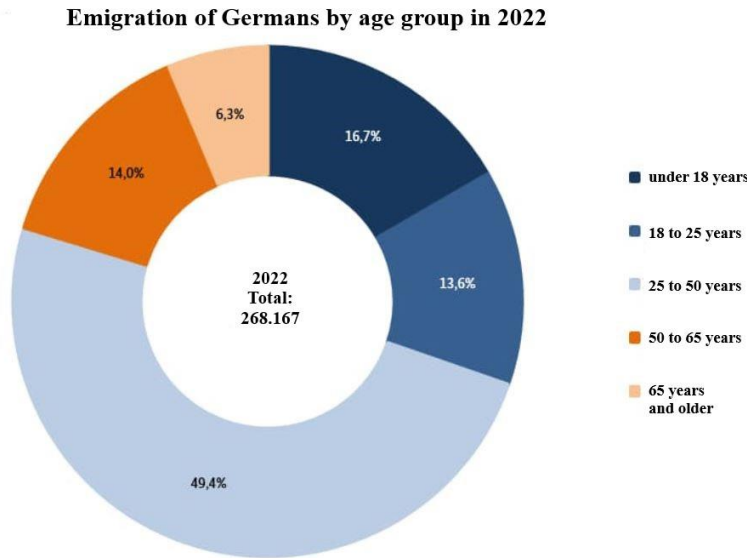
**Emigration of Germans by the most common destination countries in 2022.**



Quelle: Statistisches Bundesamt, Wanderungsstatistik

*Figure 9. Emigration of Germans in 2022.*

Just under half of German nationals who moved abroad in 2022 were between 25 and 49 years old (49.4%, 2021: 50.6%) (see Figure 10). 16.7% were under the age of 18 (2021: 15.1%), 6.3% of all German expats were aged 65 and over (2021: 7.6%).



Quelle: Statistisches Bundesamt

*Figure 10. Emigration of Germans by age group in 2022.*

The political debates in this country are currently mainly about immigration to Germany. The high number of emigrations is rarely discussed. Yet it is an important part of German migration movements.

### **LACK OF EMPLOYEES AND MIGRATION POLICIES IN OTHER COUNTRIES**

It is important to see how other countries are coping with the lack of professionals in their countries. In all the countries mentioned, the engineering and construction sector, where surveying engineering is subordinate, is affected, too.

Countries that have banned migration in the past currently have a problem with their workforce. Countries like Japan have a very strict migration policy, with the result that there is currently a shortage of skilled workers in all areas. In addition, the population is aging and the social security contributions of younger skilled workers are lacking (Gelin, 2020). Migration was seen as a solution to these problems. In 2023 a new law was introduced in Japan where the immigration of skilled workers from 14 sectors that have acute problems finding skilled workers is being supported (the so-called à la carte globalization).

Other countries that face a lack of employees are the USA, Australia and Canada. Adjusting the immigration policies can be a part of the solution to the problem.

The United States has both a near-term and long-term labor problem due to the demography. With 1.6 job openings for every unemployed worker, employers are struggling to find needed talent. The president of the American Action Forum is making in his article a number of suggestions, which include the expansion of employment-based immigration, the addressing of backlogs and the reduction of the processing times and the increase of flexibility in employment-based immigration (Holtz-Eakin, 2023).

Canada is also confronted with the same problem (Nguyen, 2022). Immigration is seen there as a solution, too; nevertheless, the discussion is here about how the difficulties and barriers of immigrants will play a key role if they will be part of the solution or not (Banerjee, 2022). Australia is reevaluating its visa system amid a workforce shortage following stringent COVID regulations. The nation closed its borders during the pandemic, instructing foreign students and backpackers to return home. Currently, Australia is contending with the second-highest employee shortage in the Western region, following Canada. In response, some companies are providing signing bonuses and arranging for overseas recruitment to address the shortfall (Johnston, 2023).

## **THE CONTRIBUTION OF THE DVW**

As a member of the IGG, an alliance of the geodesy member associations BDVI, DVW and VDV, which was founded on October 8, 2013, on the occasion of INTERGEO in Essen, the DVW can play a central role for this purpose. The goals of this initiative are a joint appearance towards society and politics as well as coordinated junior activities in the field of geodesy. The potential of foreign surveying experts for the German labor market must be addressed. The IGG has initiated the development of a concept paper that will be available abroad. The purpose of this paper will be to describe the possible steps and possible obstacles to integrating foreign geodetic experts in Germany.

The DVW as part of the IGG has started working on this concept paper, by creating a new project group in Working Group 1 'Profession/Education'. In this project group discussed how the DVW, and the IGG, the surveying world in Germany can be made more attractive for the personal from abroad. This concept paper will include information on what the German labor market looks like, what to consider when coming from other countries to Germany, where to apply for a job, how to find the way through the bureaucracy. In other words, it will be providing transparency for the surveying experts from abroad that want to work in Germany.

The DVW and the Working Group 1 'Profession/Education' have also started in 2023 a mentoring program, which is available for every member of the DVW. A mentoring program is a structured and organized initiative that facilitates the pairing of experienced individuals (mentors) with less experienced ones (mentees) to provide guidance, support, and knowledge transfer. It could be a valuable tool for professionals from abroad; they can connect with German professionals and get support through their first months in Germany. The mentoring program of the DVW was presented at the FIG 2023 in Orlando, USA (Giannopoulou & Przybilla, 2023).

## **CONCLUSION**

The demographic problem and the retirement of the baby boomers is the main cause why there is a labor shortage in Germany; the surveying world in Germany is affected, too. It is undeniable, that the immigrants living in Germany are confronted, on the one hand, with the bureaucracy and, on the other hand, with social difficulties. A rethink of the requirements, the tax and the contribution system will be at this point appropriate.

Economists say that after years of restraint, wages in Germany would have to rise significantly in order to slow down emigration and keep the urgently needed skilled workers in the country. It would also be necessary to restructure the tax and contribution system and reduce it to an appropriate level so that employees keep more money in their wallets.

Overall, Germany is facing a major challenge. The country must not only become more attractive for international skilled workers, but also ensure that once they are here, they want to stay. While researching for this paper it became clear, that this is not only a problem in Germany, but in more than one country, including, for example, Canada, Japan and Australia. The discussion there is also about how to attract foreign workers and keep them for the long-term.

In the surveying world, the DVW in collaboration with the IGG can be a part of the solution. The development of the concept paper described above will bring transparency and make the country more attractive to the surveyors from abroad trying to find a job and live in Germany. In this way, the surveying world there will be better prepared and more future oriented about this upcoming scenario.

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