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Foreign Degrees, Region of Birth and Under-utilisation of Tertiary Education in the EU

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Abstract

Improving the integration of migrants and promoting economic growth are the main policy objectives that reflect the relevance of fully harnessing migrants' human capital. Migrant employment at a comparable level with natives and in jobs that match with their level of skills are some of the indicators of a successful labour market integration of migrants. At the same time, ensuring the labour market integration of migrants and harnessing the talents of highly educated workers supports the EU's innovation and knowledge-based economy.

There is extensive empirical evidence of the under-utilisation of migrants' human capital. The scientific literature points to the fact that migrants tend to have foreign qualifications as one of the main reasons behind the under-utilisation of their human capital. Foreign degrees often do not have the same actual or perceived value as degrees obtained in a host country. This could be due to a lack of soft skills normally acquired in a local context. Employers may also consider foreign degrees to be of real or perceived lower quality, compared to ones gained from the host country. In addition, regulatory barriers may also act as an obstacle to their full use.

The main contribution of this report is to compare the labour market outcomes of prime age, tertiary educated, international migrants and EU mobile citizens. The analysis is carried out on data from the EU Labour Force Survey (LFS) in the 2017-2018 period.

The three groups of tertiary educated under analysis are: 1) natives, i.e. individuals born and residing in the reporting Member State (MS); 2) EU mobile citizens, i.e. individuals residing in an EU Member State different than the one they were born in; and 3) non-EU born individuals. This latter group is broken down by six broad regions of birth, which represent the maximum level of disaggregation currently available in the EU-LFS dataset: Europe outside the EU, North Africa and the Middle East, Sub-Saharan Africa, East-Southeast Asia, North America and Oceania, and Latin America. Moreover, two additional sub-groups are defined based on the country where the person obtained their degree. This distinguishes between the holders of "host-country" degrees and holders of "foreign" degrees (degrees that were not obtained in the host country).

Under-utilisation is analysed along two dimensions: non-employment and over-education. Non-employment is defined as not being gainfully employed, due to being either unemployed or inactive. Over-education is defined as having a level of education higher than the one required to perform a particular job. The variable of "host-country" versus "foreign" degree is derived by comparing the years of residence in the country and the years passed since the highest degree was obtained: if this difference is positive, the degree is considered to be obtained in the host country.

Section 1 provides the background of the study in terms of policy context and previous work done by the JRC. Section 2 describes the theories and empirical evidence on the role of foreign degrees in human capital. Section 3 presents the dataset used for the analysis. Finally, Section 4 and 5 discuss the main findings.

The key findings can be summarised as follows:

- One in three prime age, tertiary-educated, migrants and one in six prime age, tertiary-educated, EU mobile citizens are out of employment (either as unemployed or inactive) In contrast, only one in ten prime age, tertiary-educated, natives are. The ratio is the highest for non-EU born, and particularly for those born in North Africa and the Middle East among whom 37.1% are not employed.
- Holding a foreign degree does not penalise the employment of EU mobile citizens. At the same time, holding a foreign degree does penalise the employment prospects of non-EU born workers. This is especially relevant for those born in North Africa and the

Middle East whose share of non-employed reaches 49% among those holding a foreign degree.

- Overall, one third of EU mobile citizens are over-educated but patterns differ by MS. While in some MSs, EU mobile citizens are more likely to be over-educated than natives, in others this is not the case. At the same time, in the majority of MS non-EU born migrants are more likely to be over-educated than natives, although to a different extent across MS. Over-education is high across all non-EU regions of birth, with the sole exception of North America and Oceania.
- Holding a foreign degree does not significantly affect the prevalence of over-education of EU-mobile workers. The share of over-educated workers is similar for those who obtained their degree in the host MS and those who obtained their degree abroad.
- Finally, non-EU born citizens who hold a foreign degree are more frequently over-educated than natives and EU mobile citizens in most MS, and to a particularly large extent in the Mediterranean countries. The penalty of holding a foreign degree is the highest for workers born in North Africa and the Middle East, Sub-Saharan Africa, and non-EU Europe. On the contrary, among workers born in North America and Oceania who hold a foreign degree, the share of over-educated is lower than in the general population of tertiary educated workers from the same region of birth.

These findings suggest that more can be done to harness the full potential of migrants' human capital, especially of non-EU born who hold foreign qualifications. Supporting the recognition of foreign credentials may be one of the ways forward to take. The fact that holding foreign qualification does not imply a penalty for EU mobile citizens is consistent with the policy efforts at the EU level to facilitate the recognition of qualifications in the EU. The report, however, provides a descriptive analysis and further research needs to be conducted to better understand the causal effect of foreign qualifications as determinants of poorer labour market outcomes.

1 Introduction

The share of non-native population holding a tertiary education and residing in the EU has increased over the past decade. In 2018, among prime-age population (25-54 years of age) 37% of all EU mobile citizens had a tertiary degree and around 31% of all non-EU born migrants were tertiary educated (Eurostat, 2020).¹

This increase is associated with the overall stronger prominence of high-level qualifications and skills in the EU economy and labour market. The educational attainment of the EU native population has increased, with the share of tertiary educated rising from 27% in 2009 to 36% in 2018. Over the last decade, under the general framework of the Europe 2020 strategy, the EU has promoted a more sustained move towards an EU knowledge-based and innovation economy. This includes attracting foreign talent. To this end, significant developments in recent years have aimed at making the EU more attractive in what is perceived as a global competition for talent (OECD, 2016; OECD, 2019). Policy initiatives include the adoption of two Directives on the entry and residence of highly-qualified migrants: the Blue Card Directive (in 2009), on the admission of Third Country Nationals for qualified employment, and the recast Students and Researchers Directive (in 2016). More recently, the Commission put forward a proposal for a revision of the Blue Card Directive,² and commissioned a study of the possibility of building an EU talent pool to improve the attraction and matching of highly-skilled migrants in the EU labour markets (OECD, 2019). The increase in the share of non-EU born and EU mobile citizens with tertiary education is a welcome trend, but unlocking the full potential of migration of highly educated individuals for economic growth cannot be achieved if these talents are not efficiently harnessed.

The focus of this report is on identifying how the human capital of non-EU migrants and EU mobile citizens is utilised across the EU. In particular, this analysis addresses the issue of under-utilisation of tertiary education by looking at the prevalence of non-employment³ and over-education of natives, non-EU migrants and EU-mobile citizens who are tertiary graduates. In trying to provide an indication on the possible causes for these differences, the role of place of graduation is also analysed.

This report builds on and extends the results of two recent reports published by the Knowledge Centre on Migration and Demography (KCMD):

[Patterns of immigrants' integration in European labour markets](#) that analysed the employment rates of immigrants in the period 2008-2015 and found that *"there are substantial differences in integration outcomes across regions of birth/citizenship, even when breaking down the data by education, and these differences persist through time"*, and;

[Over-education of migrants? Evidence from the EU](#) that analysed the over-education in the period 2011-2016 and showed that the *"EU migrants and Non-EU-Born (ceteris paribus) are more likely to be over-educated [...] compared to natives with the same educational level"*.

¹ Eurostat table [edat_lfs_9912].

² European Commission (2016), Proposal for a Directive of the European Parliament and of the Council on the conditions of entry and residence of third-country nationals for the purposes of highly skilled employment, COM (2016) 378 final. It should be noted that the negotiations within the European Parliament and the Council are currently stalled.

³ The term "non-employment" indicates all individuals that are not gainfully employed. This group includes unemployed and inactive individuals of prime working age. This definition allows having a broader coverage of underuse of tertiary education that goes beyond the notion "over-education" that comprises only those individuals that are performing jobs and tasks that requires a level of education lower than the worker possess.

By leveraging information recorded in the EU-LFS, we are able to reconstruct whether the tertiary degree was obtained in the MS of current residence, i.e. host country, or elsewhere⁴. On this basis, we define *foreign degree* as a degree that was not obtained in the host country. We are able, therefore, to compare the labour market outcomes of individuals with qualifications from the MS of current residence and those with a foreign qualification. Furthermore, for those holding a foreign degree, we are able to analyse how labour market outcomes vary across several macro-regions of birth of migrants.

The report finds that EU mobile citizens with a tertiary degree have better labour market outcomes than non-EU born migrants. They have lower rates of non-employment, although a small gap with respect to native workers remains. Among EU mobile workers employed as dependent employees, one third are over-educated for the job they are performing. Contrary to all other non-native groups, for EU mobile citizens holding a foreign degree is not a significant issue, as the share of non-employed and of over-educated workers remains almost the same regardless of where the degree was obtained.

At the same time, people born in North Africa and the Middle East are the ones most severely affected by the underuse of their human capital, followed by people from Sub-Saharan Africa, East-Southeast Asia, non-EU Europe, and Latin America. Populations from these regions all share high non-employment rates and high shares of over-education among those working as dependent employees. Both the share of non-employment and of over-education increases significantly for those migrants that hold a foreign degree. However, migrants born in North America and Oceania show a specificity with respect to other non-natives. On one hand, tertiary educated migrants from North America and Oceania have a relatively high non-employment rate, which is even higher for those with a foreign degree. On the other hand, when employed, these workers enjoy the lowest risk of over-education among everyone, including non-natives and natives, especially if their degree was earned abroad.

These results have multiple possible explanations. Although the region of birth and the place where the degree was obtained receive particular attention in this report, these are only two of many possible explanations for the existing differences in labour market outcomes between tertiary educated natives and non-natives (OECD/EU, 2014). Identifying the causes of such differences goes beyond the scope of this report. In particular, the mechanisms underlying the qualification and skills mismatch have been discussed more in-depth in a previous KCMD report (see Biagi et al. 2020).⁵ At the same time, the issue of how the recognition of foreign degrees is regulated and why labour markets place a lower value on foreign degrees than host-country degrees requires additional research. In this context, a particular concern should be given to understanding whether, and to what extent, the existing legal barriers could exacerbate this gap.

The remainder of this report is organised as follows. Section 2 shortly describes the theoretical frameworks adopted in the economic literature as well as the related empirical evidence. Section 3 presents the dataset used. Section 4 describes the phenomenon of non-employment among non-EU born migrants and mobile EU citizens in relation to those holding tertiary

⁴ This type of approximation, however, presents some caveats. For details see Annex.

⁵ Biagi et al. (2020) state that “the way in which we define a phenomenon and in which we collect data to measure it have profound effects on the “big numbers” we obtain at the end of the process (e.g., across MS comparisons of overeducation rates for migrants and natives)”. In particular, Biagi et al. (2020) “show how (and why) the realized matches approach differs from the one proposed by Eurostat for tertiary graduates. In the latter, all workers that have tertiary education are considered as overeducated if they work in (one-digit) ISCO08 4-9 occupations, while they are considered well matched if they work in (one-digit) ISCO08 1-3 occupations. However, we have shown that there are many twodigit ISCO occupations falling in ISCO08 1-3 in which the modal educational attainment is lower than tertiary, and, symmetrically, that there are some two-digit ISCO occupation belonging to ISCO 4-9 in which tertiary education is the mode”.

degrees earned abroad. Section 5 provides an overview of the incidence of over-education among non-EU born workers and mobile EU workers for most MSs and, within non-natives workers, compares the performance of those who have studied in the country of current residence to those who have not. Section 6 concludes.

2 The role of foreign degrees: the empirical evidence

In the economic literature there are two competing theoretical frameworks used to analyse investment decisions in education and their returns: human capital theory (Becker, 1964; Schultz, 1961) and signalling theory (Stiglitz, 1975; Spence, 1973). These are also the main interpretative frameworks adopted in the literature studying cross-country differentials in the pay-offs of “local” degrees (i.e. degrees obtained in the host country) vs. “foreign” degrees (i.e. degrees obtained outside the host country).

Both theories predict that host country and foreign graduates are not necessarily perfect substitutes as the location of the university awarding the degree can matter for graduates' future pay-offs.

In human capital theory, differences between host country and foreign graduates arise either as a consequence of the country-specific skills that a local education would provide (i.e. language, social habits, business culture), or because education is of better quality in one location compared to another (i.e. better teachers, larger and better teaching resources, etc.).

Signalling theory, instead, predicts that a university degree would pay more if obtained in a specific location as long as employers *perceive* that degree to be of better quality, regardless of the effective productivity of graduates. This result is a consequence of the asymmetric information on workers' ability between employers and employees. Employers want to pay employees a wage commensurate to their productivity but have no way of knowing what this level is before hiring the potential worker. Educational credentials resolve this uncertainty by providing a signal on workers' ability as long as this signal is too difficult to acquire for low-ability individuals. In the recruitment process, for example, a qualitative study on Finnish employers found that applicants with non-Finnish qualifications were perceived as having lower problem solving skills and language skills in comparison to the applicants with Finnish credentials (Cai, 2013). Moreover, in the case of foreign educational credentials, in a Norwegian study the signalling effect is found to be proportional to the knowledge that the employer has about the specific foreign education (Wiers-Jenssen, 2008).

Differential pay-offs could also arise when the difference in quality between host-country and foreign degrees *is* and *is perceived* to be the same as long as legal barriers are in place. One clear example of a legal barrier thwarting the labour market prospects of foreign graduates is occupational licensing (see Box 1).

Whereas the more recent empirical literature on the EU finds evidence that foreign education is not fully transferable to different MS labour markets and can yield poorer outcomes in comparison to domestic education, there are different findings on the extent of this effect. For example, in the case of Sweden, empirical studies found only a *small* premium to workers with Swedish education in comparison to those with foreign education (Luik et al., 2016; Joonas et al., 2014; Dahlstedt & Bevelander, 2010). On the contrary, analyses of the German labour market found *large* skill downgrading and gaps in labour market outcomes for immigrants not holding a German degree (Brucker et al., 2019; Beyer, 2016). Moreover, studies have found that the degree of any effect is linked to the type of vocational or general university education held (Dahlstedt & Bevelander, 2010); to the admission category of the migrant - humanitarian, family reunification, work or study - (Maliepaard et al., 2017; Luik et al., 2016; OECD et al.,

2016); and to the national measures set to facilitate the full recognition of foreign qualification (Brucker et al., 2019; Biavaschi & Zimmerman, 2013). Variations between national vocational and educational systems and the degree of formalisation or regulation of the labour market may also play a role (Menz, 2011; Hall & Soskice, 2001).

Studies have also pointed to the fact that EU labour markets do not recognise tertiary degrees of migrants with the same value as they do for their own nationals (OECD, 2019; UNESCO/UNHCR, 2018). This has potentially significant implications for migrant integration, as the lack of recognition of diplomas makes it more difficult for them to enter the labour market and to be employed in roles that they are well-matched to (Robila, 2018). Besides the negative effects on individuals, mismatches impact earnings, productivity, innovation and growth with consequences for firms also and society at large (EIB, 2019).

At the EU level, while the framework for the recognition of qualifications obtained in other EU countries is well advanced, the framework for the recognition of qualifications obtained in non-EU countries is much more fragmented (see Box 1). Several tools to improve national recognition practices have been produced, especially after the rise in the number of refugees in 2015. However, the legal framework remains complex and the effectiveness of these tools ultimately rests on national practices and employers' uptake.

Box 1 – EU legal framework on recognition of foreign qualifications

In the EU MSs, the regulatory framework for the recognition of foreign qualifications is complex. It varies depending on the purpose of the recognition and the type of profession the recognition gives access to, in particular whether the profession is regulated.

In general, recognition may be required for further studies or for performing professional activities. In the latter case, if the profession is regulated then the recognition process is compulsory and the foreign qualification must meet the standards generally set and verified by the relevant recognition body. If the profession is not regulated then the recognition of the qualification may not be a formal requirement to access the profession; yet, it may be an informal one. When the employers are the “main arbiters of the relevance of foreign qualifications” (Sumption, 2013), uncertainty on the value of a foreign qualification may lead to its discount, thus creating an informal barrier in the labour market. In this context, a formal recognition may help to support the employers' trust.

Recognition procedures vary also depending on the country where the qualification has been obtained. In the context of promoting free movement of professionals, the EU has adopted measures to foster the recognition of professional qualifications obtained in other EU MS, with provisions extending also to EEA countries and Switzerland. *Directive 2005/36/EC*, amended by *Directive 2013/55/EU*, establishes the automatic recognition of qualifications for seven professions (general care nurses, dental practitioners, veterinary surgeons, midwives, architects, pharmacists and doctors). For these, minimum training conditions are harmonised. For other qualifications, the Directive introduces a general system. Other sectoral measures provide for the recognition of qualifications for specific professions. The *European Professional Card (EPC)* introduced the possibility to apply online for the recognition of qualifications for selected professions (general care nurses, physiotherapists, pharmacists, real estate agents and mountain guides). Furthermore, in 2018, the Council adopted a *Recommendation (2018/C 444/01)* promoting measures for the introduction of automatic mutual recognition of qualifications for further learning by 2025.

In addition, the *European Qualifications Framework (EQF)* has been developed at the EU level as a tool that creates more transparency on qualifications, thus supporting the recognition process for employment or further learning purposes. The EQF is a European reference framework composed of 8 levels to which learning outcomes are associated. It addresses all types of qualifications and acts as a translation tool for the European national qualifications frameworks that have related their qualifications levels to the levels of the EQF. Other European instruments are the *European Credit and Transfer system for higher education (ECTS)* and the *European Credit system for Vocational Education and Training (ECVET)*, supporting transparency of educational credentials; Europass, that is a set of

documents that facilitate the understanding of skills and qualifications; and the European Skills, Competences, Qualifications and Occupations (ESCO), that provides multilingual descriptions of occupations and related skills.

The regulatory framework set out above also applies to Third Country Nationals who are acquiring qualifications in EU MS and are covered by equal treatment clauses in relevant migration Directives (OECD, 2016). However, there may be additional burden for Third Country Nationals if, for instance, the recognition is compulsory for obtaining residence permits (Ecorys, 2016).

When it comes to qualifications obtained in third countries, their recognition is competence of MS and practices vary to a great extent (OECD, 2019; Ecorys, 2016; IOM, 2013). Normally, there are no universal procedures and these depend upon the country's participation in an international agreement, such as the Lisbon Recognition Convention (55 signatory States) establishing the right for individuals to have their qualifications recognised; bilateral agreements between countries (e.g. between France and Quebec, or Portugal and its former colonies) (Ecorys, 2016); or between individual institutions. Similarly, the international professional bodies may have developed procedures to facilitate the recognition of qualifications (e.g. the agreement signed by engineering regulators under the name of Washington Accord).

Some countries partner with the EU in efforts towards greater coherence in educational systems. This is with a view to also facilitating the recognition of qualifications. In this context, 48 countries (EU plus other European and some Asia countries) participate in the Bologna Process. Similarly, EU, EFTA-EEA and candidate countries participate in the Copenhagen process to promote mutual trust, transparency and recognition of competences and qualifications of vocational education and training. The ENIC-NARIC network, established in its original form in the context of the Lisbon Convention, is also a relevant tool, with its centres giving advice on issues relating to the recognition of qualifications.

While a coherent policy framework for the recognition of non-EU qualifications is missing, it is largely acknowledged at the EU level that the recognition of non-EU qualifications is a crucial element for the integration of Third Country Nationals. To facilitate this process, the EU has developed tools to facilitate the recognition of qualifications obtained in third countries. The *EU Skills Profile Tool for Third Country Nationals*, for instance, aims at facilitating the early skill profiling of Third Country Nationals. Other instruments target specific groups of Third Country Nationals. The *European Qualifications Passport for Refugees* provides an assessment of higher qualification, work experience and language skills, on the basis of available documentation and a structured interview. Finally, following to the EQF Revision in 2017 as part of the 2016 *Skills Agenda*, an external dimension was added to the EQF. Under this, the Commission is invited to “explore possibilities for the development and application of criteria and procedures to enable, in accordance with international agreements, the comparison of third countries’ national and regional qualifications frameworks with the EQF”. In the future, the EQF could thus further support the recognition of qualifications of third countries subject to comparison.

3 Data

The analysis is carried out using the EU-LFS data for the 2017-2018 period and in reference to the prime-age population (25-54 years of age). In this report, the definition of *migrant* is based on the country of birth criterion. Non-EU born migrants refer to individuals born outside the EU and currently residing in an EU MS. EU mobile citizens refer to EU-born individuals residing in an EU MS different than the one they were born in. The EU-LFS distinguishes between seven broad regions of birth:⁶

- 1) EU-28;
- 2) Europe outside the EU;
- 3) North Africa and Middle East;
- 4) Sub-Saharan Africa;
- 5) East-Southeast Asia;
- 6) North America and Oceania;
- 7) Latin America.

It is not possible to disaggregate the region of birth further due to “[...] both the availability of individual country codes over time and discussions on confidentiality with countries whose data form part of the anonymised LFS microdata for researchers” (EC, 2017).

In addition to the region of birth of a migrant, the analysis takes into account also whether the migrant obtained the tertiary degree in the country of current residence or not. This information is not directly recorded in the survey, but it is derived by comparing migrants’ years of residence in the host country and the year when the highest degree was obtained following the method used by the OECD International Migration Division (OECD, 2014). If the migrant declares having fewer years of residence in comparison to the reported years that have passed since the highest degree was obtained, then he/she is considered to hold a foreign degree, and vice versa⁷. No imputation of missing values was carried out. For a comparison with other methods used to derive the location where the highest degree was earned see Annex.

Finally, the analysis is carried out for EU-28 MS and, therefore, the aggregate includes the UK data.

⁶ For country of birth aggregations see: <https://ec.europa.eu/eurostat/documents/1978984/6037342/Criteria-for-the-anonymisation.pdf>

⁷ This type of approach is based on the assumption that the persons’ latest degree is the one which is consequential for their current employment.

4 Migrants face high non-employment rate of tertiary educated migrants, but less so EU mobile citizens

In the period 2017-2018, the EU MSs hosted around 7 million prime age, tertiary-educated, non-EU born migrants and EU mobile citizens.⁸ One third of the non-EU born migrants were not in any kind of employment but were either inactive or unemployed.

For a better overview of this under-utilisation of human capital, we compute the *non-employment rate* of the tertiary educated. This is defined as the share of unemployed and inactive migrants/mobile citizens within the prime age population (25-54) of reference.

Regardless of the region of birth, all non-native groups showed higher non-employment rates than natives (11.9%) in the 2017-2018 period, as reported by the Table 1.

Around 37% of migrants (Table 1) born in *North Africa and the Middle East* were not employed. In particular, the share of people from North Africa and the Middle East who were unemployed was higher (around 15%) than all regions considered. The share which was inactive was second-highest (almost 22%). Moreover, for those holding a foreign degree, the risk of being not employed was even higher. 1 out of 2 migrants born in North Africa and the Middle East with a tertiary education degree was not employed (Table 2).

Non-employment is also common among other groups of non-EU born people with tertiary education degrees, such as *East-Southeast Asians, Sub-Saharan Africans, non-EU Europeans, and Latin Americans*. In these four groups, the non-employed were slightly less than 30% of the overall prime age migrant population of reference. Among people from these regions, non-employment was even more common for those who had graduated from a country other than the one of their current residence. For example, 37% of East-Southeast Asia born tertiary graduates with a foreign degree were not employed.

At the same time, 1 out of 5 migrants in the EU who were born in *North America and Oceania* holding a tertiary degree were not employed, making it the non-EU region of birth with the best employment prospects. Also for this group, non-employment is higher among those holding a foreign degree, with a ratio of 1 out of 4 migrants who were born in *North America and Oceania* holding a foreign tertiary degree were not employed.

Finally, the share of not employed *EU mobile citizens* was lower than the shares for the other regions (16.6%). However, the gap with respect to the native population (11.9%) remained. Contrary to all other groups, holding a foreign degree is not a penalising factor for EU mobile citizens, as evidenced by the share of non-employed being almost the same for those having a host-country and those having a foreign degree.

⁸ KCMD elaborations of EU-LFS, 2017-2018.

Table 1 – Non-employment by the region of birth of migrant with tertiary education, all degrees, in %

	Unemployed	Inactive	Non-employed
<i>Nationals</i>	4.8	7.1	11.9
<i>EU mobile citizens</i>	6.2	10.4	16.6
<i>Non-EU born</i>	11.2	18.6	29.7
Non-EU Europe	9.0	17.0	25.9
North Africa and Middle East	15.2	21.9	37.1
Sub-Saharan Africa	13.6	14.8	28.4
East and South-East Asia	7.7	24.0	31.7
North America and Oceania	6.4	14.2	20.6
Latin America	11.8	14.7	26.5

NB. Data do not include BG and RO as destination countries.

Source: KCMD elaborations of EU-LFS, 2017-2018.

Table 2 – Non-employment by region of birth of migrant with a foreign tertiary degree, in %

	Unemployed	Inactive	Non-employed
<i>Nationals</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>
<i>EU mobile citizens</i>	5.8	11.5	17.3
<i>Non-EU born</i>	13.7	22.6	36.3
Non-EU Europe	10.7	20.2	30.9
North Africa and Middle East	20.8	28.2	49.0
Sub-Saharan Africa	14.9	21.3	36.2
East and South-East Asia	9.3	27.6	37.0
North America and Oceania	6.3	18.0	24.4
Latin America	13.9	16.3	30.2

NB. Data do not include BG and RO as destination countries.

Source: KCMD elaborations of EU-LFS, 2017-2018.

5 Over-education is a characteristic of workers born outside the EU

In addition to the 1.8 million prime age, tertiary-educated migrants and EU mobile citizens who were not in any type of employment in 2017-2018, there were around 5.2 million who were employed in one of the EU MS.⁹ Employment status alone, however, does not provide a complete indication of the use of human capital. A more complete picture of under-utilisation can be gained by looking at over-education. Over-education describes the extent to which an individual possesses a level of education in excess of that which is required for performing a particular job (McGuinness, 2006).

Indicators of over-education can be constructed with subjective, statistical or normative approaches (Biagi et al., 2020; Flisi et al. 2014). In this report, over-education is defined following the statistical or the so-called “realised matches” approach. According to this approach, an individual is considered well-matched if his/her actual level of education at time t corresponds to the educational attainment that most of the employees have within the same two-digit ISCO-08 occupation at the same point in time and in the same MS (i.e. the mode). The worker is considered to be over-educated if his/her level of education is higher than the level of education required for the specific position, defined by the mode. To better understand the value that the employers place on the tertiary degrees of people who are non-EU born or EU mobile citizens, we exclude self-employed and family workers¹⁰ from our sample.

Over the last two decades, the phenomenon of over-education among people in the EU with a tertiary education has steadily risen, albeit with strong regional variations. These are determined by numerous factors, such as different labour market institutions, the degree of technological adoption, demographic trends, among others. As a consequence, in some MS (AT, CZ, FR, IT, SK, UK) more than one third of tertiary educated workers are mismatched, while the issue seems less pressing in other MS (ES, FI, IE, LT, LU, LV, PL) where less than 20% of such workers are mismatched (see Figure 1).

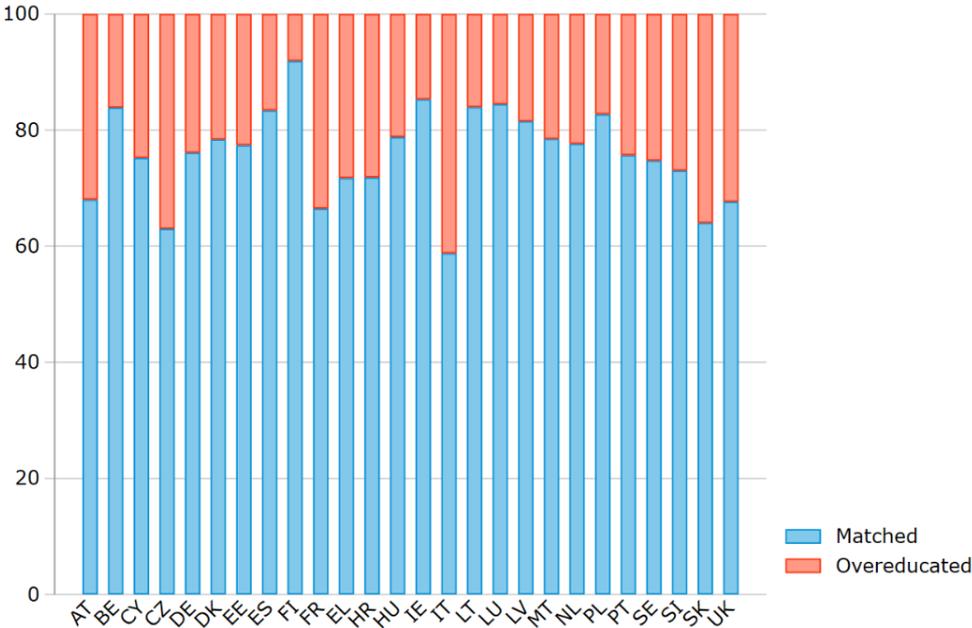
Figure 2 provides some insights on how over-education among non-native workers differs from that of native workers across MS: on the left panel (A), over-education of non-EU born migrants is compared to that of natives, while on the right panel (B), EU mobile citizens are compared to native workers. For ease of interpretation a 45-degree dotted line is added to the graph. A dot on the line indicates an equal share of over-education between natives and non-natives, one below the line indicates that non-native are more frequently over-educated while a dot above the line, the opposite.

Figure 2 shows that the over-education of EU mobile citizens and non-EU born workers reflects the geographical pattern emerging from Figure 1. For example, Italy reports the highest over-education rates among all MSs for all three groups of workers (natives, EU and non-EU). In particular, a non-EU born tertiary educated migrant in Italy is almost twice as likely to work in a profession that (on average) does not require a university degree compared to a native. On the other end of the MS scale, the smallest share of over-education for all three groups of tertiary educated workers is in Luxembourg.

⁹ KCMD elaborations of EU-LFS, 2017-2018.

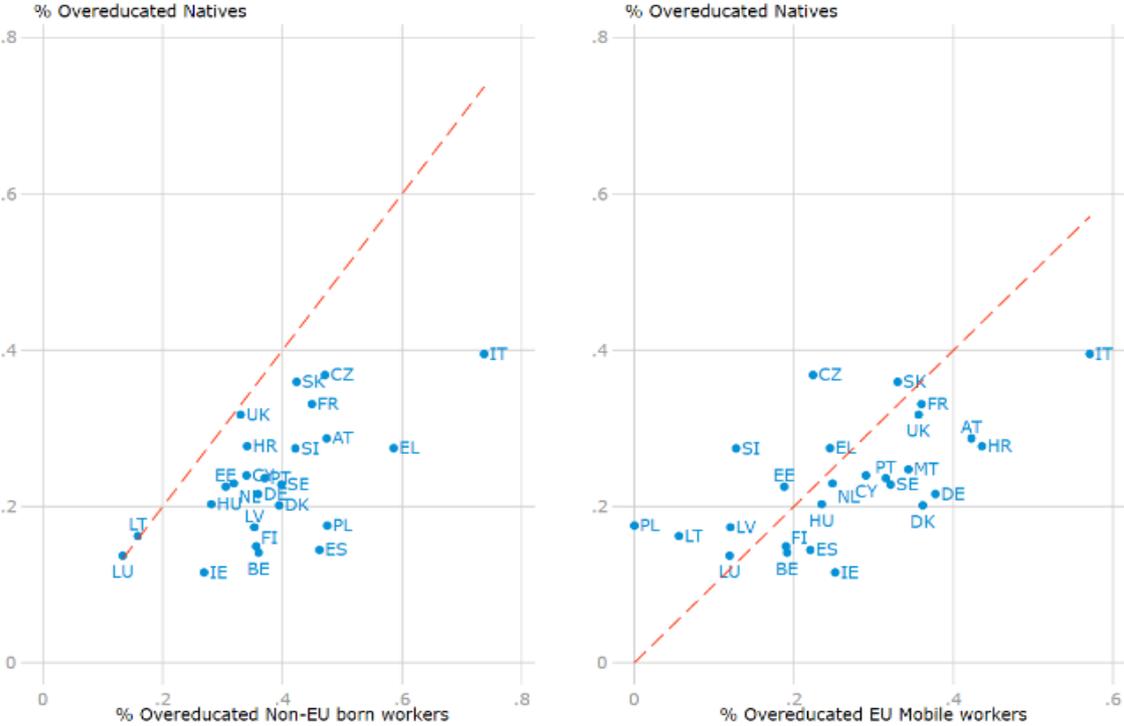
¹⁰ Self-employed and family workers constitute around 15% of the employed foreign-born prime age population with tertiary education.

Figure 1 – Share of over-educated workers among EU MS, 2017-2018



NB. Data do not include BG and RO as destination countries.
 Source: KCMD elaborations of EU-LFS, 2017-2018

Figure 2 – Comparison of over-education across migration groups and Member States, 2017-2018



NB. Data do not include BG and RO as destination countries.
 Low reliability for EE, FI, HR, LT, LV, PL, SK in relation to EU mobile workers.
 Low reliability for SK in relation to non-EU born migrants.
 Source: KCMD elaborations of EU-LFS, 2017-2018.

Theoretically, the free movement of EU workers – one of the four fundamental freedoms of the EU – should improve the allocation of productive factors due to better matching of supply and demand for skills (EC, 2019). This is an advantage that non-EU born migrants – unless holders of an EU citizenship – might not enjoy due to limitations regulating their admission and residence as set by the EU and its MS. For this reason, the matching of EU born workers is expected to be better than that of non-EU born workers.

In fact, Figure 2 shows that EU mobile workers are better matched than non-EU born workers for the period 2017-2018, with values closer to the ones of natives (the dotted line). In some MS¹¹ (CZ, SI), EU mobile citizens are even better matched than native workers are. At the same time, few MS (AT, DE, DK, IE, IT) report over-education rates for EU mobile citizens considerably higher than the ones for native workers. For example, in Italy 57% of EU mobile workers are over-educated in comparison to 38% of native Italian workers, while in Germany the share of over-educated EU mobile workers reaches 37% in comparison to 21% over-educated native German workers.

In comparison to native and EU mobile workers, those born outside the EU are more likely to be over-educated in almost all EU MS. For this group, the best prospects for a good match are in the UK, LT and LU, where the share of over-educated among non-EU born is as high as among natives; while the worst are in IT, EL, PL and ES. Especially the cases of Italy and Greece, where the share of over-education of non-EU born workers is 75% and 60% respectively, stand out in comparison to other MS.

5.1 Foreign degree matters for over-education of non-EU born workers, but not for EU mobile workers

As mentioned in Section 2, there is evidence that EU labour markets do not value degrees attained in a foreign country as much as those awarded in the host-country.

To identify differences in over-education between people educated abroad or in the current country of residence, in Figure 3 we compare the shares of over-educated among those who obtained their tertiary degree in the host country versus those who obtained it abroad. For ease of interpretation a 45-degree dotted line is added to the graph. A dot on the line indicates an equal share of over-education between those who hold a host-country degree and those who hold a foreign degree. A dot below the line indicates that workers that hold a foreign degree are more frequently over-educated, while a dot above the line indicates the opposite.

Figure 3 shows a different pattern for non-EU born workers (panel A) and EU mobile workers (panel B).

For *EU mobile workers*, differences in over-education between workers with foreign and host-country degree are not large^{12,13} as the majority of values tend to concentrate on, or in proximity of, the red dotted line. The MS with larger differences are DK, DE, HU. For example, in Denmark 46% of the EU mobile workers who possess a foreign degree (i.e. a degree not obtained in the host MS), are over-educated while only 33% of those with a degree from the current country of residence are in the same situation. Similarly, in Hungary these shares are 36% and 18% respectively.

A much larger share of non-EU migrants with a foreign degree is over-educated than the other groups. First, excluding the MS for which the sample is not sufficiently large, only in CY, LU and the UK there seems to be no difference in the extent of over-education between non-EU workers with degrees from foreign countries of the MS of current residence. Secondly, in most

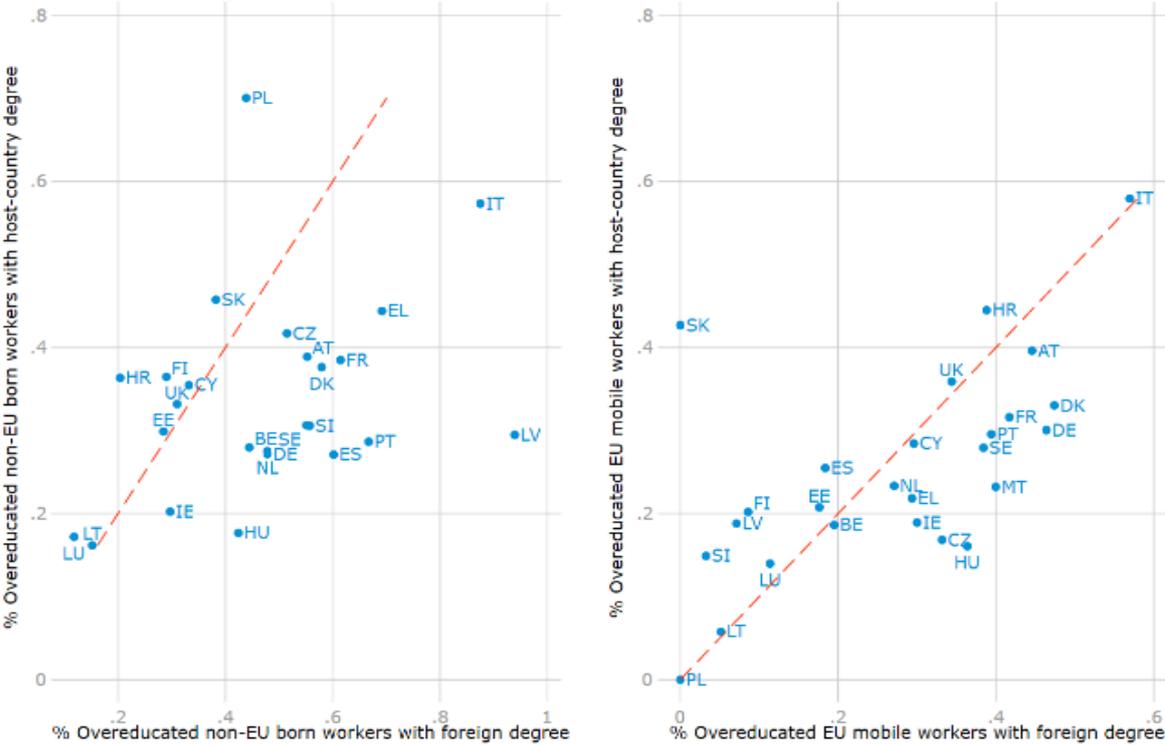
¹¹ Excluding MSs with low reliability values.

¹² Excluding MSs with low reliability values.

¹³ For the regulatory framework for the recognition of foreign qualifications see Box 1.

MSs a foreign degree is frequently associated with a higher probability of over-education. Differences between those with foreign and host-country degrees is especially severe in the Mediterranean countries (IT, GR, ES and PT). For example, in Spain and Portugal 27% and 29% of non-EU workers with host-country degrees were over-educated respectively, whereas the share of those with foreign degrees reached 60% and 67% respectively.

Figure 3 - Comparison of the share of workers with host-country degree that are over-educated versus the share of workers with foreign degree that are over-educated among A) non-EU born workers; and B) EU mobile workers



NB. Data do not include BG and RO as destination countries.
 Low reliability for CZ, EE, FI, HR, LT, LV, MT, PL, SK in relation to EU mobile workers.
 Low reliability for CZ, EE, HR, LT, LV, SK, PL in relation to non-EU born migrants.
 Source: KCMD elaborations of EU-LFS, 2017-2018.

5.2 Region of birth matters for over-education

The previous section provided evidence that over-education across EU MSs is especially relevant for non-EU-born migrants holding foreign degrees. At the same time, in the case of EU mobile citizens, over-education among foreign-educated graduates seems to be less pervasive than for non-EU born migrants. This geographical variation can be indicative of the role that the place where the degree was earned can play. An additional step to better understand the relationship between over-education and foreign degrees would be to consider the exact country or the region where the degree was attained. However, the information contained in the EU-LFS data do not show the country where the degree was obtained. In the absence of such information, we show differences by region of birth only. Keeping in mind that individuals tend to graduate in their native region, these figures can shed some light on the

effect of real and/or perceived differences in the quality of educational systems and the marketability of a tertiary education diploma between the different regions¹⁴.

In Table 3 and in Figure 4, we show the proportion of non-native people who are over-educated by region of origin. The groups of people most severely affected by over-education are those born in non-EU Europe, North Africa and the Middle East, and Sub-Saharan Africa. The latter show very high overall over-education rates (above 40%) and an extremely high over-education rate for holders of foreign degrees (around 60%). They are followed by workers born in East-Southeast Asia and in Latin America who also have very high overall over-education rates (around 40%), but over-education shares for foreign educated workers are somewhat lower (around 50%) than the most severely affected group.

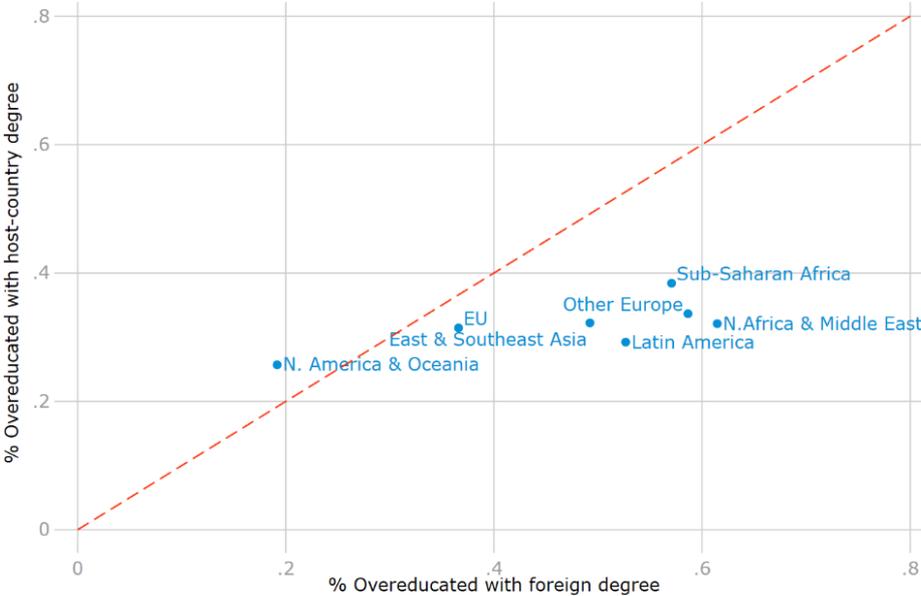
Table 3 – Share of people who are over-educated by region of birth, in %

	Over-educated all degrees	Over-educated with foreign degree
<i>Natives</i>	24.8	<i>n.a.</i>
<i>EU mobile workers</i>	33.4	36.6
<i>Non-EU born workers</i>	39.9	53.8
Non-EU Europe	43.7	58.7
North Africa and the Middle East	42.3	61.5
Sub-Saharan Africa	41.9	57.0
East-Southeast Asia	37.0	49.2
North America and Oceania	23.6	19.2
Latin America	40.1	52.7

NB. Data do not include BG and RO as destination countries.
Source: KCMD elaborations of EU-LFS, 2017-2018.

¹⁴ See paragraph 2.

Figure 4 - Comparison of the share of people with host-country degree who are over-educated versus the share of people with a foreign degree, by country of origin



NB. Data do not include BG and RO as destination countries.
 Source: KCMD elaborations of EU-LFS, 2017-2018.

Of all people from non-EU countries and EU mobile citizens with a tertiary education, those born in North America and Oceania are at lowest risk of being over-educated. The share of those who are over-educated from this region is even lower when their degree is attained abroad. This is the only case where such inversion occurs and might suggest that qualifications obtained in this region are highly valued in the EU labour market.

The case of EU mobile workers is of particular interest considering that for these workers the formal recognition of a degree earned in their home country and/or its evaluation by an employer is facilitated by current EU regulations (Box 1). This is somehow reflected in the results shown in Table 3. For EU mobile workers, one third is over-educated but, more interestingly, the difference in the share of over-educated increases only slightly among those workers holding foreign degrees. This might suggest that the measures set to facilitate the recognition of foreign qualifications for EU mobile citizens do affect the marketability of a degree earned in the home country.

6 Conclusions

The results on the under-utilisation of tertiary education among the non-native population suggest that holding a foreign degree is often associated with poorer labour market outcomes. It should be stressed that this report defines a foreign degree as a degree that was not obtained in the host country. The extent of these poorer outcomes seems to vary largely across different non-native groups. In particular, the results outline clear differences between the EU mobile citizens, migrants born in North America and Oceania, and other non-EU born migrants.

EU mobile citizens who hold a tertiary degree have relatively low rates of non-employment and over-education. Moreover, the difference in outcomes between people who earned their degree in the MS they currently reside in and people whose degree is from a foreign country is small.

Non-EU born, tertiary educated migrants have the highest rates of non-employment and of over-education of the three groups considered. Both non-employment and over-education are higher for those holding a degree from a country other than the one of current residence. Within this group, people from both North Africa and the Middle East and Sub-Saharan Africa have the weakest labour market performance.

Among non-EU born migrants, people from North America and Oceania are an exception. Overall, the results point to a low share of people from this region who are over-educated. This tends to be even lower among those workers holding a foreign degree, suggesting that employers highly value degrees from North America and Oceania.

The aim of this report is limited at providing a descriptive overview of the most important indicators of under-utilisation of human capital, without providing causal explanations of the differences recorded in the main statistics. As we highlighted in Sections 1 and 2, many different and sometimes competing explanations could be advanced to the recorded performance gaps. In addition, the results should be interpreted bearing in mind that a degree is only an imperfect indicator of an individual's skills (Flisi et al. 2014). When studying labour market outcomes of migrants and particularly migrants with a foreign degree, skills such as language ability, problem-solving, country-specific social skills, and so on are essential (OECD/EU, 2018; Chiswick & Miller, 2015; Bonfanti & Xenogiani, 2014; Cai, 2012).

Nonetheless, the evidence discussed in the report, and in particular the reported gap between the performance of tertiary education graduates from the same region of birth but with a "host country degree" versus those with a "foreign degree", is indicative of the importance of the recognition of qualifications. The recognition instrument deserves particular attention as it directly and largely depends on the regulatory framework. As shown in OECD (2017), the possibility of having foreign qualifications recognised now exists almost everywhere in the OECD. However, in many OECD countries the process can be long and off-putting due to a lack of transparency. Overall, a range of barriers to existing recognition mechanisms remain, and this explains why still only relatively few migrants use assessment offers (OECD, 2017).

The full integration of skilled migrants within the EU labour market is paramount to their well-being and the Union's full transition towards a knowledge-based economy. This report has evaluated how the place of graduation relates to labour market performance. This is just one of many aspects underlying migrants' integration. The next step that the KCMD plans to take in this direction is to examine the trends and patterns of the under-utilisation of skills of migrant women. This is a particularly vulnerable group for which over-education (Biagi et al. 2019) as well as non-employment (EU-LFS) remains higher than for migrant men.¹⁵

¹⁵ KCMD elaborations of EU-LFS, 2017-2018.

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List of abbreviations and definitions

ECTS	European Credit and Transfer system for higher education
ECVET	European Credit system for Vocational Education and Training
EEA	European Economic Area
EFTA	European Free Trade Association
EPC	European Professional Card
EQF	European Qualifications Framework
ESCO	European Skills, Competences, Qualifications and Occupations
EU	European Union
EU-LFS	European Union Labour Force Survey
KCMD	Knowledge Centre on Migration and Demography
MS	Member States
OECD	Organisation for Economic Co-operation and Development

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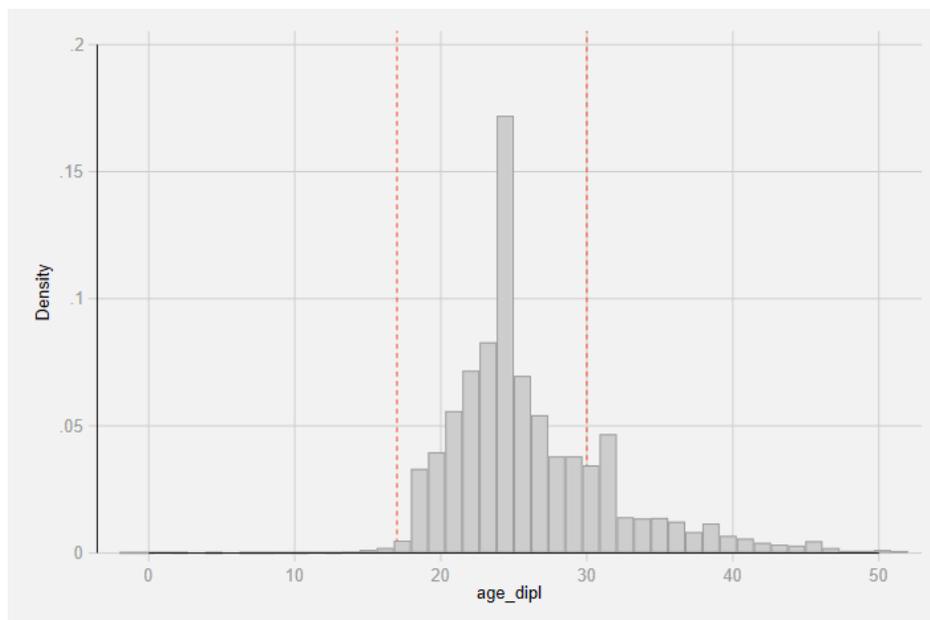
Annexes

As mentioned in the Section 3 on data, the information on where the tertiary degree was earned (i.e. in the host country or abroad) is not directly recorded in the EU-LFS. It is derived by comparing migrant's years of residence in the host country and the year when the highest degree was obtained. If the migrant declares having fewer years of residence in comparison to the reported years that have passed since the highest degree was obtained, then he/she is considered to hold a foreign degree, and vice versa.

This type of approximation, however, presents some caveats.

The first caveat is linked to the variable *age*. This variable is given in five-year age groups rather than single ages; therefore, it is necessary to use the central value to derive the implied age at graduation represented in Figure 5. Assuming that the average age at tertiary level graduation is between 17 and 30 years then we do find the majority of observation (around 83%) within that age interval (marked with two dotted red lines). There is a significant group of individuals (16%) who presumably earned their degree after the age of 30, however, there is no possibility to validate this information. Finally, there are 0.5% of individuals, who quite implausibly, earned their degree at the very young age.

Figure 5 – Implied age at graduation



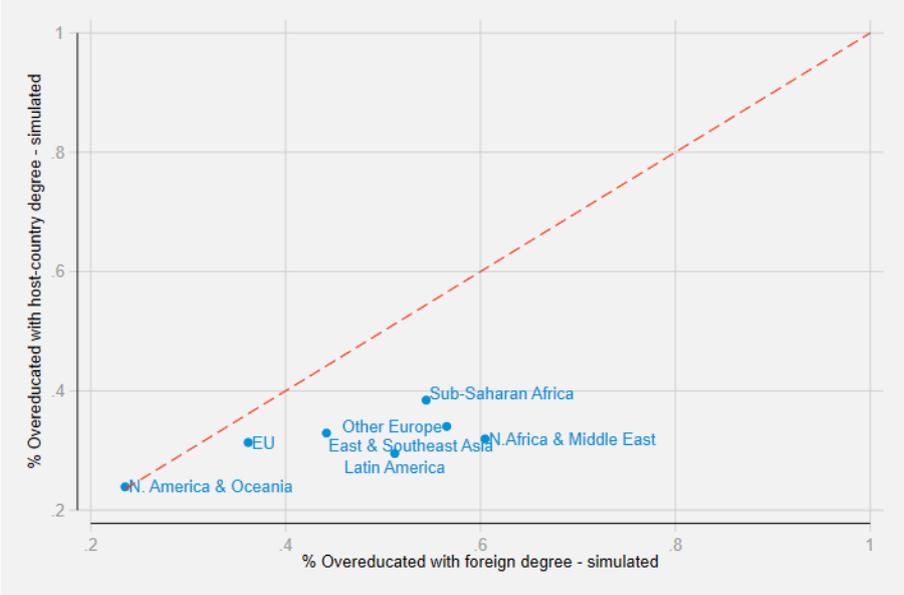
NB. Data do not include BG and RO as destination countries.

Source: KCMD elaborations of EU-LFS, 2017-2018.

The second potential caveat is represented by the missing values in the variable *hatyear*, which records the year when the highest level of education was successfully completed. Each year, around 1.5% of respondents did not provide information on this question. In our analyses on foreign degree, we dropped all observations for which the year when the last degree was obtained is not observed.

Finally, we also consider the OECD methodology which foresees the imputation of missing values. As a robustness check, we impute the year of graduation to the missing values assigning the mean age at graduation that is observed in data within the same ISCED-11 category and then compute over-education for non-EU born workers holding host-country versus foreign degree. As an example, we show the results split by the region of birth of non-EU migrants and we do not find any substantial difference in respect to a non-simulated scenario.

Figure 6 - Prevalence of over-education among migrant workers with local vs. foreign diploma by region of birth – Simulated



NB. Data do not include BG and RO as destination countries.
 Source: KCMD elaborations of EU-LFS, 2017-2018.

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